Metro Inner Development Assessment Panel Agenda

Meeting Date and Time: Wednesday, 25 November 2026; 1:00pm
Meeting Number: MIDAP/166
Meeting Venue: 140 William Street, Perth

A live stream will be available at the time of the meeting, via the following link:
MIDAP/166 - 25 November 2026 - City of South Perth

PART A – INTRODUCTION

1. Opening of Meeting, Welcome and Acknowledgement
2. Apologies
3. Noting of Minutes

PART B – CITY OF SOUTH PERTH

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
   - 3.1 Lot 38 (11) South Perth Esplanade, South Perth - Nine Multiple Dwelling – DAP/26/03118
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations

PART C – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals
2. Meeting Closure

Please note, presentations for each item will be invited prior to the items noted on the agenda and the presentation details will be contained within the related information documentation

DAP Members
Dale Page (Presiding Member)
Karen Hyde (Deputy Presiding Member)
John Syme
Cr Kathy Lees (Part B – City of South Perth)
Cr Bronwyn David (Part B – City of South Perth)

DAP Secretariat
Kristen Gray
Tenielle Bronwfield

PART A – INTRODUCTION

1. **Opening of Meeting, Welcome and Acknowledgement**

2. **Apologies**

3. **Noting of Minutes**

PART B – CITY OF SOUTH PERTH

1. Declarations of Due Consideration

2. Disclosure of Interests

3. Form 1 DAP Applications

3.1 Lot 38 (11) South Perth Esplanade, South Perth - Nine Multiple Dwelling – DAP/26/03118

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil

Part B – Item No.3.1
LOT 38(NO. 11) SOUTH PERTH ESPLANADE, SOUTH PERTH

RESPONSIBLE AUTHORITY REPORT – FORM 1	
DAP Name:	Metro Inner DAP
DAP File No:	DAP/26/03118
LG Reference:	PDDA-2026/1514
Proposed Development:	Nine Multiple Dwellings
Value of Development:	$25 million
Owner:	SUN WAI HOLDINGS PTY LTD
Applicant:	Planning Solutions
Local Government Area:	City of South Perth
Responsible Authority:	City of South Perth
Authorising Officer:	Jeremy Versaico - A/Manager Development Services
Application Acceptance Date:	26 May 2026

LOCATION PLAN



SUPERSEDING REPORT AND REPLACEMENT OF PREVIOUS SUBMISSION

This Responsible Authority Report (RAR), dated 13th November 2026, supersedes and replaces the previously submitted Responsible Authority Report prepared for consideration at the 30 September 2026 meeting.

All attachments, plans, supporting documents and other materials submitted with the previous RAR are also superseded and withdrawn. The current RAR and its accompanying attachments are to be taken as the definitive submission and are intended to replace in their entirety all documentation associated with the previous RAR for the 30 September 2026 meeting.

Accordingly, only the contents of this RAR dated 13 November 2026 and its attached documents should be relied upon for the purposes of assessment and determination of the application.

RESPONSIBLE AUTHORITY RECOMMENDATION

That the Metro Inner DAP resolves to **APPROVE** DAP Application reference DAP/26/03118for Nine Multiple Dwellings at 11 South Perth Esplanade, South Perth in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the Planning and Development (Local Planning Schemes) Regulations 2015, and the provisions of the City of South Perth Local Planning Scheme No. 7, subject to the following conditions:

General conditions

1. The development is to be undertaken in accordance with the approved plans and documents attached to this approval, except where amended by subsequent conditions.

2. This decision constitutes development approval only and is valid for a period of four years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

3. All works to be carried out under this development approval, including footings, are required to be contained within the boundaries of the subject lot.

Design

4. Prior to or in conjunction with the submission of a Building Permit application, the applicant shall supply certification from a Liveable Housing Australia assessor confirming that the detailed design of all dwellings are compliant with the ‘Silver Level’ (or better) of the ‘Liveable Housing Design Guidelines’ produced by Liveable Housing Australia to the satisfaction of the City of South Perth

5. Prior to occupation or use of the development, certification from a Liveable Housing Australia assessor shall be provided, to the satisfaction of the City of South Perth, confirming all apartments have been constructed in accordance with ‘Silver Level’ (or better) design elements of the ‘Liveable Housing Design Guidelines’ produced by Liveable Housing Australia.

Materials and Finishes

6. Prior to or in conjunction with the submission of a Building Permit application, final details of the proposed materials, colours and finishes of the proposed development (inclusive of fencing, screening, services and utilities) are to be submitted to and approved in writing by the City of South Perth.

   The finishes indicated shall be reflective of the finishes demonstrated in the documentation submitted for development approval, and be implemented and maintained thereafter, to the satisfaction of the City of South Perth.

7. Prior to occupation or use of the development, the boundary walls shall be constructed and finished to a clean professional standard as indicated on the approved plans, to the satisfaction of the City of South Perth.

Access and Parking

8. Prior to occupation or use of the development, vehicle parking, manoeuvring and circulation areas shall be designed, constructed, sealed, drained, line marked and kerbed in accordance with the approved plans and AS2890, maintained for the lifetime of the development, and include:

   a. A minimum of one car bay allocated to each apartment;
   b. A minimum of two visitor car bays; and
   c. A service bay suitable to accommodate waste collection, loading, deliveries, and general servicing of the site.

   Where visitor bays are located behind a security access gate, suitable measures are to be implemented to ensure legibility and ease of access for visitors, to the satisfaction of the City of South Perth.

9. Prior to occupation of the development, all bicycle parking spaces are to be installed in accordance with AS2890.3, to the satisfaction of the City of South Perth.

10. Prior to or in conjunction with the submission of a Building Permit application, the applicant must be in receipt of an approved 'Crossings Application' that confirms the design is to the satisfaction of the City of South Perth.

Public Art

11. Prior to or in conjunction with the submission of a Building Permit application, the applicant/owner is to comply with the City of South Perth Local Planning Policy 6.3 - Developer Contributions for Public Art and Public Art Spaces through the contribution of a sum of 1% of the estimated cost of the development towards public art, being either:

    a. Payment to the City of South Perth the value of 1.0% of the construction value (with the contribution capped at $1,000,000); or
    b. The provision of public art on site to the minimum value of 1.0% of the construction value to the satisfaction of the City of South Perth.

If public art is being provided on site, the applicant must seek approval in writing from the City of South Perth for the public art concept, including the artist proposed to undertake the works to the satisfaction of the City of South Perth. The approved public art concept shall be implemented prior to occupation of the development and maintained in compliance with the conditions of approval for the public art proposal to the satisfaction of the City of South Perth.

Community Benefit

12. Prior to occupation or use of the development, a community benefit contribution, calculated in accordance with Clause 8.3, Additional Centre Requirements 2 of the City of South Perth Local Planning Scheme No. 7 shall be made by way of monetary payment to the City of South Perth.

Landscaping

13. Prior to or in conjunction with the submission of a Building Permit application, a detailed landscape plan demonstrating the long-term viability of planting is to be submitted to and approved in writing by the City of South Perth to address the following:

    a. Hard and soft landscaping areas;
    b. The location and species of all trees and plants to be retained or removed;
    c. The quantity, pot size, mature height and diameter of all new species to be planted;
    d. The location of any lawn areas to be established;
    e. Reticulation details and water saving measures;
    f. Design of the bioswale and any associated features;
    g. Design of on structure planters including soil depths and access for maintenance;
    h. Details of the verge landscaping or planting of street trees; and
    i. Removal of proposed structures and hardstand within the verge, including any bin pad, pedestrian path connecting the existing footpath with the road pavement, or hardstand either side of the existing footpath with exception to the driveway and pedestrian connection between the footpath and the development.

    The detailed landscape plan shall be reflective of the landscape concept prepared by See Design Studio Landscape Architects August 2026, updated as necessary to address requirements of development approval.

14. Prior to occupation of use of the development, landscaping areas shall be installed in accordance with the approved detailed landscape plan, to the satisfaction of the City of South Perth. All landscaping areas shall be maintained for the lifetime of the development, to the satisfaction of the City of South Perth.

15. Prior to or in conjunction with the submission of a Building Permit application, a revised Arborist Report must be submitted to, and approved in writing by the City of South Perth, addressing the following matters as relevant to the Ficus macrocarpa adjacent to the site:

a. Investigation and recommendations on construction methodology of boundary walls adjacent to the tree to establish the least invasive methodology for construction. Excavation and piling within the structural root zone (SRZ) will not be supported and should be avoided where possible within the notional root zone (NRZ).
b. Investigation and recommendations on appropriate ground finishes within the SRZ and NRZ to minimise impact to the tree.
c. Investigation and recommendations on any necessary modifications to the boundary wall to ensure that no further damage or pruning occurs to the tree at or below the proposed podium height.
d. Investigation and recommendations on the extent of pruning reasonably necessary to enable construction of the tower component of the development. The extent of pruning shall be limited to the minimum reasonably necessary to facilitate the works.
e. Recommended measures to be undertaken prior to, during, and after demolition and construction works, to minimise potential damage and ensure the ongoing health and survival of the tree. This shall include details on the methodology for removal of the existing car park pavement and drains within the SRZ and NRZ.

The approved Arborist Report shall be implemented and adhered to all times, to the satisfaction of the City of South Perth.

Sustainability

16. Prior to or in conjunction with the submission of a Building Permit application, the applicant is to submit a sustainability report confirming the final green star strategy that addresses the construction stage of the development and beyond. This report shall clearly demonstrate that a Four-Star Green Star Certified rating is achieved for the development. A supplementary equivalent standard is not accepted. Where relevant, elements of the sustainability report and strategy should clearly be reflected in documentation and plans submitted with the Building Permit application. All sustainable design features proposed in the development shall be implemented, to the satisfaction of the City of South Perth.

17. Prior to or in conjunction with the submission of an Occupancy Permit application, certification is to be provided by a suitably qualified person that the development has satisfied a minimum Four-Star Green Star Certified rating and all sustainability initiatives have been installed and are operational, to the satisfaction of the City of South Perth.

Construction Management

18. Prior to or in conjunction with the submission of a Building Permit application, or demolition permit application, whichever is earlier, a Construction Environmental Management Plan (CEMP) must be submitted to, and approved in writing by, the City of South Perth. The CEMP must address the following issues, where applicable:

a. public safety and amenity;
b. site plan and security;

c. contact details of essential site personnel, construction period and operating hours;
d. maintained public access to the pedestrian path within the verge abutting the subject site;
e. community information, consultation and complaints management plan;
f. noise, vibration, air and dust management;
g. traffic, access and parking management including deliveries and storage of materials and equipment;
h. maintaining adequate sightlines for vehicles and pedestrians around access points to the subject and surrounding sites;
i. waste management and materials re-use;
j. earthworks, excavation, land retention/piling methods and associated matters;
k. stormwater, rubble, and sediment control;
l. groundwater, dewatering, and acid sulfate soils management;
m. tree management and protection;
n. removal of onsite effluent disposal system and stormwater management system;
o. asbestos removal; and
p. monitoring and reporting requirements.

Where management of a particular issue is required to be addressed through a separate specialised management plan, the CEMP is to reference the specialised management plan. The CEMP must be implemented and adhered to all times, to the satisfaction of the City of South Perth.

19. Prior to construction, any sewage and/or effluent disposal systems (septic tanks, aerobic treatment units, greywater systems) including all associated tanks, pipes and drainage systems (soak wells or leach drains) shall be pumped out by a licensed contractor and removed from the ground, backfilled with clean fill and the area compacted; and a statutory declaration indicating as such, shall be provided to the City.

20. Prior to or in conjunction with the submission of a Building Permit application, a Dilapidation Report shall be submitted to and approved in writing by the City of South Perth, detailing the current condition and status of all buildings (both internal and external together with surrounding structures and paved areas) at the following addresses:

a. No. 9 South Perth Esplanade, South Perth;
b. No. 13 South Perth Esplanade, South Perth;
c. No. 5 Queen Street, South Perth;
d. No. 7 Queen Street, South Perth;
e. No. 9 Queen Street, South Perth; and
f. No. 16 Mill Point Road, South Perth (limited to rear tennis court / parking structure).

In the event access to undertake the dilapidation report is denied by a landowner, the applicant must demonstrate to the satisfaction of the City of South Perth that all reasonable steps have been taken to obtain access and that the landowner was advised of the reason for the dilapidation report. Landowners that consent to the dilapidation report are to be provided with a copy of the dilapidation report.

Screening

21. External fixtures, including but not limited to, air-conditioning units, clothes drying facilities, satellite dishes and non-standard television aerials, but excluding solar collectors, are to be integrated into the design of the building, suitably screened, and/or located so that they are not visible from the street or adjoining properties, to the satisfaction of the City of South Perth.

Noise

22. Prior to or in conjunction with the submission of a Building Permit application, a revised Acoustic Report must be submitted to, and approved in writing by, the City of South Perth. The revised acoustic report shall address noise impact prediction based on mechanical equipment selection / specification including but not limited to that from ventilation and exhaust systems, mechanical plant/equipment/motors/pumps, air-conditioning, mechanical gates/doors and intercoms alarms; compared with the *Environmental Protection (Noise) Regulations 1997*.

    All noise attenuation measures identified in the approved Acoustic Report shall be implemented and maintained for the lifetime of the development, to the satisfaction of the City of South Perth.

23. Prior to the submission of an Occupancy Permit application, certification is to be provided from a suitably qualified person confirming that all noise attenuation measures identified in the approved Acoustic Report have been implemented, to the satisfaction of the City of South Perth.

Waste Management

24. Prior to or in conjunction with the submission of a Building Permit application, a revised Waste Management Plan prepared in accordance with the City of South Perth Local Planning Policy 3.1 – Waste Management, must be submitted to, and approved in writing by the City of South Perth, addressing the following:

    a. On-site waste collection;
    b. Measures to be implemented for the purpose of minimizing the delivery of waste to landfill, including the onsite separation of materials for recycling;
    c. The location of bin storage areas and bin collection areas;
    d. The number, volume and type of bins, and the type of waste to be placed in the bins;
    e. Management of the bins and the bin storage areas, including cleaning, rotation and moving bins to and from the bin collection areas;

    The approved Waste Management Plan shall be implemented and adhered to all times, to the satisfaction of the City of South Perth.

Lighting

25. Prior to or in conjunction with the submission of a Building Permit application, a Lighting Plan detailing lighting to communal pathways and car parking areas

shall be submitted to and approved in writing by the City of South Perth. The approved lighting plan shall be implemented prior to occupation of the development and maintained thereafter, to the satisfaction of the City of South Perth.

26. Prior to or in conjunction with the submission of a Building Permit application, certification is to be provided from a suitably qualified person confirming that the lighting plan complies with Australian Standards 1158, 1680, and 4282, as relevant to the proposal, to the satisfaction of the City of South Perth.

Ground and Stormwater

27. Prior to or in conjunction with the submission of a Building Permit application, a stormwater management plan (SMP) must be submitted to, and approved in writing by the City of South Perth. The approved SMP shall be implemented and thereafter maintained, to the satisfaction of the City of South Perth.

28. In the event dewatering or excavation (100m³ or more) is required, an Acid Sulfate Soil Management Plan in accordance with Department of Water and Environmental Regulation guidelines must be submitted to and approved in writing by the City of South Perth. The approved plan must be adhered to at all times to the satisfaction of the City of South Perth.

29. In the event dewatering is required during construction, all works are to be undertaken in accordance with a Dewatering Management Plan which is to be submitted to and approved by the City of South Perth, to the specification of the Department of Biodiversity, Conservation and Attractions, prior to commencement of works. Any dewatering is to occur wholly on site, to the satisfaction of the City of South Perth.

Advice Notes

1. The applicant is advised to liaise with the adjoining landowner(s) regarding the possible retention or replacement of the existing dividing fence along the lot boundary. Please refer to the *Dividing Fences Act 1961* for the rights and responsibilities of landowners regarding dividing fences.

2. The applicant is advised separate approval is required to be obtained from the local government prior to the commencement of any works within the verge.

3. When addressing noise under the Construction Environmental Management Plan, the impact of temporary structures is to be included, such as banging from loose gates and flapping of fabric or sheet screening and signage. Kickboards should also be implemented for any scaffolding within 2.0m of a lot boundary to minimise impacts of rubble and loose materials on adjoining sites.

4. The Stormwater Management Plan will require discharge to the City's stormwater drainage network via a controlled outlet through an approved private drainage connection, and shall include the following detail:

    a. Total impervious area, including 50% of the area of the largest wall of the building.

b. Discharge rate into the City's drainage network being limited to 1 litre per second for every 500m² of impervious area.
c. Certified Engineering Statement confirming the stormwater management solution meets all applicable requirements.
d. Height of the water table, specifically in relation to the base of the proposed drainage structure.

PROPOSAL

The proposal is for a five-storey residential development, comprising nine multiple dwellings, a ground floor lobby and car parking area, and two roof terraces for the exclusive use of the fourth-floor dwellings.

SITE CONTEXT

The development is located at No. 11 South Perth Esplanade, South Perth. The property fronts onto an offshoot portion of South Perth Esplanade, fronting the Swan River foreshore. The nearest intersection is Queen Street to the south, and the Kwinana Freeway to the east, accessed via Mill Point Road to the south.

The site is regular in shape, with an area of 1,730m². No significant vegetation has been identified within the site or the adjoining verge area, however a large, Regulated Tree which overhangs into the site is located on the adjacent site at No. 7 Queen Street, South Perth.

Single houses adjoin the site to the north (four-storey) and south (three-storey). Development adjacent to the rear boundary (west) is an eight-storey residential development comprising 16 Multiple Dwellings. A second development adjoins the western portion of the site's southern boundary, which contains three, two-storey grouped dwellings.

BACKGROUND

On 30 September 2026, the Metro Inner Development Assessment Panel (MIDAP) resolved to defer determination of DAP/26/03118 for the following reasons:

- Improved articulation or treatment of the rear boundary wall to soften its appearance and visual impact on the neighbours to the rear.
- Provision of renders to illustrate the visual impact of the rear of the building on the neighbouring properties on Mill Point Road.
- Inclusion of an on-site service bay or other suitable area to accommodate waste collection, loading, deliveries, and general servicing of the site.
- Redesign of the structures on the roof terrace to reduce and minimise the impact of overshadowing of the neighbours to the south.
- Any further amendments to the development required to ensure the health and ongoing viability of the tree on the adjoining property.
- Details of how the community benefit contribution could be included on site (suggested as an alternate pathway by the applicant).

Following receipt of the deferral reasons published by the MIDAP Secretariate on 6 October 2026, the applicant met with City of South Perth (the City) Officers to discuss

the response to the deferral reasons. Following this meeting, the City received amended plans and materials from the applicant on 20 October 2026.

The City sought clarification from the MIDAP as to the manner and form of the 'addendum' referenced within the MIDAP deferral. The DAP Secretariate advised that the City is to provide a new RAR based on any revised information received following the deferral.

DEFERRAL RESPONSE

In response to the deferral reasons from the 30 September 2026 MIDAP decision, the applicant has provided amended plans and supporting materials. A summary of the changes made, and the additional information/materials provided to those presented at the 30 September 2026 MIDAP in response to each deferral reason is outlined below:

Improved articulation or treatment of the rear boundary wall to soften its appearance and visual impact on the neighbours to the rear.

Changes have been made to the western boundary wall as follows:
- Height has been stepped to reduce the height of the boundary wall by approximately 1.5m (from 5.4m above natural ground level to 3.9m above natural ground level).
- Detailing has been introduced in relation to the finish of the western boundary wall consisting of changes to colours and patterns on the boundary wall structure.

Provision of renders to illustrate the visual impact of the rear of the building on the neighbouring properties on Mill Point Road.

Amended plans have been submitted including:
- Revised elevation drawings including material schedules and detailing of the boundary wall structures.
- Details of the existing structures on the adjoining western lot boundary at No. 16 Mill Point Road which the development interfaces with.

Inclusion of an on-site service bay or other suitable area to accommodate waste collection, loading, deliveries, and general servicing of the site.

An amended ground floor plan has been submitted. The amended ground floor plan includes:
- A dedicated on-site turn-around bay to accommodate waste/delivery vehicle movements.
- Relocation of proposed visitor parking bays.
- Revised swept path diagrams for the amended car parking/waste/delivery vehicle arrangements.
- Internal amendments to the residential lobby, bike store and service areas associated with the reconfiguration of the parking/turn-around bay revisions.

Redesign of the structures on the roof terrace to reduce and minimise the impact of overshadowing of the neighbours to the south.

Amended plans and further supporting documents relating to the roof terrace structures and their impacts on adjoining lots have been submitted. Plan revisions include:

- Reduction to the pergola rooftop structures by approximately 0.3m (from 3.1m above the finished floor level to 2.8m above the finished floor level).
- Increase of the pergola/screen wall setbacks from the southern lot boundary by 0.4m (going from a 5.3m side setback to a 5.8m side setback).
- Portions of the pergola roof structure removed above the northern and southern pools.
- Increase in the permeability of the pergola roof structures.

Any further amendments to the development required to ensure the health and ongoing viability of the tree on the adjoining property.

Further detail has been submitted in relation to the construction methodology of the structures within the notable root zone and structural root zones of the tree on the adjoining southern lot.

Details of how the community benefit contribution could be included on site (suggested as an alternate pathway by the applicant).

The applicant has determined that the Community Benefit Contribution is to be addressed through a cash-in-lieu payment to the City of South Perth in accordance with the provisions of the City of South Perth Local Planning Scheme No. 7 and the South Perth Activity Centre Plan.

PLANNING ASSESSMENT

PLANNING FRAMEWORK	
Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of South Perth Local Planning Scheme No. 7
Local Planning Scheme - Zone	Centre
Structure Plan/Precinct Plan	South Perth Activity Centre Plan (SPACP)
Structure Plan/Precinct Plan - Land Use Designation	Mill Point Character Area Multiple Dwellings – Preferred Land Use
Lot Size	1,730m²
Existing Land Use	Multiple Dwellings
Heritage Status	☒ N/A ☐ State Register of Heritage Places ☐ Local Heritage List ☐ Local Heritage Area
Bushfire Prone Area	No

The below assessment and consideration of discretion includes assessment of the revised plans and materials submitted in response to the 30 September 2026 deferral.

The proposal has been assessed against all relevant legislative requirements of the City of South Perth Local Planning Scheme No. 7 (LPS 7), the South Perth Activity

Centre Plan (SPACP), the Residential Design Codes Volume 2 (R-Codes), and applicable state and local planning policies.

The SPACP outlines the land use permissibility and built form requirements for the subject site. The SPACP augments the requirements of specific provisions of the R-Codes in its application, however, provides its own requirements which are to be read in conjunction with the Acceptable Outcomes and Element Objectives of the R-Codes in considering the exercise of discretion.

The following matters have been identified as key considerations for the determination of this application:

- Building height
- Podium
- Tower Gross Floorplate Area
- Design Quality

These matters are outlined and discussed in further detail below.

Building height (ACR2 Provision 5 Element 2)

The proposed development has a height of five (5) storeys.

The subject site is located within the 'low' building height typology precinct of the SPACP and subject to a four (4) storey primary building height limit under the SPACP, however is eligible for assessment against the 'Tier 1' five (5) storey development requirements of the SPACP should 'design excellence' be achieved and the required community benefit contribution is satisfied.

Whilst the development seeks approval for a building height which exceeds the primary building height outlined within the SPACP, the development has been considered by the City's DRP and determined to achieve 'design excellence' and therefore eligible for assessment against the 'Tier 1' development controls, including the five (5) storey maximum building height.

The proposed building height is supported as:

- The development has satisfied the 'design excellence' requirements outlined within the SPACP and LPS7 to be eligible for assessment under the 'Tier 1' building height controls.
- The development satisfies the 'Tier 1' development controls of the SPACP in relation to building height.
- The development satisfies the community benefit framework associated with the 'Tier 1' development requirements, as the applicant has nominated to make a cash in-lieu contribution in accordance with the requirements of the SPACP and LPS 7. The City has recommended a condition to satisfy this requirement.

Discretion is sought in relation to building height under requirement 2.2 of ACR2, a summary of the assessment is provided below.

Requirement	**Proposed**

ACR2 Provision 5 Element 2 – Requirement 2.2 (Low Typology)	
Primary – Four storeys Tier 1 – Five storeys[1]	Five storeys[2] (Tier 1)
[1] Subject to satisfying requirements of Element 7 (design quality) and 8 (approval for additional development potential) of ACR2 Provisions 5.	[2] The roof terrace structures are excluded from the definition of a storey and therefore do not affect compliance.

Discretion is to be considered against Elements 7 and 8 of ACR2 Provision 5, which have been assessed under separate sections below.

Podium (ACR2 Provision 5 Element 3)

Discretion is sought in relation to podium setbacks under requirement 3.1 of ACR2, a summary of the assessment is provided below.

Requirement	Proposed
ACR2 Provision 5 Element 3 – Requirement 3.1 (Mill Point Character Area)	
Maximum podium boundary wall length two-thirds the length of the boundary for a height of two storeys (10.0m)	Boundary wall proposed for the entire length of the rear (west) boundary to a height of 3.9m

Discretion is to be considered against the associated objectives of the SCACP (4.1.2), as follows:

- *To ensure buildings contribute to a public realm that creates interest and encourages pedestrian movement.*
- *To provide human-scale development fronting onto a defined hierarchy of streets, as outlined on Plan 3.*
- *To support the development of a human scale, vibrant streetscape experience whilst ensuring that a viable built form siting and access solution can be achieved.*
- *To articulate the base of buildings with high-quality material and design elements that complement neighbouring*

The proposed rear boundary wall is conditionally supported for the following reasons:

- The rear boundary wall will not be visible from the public realm.
- The rear boundary wall will be adjacent to a car parking and tennis court structure, which is generally not considered to be a sensitive area in terms of visual impact.
- To mitigate the potential of visual impact resulting from the rear boundary wall when viewed from the adjoining property, the applicant has provided additional architectural detailing and articulation to the wall elevation. These measures improve the visual presentation of the structure and assist in reducing the perception of a continuous blank wall.
- Further to the applicant's design response, the City's recommended conditions requiring the incorporation of additional design treatments and detailing to the rear boundary wall. This will ensure the wall is visually broken into smaller components, reducing its apparent scale and bulk when viewed from neighbouring properties.
- The boundary wall has been stepped in height, with a maximum height of 3.9 metres along the western adjoining lot boundary. The stepping of the wall assists

in reducing the visual dominance of the structure and provides a more graduated transition between the development and adjoining land.

- At ground level, the boundary wall interfaces predominantly with a car parking area and associated landscaping strip on the adjoining property. These areas are not considered sensitive residential receptors and are therefore less susceptible to amenity impacts arising from the bulk and scale of the proposed development. It is noted that additional planting of the existing landscaping strip could also be used to mitigate impacts on the adjoining property as viewed by residents.
- The western boundary wall also interfaces with an elevated tennis court located on the adjoining property. The finished floor level of the tennis court is approximately 2.1 metres above the natural ground level at the common boundary. Consequently, while the wall has an overall height of 3.9 metres, it projects approximately 1.8 metres above the finished floor level of the tennis court, substantially reducing its perceived height as viewed from this location.
- The built form of the podium above the boundary wall has been recessed from the western boundary by a minimum setback of 1.0 metre. This setback creates visual separation between the boundary wall and the upper portions of the development, reducing the perception of building mass when viewed from the adjoining site.
- The maximum height of the recessed podium level is 5.4 metres. While visible from the adjoining property, the impact is mitigated by the setback from the boundary and the introduction of landscape elements along the western podium interface.
- The western podium incorporates raised planter boxes and on-structure landscaping, which provide opportunities for substantial vegetation establishment. Over time, the proposed planting will soften the appearance of the built form, contribute to visual screening, and further reduce the perception of bulk and scale when viewed from adjoining land.

Having regard to the stepped boundary wall design, the interface with predominantly non-sensitive areas of the adjoining property, the reduced wall projection relative to the elevated tennis court, the recessed upper-level built form, and the inclusion of substantial landscaping, the visual amenity impacts associated with the western boundary are considered reasonable. The combination of these measures is expected to effectively mitigate the appearance of bulk and provide an appropriate transition to the adjoining property and is therefore supported.

Tower Gross Floor Plate Area (ACR2 Provision 5 Element 5)

The development proposes a tower floor plate area occupying 44% of the site area in lieu of a maximum of 40%.

Discretion is sought in relation to tower maximum gross floorplate area under requirement 5.1 of ACR2, a summary of the assessment is provided below:

Requirement	**Proposed**
ACR2 Provision 5 Element 5 – Requirement 2.2	
Mill Point character area: Primary – 50% (865m²) Tier 1 – 40% (692m²)	 44% (767m²) tower gross floorplate area

Discretion is to be considered against the associated objectives of the SCACP (4.1.4) and clause 34 of LPS 7, as follows:

- *To ensure that all buildings adhere to the principle that, if a building is taller, it must be more slender in proportion to the overall lot size and have more space around it.*
- *To maintain opportunities for view corridors between buildings, minimise overshadowing and limit building bulk.*
- *To organise and articulate tall building towers to promote design excellence, innovation and sustainability.*
- *To minimise wind impacts arising from bulky or closely grouped buildings. (SPACP 4.1.4)*
- *Approval would be appropriate having regard to the matters as set out in clause 67(2) of the deemed provisions.*
- *The non-compliance will not have a significant adverse effect on the occupiers or users of the development, the inhabitants of the locality or the likely future development of the locality. (LPS 7 cl. 34)*

The proposed tower maximum gross floorplate area is conditionally supported for the following reasons:

- The development does not seek any discretion on side lot boundary setbacks and proposes reduced height boundary walls when two storey boundary walls (10.0m) are permitted, resulting in a slender built form outcome that preserves view corridors.
- The development complies with all building height and setback requirements and includes a high level of detailing to mitigate impacts of building bulk.
- The extent of overshadowing is consistent with expectations for the area when considering the permissible built form.
- The development is considered to have met design excellence and will include substantial sustainably measures.
- The gross floorplate area proposed is not considered to result in any significant adverse impacts, noting that no area of the floorplate extends beyond the required setback areas and adequate measures have been implemented to ensure suitable levels of privacy are maintained between properties.

Design Quality (ACR2 Provision 5 Element 7)

Discretion sought in relation to building height is dependent on requirements of Element 7 being satisfied. The requirement to be addressed is provided below.

Requirement	**Comment**
ACR2 Provision 5 Element 7 – Requirement 7.2	
Achieve design excellence demonstrably exceeding the relevant requirements of State Planning Policy 7 (SPP 7). Due regard shall be given to Design Review Panel (DRP) advice on all elements relating to built form.	The City's DRP supports the proposal on all 10 design principles of SPP 7, concluding that the proposal exceeds most metrics and, in the opinion of the Panel, has achieved a level of Design Excellence.

DESIGN REVIEW PANEL ADVICE

The proposal was reviewed by the Design Review Panel (DRP) on three (3) occasions.

To be eligible for assessment against the 'Tier 1' development controls (including height and plot ratio) the development is required to satisfy the 'design excellence' requirements of the SPACP on the advice of the City's DRP. Should the development not achieve 'design excellence' it is required to be assessed under the primary controls of the SPACP.

In response to the changes made to the proposal development throughout the assessment and DRP review process, the City's DRP are satisfied that the development has achieved 'design excellence' as per the SPACP.

The minutes of the final review confirm support of all ten design principles. The concluding remarks of the DRP Chair on the final review were as follows:

1. *The Panel commends the Proponent for a high-quality design proposal.*
2. *Of particular note is the quality landscape design and framework within which the built form is situated.*
3. *The proponent is commended for their collaborative approach to design review and for the design enhancements made during the process. The proposal offers the opportunity to provide exceptional residential accommodation in a premium location with outstanding river and city views.*
4. *The proposal demonstrates a high level of alignment with the 10 Design Principles of Design WA exceeding most metrics and, in the opinion of the Panel, has achieved a level of Design Excellence.*

The City has reviewed the commentary provided by the DRP in relation to the 'design excellence' criteria and is satisfied that the development is eligible for assessment against the 'Tier 1' development requirements of the SPACP.

A copy of the Design Review Panel minutes is provided in **Attachment 4**.

Approval for additional development potential (ACR2 Provision 5 Element 8)

Discretion sought in relation to building height is dependent on the requirements of Element 8 being satisfied. The key requirements to be addressed are provided below.

Requirement	Comment
ACR2 Provision 5 Element 8 – Requirement 8.2	
8.2.1 Due regard matters Approval of the development would be appropriate having regard to: • Building height objectives (4.1.1) of the SPACP • Whether the proposed development satisfies requirements of ACR2	• Building height objectives are subjective considerations. • There is no specific overshadowing limit for the site, only objectives.

Provision 5 and SPACP Part 1 including but not limited to: o overshadowing o tower maximum gross floorplate o design quality	• Refer to the tower maximum gross floorplate section above. • Refer to the design quality section above.
8.2.2 Significant adverse effect The additional height will not have a significant adverse effect on the occupiers or users of the development, the inhabitants of the locality or the likely future development of the locality.	The key concerns relevant to building height which have been identified relate to impact on significant views and overshadowing.
8.2.4 Community benefit contribution A community benefit contribution is paid to the City of South Perth or delivered onsite.	The applicant has acknowledged this requirement, which will be addressed as a condition in the event of approval.
ACR2 Provision 5 Element 8 – Requirement 8.5	
Development which exceeds the maximum building height limit, maximum tower gross floorplate area or maximum plot ratio limit shall not be approved.	The development exceeds the maximum tower gross floorplate area, 44% in lieu of 40% for Tier 1 building height.

8.2.1 Due regard matters

Building height objectives (4.1.1)

- To ensure that building heights are consistent with the desired future scale and built form of the activity centre and character area.
- To ensure that the interface between character areas is appropriately managed.
- To facilitate and manage growth across the ACP area based on population growth forecasts and identified economic and transport capacity, reflecting the Centre's role as an inner city activity centre.
- To establish a consistent and transparent performance based approval process that accommodates additional development potential in return for community benefit contributions in appropriate locations and development proposals.
- To locate larger scale developments within walking distance of the Mends Street ferry terminal and the future South Perth train station to optimise access to transit services for new development.

The proposed development is consistent with the desired future scale and built form outlined within the SPACP, being within the building height limits that can be considered for the site. The site is not located on a character area transitional interface and will facilitate growth within the SPACP by increasing the number of dwellings on a site which is within walking distance of the Mends Street ferry terminal.

Overshadowing (SPACP 4.3.3.4 / R-Codes 3.2)

- All new development shall achieve the Element Objectives and applicable provisions of the Residential Design Codes – Volume 2 with respect to overshadowing. Shadow diagrams are to be submitted demonstrating the extent of impact, if any, on adjoining lots. (4.3.3.4)
- Building form and orientation minimises overshadowing of the habitable rooms, open space and solar collectors of neighbouring properties during mid-winter. (O3.2.2)

The proposed development will cast shadow primarily over the southern adjoining properties at No. 13 South Perth Esplanade and Nos. 5, 7 and 9 Queen Street. The extent and significance of the impacts vary between these properties due to differences in building siting, dwelling orientation and existing site conditions.

Queen Street Properties (No. 5, 7 and 9)

- The shadow cast to the Queen Street properties will predominantly affect portions of the rear private open space areas and sections of the adjoining primary living spaces. While the reduction in solar access is acknowledged, the affected dwellings are generally setback a considerable distance from their northern lot boundaries, averaging approximately 13.0 metres. As a result, the overshadowing impact on the built form of the dwellings is largely confined to the winter months and is estimated to affect these properties for approximately four months of the year.
- This level of impact is not insignificant; however, it must be considered within the broader strategic planning context. The South Perth Activity Centre Plan (SPACP) anticipates a substantially increased scale and intensity of development within the precinct, and a degree of additional overshadowing is an inherent consequence of achieving the desired urban form outcomes. In this context, the extent of overshadowing generated by the proposal is considered a reasonable and expected outcome of the planned transition to higher-density development.
- Whilst not a determinative factor in the assessment, it is further noted that portions of the affected areas are already subject to shading from the substantial mature tree located at the rear of No. 7 Queen Street. Importantly, the development has been designed to facilitate the retention of this tree and includes measures to minimise impacts upon it were reasonably practicable. Accordingly, the proposal does not introduce overshadowing to an otherwise unshaded environment and must be considered in the context of the existing conditions.

No. 13 South Perth Esplanade

- The dwelling at No. 13 South Perth Esplanade is situated directly to the south of the proposed development and therefore experiences a substantial shadow cast as a result of the proposed development. Notwithstanding the extent of overshadowing, the existing development has been designed and orientated to capitalise on significant views to the north-east, with major openings and the main outlook oriented accordingly. The dwelling does not rely heavily on north-facing major openings for access to sunlight.
- Consequently, although the shadow cast is relatively extensive in plan form, the resulting impact on habitable rooms and internal residential amenity is comparatively limited. The overshadowing is therefore not considered to unreasonably reduce the functionality or liveability of the adjoining southern development.

Solar Access and Roof Terrace Structures

- The development has the potential to affect the rooftop solar panels located on the dwelling at No. 13 South Perth Esplanade during the mid-winter period. While some shadowing impacts arising from a building that is consistent with the contemplated built form outcomes of the SPACP may reasonably be anticipated, structures that extend above the building height limit should be designed to avoid unnecessarily increasing those impacts.
- In response, the roof terrace structures have been designed to minimise additional overshadowing of the adjoining solar collectors. The roof terrace incorporates a largely open-framed pergola structure setback approximately 5.8 metres from the southern lot boundary, together with a cut-out section specifically positioned adjacent to the neighbouring solar array. These design refinements substantially reduce the extent of additional shadowing generated by the rooftop elements.
- The City has reviewed the building height, siting and design of the proposed roof terrace structures and is satisfied that the proposal mitigates shadow impacts on the adjoining solar panels to the extent reasonably practicable. On this basis, the overshadowing associated with the rooftop elements are considered acceptable and are supported by the City.

8.2.2 Significant adverse effect

The areas of potential significant adverse effect resulting from the increased height identified in the City's assessment and reflected in submissions received is the potential to impact on views of significance, and overshadowing. Overshadowing has been addressed under 8.2.1 above.

The potential impact on views of significance resulting from the additional height would be primarily limited to levels of development with a similar finished floor level as the proposed fourth floor and roof terrace of the proposed development. The properties most significantly affected are No. 16 Mill Point Road and No. 1 Queen Street.

Considering the sightlines available post development, properties on the affected floors at No. 16 Mill Point Road are expected to have views towards East Perth impacted by the proposal. The affected floors at No. 1 Queen Street are expected to have views towards the Perth CBD and Elizabeth Quay impacted by the proposal.

Whilst these views in their own right are considered to be significant, in the context of the panoramic views available to the affected properties which include a range of landmark sites and natural features, the relatively narrow field of view that will be obstructed is not considered to be a significant adverse effect. The proposal has fully complied with all setback requirements and therefore is considered to have minimised impact on existing view corridors.

8.5 Exceeding maximum limits

The proposal seeks discretion on the tower gross floorplate area limit for Tier 1 building height, proposing 44% in lieu of 40%. ACR2 explicitly states that development exceeding these limits shall not be supported, however this requirement is still subject to the general variation clause 34 of LPS 7 and has previously been varied by the DAP.

The requirements of LPS 7 clause 34 have been addressed earlier in this report under the tower gross floorplate area assessment and are considered to have been satisfied. Accordingly, notwithstanding the intent of this requirement, consistent with previous decisions to vary this requirement, the proposal is considered supportable.

CONSULTATION

PUBLIC CONSULTATION

Consultation has been undertaken to the extent and in the manner required by the Deemed Provisions and Local Planning Policy 6.1 – Advertising of Planning Proposals. A total of 92 letters were sent to nearby landowners and occupiers.

At the close of the 14-day submission period one submission was received, objecting to the proposal. A late submission was received after the consultation period had closed and a further submission has been received since the previous deferral of the application by the DAP. The contents of the submissions have been considered by the City and are addressed within the RAR and below.

Issue Raised	**Officer's comments**
Visual privacy	Concerns relate to large windows overlooking the property to the south. The screening depicted on the plans does not provide adequate privacy. Habitable room windows to the side elevations are screened by aluminium battens. Since advertising the applicant has provided sections of the screening and the City is satisfied that the level of privacy achieved is satisfactory. The rear (west) balconies are unscreened on their rear (west) elevation and setback 4.0m from the rear (west) lot boundary in lieu of 6.0m stipulated in Table 3.5 of the R-Codes. The balconies overlook a tennis court at the rear of No. 16 Mill Point Road, which is generally not considered to be a sensitive area requiring visual privacy protection. Beyond the tennis court are apartments which are setback approx. 21m from the common boundary, resulting in 25m separation between the balconies and the nearest apartments. Whilst acknowledging the concerns of direct views between these spaces, the 25m separation achieved is more than double the combined setback requirements of balconies either side of the boundary. Given the significant separation achieved, an acceptable level of privacy is considered to have been met, and it is not considered reasonable for the City to recommend any further privacy measures.
Visitor parking	Concerns relate to two visitor bays being inadequate for the development and will result in on-street parking, creating traffic and access impacts for adjoining properties.

	The one visitor car bay shortfall is not considered to adversely impact on-street parking in the context of a development which is providing three times the required residential car bays. The City's recommended condition to maintain two visitor car bays in addition to a service bay will result in the visitor bays being relocated into the secure parking area. Convenient visitor access to the secure parking area will improve the opportunity for surplus residential bays within the secure area to also facilitate visitor parking when available. The potential dual use of residential bays is considered adequate to offset the negative impacts of the one visitor bay shortfall.
Tower gross floorplate area	Concerns relate to the tower gross floorplate area variation as it sets a precedent and does not provide visual interest to adjoining properties. The variation sought is considered minor in nature, and as the entire development complies with setback requirements the variation is considered to be of no notable impact to adjoining properties. The development includes numerous features which provide visual interest to the elevations, including varying setbacks, materials and colours, and use of landscaping to offset the impacts of building bulk.
Overshadowing	Concerns relate to the proposal being inconsistent with O2.2.4 and O3.2.2 of the R-Codes, and overshadowing impacting solar access for the southern adjoining dwelling and its rooftop solar panels. The impact to the solar panels of the southern adjoining property is acknowledged, and a condition has been included in the City's recommendation to reduce the impact of overshadowing from the roof terrace structures.
Waste management	Concerns relate to twice weekly waste collection unacceptably disrupting the residential amenity of the locality. This concern has been addressed through a recommended condition of approval, requiring on-site waste collection and a maximum collection frequency of once per week for general waste and once per fortnight for recycling, in accordance with LPP 3.1.
Operation	Concerns relate to the development appearing to be planned to accommodate more than one family per apartment or support a 'boarding house' type arrangement. An operation of this nature results in greater traffic and parking impacts than would otherwise be anticipated for a typical dwelling. The City does not consider the dwelling design to include ancillary dwellings or dual-key dwellings which would support a

	'boarding house' type arrangement. Relevant to the parking impact concern it is noted that the development proposes a significant parking surplus.

A copy of all submissions received, including late submissions and submissions during the deferral period are provided in **Attachment 3**.

REFERRALS/CONSULTATION WITH GOVERNMENT/SERVICE AGENCIES

A summary of the referrals and advice received is provided below.

- **Department of Planning, Lands and Heritage**: Confirmation that approval under the *Aboriginal Heritage Act 1972* is not required for this proposal.
- **Water Corporation**: The existing water and reticulated sewer network has capacity to service the proposed development.

ALTERNATIVE TO RESPONSIBLE AUTHORITY RECOMMENDATION

The DAP could determine that the proposed development is not appropriate for consideration as a Form 1 application, or that the proposed amendments are not consistent with the applicable planning framework and should not be supported.

Providing without prejudice conditions of approval where a refusal has been recommended is considered reasonable as to not impede the DAP's ability to approve a development. It is however not considered appropriate to provide without prejudice reasons for refusal when the City does not consider the discretion being sought to warrant refusal.

Should the DAP be inclined to refuse the proposal, any element of the proposal requiring discretion could potentially represent a reason for refusal.

CONCLUSION

The development is generally consistent with the local planning framework as discussed in the body of the report. The development is of a scale and design which is contemplated by the South Perth Activity Centre and provides activation and land use intensity to the site which is considered to be of benefit to the vision for the locality.

The proposal was subject to several reviews by the City's Design Review Panel and is considered to have achieved 'design excellence' to support the Tier 1 building height proposed.

Accordingly, subject to the inclusion of appropriate conditions, the application is recommended for approval.

ATTACHMENTS

1. Development Plans
2. Landscape Plans
3. Schedule of Submissions
4. Design Review Panel Minutes

5. Acoustic Report
6. Arborist Report
7. Environmentally Sustainable Design Report
8. Geotechnical Report
9. Transport Impact Statement
10. Waste Management Plan
11. Solar Study Diagrams
12. DAP Deferral Reasons
13. Applicant Response to Deferral

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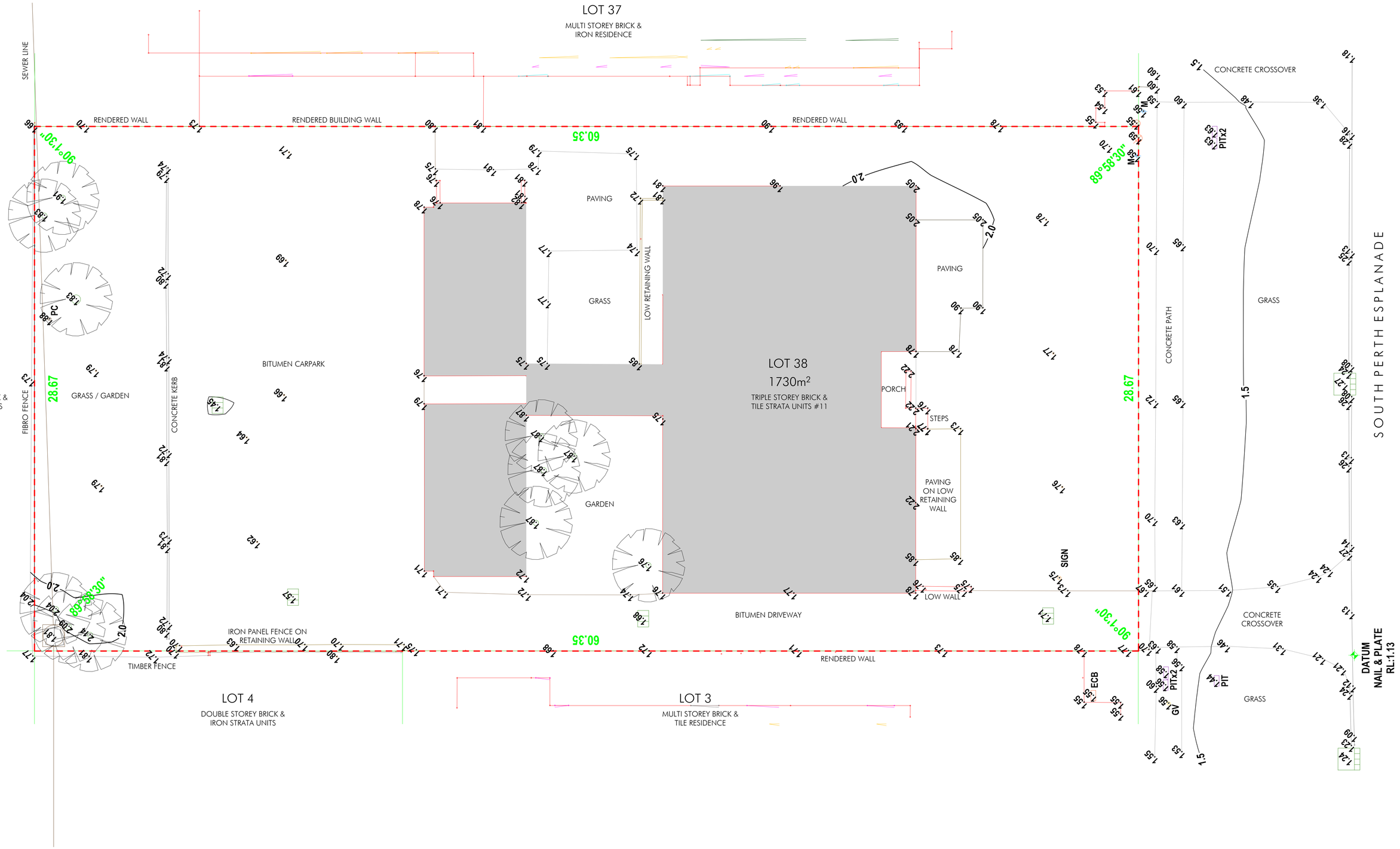

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE 1: 400 (A3) 1 : 100 @A1 (0 2 4 6 8 10 m)

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME SURVEY PLAN

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD1-00

REV C

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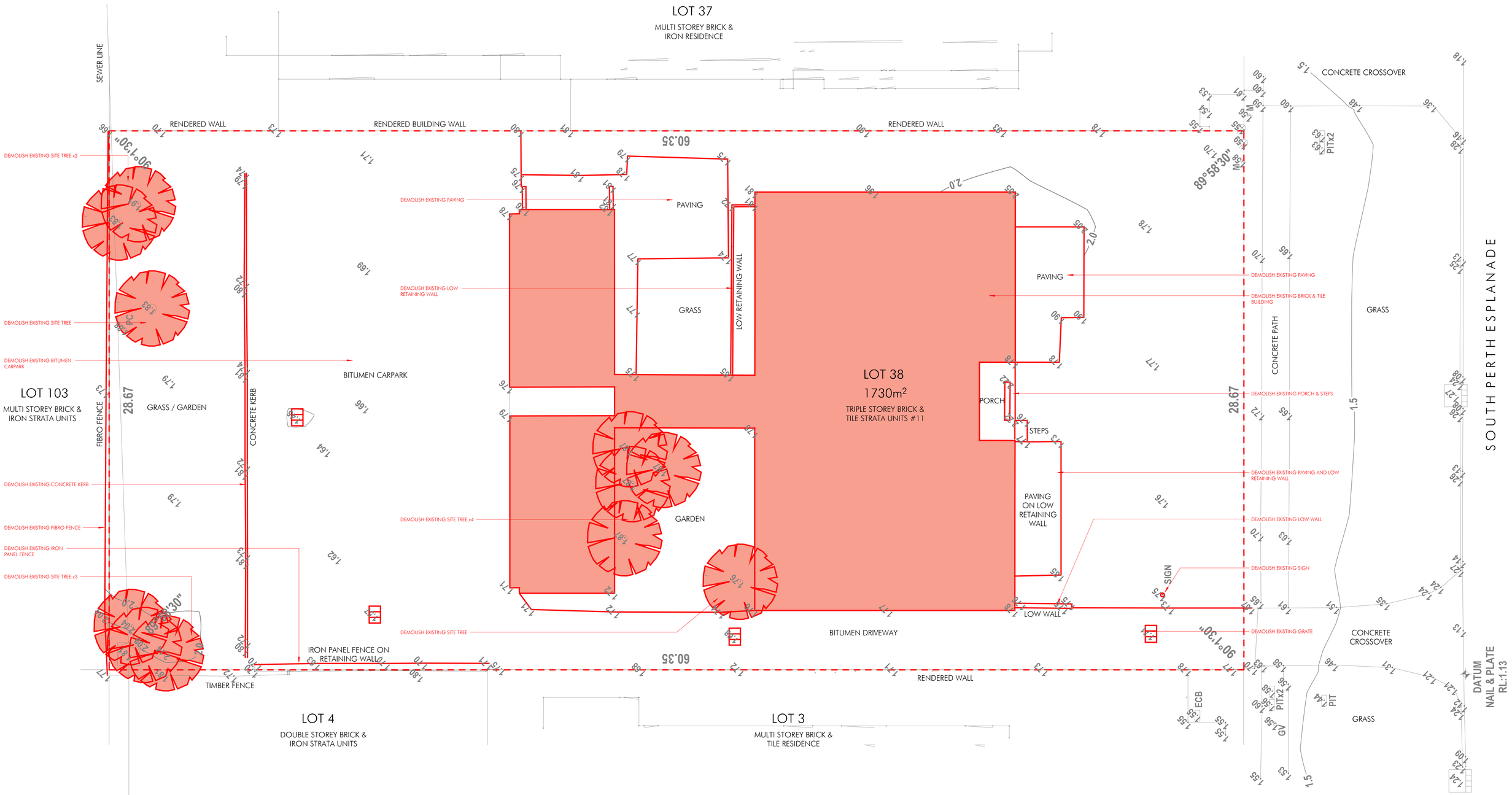

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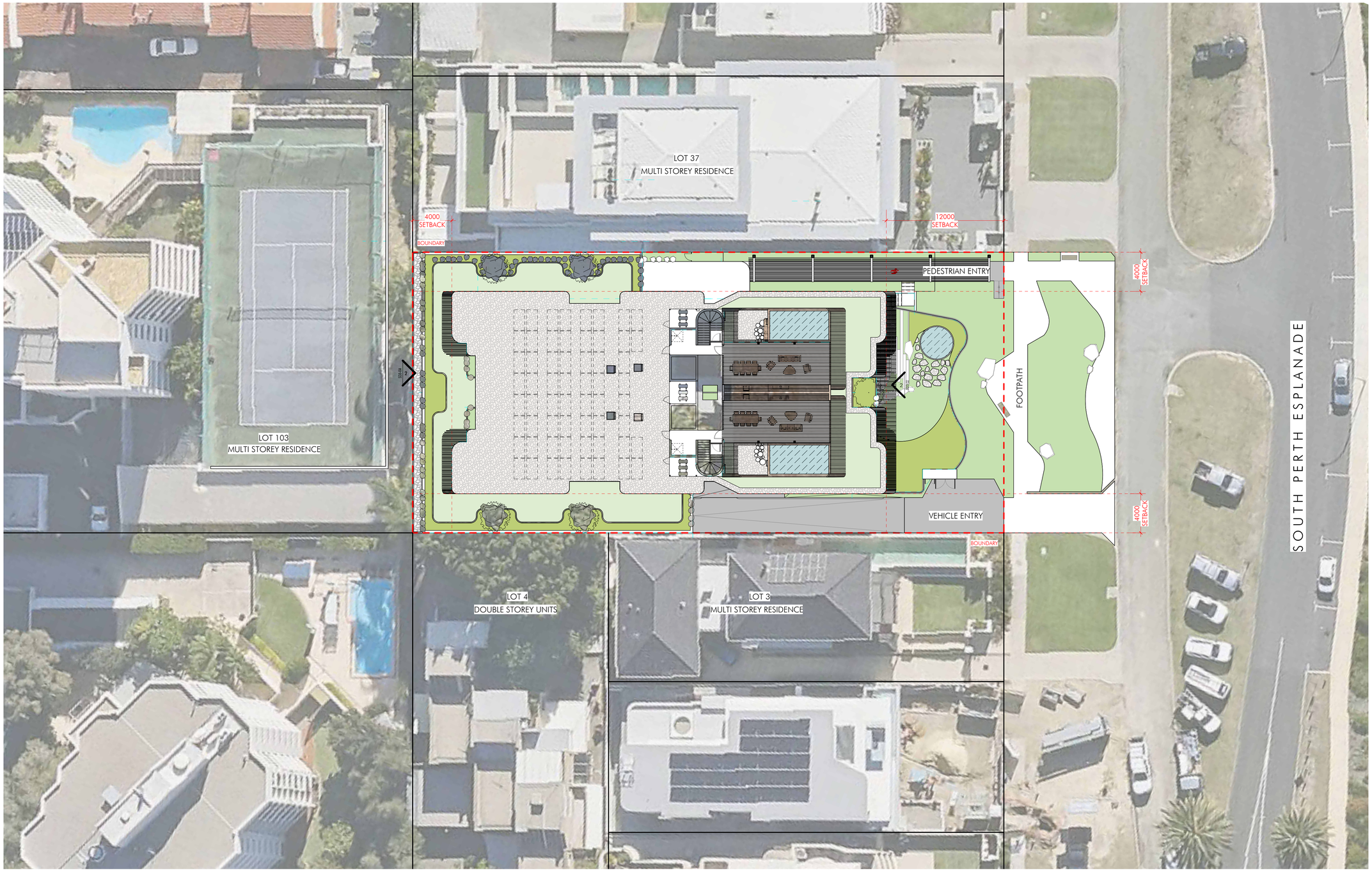

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PRELIMINARY

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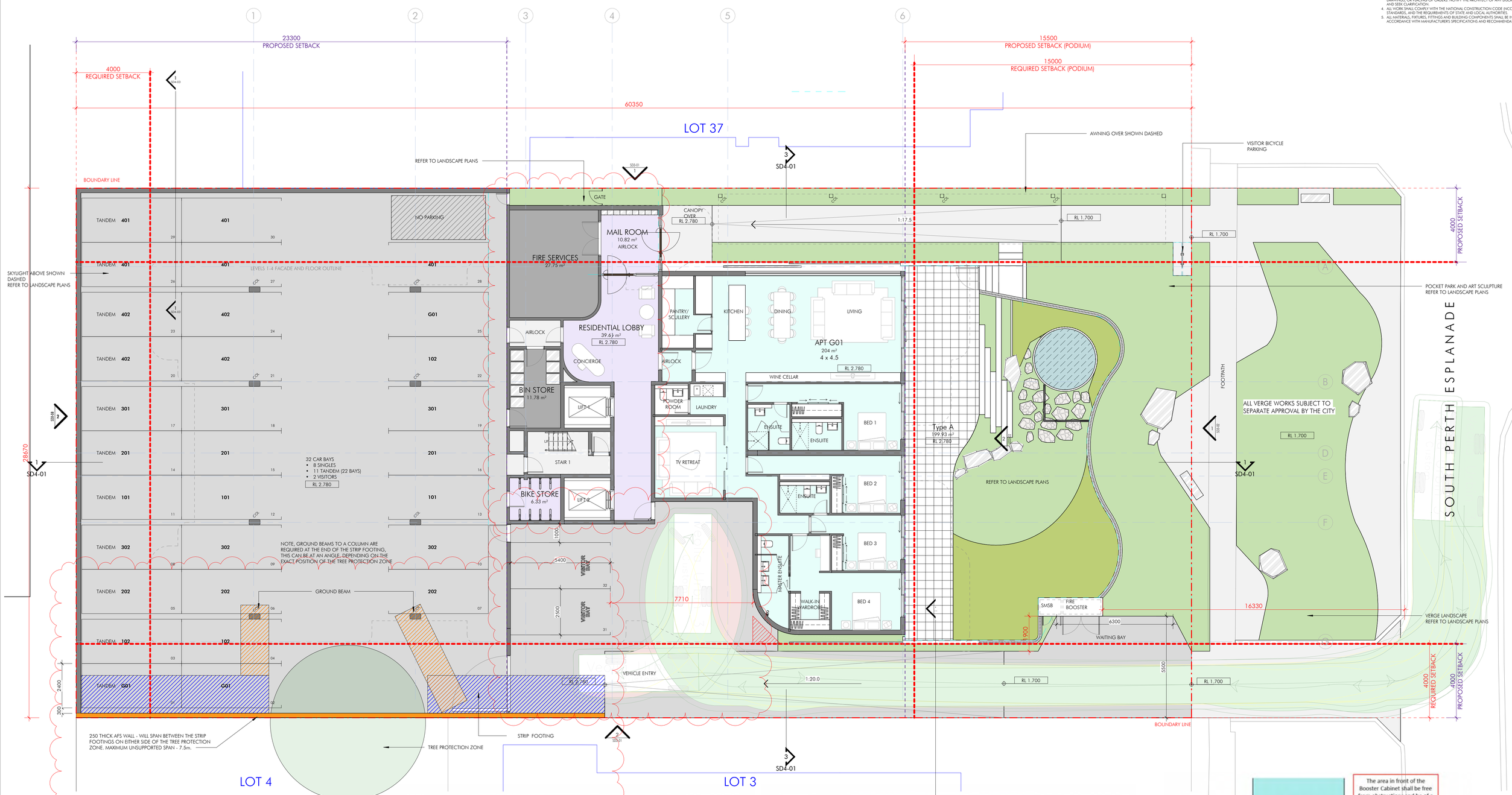

PLOT RATIO AREA

UNIT No.	APT TYPE	P.R. AREA
G01	A	218.92m²
101+102	B & C	671.57m²
201+202	B & C	671.57m²
301+302	B & C	671.57m²
401+402	D	653.08m²

TOTAL LEVEL AREA	2886.72m²
SITE AREA	1730.25m²
PLOT RATIO	1.66
REQUIRED PLOT RATIO	2.2

VISITOR PARKING - SWEPT PATHS





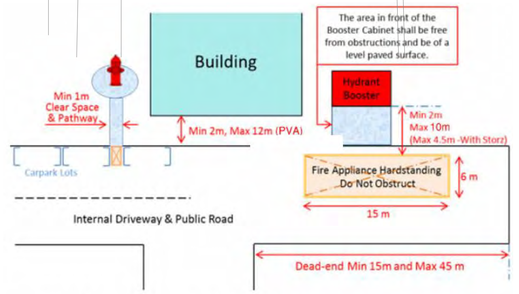

Figure 2. Building Site Clearances and firefighting facilities

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PRELIMINARY | SCALE 1: 400 (A3) 1 : 100 @A1 (0 2 4 6 8 10 m) | NP | JOB No. 2513 | DATE ISSUED 16/10/2026 | DRAWING NAME GROUND FLOOR PLAN | PROJECT PHASE SCHEMATIC DESIGN | DRAWING No. SD2-01 | REV C

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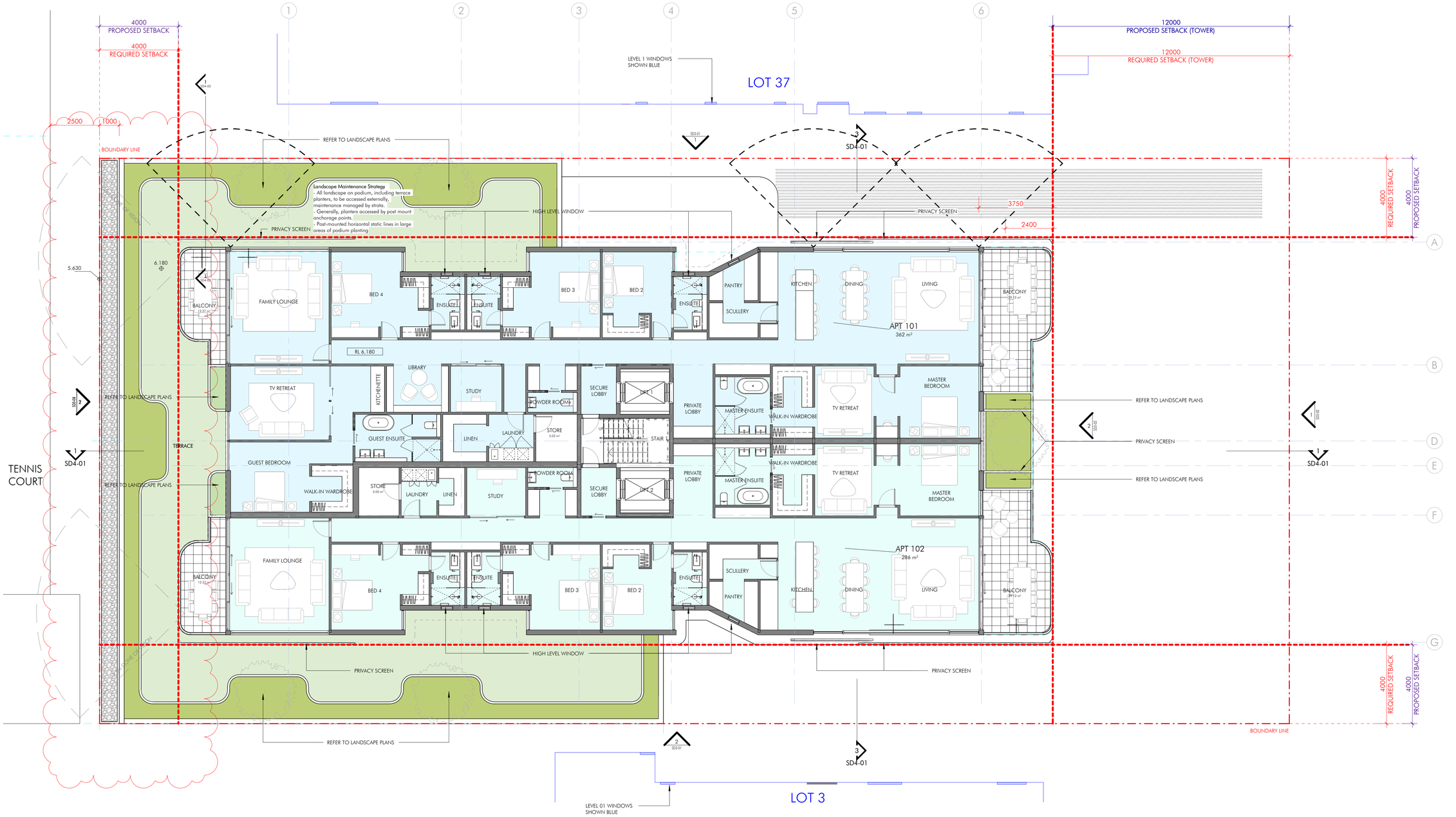

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PRELIMINARY

SCALE	NP	JOB No.	DATE ISSUED	DRAWING NAME	DRAWING No.	REV
1: 400 (A3) 1 : 100 @A1		2513	16/10/2026	LEVEL 1 PLAN PROJECT PHASE SCHEMATIC DESIGN	SD2-02	C

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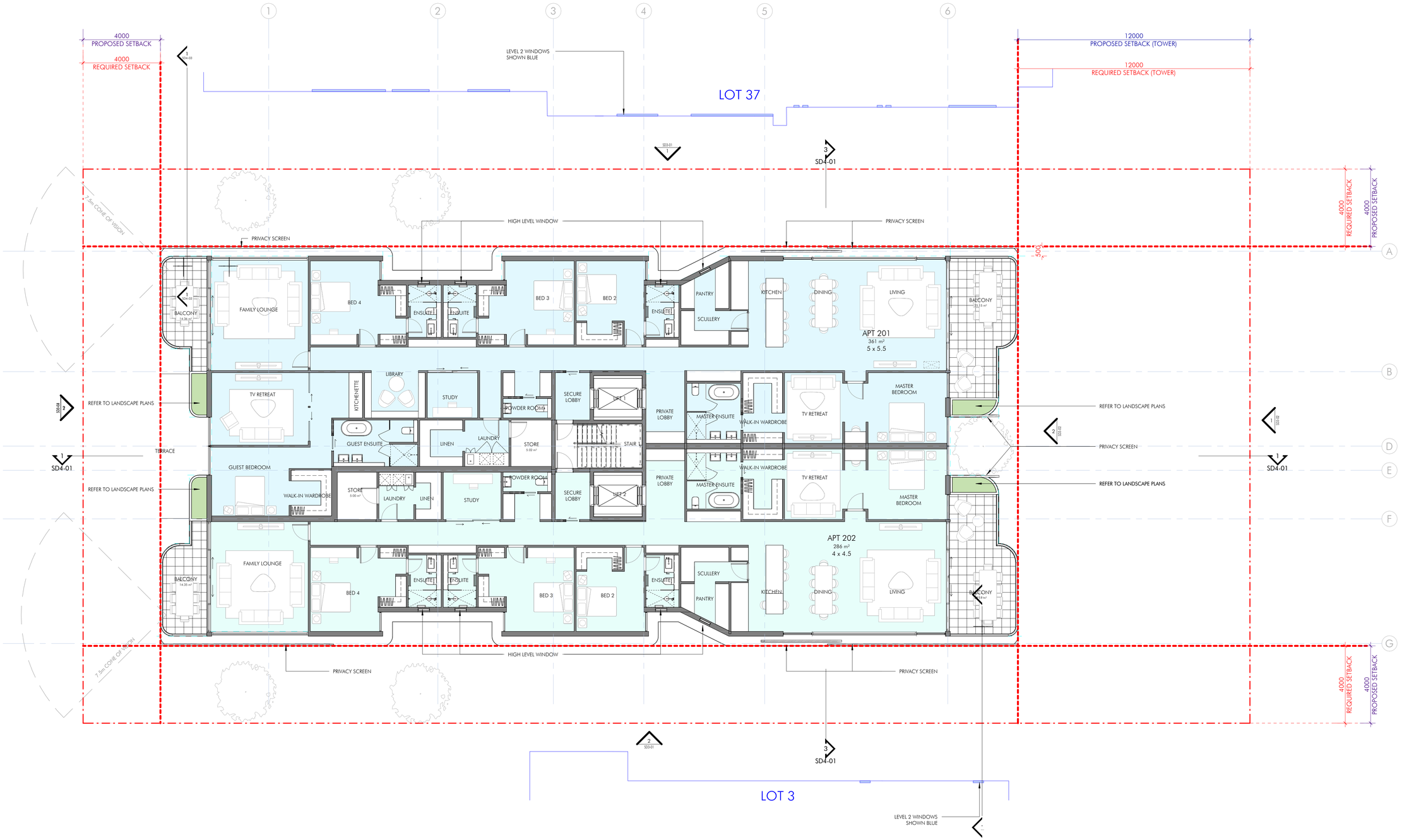

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SCALE 1: 400 (A3) 1 : 100 @A1
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JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME LEVEL 2 PLAN

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD2-03

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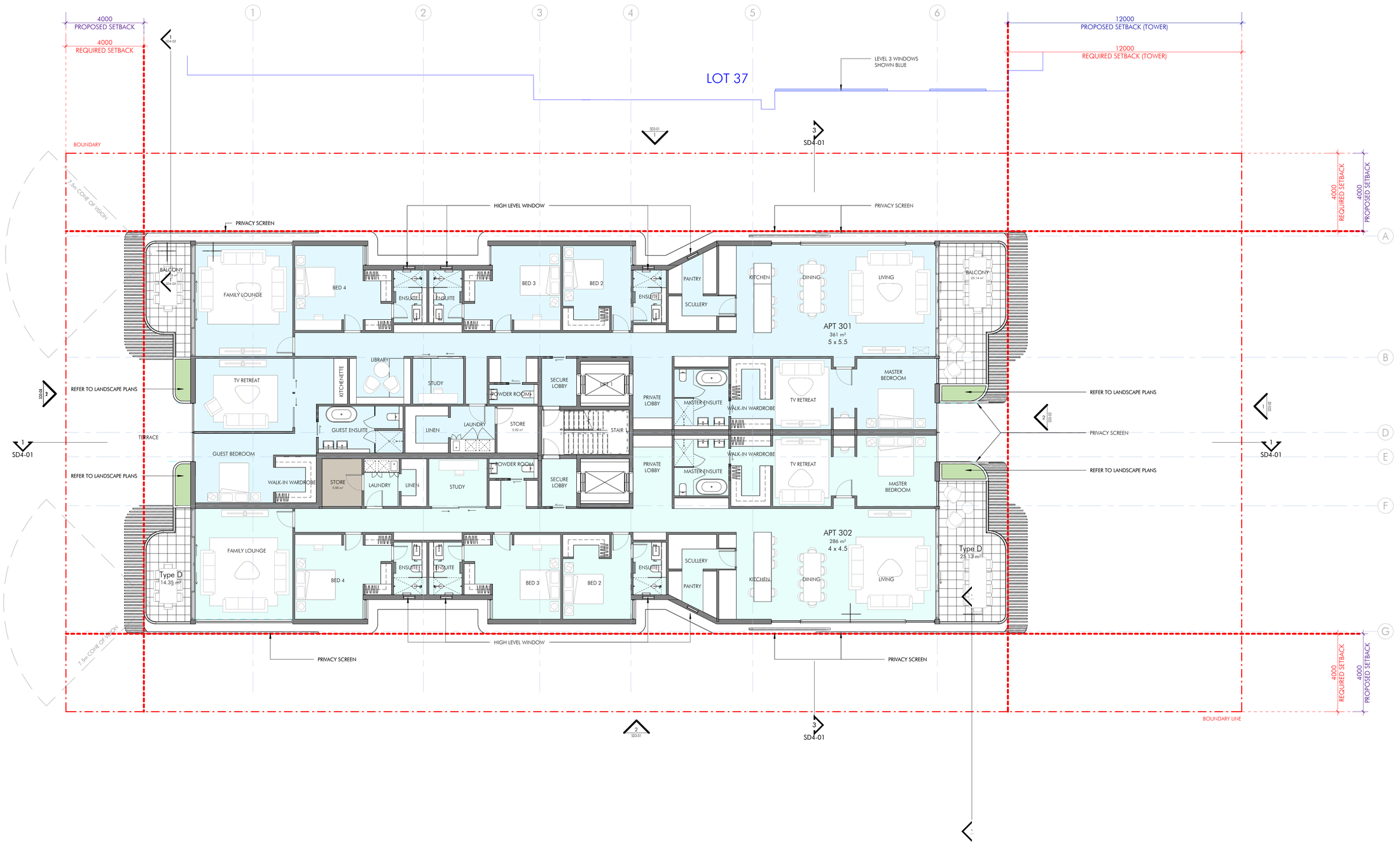

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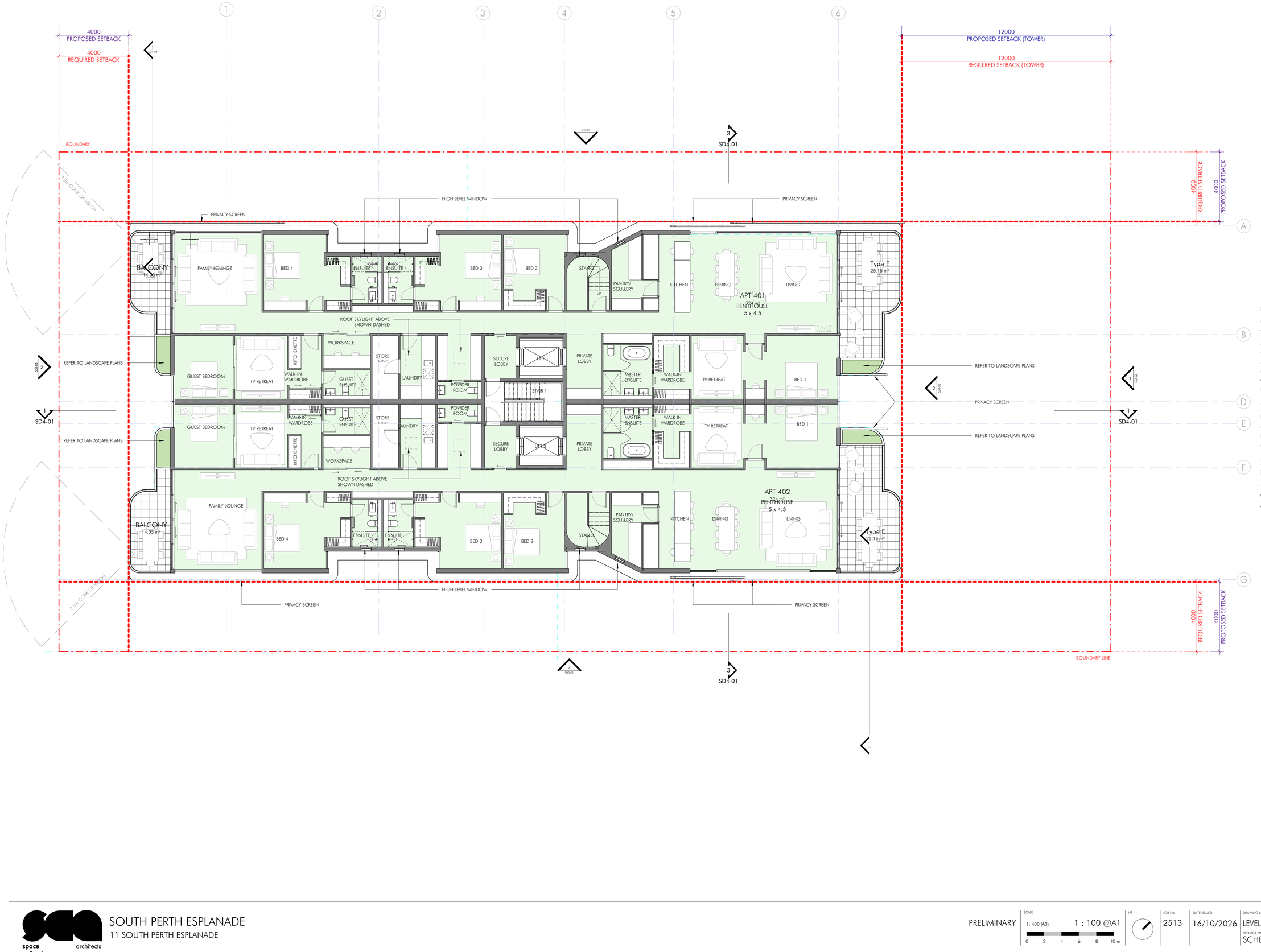

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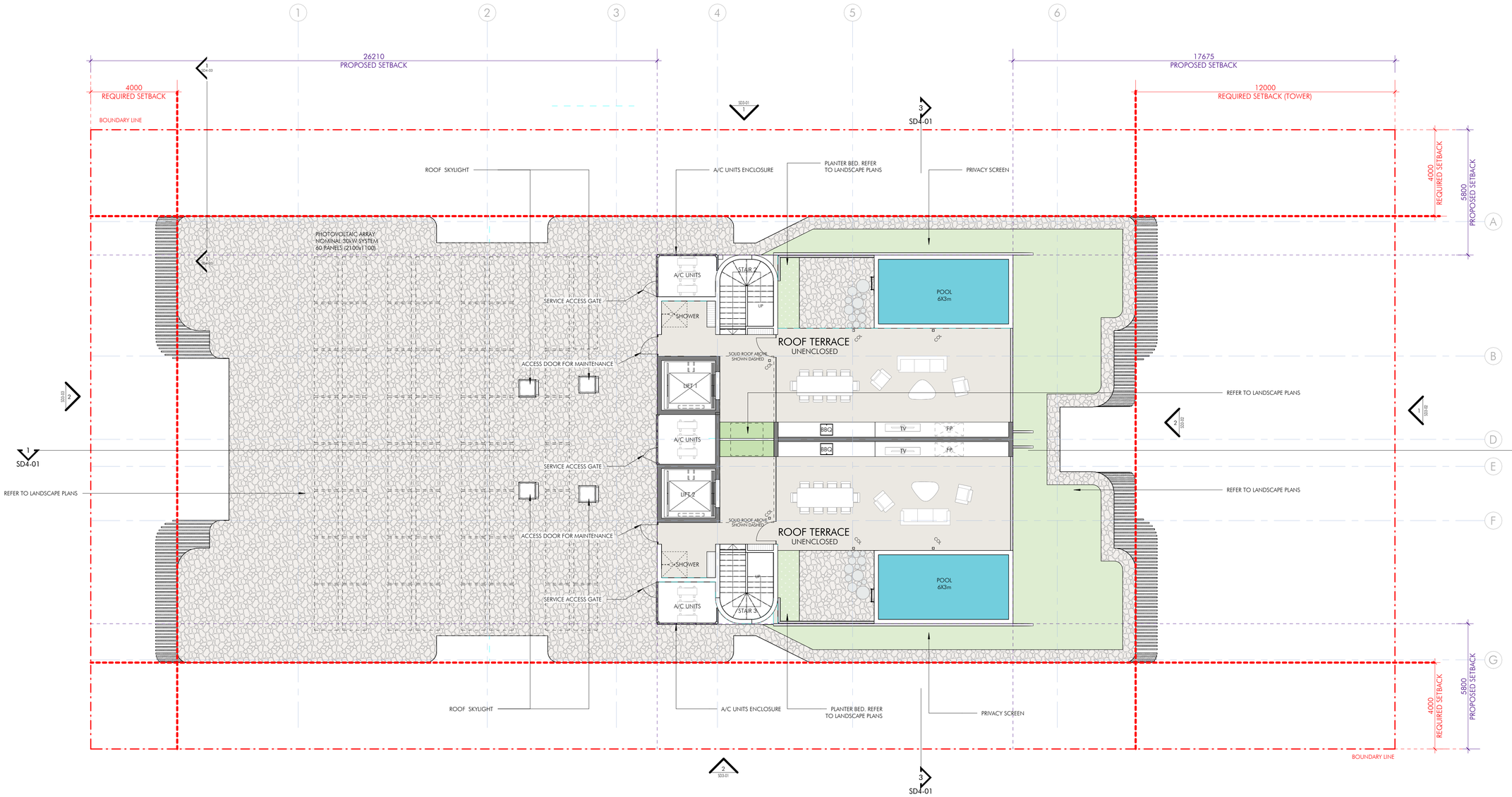

SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

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PRELIMINARY

SCALE 1: 400 (A3) 1 : 100 @A1 (0 2 4 6 8 10 m)

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME ROOF TERRACE

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD2-06

REV C

GENERAL NOTES:
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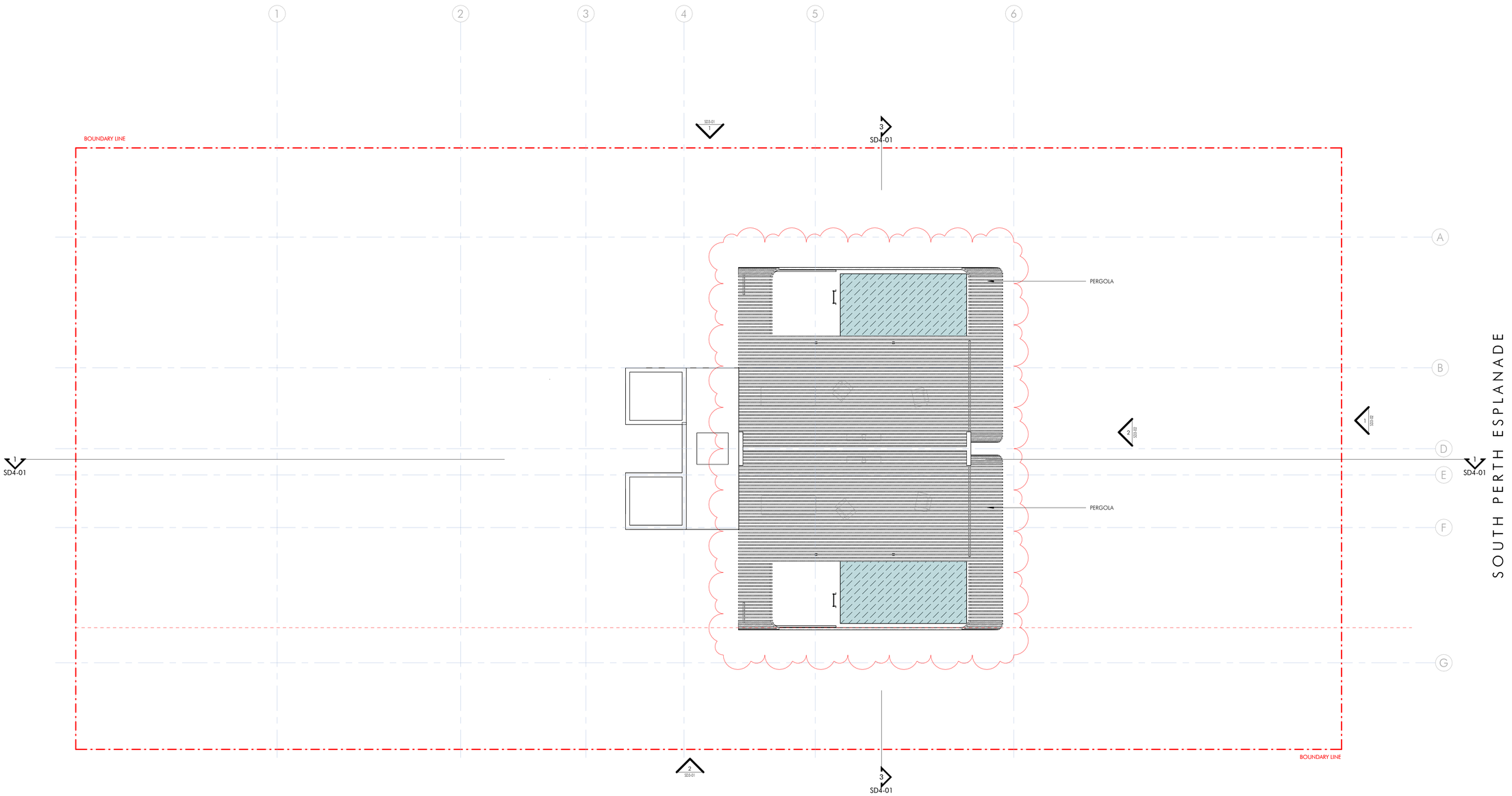

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE 1: 400 (A3) 1 : 100 @A1
0 2 4 6 8 10 m

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME ROOF PLAN

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD2-07

REV C

GENERAL NOTES:
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APARTMENTS

APT No.	BED x BATH	STRATA AREA	Comments
Not Placed			
G01	STORE	Not Placed	
Not Placed: 1		0.00 m²	
GROUND			
G01	4 x 4.5	203.73 m²	
G01 TERRACE	BALCONY	199.93 m²	
GROUND: 2		403.66 m²	
LEVEL 1			
101	5 x 5.5	361.86 m²	
102	4 x 4.5	286.48 m²	
LEVEL 1: 2		648.34 m²	
LEVEL 2			
201	5 x 5.5	361.19 m²	
202	4 x 4.5	286.48 m²	
LEVEL 2: 2		647.67 m²	
LEVEL 3			
107	STORE	5.00 m²	
301	5 x 5.5	361.19 m²	
302	4 x 4.5	286.48 m²	
BALC 302	BALCONY	25.13 m²	
BALC 302	BALCONY	14.35 m²	
LEVEL 3: 5		692.15 m²	
LEVEL 4			
108	STORE	5.47 m²	
109	STORE	5.47 m²	
401	PENTHOUSE 5 x 4.5	324.00 m²	
402	PENTHOUSE 5 x 4.5	324.03 m²	
BALCONY 401	BALCONY	25.15 m²	
BALCONY 402	BALCONY	25.16 m²	
LEVEL 4: 6		709.30 m²	
ROOF TERRACE			
401 ROOF TERRACE	ROOF TERRACE	82.33 m²	
402 ROOF TERRACE	ROOF TERRACE	119.25 m²	
ROOF TERRACE: 2		201.58 m²	
TOTAL STRATA: 20		3302.70 m²	

BALCONIES

APT No.	BED x BATH	STRATA AREA	Comments
LEVEL 1			
BALC 101	BALCONY	29.12 m²	
BALC 101	BALCONY	12.27 m²	
BALC 102	BALCONY	29.12 m²	
BALC 102	BALCONY	12.27 m²	
LEVEL 1: 4		82.78 m²	
LEVEL 2			
BALC 201	BALCONY	25.15 m²	
BALC 201	BALCONY	14.36 m²	
BALC 202	BALCONY	14.35 m²	
BALC 202	BALCONY	25.15 m²	
LEVEL 2: 4		79.01 m²	
LEVEL 3			
BALC 301	BALCONY	25.14 m²	
BALC 301	BALCONY	14.35 m²	
LEVEL 3: 2		39.50 m²	
LEVEL 4			
BALCONY 401	BALCONY	14.35 m²	
BALCONY 402	BALCONY	14.35 m²	
LEVEL 4: 2		28.71 m²	
TOTAL STRATA: 12		229.99 m²	

TOTAL APARTMENT MIX

BED x BATH	TOTAL	%
4 x 4.5	4	20%
5 x 5.5	3	15%
BALCONY	5	25%
PENTHOUSE 5 x 4.5	2	10%
ROOF TERRACE	2	10%
STORE	4	20%
TOTAL	20	100%

PLOT RATIO AREA

LEVEL	AREA	Number
GROUND	218.92 m²	PR
LEVEL 1	671.57 m²	PR
LEVEL 2	671.57 m²	PR
LEVEL 3	671.57 m²	PR
LEVEL 4	653.08 m²	PR
TOTAL	2886.72 m²	

PLOT RATIO AREA

UNIT No.	APT TYPE	P.R. AREA
G01	A	218.92m²
101+102	B & C	671.57m²
201+202	B & C	671.57m²
301+302	B & C	671.57m²
401+402	D	653.08m²

TOTAL LEVEL AREA	2886.72m²
SITE AREA	1730.25m²
PLOT RATIO	1.66
REQUIRED PLOT RATIO	2.2

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE 1: 400 (A3) @A1
0 2 4 6 8 10 m

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME DEVELOPMENT DATA
PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD2-08

REV C

GENERAL NOTES:
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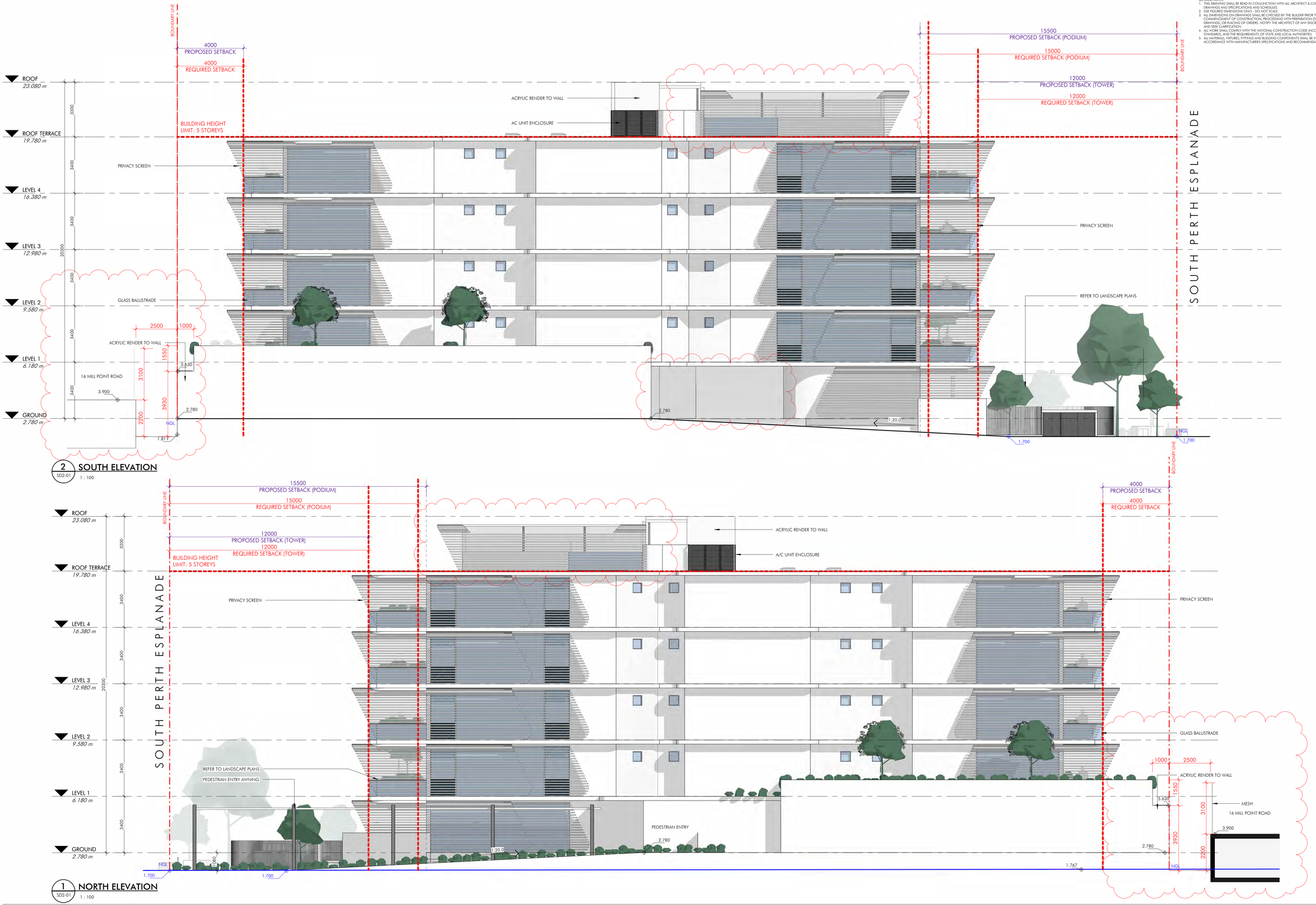

2 SD2-01 **SOUTH ELEVATION** 1 : 100

1 SD2-01 **NORTH ELEVATION** 1 : 100

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE 1: 400 (A3) 1 : 100 @A1 — 0 2 4 6 8 10 m

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME ELEVATIONS 1

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD3-01

REV C

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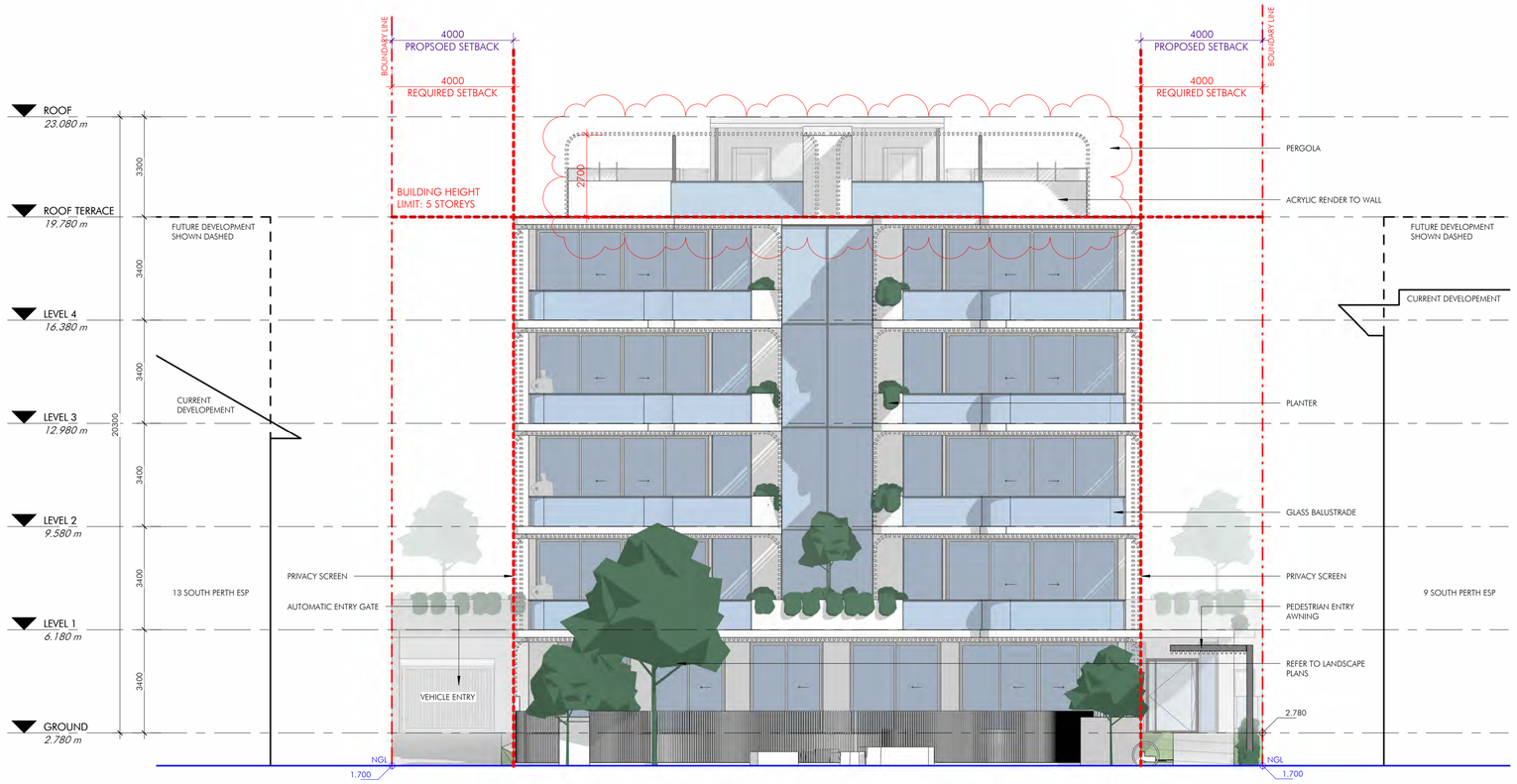

1 SD2-01 **EAST ELEVATION**

1 : 100



2 SD1-02 **EAST ELEVATION_BUILDING ONLY**

1 : 100

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE 1: 400 (A3) 1 : 100 @A1
0 2 4 6 8 10 m

NP

JOB No. 2513

DATE ISSUED 16/10/2026

DRAWING NAME ELEVATIONS 2

PROJECT PHASE SCHEMATIC DESIGN

DRAWING No. SD3-02

REV C



1 SD2-01 **WEST ELEVATION**

1 : 100



2 SD1-02 **WEST ELEVATION - FINISHES**

1 : 100

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SOUTH PERTH ESPLANADE

11 SOUTH PERTH ESPLANADE

PRELIMINARY	SCALE	NP	JOB No.	DATE ISSUED	DRAWING NAME	DRAWING No.	REV
	1: 400 (A3) 1 : 100 @A1		2513	16/10/2026	ELEVATIONS 3	SD3-03	C
	0 2 4 6 8 10 m				PROJECT PHASE SCHEMATIC DESIGN		

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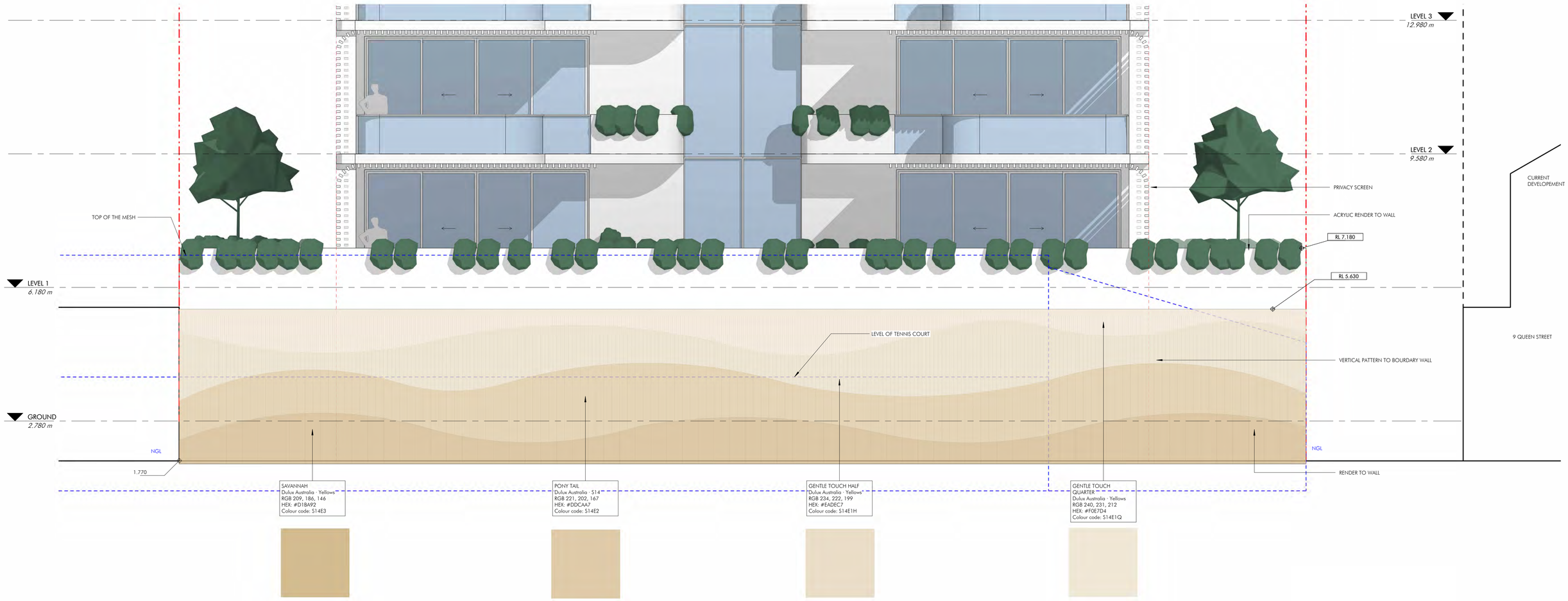

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE	NP	JOB No.	DATE ISSUED	DRAWING NAME	DRAWING No.	REV
1: 400 (A3) 1 : 50 @A1 0 2 4 6 8 10 m		2513	16/10/2026	DETAIL BUNDARY WALL PROJECT PHASE SCHEMATIC DESIGN	SD3-04	C

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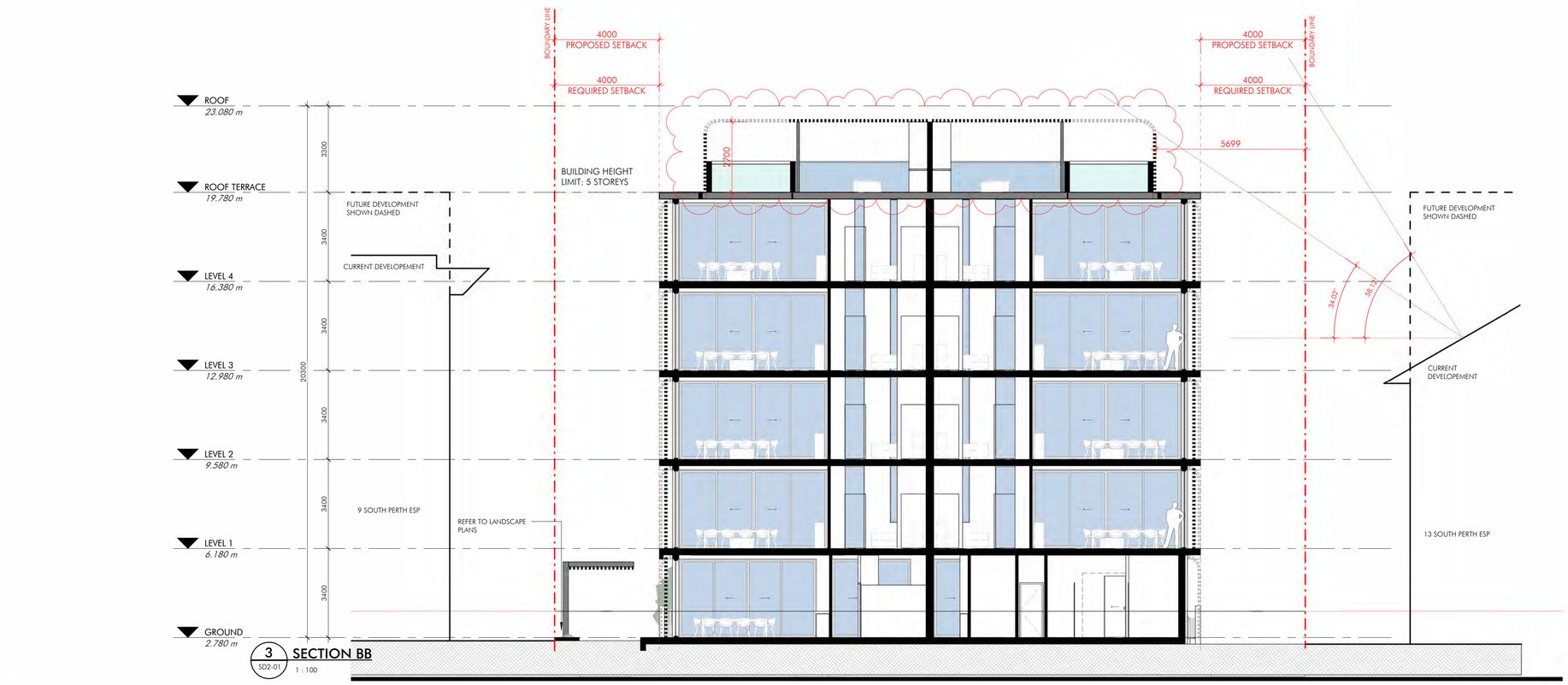
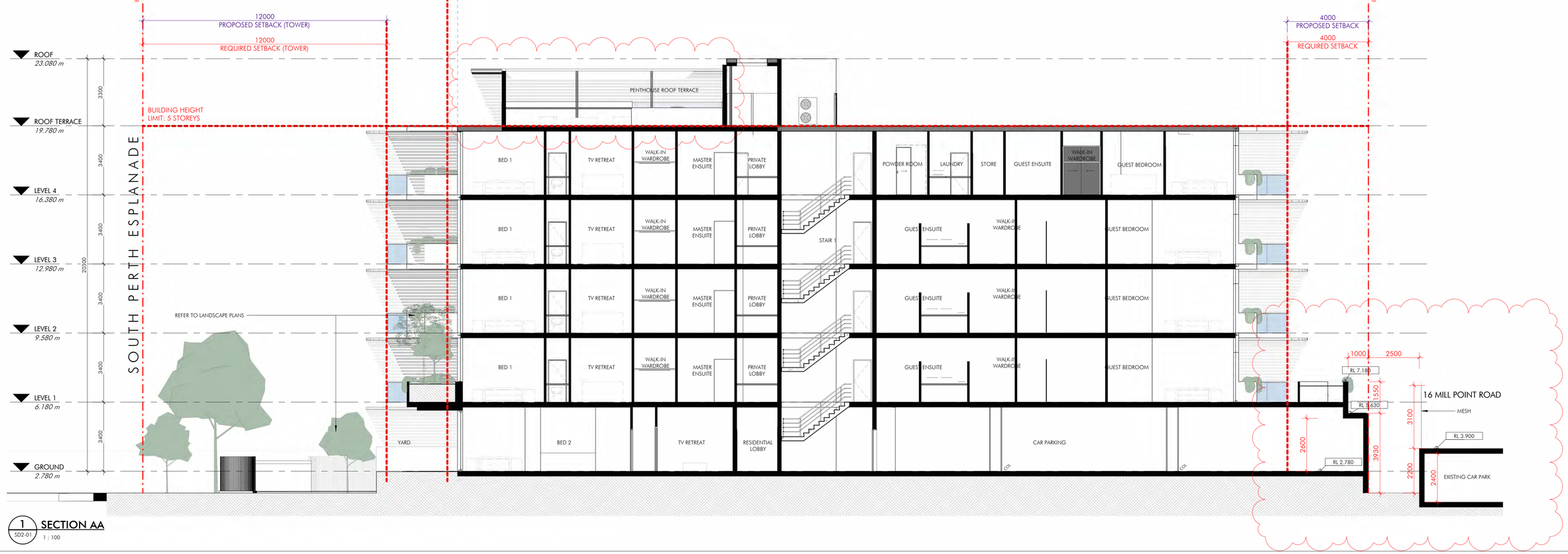


3 SECTION BB
SD2-01 1 : 100



1 SECTION AA
SD2-01 1 : 100

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SOUTH PERTH ESPLANADE
11 SOUTH PERTH ESPLANADE

PRELIMINARY

SCALE	NP	JOB No.	DATE ISSUED	DRAWING NAME	DRAWING No.	REV
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0 2 4 6 8 10 m				PROJECT PHASE: SCHEMATIC DESIGN		

11 SOUTH PERTH ESPLANADE

WA, 6151

August 2026

Lanscape Architecture
Concept Design Report

See Design Studio
Landscape Architects

See Design Studio operates in Walyalup
(Fremantle)
on Whadjuk country of the Noongar nation.
We honour Elders past and present and
recognise their ongoing care for the land and
waters on which our work takes place.



Contents

Context Diagrams	4
Concept Drivers	10
Landscape Masterplan	14
Perspectives	18
Selections	26
Technical Information	31

Context Diagrams

Kareenup

Beeloo Country - Noongar History

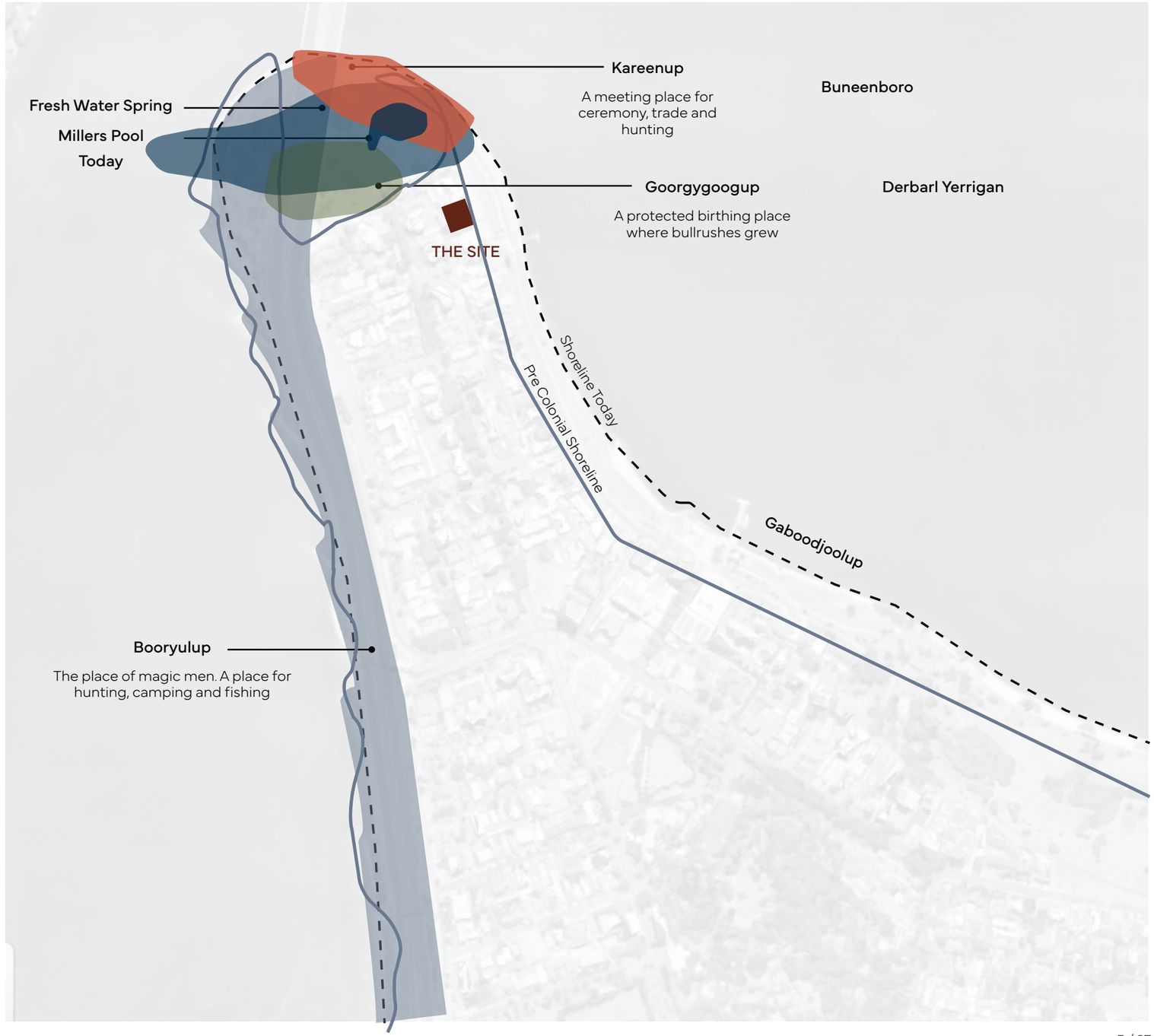
The Whadjuk Noongar people are the Traditional Owners of the lands on which this site stands.

The lands and waters of Kareenup hold great significance for the Whadjuk people, who have lived on and cared for this Country for thousands of years.

The riverbank, known as Gaboodjoolup meaning “place of the shore” — was an important site for fishing, collecting shellfish, and accessing fresh water. Seasonal camps were established along the banks of the bilya (river), with Noongar families moving between sites in response to seasonal changes and ceremonial needs. These activities provided not only food and resources, but also sustained deep spiritual and custodial connections to Country.

This name given to the tip of the South Perth penninsula, where the site sits, markes the site know as Kareen’s Place. Kareen was a prominant Noongar and the brother of Beenan. The brothers camped at what is today known at Miller’s Pool, which was connected to Buneenboro (Perth Water) and fed by a nearby spring, where banksia’s bloomed in abunance.

Despite much local protest, Miller’s Pool was filled and the shoreline of Kareenup was enlarged through reclamation and dredging activities in the late 1930s. This was done to deepen the river at the Narrows and begin the roadwork that has developed into the Kwinana Freeway that stands there today.



REFERENCES

1. Museum of Perth - Kareenup
2. Gnarla Boodja Mili Mili - Our Country on Paper

The Site



- Freeway
- Green Open Space
- Bike / Walk Trails
- Jetty

01	South Perth Bowling Club
02	Old Mill Theatre
03	Mindeerup
04	South Perth Boat Ramp
05	Mill Point Reserve
06	Old Mill
07	Miller's Pool
08	Perth Zoo
09	Sir James Mitchell Park

Neighbourhood Walkability

Surrounding the site are a series of natural and recreational environs that community members and the general public utilise on a day to day basis. On the banks of the bilya / river, South Perth offers a distinct and beloved outdoor environment in the Perth metropolitean area.

Characteristics of a Walkable Neighbourhood

- Safe and accessible
- Strong local economy
- Design for climate
- Destinations and community services
- Public realm
- Increased housing density



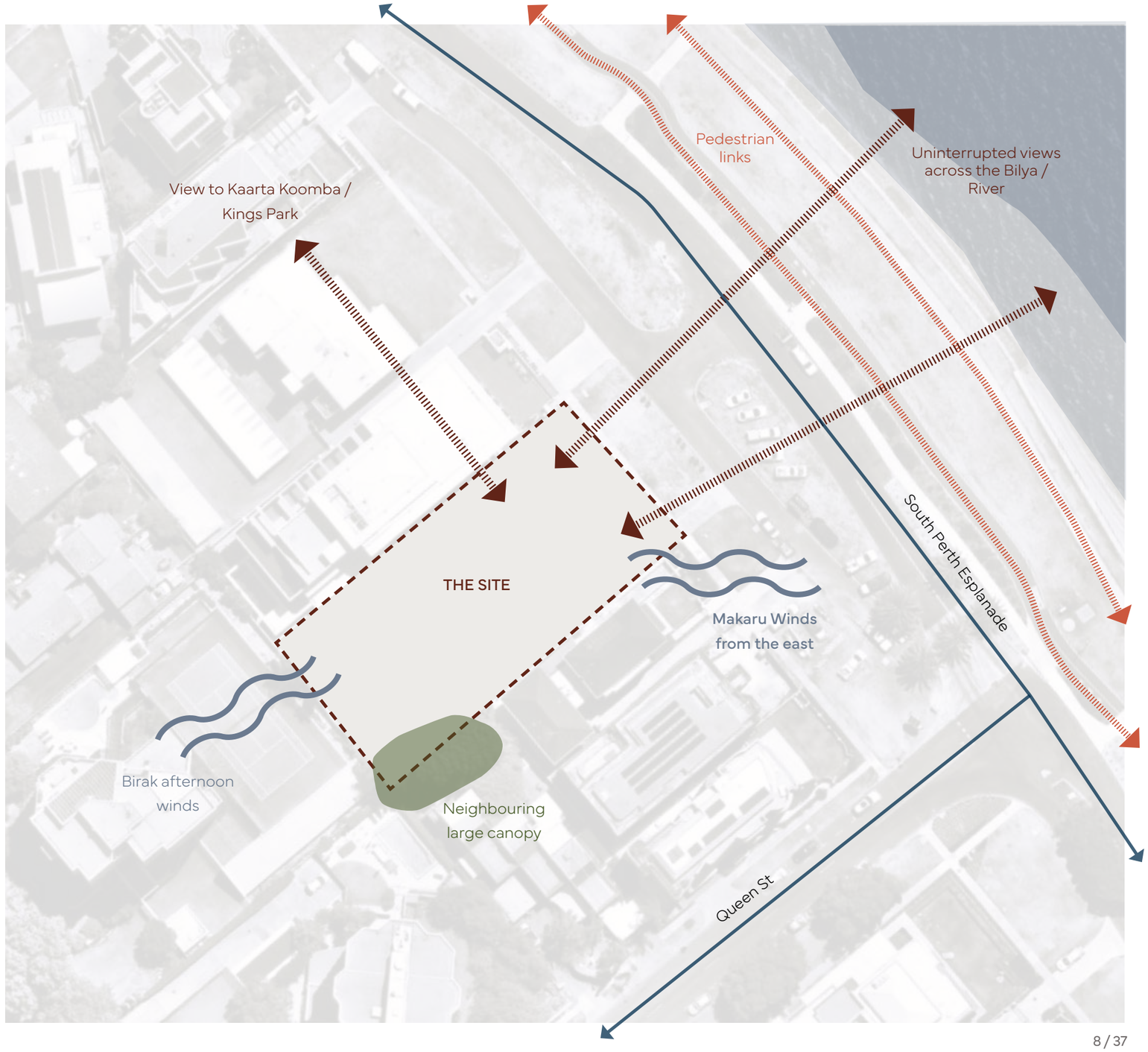
REFERENCES

https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/20-minute-neighborhoods

Western Australian Planning Commission, Livable Neighborhoods, 2015

The Site

The site is primarily influenced by it's direct connection to the Derbarl Yerrigan (Swan River), with the sweeping expanse of the foreshore just across the Esplanade and uninterupted views across the river to the city.



REFERENCES

https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/20-minute-neighborhoods

Western Australian Planning Commission, Livable Neighborhoods, 2015

Design Concept

Concept Drivers

Bilya



Connection to the Bilya / River

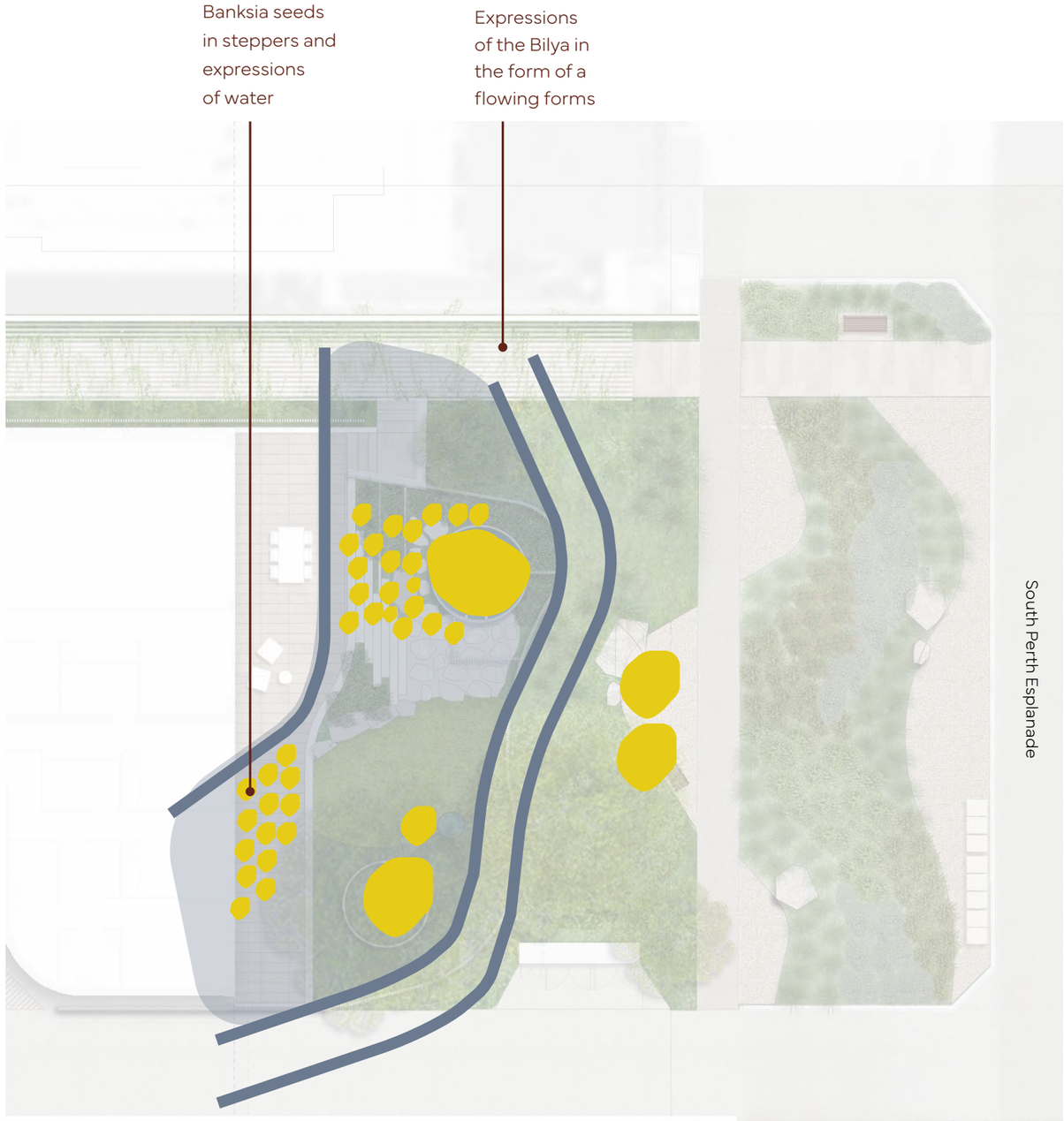
Located on the banks of the bilya / river which is expressed in form, materiality and planting across the site.

Banksia



Curves of banksia

Which once bloomed here in abundance. Seeds are scattered across the ground plane to celebrate a species that is endemic to Perth.



Ground Floor













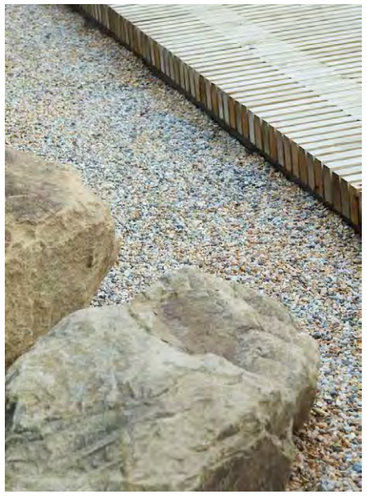
Podium

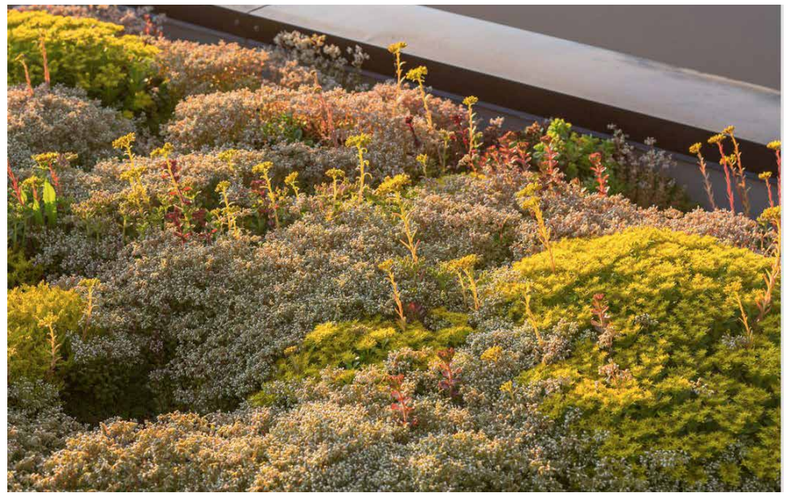
















Landscape Masterplan

Ground Floor Masterplan

Legend

1. Native verge garden
2. Bench seats
3. Visitor Parking
4. Pedestrian Entrance with Planted Arbour
5. Private Courtyard
6. Plunge Pool
7. Lawn Space
8. Bird Bath
9. Curved Privacy Fence
10. Low Verge Planting to maintain views
11. Lobby Entrance
12. Raised Planter with Feature Tree



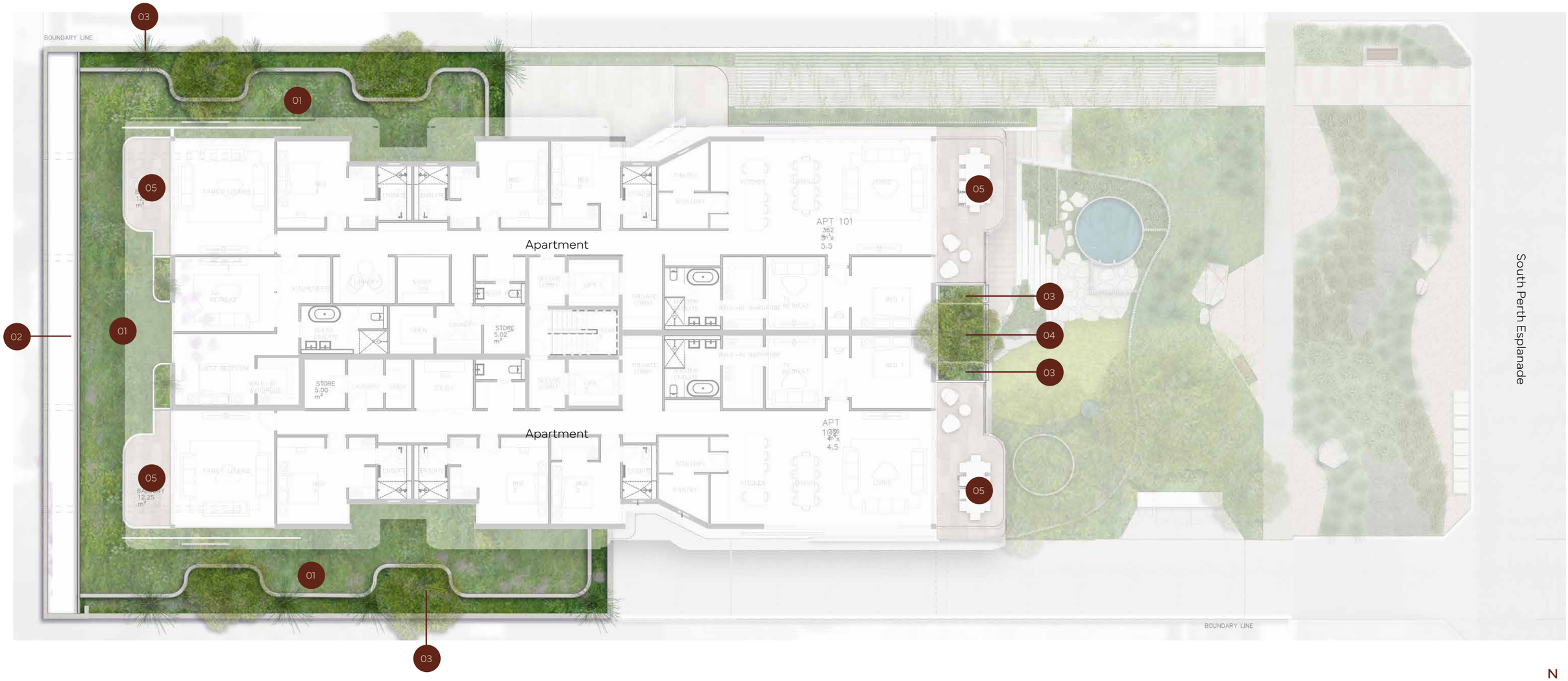
1:100 @ A1

N

Level 01 Masterplan

Legend

1. Sedum Planted Roof
2. Sky light
3. Planter Bed with Cascading Plants
4. Planter with Tree
5. Private Terrace



1:100 @ A1

N

Level 02-04 Masterplan

Legend

1. Planter Bed with Cascading Plants
2. Private Terrace



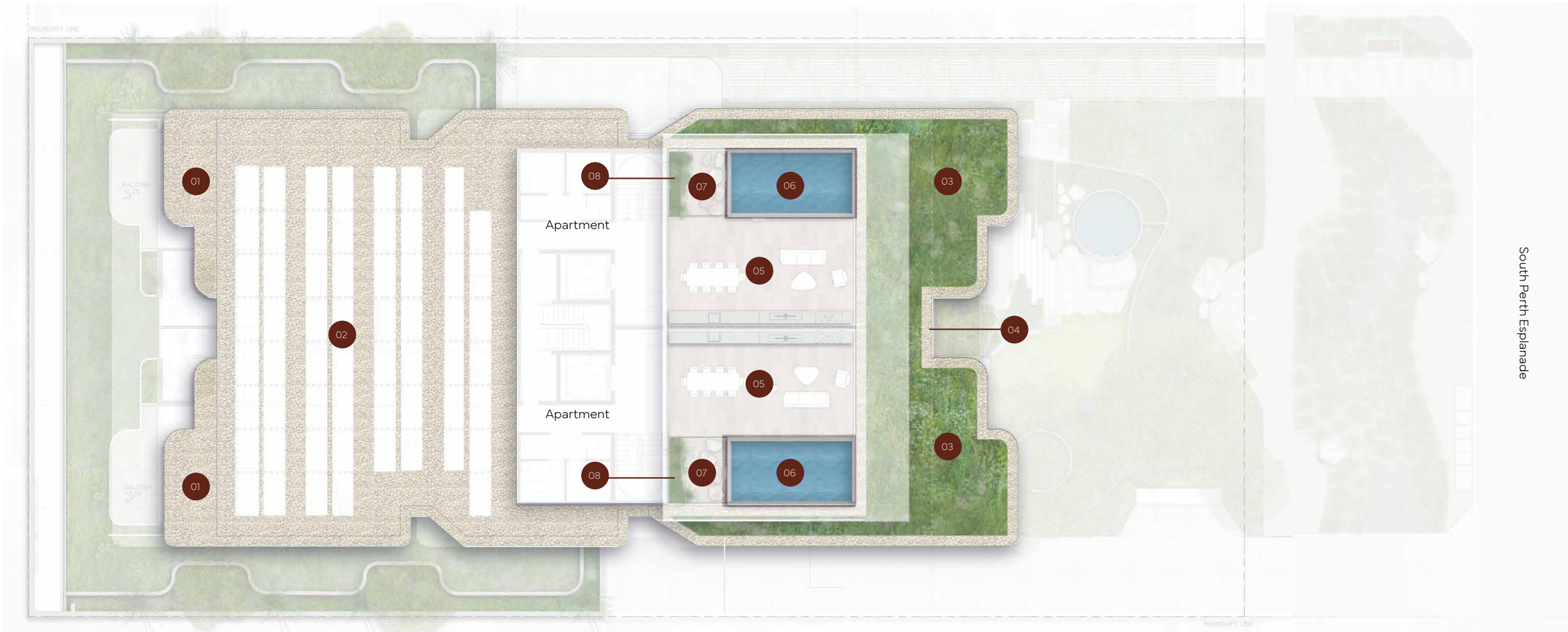
1:100 @ A1

N

Rooftop Terrace Masterplan

Legend

1. Gravel Ballast
2. Solar Panels
3. Sedum Planted Roof
4. Gravel Edge
5. Private Terrace
6. 1200mm Raised Pool
7. Gravel with Steppers
8. Planter Bed



1:100 @ A1

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Perspectives

Perspective 01





Location Plan

Perspective 02





Location Plan

Perspective 03

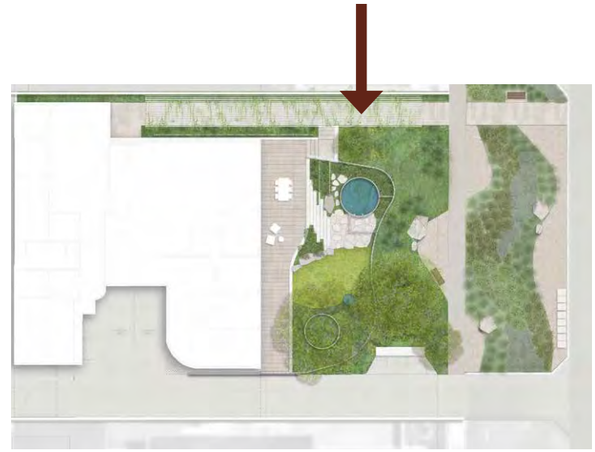




Location Plan

Perspective 04





Location Plan

Perspective 05





Location Plan

Perspective 07





Location Plan

Perspective 08





Location Plan

Selections

Planting

Trees

SMALL TREES



Crepe Myrtle ‘Natchez’



Eucalyptus vitrix



Melaleuca quinquenervia

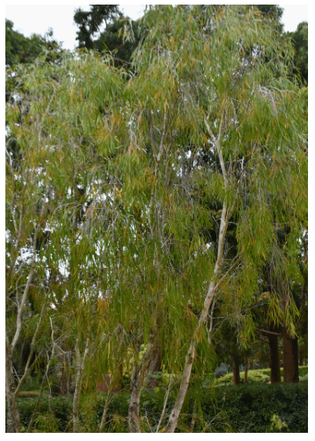
MEDIUM + LARGE TREES



Banksia integrifolia



Waterhousea floribunda



Melaleuca leucadendra

Planting

Ground Floor Planting

CASCADING


Casuarina Cousin It


Acacia Saligna Prostrate


Myoporum Insulare Prostrate


Hibbertia Scandens


Banksia Integrifolia Roller Coaster


Grevillea Gingin Gem

STRAPPY LEAF


Lomandra Tanika


Liriope Isabella


Liriope Emerald Cascade


Conostylis candicans

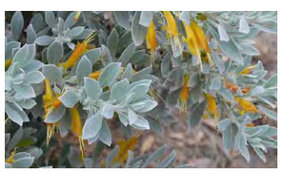

Poa ‘Eskdale’


Ficinia Nodosa

GROUNDCOVERS


Melaleuca hugelii prostrate


Banksia blechnifolia

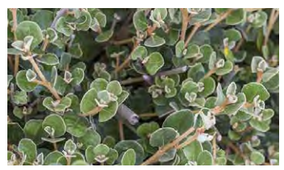

Eremophila ‘Kalbarri carpet’


Myoporum ‘Yareena’


Banksia Nivea


viola hederacea

SHRUBS


Correa Alba


Calothamnus hirsutus


Banksia menzeisii dwarf


Acacia howitii Honey Bun


Westringia Grey Box


Westringia Mundi


Casurina Green Wave

CLIMBING


Hardenbergia White Out


Ficus Pumila

Planting

Podium Planting

CASCADING


Casuarina Cousin It


Acacia Saligna Prostrate


Hardenbergia White Out


Hibbertia Scandens


Carpobrotus aussie rambler


Grevillea Gingin Gem


Rosemary prostrate

STRAPPY LEAF


Lomandra Tanika


Liriope Samantha


Liriope Emerald Cascade


Conostylis candicans


Nolina nelsonii


Austrostipa stipiodes


Pennisetum Nafray

GROUNDCOVER


Sedum sp.


Senecio Blue Chalky Sticks

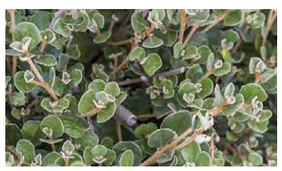

Banskia Petioralis


Santolina Lavender Cotton


Carissa Green Carpet


viola hederacea

SHRUBS


Correa Alba


Kalanchoe Silver Spoons


Pittoporum Miss Muffet


Aloe Plicatilis


Westringia Grey Box

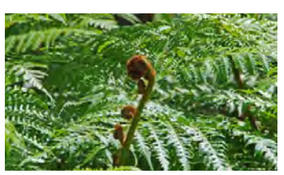

Westringia Mundi


Helichrysum Silver Mist

FEATURE


Agave Blue Glow


Kalanchoe beharensis


Cyathea cooperi

Materials

SURFACES



Crepe Myrtle ‘Natchez’



Tumbled Limestone Paver



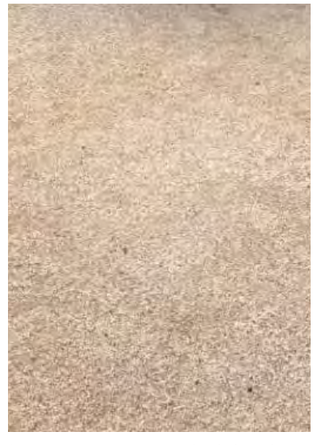
Porcelain Paver



Hydro-pave Permeable Paver



Rainbow Stone Gravel



Summerstone Fines Stabilised Gravel

FURNITURE



Limestone Feature Boulder



Copper + Sandstone Birdbath



Concrete Planters



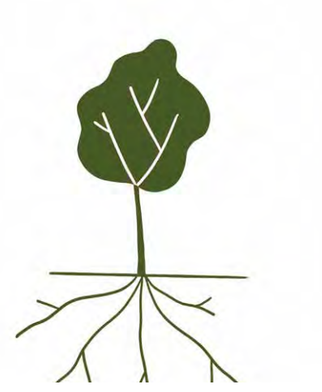
Steel Trellis

Technical Drawings

Deep Soil Zone Benefits

Trees and gardens make a significant contribution to the ecology, character and amenity of neighbourhoods. They provide habitat for fauna, shade, storm water management and micro-climate benefits, as well as improve apartment outlook and privacy.

The provision of deep soil areas to support and sustain the development of tree canopy can also make a major contribution to the retention of existing trees. A deep soil area is an area of soil that is free of built structure and has sufficient area and depth to support tree growth and infiltrate rainwater. Site planning should seek to co-locate deep soil areas with existing trees on and adjacent to the site, and in locations best suited to the development of a viable tree canopy and landscaping.



Healthy roots = healthy tree



Enhance water filtration



Comfortable Micro-Climate + Reduction of Urban Heat Island Effect



Create Habitat



Improve Air Quality



Community Health through increased canopy coverage

Deep Soil

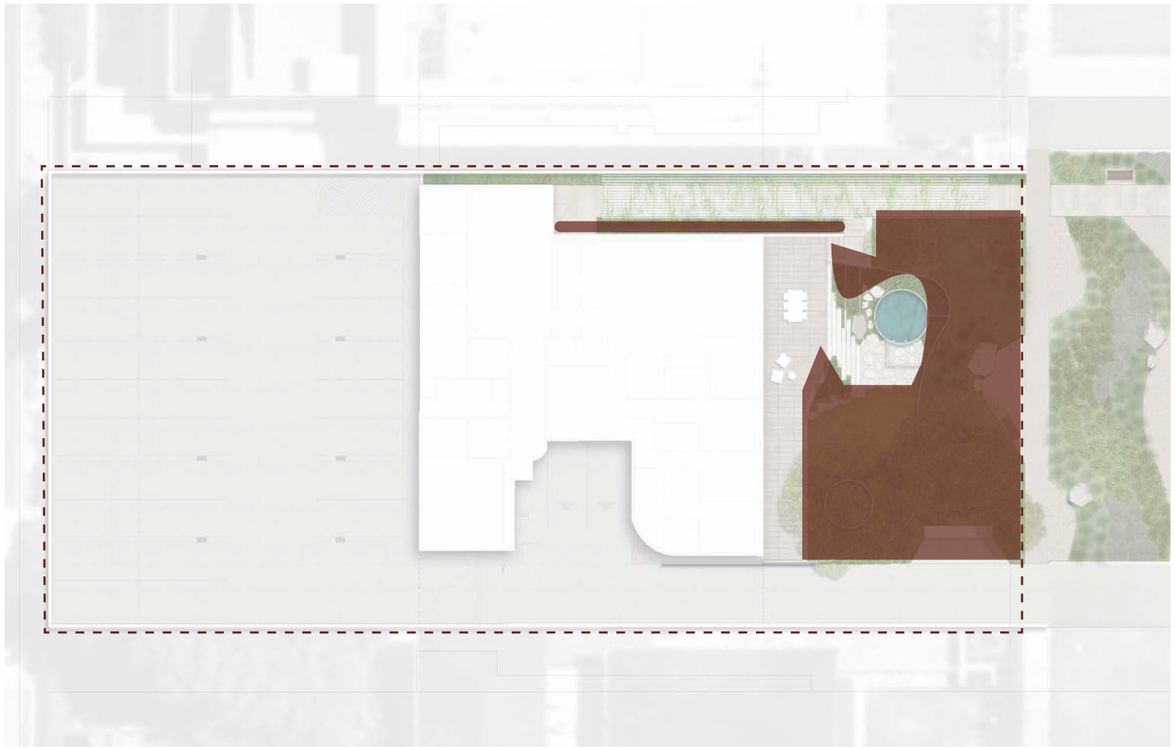
Deep Soil Calculation (min 1000mm soil depth + width)	Area
Site Area	1730 sqm
Min Site Wide Deep Soil Required	173 sqm (10%)
Ground Floor DSA	254 sqm (14.68%)
Level 01 Planting on Podium	72 sqm (4.16%)
Total	326 sqm (18.80%)

Legend

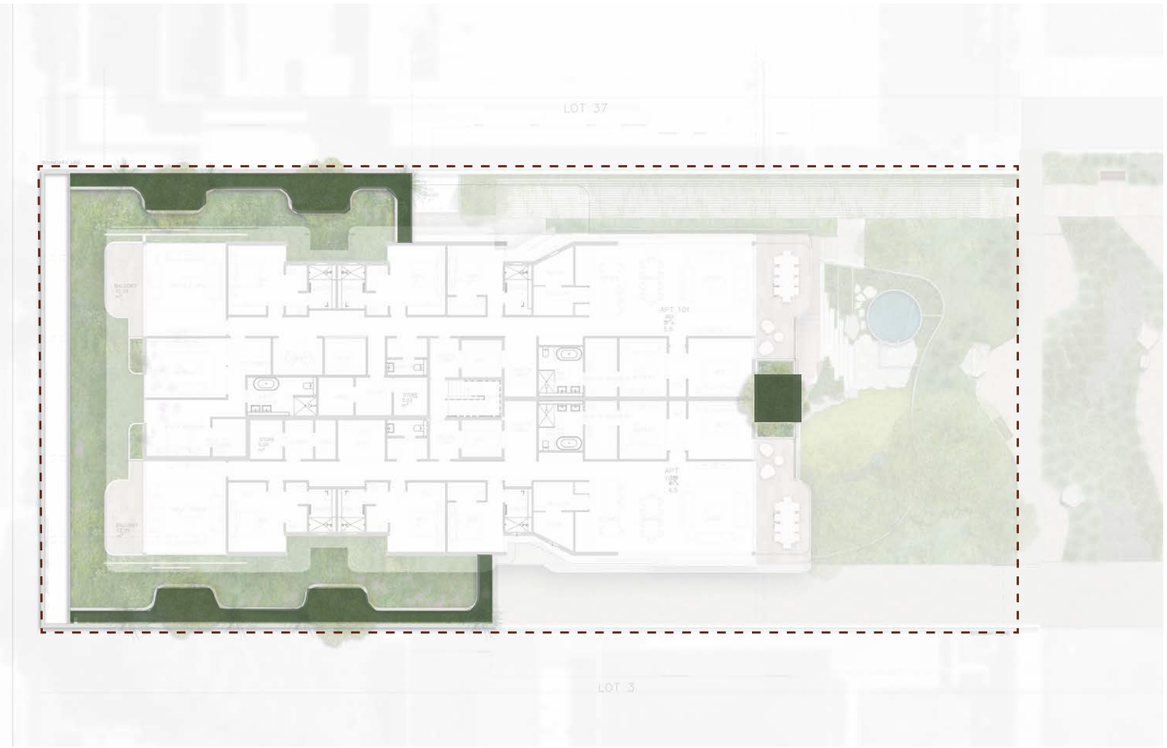
Rootable Deep Soil Zone

Planting on Podium (min 1000 mm soil depth + width)

Ground Floor



Level 01



Tree Requirements

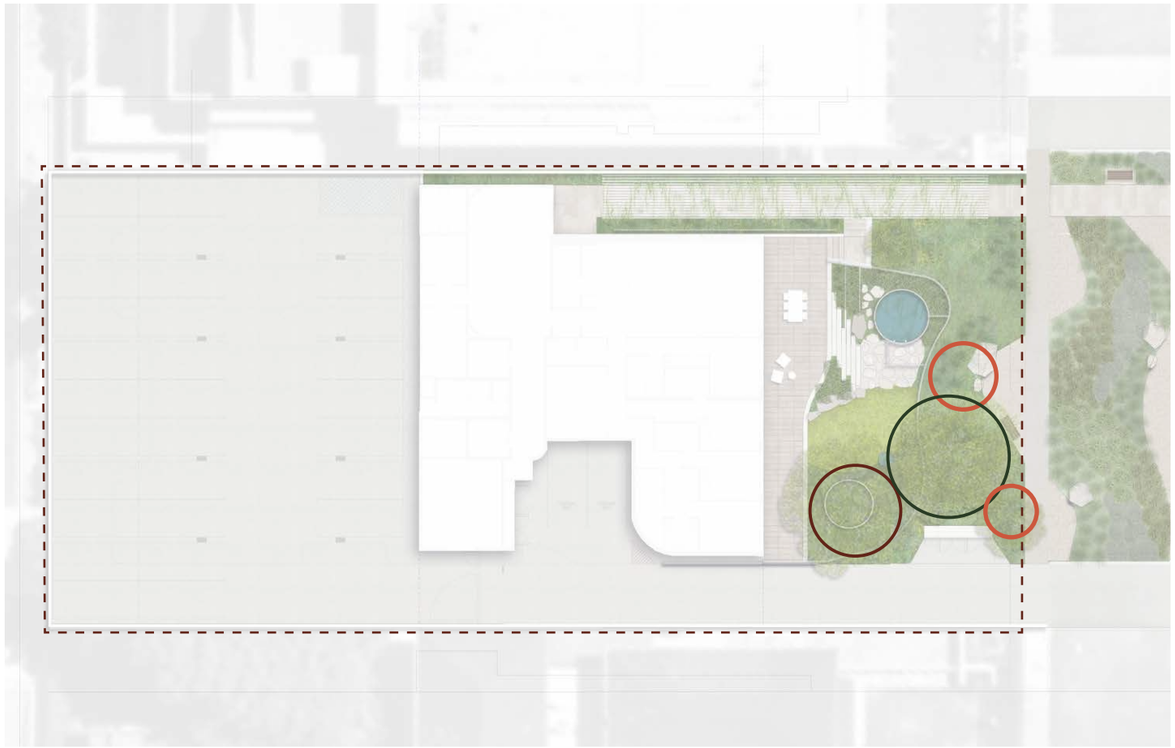
NOTE:
All trees indicated meet the minimum deep soil zone requirement as per State Planning Policy 7.3 Residential Design Codes - Apartments

Tree Requirements	Area
Site Area	1730 sqm
Site Wide Tree Requirements (>1000 sqm)	1 Large Trees and Small Trees to Suit
Total	Large Tree = 1 Medium Tree = 1 Small Tree = 7

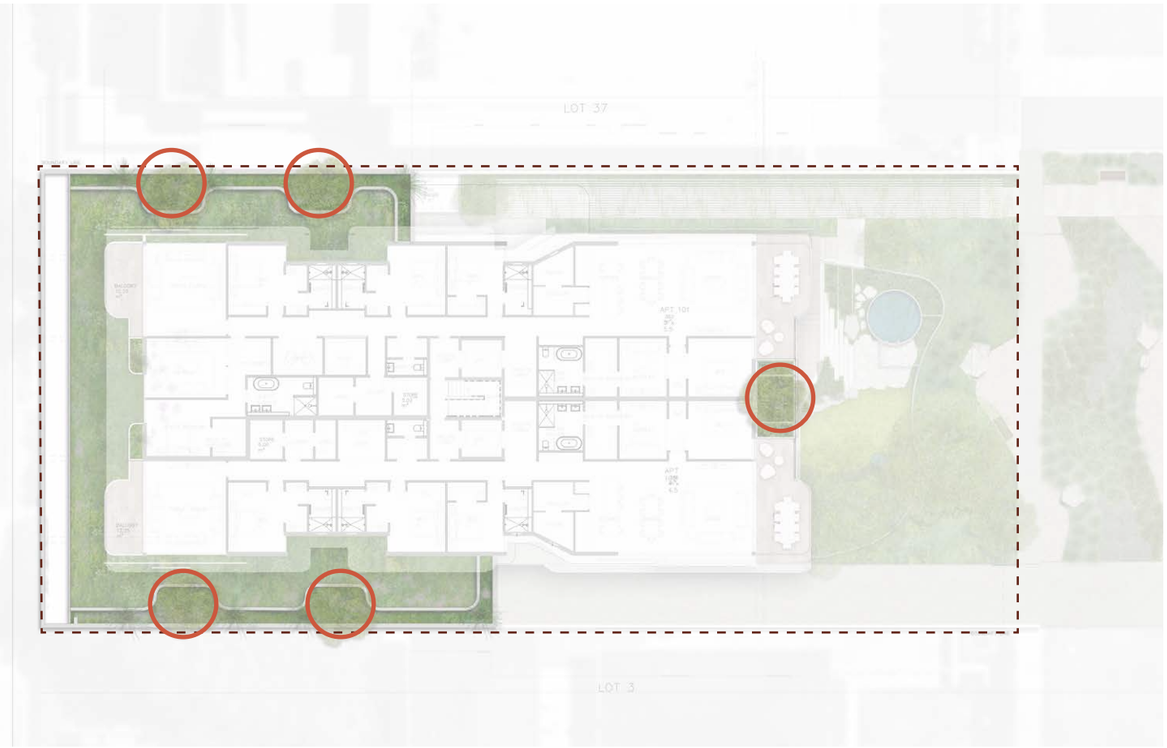
Legend

- Large Tree (9 x 9 sqm)
- Medium Tree (6 x 6 sqm)
- Small Tree (3 x 3 sqm)

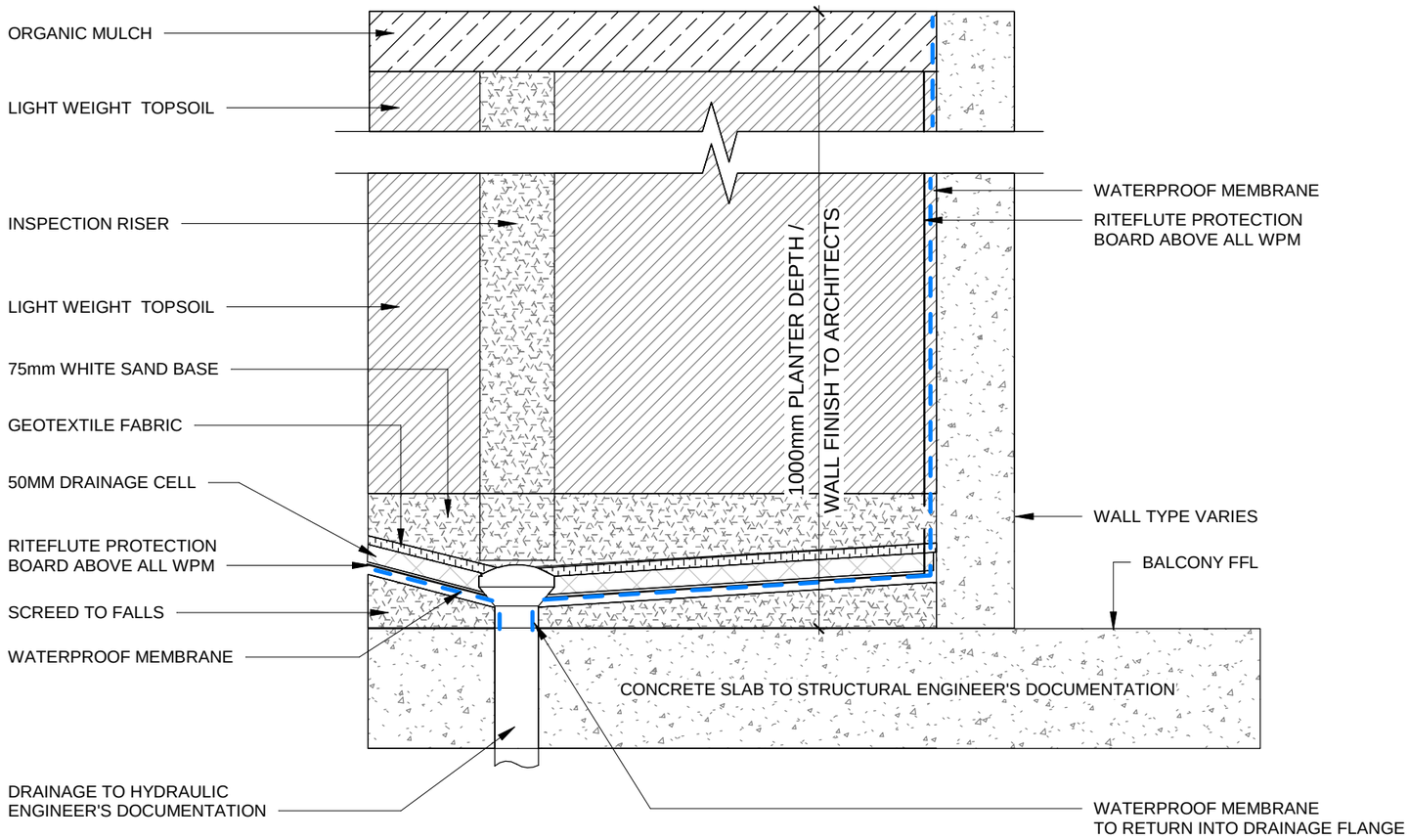
Ground Floor



Level 01

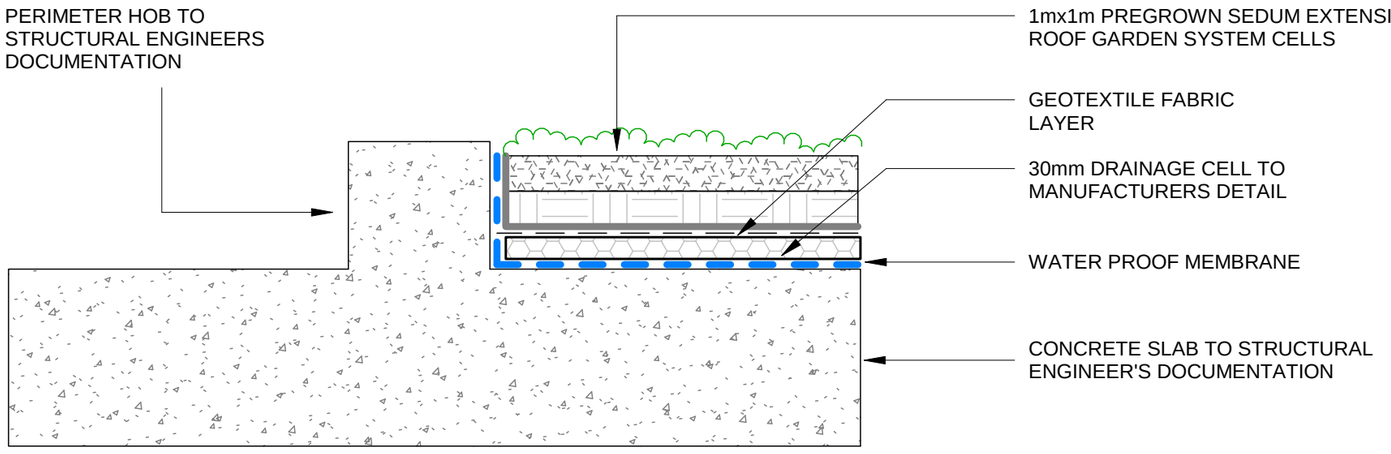


Details



Typical Planter Lining Detial on Slab

Details



Typical Sedum Detail on Slab

Please feel free to contact us with any inquires.

Joel Barker
0466 266 305
joel@seedesignstudio.com.au

Eoin Gladish
0423 150 244
eoin@seedesignstudio.com.au

seedesignstudio.com.au

See Design Studio
Landscape Architects

R-Codes – Element Objectives:

O3.5.1: We object to large windows facing 13 South Perth Esplanade. Other buildings along South Perth Esplanade have previously not been allowed to have large windows facing their neighbours (apart from 15 SPE for some reason!). When we built, we were required to have either high windows, small openings or opaque glass on any windows facing adjacent neighbours.

Opaque glass to large windows facing us may be acceptable. This allows daylight through, but protects privacy.

The privacy screens detailed on the plans are not acceptable to us as this allows the occupants of 11 SPE to see directly into our house from adjacent levels.

The metal screens will collect dust and bird droppings which would prove to be very difficult to clean, if not impossible. Dust at this location is particularly bad due to the proximity to the Kwinana Freeway and Narrows Bridge. It is black rubber dust and falls constantly.

DA Report

3.3 Access and Parking
Allowance is made for only 2 visitor parking bays. This is inadequate in our opinion. With 9 apartments, where will the other visitors park? We feel lack of visitor parking will impact on neighbouring properties causing traffic chaos and interfere with ingress/exit to/from those properties.

[The **Traffic Impact Statement** 4.3 suggests there is ample parking including Mill Point Close. There is NO parking in Mill Point Close. We object to incorrect facts being put forward.]

3.4 Landscaping (p.10)
Reference is made to “parklet space” which we object to. There is provision for parking at the rear of the building.

4.2.4 (p.18) Maximum Floorplate Area
We object to discretionary consideration of the proposed 3% variation to the floorplate area. Specific requirements are set for a reason, and to allow a variation is to set a precedent and we disagree that it would “provide excellent visual interest …to…adjoining properties.”

R-Codes

O2.2.4 (p.7)
Increase of shadow beyond compliant levels.
We vehemently object to an increase in overshadowing beyond compliant levels. 58.7%!! This will increase our need for reliance on electricity from the grid instead of from our solar panels. Increased shadowing will impact our current solar panels as well as the future panels we are considering. It will affect daylight coming into our home and thus increase our energy use. This plan does not recognize Element Objective O2.2.4 nor O3.2.2 (p.15)

Waste Management Plan

We object to twice weekly rubbish collection. This will disrupt our quiet amenity one more day each week than necessary. 5 bins for 9 apartments is not acceptable.

Construction Management Plan
It is necessary to implement a Management Plan for construction traffic and equipment. This is needed to ameliorate parking problems and to protect neighbours from interference regarding access to their own properties.

Strict adherence to operating times and noise levels must be implemented and a plan to solve problems as they occur to be detailed, together with applicable penalties.

Comments
With reference to the architectural plans, we do not consider this is a residential apartment building. It appears to be planned to accommodate more people than one family per apartment eg: additional living room and kitchen at the rear of each apartment (excepting the ground floor). The planned four or five bedrooms per apartment are extremely small for family living. We are concerned that it may become a 'boarding house' type accommodation ie: accommodating workers of the owner companies or to sub-let bedrooms, as has been the case in the past with the current building. The impact is extra traffic, both vehicular and pedestrian.

With reference to Construction Management we would like to see a requirement for the builders to contain all building rubbish, dust etc within their boundaries by using protective screening cloth or boarding on scaffolding to full height. We had a problem with this when 15 SPE were building. Rubble, paint etc landed on our property resulting in the driveway needing re-coating; walls cleaned, repaired and repainted. We do not want to go through that again.

From: [redacted]
Sent: Fri, 14 Aug 2026 11:33:29 +0800
To: "enquiries" <enquiries@southperth.wa.gov.au>
Cc: [redacted]
Subject: URGENT - 11 The Esplanade, South Perth - Formal Objection - Att: Steven Depiazzi
Attachments: Submission to City of South Perth re 11 The Esplanade South Perth.docx

Hi Steven, please acknowledge receipt of this message

Regards Karen McGrath

To: THE CHIEF EXECUTIVE OFFICER, CITY OF SOUTH PERTH

METRO INNER DEVELOPMENT ASSESSMENT PANEL (DAP)

FORMAL OBJECTION

Form 2 - Application for Discretionary Height Increase

Application Reference: DAP/26/03118 (Cross-Referenced with Original Approval DAP/22/02185)

Property Location: Lot 38 (No. 11) South Perth Esplanade, South Perth

Proposed Development: Amended Multiple Dwelling Development
Submission Category: Formal Joint Objection by Affected Surrounding Landowners [1]

Executive Summary

We write on behalf of the collective landowners and long-term residents of the building (16 Mill Point Road) located directly behind the subject site at 11 The Esplanade, South Perth. Our building (named Mill Point) is an established part of the South Perth community, being over 40 years old, with many residents having lived here for 25 to 30 years.

As the most directly impacted neighbours, we object in the strongest possible terms to the development applicant's request for a discretionary building height increase above the standard baseline zone limit and aspects of the design that will impact on us directly.

The subject site enjoys an unobstructed, absolute riverfront position. There is no structural or environmental justification for the developer to push above the zone height limit, other than maximizing private commercial gain at the direct expense of our established community.

Detailed Grounds for Objection

Unacceptable Amenity Impact and Loss of Solar Access on a 40-Year-Old Complex

- The Planning Conflict: Any discretionary height variation must prove it will not cause significant adverse impacts on the local amenity.
- Our Reality: Our building has relied on its orientation and the established, low-to-medium rise scale from the foreshore for over four decades. Because the proposed development is located directly in front of us, any discretionary height increase creates a severe "wall effect." This extra height will completely block critical winter solar access, trap shadow, and destroy the reasonable expectation of visual amenity that our residents — many of whom are elderly long-term owners—have maintained for up to 30 years. [1, 2]
- Balconies: Our privacy will also be impacted by 8 rear balconies overlooking our property and directly into our dwellings.

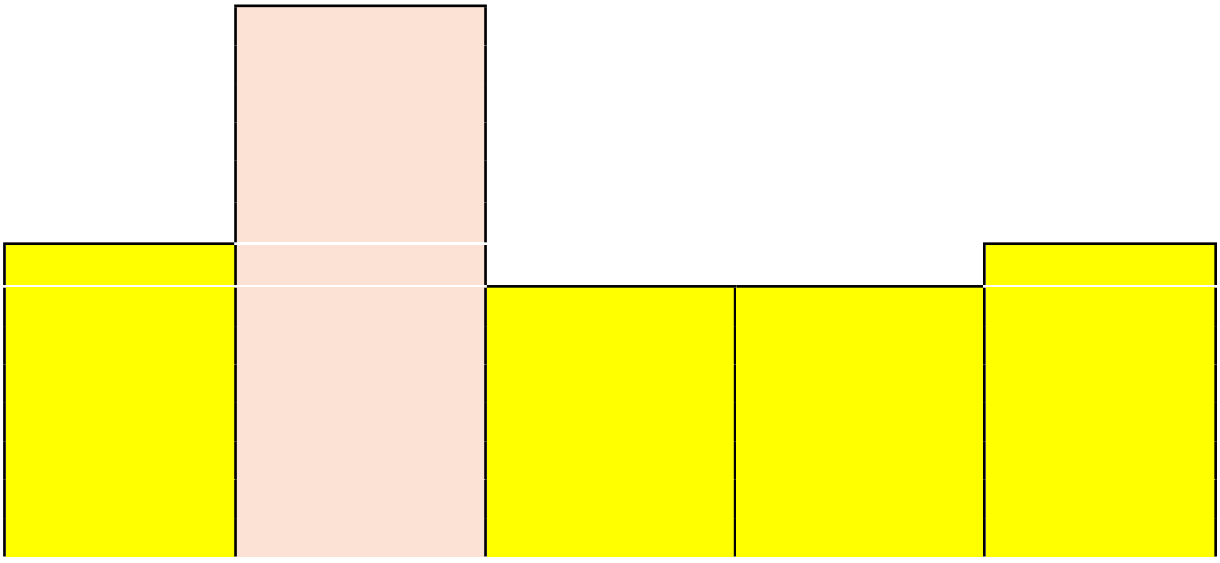
Excessive Building Height Discrepancy and Disproportionate Streetscape Character

The proposed total height of 23.08 metres for a 6-level structure is an inappropriate insertion into the current visual profile of this specific sub-precinct. It introduces severe building bulk that conflicts with Local Planning Policies aiming to protect local character.

- The Discrepancy: The proposal sits significantly higher than the adjacent properties, which average closer to a standard 14–17 metre building height corridor:

    - No. 9 The Esplanade: 16.83m
    - **Proposed No. 11 The Esplanade: 23.08m**
      (A discrepancy of up to 8.79m over neighbours)
    - No. 13 The Esplanade: 14.29m
    - No. 15 The Esplanade: 14.79m
    - No. 17 The Esplanade: 17.20m
    - See inserted plan drawing below

HEIGHT VARIATIONS - THE ESPLANADE, SOUTH PERTH
Lot number and meters



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Lot 9 - 16.83	**Lot 11 - 23.08**	**Lot 13 - 14.29**	**Lot 15 - 14.79**	**Lot 17 - 17.2**

- The Planning Solution: The developer has designed excessively high floor-to-ceiling volumes, averaging 3.4 metres per level. The City of South Perth should mandate a reduction of these level heights to a standard residential specification (e.g., 3.0 to 3.1 metres floor-to-floor). This simple alteration would bring the overall building footprint down by roughly 2.0 to 2.4 metres, moving it significantly closer to the established streetscape benchmark without sacrificing the number of dwellings.

Unjustified Level 6 Footprint and Relocation of Swimming Pools

The inclusion of a complete sixth level solely to house two swimming pools separated by a vertical wall introduces unnecessary height, weight and visual bulk to the roofline.

- The Planning Solution: Rather than increasing the height envelope of the peninsula with an entirely separate pool deck level, the applicant has a logical alternative on-site. The current designs allow for an oversupply of 36 secured resident car bays and 2 visitor parking spaces. Under modern R-Code guidelines and the South Perth Activity Centre initiatives, prioritizing excessive vehicle garaging over compact building design is highly discouraged.
- Requested Amendment: The Council should condition the removal of Level 6. The dual swimming pools can easily be relocated to the ground floor or subterranean levels by reallocating a portion of the over-required, low-efficiency rear car parking spaces.

Severe Breach of Visual Privacy and Inadequate Setbacks

The proposal outlines eight large balconies spanning Levels 2 through 5 featuring wide-span glass sliding doors and expansive windows.

The rear balconies are set back only 4.5 metres from our boundary line.

- The Planning Deficit: Under Western Australia's Residential Design Codes (R-Codes Volume 2), a 4.5-metre setback for an unscreened outdoor living area is entirely deficient for a multi-level structure directly overlooking an adjacent building's primary living zones. A minimum 6-metre visual privacy setback corridor is standard to prevent overlooking.
- The Amenity Impact: A 4.5-metre gap grants future residents direct, unobstructed views straight into the main bedrooms and primary internal living spaces of units in our complex.

  This is a severe invasion of fundamental residential privacy.

Failure to Satisfy Tier 1 or Tier 2 Architectural Benchmarks

- The Planning Conflict: Discretionary height increases above the base zone limit under Local Planning Scheme No. 7 (LPS7) and the South Perth Activity Centre Plan (ACP) require proof of Tier 1 (Excellent) or Tier 2 (Exemplary) design standards.
- Our Reality: The applicant claims minor cosmetic adjustments or updated material finishes satisfy these design standards. However, adding building bulk or an extra level does not constitute superior architecture. The design fails to showcase the outstanding civic contribution required for landmark status along the riverfront.

-

Absence of Verifiable Public Benefit Contribution

- The Planning Conflict: The South Perth ACP states that additional height is strictly tied to providing a proportionate, tangible Public Benefit Contribution.
- Our Reality: The applicant's reasons focus on internal commercial viability and private layout upgrades. These benefits are entirely private and do not help the public. The application fails to offer

meaningful public realm improvements, infrastructure upgrades, or community spaces to justify the requested height variation.

Loss of Significant Views and Amenity Devaluation

The extreme height and bulk of the northern leaf of this development will act as a solid visual wall, cutting off daylight and airflow. It directly contravenes the City's recently adopted Local Planning Policy 7.2 – Significant Views, which requires a balanced approach to ensure new developments do not disproportionately strip away the visual amenity of neighbouring buildings.

Failure to Meet Form 2 Amendment Scope

- The Planning Conflict: Under Clause 68 of the Deemed Provisions, a Form 2 amendment must only make minor variations that align with the original approval's framework (DAP/22/02185).
- Our Reality: Adding building height or creating an additional storey significantly shifts the scale of the approved building footprint. This change is a major redesign, not a minor modification.
- The developer is trying to bypass the rigorous review required for a brand-new Form 1 application.

SITE WORKS:

We note that the required Geotech report recommended the removal to a depth of 12 metres, soil and any contamination to be replaced by suitable ground soil to be compacted to take the weight of a heavy building.

The report mentions that the compacting "could" compromise existing nearby structures with cracking. We are concerned of the possibility of our underground private secure carpark and the tennis court that sits above it could be subjected to cracking and ground shift.

Conclusion

The current design prioritizes developer luxury (oversized 3.4m ceiling voids, dual-leaf separation, and a dedicated rooftop pool level)

at the extreme expense of the surrounding community's privacy, light and property values.

The applicant has not justified why the development cannot be completed within the standard building envelope of the zone.

Financial viability or a desire for larger private floor layouts are not valid reasons to compromise local planning standards.

We respectfully urge the City of South Perth and the Metro Inner DAP to refuse the discretionary height increase for application DAP/26/03118 and direct developer to build within the approved, compliant height limits established in DAP/22/02185

(please see attached)

A signed endorsement of the above submission from the residents and owners of Mill Point apartments, 16 Mill Point Road, South Perth 6151

Yours faithfully

John and Karen McGrath (0412 103 239) and (0411 608 034)

Garry Roberson – (0428 401 265)

Friday 14th August 2026

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Affected Landowners' / Residents

Signatures & Endorsement

Apartments located an known as "Mill Point" - 16 Mill Point Road, South Perth

We, the undersigned are registered proprietors / long-term residents of the property located directly behind 11 The Esplanade - the subject site, formally endorse this submission.
We request that the City of South Perth and the Metro Inner DAP refuse the requested discretionary height increase for DAP/26/03118.

Unit/s No	Name: Proprietor / Resident	Years of Residency	Signature /Date
8	John and Karen McGrath - Owners	10 months	13/8/26
13	BERNARD & BERNADETTE LAWRENCE	16 yrs	13 Aug 2026
6	ELIZABETH H CUERDEN	12 yrs	13 Aug 2026
11	Mary DELBORRELLO	6 years	13 Aug 202
14	MARY DELBORRELLO	6 years	13 Aug 202
15	John Murdoch	31 YEARS	13 Aug 202
1	RONALD & JANET LUTZ	31 YEARS	13 AUG 202
4	MARGARET F. MABER	33	14 Aug 2026
10	ALLAN SYMONS	35	14 Aug 2026
12	GARRY and JOAN ROBERTSON	9	14 Aug 2026
16	BETTY LEVI	16	14 AUG 2026

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To: THE CHIEF EXECUTIVE OFFICER, CITY OF SOUTH PERTH

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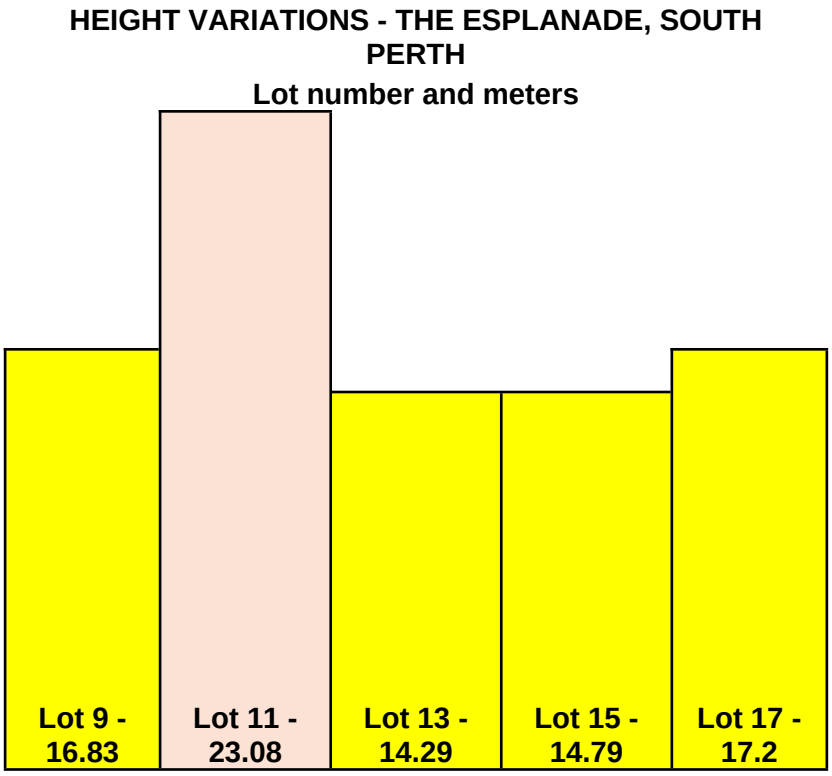

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Failure to Meet Form 2 Amendment Scope

- The Planning Conflict: Under Clause 68 of the Deemed Provisions, a Form 2 amendment must only make minor variations that align with the original approval's framework (DAP/22/02185).
- Our Reality: Adding building height or creating an additional storey significantly shifts the scale of the approved building footprint. This change is a major redesign, not a minor modification.
- The developer is trying to bypass the rigorous review required for a brand-new Form 1 application.

SITE WORKS:

We note that the required Geotech report recommended the removal to a depth of 12 metres, soil and any contamination to be replaced by suitable ground soil to be compacted to take the weight of a heavy building.

The report mentions that the compacting "could" compromise existing nearby structures with cracking. We are concerned of the possibility of our underground private secure carpark and the tennis court that sits above it could be subjected to cracking and ground shift.

Conclusion

The current design prioritizes developer luxury (oversized 3.4m ceiling voids, dual-leaf separation, and a dedicated rooftop pool level) at the extreme expense of the surrounding community's privacy, light and property values.

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The applicant has not justified why the development cannot be completed within the standard building envelope of the zone.

Financial viability or a desire for larger private floor layouts are not valid reasons to compromise local planning standards.

We respectfully urge the City of South Perth and the Metro Inner DAP to refuse the discretionary height increase for application DAP/26/03118 and direct developer to build within the approved, compliant height limits established in DAP/22/02185

(please see attached)

A signed endorsement of the above submission from the residents and owners of Mill Point apartments, 16 Mill Point Road, South Perth 6151

Yours faithfully

John and Karen McGrath (0412 103 239) and (0411 608 034)

Garry Roberson – (0428 401 265)

Friday 14th August 2026

Affected Landowners' / Residents

Signatures & Endorsement

Apartments located an known as "Mill Point" - 16 Mill Point Road, South Perth

We, the undersigned are registered proprietors / long-term residents of the property located directly behind 11 The Esplanade - the subject site, formally endorse this submission.
We request that the City of South Perth and the Metro Inner DAP refuse the requested discretionary height increase for DAP/26/03118.

Unit/s No	Name: Proprietor / Resident	Years of Residency	Signature /Date
8	John and Karen McGrath - Owners	10 months	13/8/26
13	BERNARD & BERNADETTE LAWRENCE	16 yrs	13 Aug 2026
6	ELIZABETH H CUERDEN	12 yrs	13 Aug 2026
11	Mary DELBORRELLO	6 years	13 Aug. 202
14	MARY DELBORRELLO	6 years	13 Aug. 202
15	John Murdoch	31 years	13 Aug 20
1	RONALD & JANET LUTZ	31 YEARS	13 AUG. 202
4	MARGARET F. MABER	33	14 Aug 2026
10	ALLAN SYMONS	35	14 Aug 2026
12	GARRY and JOAN ROBERSON	9	14 Aug 2026
16	BETTY LEVI	16	14 AUG 2026

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Version: 1, Version Date: 18/08/2026

Document Set ID: 2124329
Version: 1, Version Date: 18/08/2026

Date: 19 October 2026

To: The Chief Executive Officer, City of South Perth
Members of the Metro Central Joint Development Assessment Panel (JDAP)

Submission via:	enquiries@southperth.wa.gov.au (or City Planning Portal)
Property Reference:	Lot 38 (No. 11) South Perth Esplanade, South Perth
Proposal:	A 6-Storey Residential Development consisting of 9 Units, 30 Car Bays, Boundary Wall and Amenities (DA26/0002 / DAP/26/03118)
Objector Property:	Residents/Owners "Mill Point" 16 Mill Point Road, South Perth

FORMAL OBJECTION TO PROPOSED DEVELOPMENT – LOT 38 (NO. 11) SOUTH PERTH ESPLANADE

We, as landowners in "Mill Point" apartments, 16 Mill Point Road, South Perth wish to lodge a **strong and unconditional objection** to aspects of the proposed development of Lot 38 (11) The Esplanade, South Perth. Our property immediately adjoins the proposed 6-story, 9-unit, 30-car bay development.

While we support orderly and sensitive redevelopment within the South Perth/Mill Point peninsular precinct, we feel this proposal represents an egregious overdevelopment. The applicant relies on an artificial 5-metre floor-to-floor height configuration to manipulate previous planning framework loops and aggressively bypass the clear statutory height limits established in the **South Perth Activity Centre Plan (ACP)** and **Local Planning Scheme No. 7 (LPS7)**.

We urgently request that Council and the JDAP exercise their statutory discretion under the *Planning and Development (Local Planning Schemes) Regulations 2015* to **refuse** the requested variations based on the following critical planning grounds:

1. Severe Height Breach and Abuse of Floor-to-Floor Discrepancies

The subject lot is explicitly zoned for a base height limit of **14.4 metres**, up to a maximum Tier 1 limit of **17.5 metres**. The proposed height of **23.08 metres** exceeds the absolute maximum threshold by a staggering **5.58 metres**.

- **Artificial Volume Inflation:** The choice of an excessive 5-metre floor-to-floor configuration is an obvious, bad-faith mechanism designed solely to exploit height measurement loopholes and artificially stretch the building envelope.
- **Destroying Streetscape and Precinct Uniformity:** No other development on this section of the Esplanade between Mill Point Road and Mends Street has breached the 17.5-metre ceiling — including No. 31 The Esplanade currently under construction. If approved, No. 11 will sit over 5 metres higher than all adjacent properties, severely impacting the amenity, privacy, and sky-exposure of the properties situated directly behind it on Mill Point Road. [1]

2. <u>Unacceptable Amenity Impact of the 28-Metre Rear Boundary Wall on Existing Tennis Court</u>

Our property features an established private tennis court that sits directly along our shared boundary (which forms the rear boundary of No. 11 Esplanade). The playing surface of this court is elevated **1.8 metres above natural ground level** and is set back **2.8 metres** from the boundary line. The proposed **5.4-metre-high boundary wall** creates an unlawful and unacceptable impact on this active recreational zone. Our private/secure carpark sits directly underneath the tennis court.

- **Overbearing Visual Bulk:**

  Because our court surface is elevated 1.8 metres, the developer's 5.4-metre wall will tower an oppressive **3,600 mm (3.6 metres) vertically above our playing surface**.

- **Massive Spatial Encroachment:**

  No. 11 Esplanade features a **28-metre-wide boundary**. By proposing a full-width boundary wall, the developer is seeking to erect a monolithic concrete barrier across their entire rear lot line. This wall will aggressively swallow up **two-thirds (2/3) of the entire length of our tennis court**. This creates an uninterrupted, prison-like sense of confinement that completely destroys the established open recreational amenity of our land.

- **Microclimate Degradation (Thermal Trap & Wind Block):**

  A 3.6-metre exposed vertical concrete surface spanning 28 metres will act as a major thermal mass to our north/east. It will absorb daytime sun, completely choke off prevailing cooling breezes, and radiate extreme heat directly back onto our playing surface (which in turn will reflect onto our living areas of balcony and bedrooms) making our outdoor living area unusable during daylight hours. These balconies are virtually our 'front door' as the major existing window openings.

3. <u>Breach of R-Codes Element 2.4 (Rear Setbacks & Boundary Wall Controls)</u>

- Under the *Western Australian Residential Design Codes (R-Codes) Volume 2*, rear boundaries are heavily protected to maintain an open-space core between parallel streets (the Esplanade and Mill Point Road).
- Proposing a 5.4-metre-high wall built directly on the rear boundary line—instead of utilizing standard, stepped rear setbacks—represents an aggressive shifting of the building's physical bulk entirely onto our lot.
- The proposal completely fails the Design Principles of Element 2.4, as it does not moderate the impacts of building bulk, nor does it respect the established backyard context of the immediate neighbours.

4. <u>Disproportionate and Inadequate Community Benefit Contribution</u>

The proposal seeks to add two highly lucrative additional units (with a projected market value of approximately $10,000,000m each) in exchange for a token community contribution of $150,000 or a minor facility.

- Under SPACP guidelines, development incentives and variations must demonstrate a **proportional and tangible public nexus**.
- A $150,000 offset for a massive, multi-million-dollar private windfall provides virtually zero meaningful infrastructure benefit to the South Perth community. It represents an inequitable exploitation of the planning framework to the severe detriment of local amenity.

5. Excessive Scale, Intensity, and Level 6 Private Amenities

The sheer scale of 9 units, the majority containing 5 bedrooms with 5 en-suite bathrooms, two dual-entry lifts, paired with a massive 30-car bay garage and concierge service, speaks to a commercial-scale intensity of use unsuited for this specific frontage footprint. [1]

- Stretching the building to a **6th level** to house two swimming pools **dedicated exclusively** to the private use of Level 4 owners is egregious.
- This 6th level is an undeniable breach of the building envelope, adding unnecessary visual mass, overshadowing, and severe overlooking risks into our private backyard and tennis court from an elevated height.

6. Adverse Planning Precedent

The South Perth ACP and LPS7 were codified following extensive community consultation to provide certainty regarding built form, height, and setbacks. Approving a 23.08-metre structure in a strict 17.5-metre zone sets a highly dangerous planning precedent. It signals to the development industry that statutory height limits and rear setback provisions are entirely optional. [1, 2, 3]

Conclusion

We believe that the proposed development fails to satisfy the core objectives of orderly and proper planning. It causes direct and undue hardship to adjoining neighbours, in particular rear neighbours, through excessive building bulk, severe spatial confinement across 28 metres of our shared boundary, and an unprecedented breach of the established 17.5m streetscape height limit. [1]

We strongly urge the City of South Perth to recommend **refusal**, and the JDAP to **reject the application** in its current form, requiring the developer to redesign the building to strictly comply with the 17.5-metre maximum height limit and standard R-Code boundary wall setbacks.

Thank you for your consideration of this matter. We request to be kept informed of all council officer assessments, JDAP meeting dates, and opportunities to present a verbal deputation.

Yours sincerely

Signed: (on behalf of the Owners)

John Murdoch (Chair, Council of Owners) -

Karen McGrath (Council of Owners member) – 0411 608 034

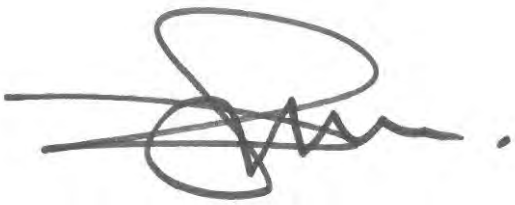
Garry Roberson (Owner) -

John McGrath (Owner) – 0412 103 239

Design Review Report

11 South Perth Esplanade

Date: 2026-06-02

Design Review Report		
Subject	11 South Perth Esplanade South Perth	
Date	2026-06-02	
Time	9.30am	
Location	City of South Perth	
Design Reviewers	Dominic Snellgrove Brett Woodgush Olivar Grimaldi Simon Venturi	Chair Member Member Member
Proponent	Felipe Soto	Space Collective
Project Team	Matthew Cain	Planning Solutions
Planning Authority	Steven DePiazzi Courtney Wynn	City of South Perth
Stakeholders	N/A	
Declarations	None	
Briefings		
Relevant Authorities Project Team		
Design Review Report endorsement		
Reviewer's signature	 Dominic Snellgrove	

Introductory Comments		
Design quality evaluation		
		Supported
		Pending further attention
		Not yet supported
		Yet to be addressed
Strengths of the Proposal		DRP03 • The recalibration of the floor plate to deliver compliant side setbacks has significantly enhanced the built form and scale. The preservation of view corridors provides a reassuring response to maintaining and enhancing the opportunity for landscape to be augmented and views to be preserved. • The extension of the lobby entry to engage more legibly with the pathway of arrival enhances the entry experience and boosts visual connectivity and building address with the streetscape. • The introduction of an air lock lobby to Apartment G01 will improve acoustic separating for the occupants from the lift lobby. DRP02 • The project continues to build on the high-quality approach identified in DRP01. • The entry lobby has been reversed, significantly improving entry legibility and sight lines towards both lifts. • The ground floor FFL has been raised to 2.78 to align with the flood risk and the City's requirements. • The street set back of built form has been adjusted to comply with the 12M minimum requirement. • Visitor bays have been relocated away from the setback area and concealed from the public realm. • All enclosed spaces on the roof top terrace have been removed to allow the communal area to not be identified as an additional and non-compliant level whilst retaining the amenity for residents. • The landscape plans have been updated to include high quality verge treatments and on-structure planting details. • Roof lights have been incorporated to enhance indoor amenity. • It is noted that the built form is carefully choreographed into two distinct volumes further mitigating and managing built form and scale. DRP01 • Comprehensive and instructive presentation • Comprehensive context and character study • Generous floor to floor heights • High levels of streetscape activation and passive surveillance • Predominantly sleeved parking • Services provision considered with pumps and tanks sleeved from the public

		realm. • Landscape design professional appointed to steer the concept design through the early stages of schematic design • High quality landscape design concept including o Generous deep soil planting amounting to 14% of the site. o Generous tree canopy within the front set back o Landscape planting proposed on the east podium roof o Landscape distributed throughout the façade o Focus on native planting species. • Attractive and distinctive aesthetic approach including sinuous curved balcony edges referencing the riverine precinct and architectural screening providing a layer of detail as well as the potential to channel views and litigate privacy issues. • Public seating area proposed at the front of the boundary adjacent to the public domain providing community benefit at the front of the property. • 0% solely south facing units • 100% cross ventilation • ESD professional appointed and a preliminary report provided for review including: o 30Kw PVs, EV charging, central hot water • 100% Silver Level Liveable Design
Principle 1 **Context and character**		*Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.*
		a) The design approach is built around a detailed understanding of the site's context and character. The sinuous erosion patterns of the Swan River foreshore environment are echoed in the curvaceous and modelled form of the building edges and privacy screens. b) The proposal offers high levels of streetscape activation and passive surveillance
Recommendations		**1. Supported**
Principle 2 **Landscape quality**		*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
		a) The landscape design is of a very high quality b) The landscape design response, including its form and the selected species reflects the riverine context of the site in a sincere and legible way. c) The true deep soil zones exceed the minimum 10% of the site area at 14% d) Additional on-structure planting accompanied with detail planter drawings further enhances the landscape design frame e) The front fence is generously set back from the front boundary blurring the distinction between public and private further enhancing the design's response to context. f) The inclusion of public seating at the front boundary is a generous contribution to the community as well as an attractive space fronting the river foreshore.
Recommendations		**1. Supported**

Principle 3 **Built form and scale**		*Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
		a) The recalibration of the floor plate to deliver compliant side setbacks has significantly enhanced the built form and scale. The preservation of view corridors provides a reassuring response to maintaining and enhancing the opportunity for landscape to be augmented and views to be preserved.
Recommendations		**1. Supported** **2. Note: The floor plans do not appear to match the elevations and extent of screens precisely.**
Principle 4 **Functionality and build quality**		*Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life cycle.*
		a) The proposal is functional and well arranged b) Services have been considered including tanks and pumps as well as the location of HVAC condenser equipment in a screened location on the roof.
Recommendations		**1. Supported**
Principle 5 **Sustainability**		*Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
		a) The Proponent is commended for appointing an ESD professional and producing a sustainability report. b) The Panel acknowledges the commitment by the Proponent and commends the commitment to 4 Star Green Star Certified.
Recommendations		**1. Supported (subject to on-going commitment to 4 Star Green Star Certification)** **2. Consider illustrating EV charging on the plans.** **3. Note: The extent of glazing may present challenges in achieving the targeted 7 Star NatHERS rating and should continue to be carefully assessed as the design develops.**
Principle 6 **Amenity**		*Good design optimises internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*
		a) The project has the capacity to offer high levels of resident amenity and exceeds many of the minimum design requirements under SPP 7.0 including cross ventilation, solar access and a newly introduced roof light to the car park.
Recommendations		**1. Supported**
Principle 7 **Legibility**		*Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
		a. The extension of the lobby entry to engage more legibly with the pathway of arrival enhances the entry experience and boosts visual connectivity and building address with the streetscape. b. The entry lobby has been reversed, significantly improving entry legibility and sight lines towards both lifts. c. The arbour structure connecting the public domain to the entry lobby has been enhanced to assist with entry legibility.
Recommendations		**1. Supported** **2. Consider modifying landscape and splaying the entry from the street to amplify streetscape legibility further.**

Principle 8 **Safety**		*Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.*
		a. The proposal enjoys high levels of streetscape activation and passive surveillance
Recommendations		**1. Supported**
Principle 9 **Community**		*Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*
		a. The landscape design response, including its form and the selected species reflects the riverine context of the site in a sincere and legible way. b. The true deep soil zones exceed the minimum 10% of the site area at 14% c. Additional on-structure planting accompanied with detail planter drawings further enhances the landscape design frame d. The front fence is generously set back from the front boundary blurring the distinction between public and private further enhancing the design's response to context. e. The inclusion of public seating at the front boundary is a generous contribution to the community as well as an attractive space fronting the river. f. The Panel acknowledges the commitment by the Proponent and commends the commitment to 4 Star Green Star Certified.
Recommendations		**1. The Panel supports a commitment to 4 Star Green Star Certified in lieu of 5 Star self-assessed**
Principle 10 **Aesthetics**		*Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*
		a) Attractive and distinctive aesthetic approach including sinuous curved balcony edges referencing the riverine precinct and architectural screening providing a layer of detail as well as the potential to channel views and litigate privacy issues. b) The setback landscape design proposal is of a high quality including proposed tree canopy
Recommendations		**1. Supported**

Concluding Remarks

1. **The Panel commends the Proponent for a high-quality design proposal.**
2. **Of particular note is the quality landscape design and framework within which the built form is situated.**
3. **The proponent is commended for their collaborative approach to design review and for the design enhancements made during the process. The proposal offers the opportunity to provide exceptional residential accommodation in a premium location with outstanding river and city views.**
4. **The proposal demonstrates a high level of alignment with the 10 Design Principles of Design WA exceeding most metrics and, in the opinion of the Panel, has achieved a level of Design Excellence.**

Design Review progress.

		Supported
		Pending further attention
		Not yet supported
		Yet to be addressed

	DR1	*DR2*	*DR3*		
Principle 1 - **Context and character**					
Principle 2 - **Landscape quality**					
Principle 3 - **Built form and scale**					
Principle 4 - **Functionality and build quality**					
Principle 5 - **Sustainability**					
Principle 6 - **Amenity**					
Principle 7 - **Legibility**					
Principle 8 - **Safety**					
Principle 9 - **Community**					
Principle 10 - **Aesthetics**					

11 South Perth Esplanade, South Perth

Acoustic Report – Development Application

Project No.	P03346
Revision	02
Issued	7 May 2026
Client	Space Collective Architects

Issue and Revision Record

Revision	Date	Comments	Engineer	Reviewer
01	04.05.2026	DA Issue	IK	TDN
02	07.05.2026	DA Issue	IK	TDN
03				
04				

The project design and construction team are required to review and consider the implications of these recommendations on their design for the project. The design team shall coordinate with any specific condensation, acoustic, wind, structural, safety, constructability, maintenance or architectural design requirement for this particular project.

Engineering Lab NSW Pty Ltd

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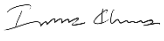
Imran Khan | National Technical Director



E-LAB Consulting

e-lab.com.au

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Executive Summary

E-Lab Consulting has been commissioned by Space Collective Architects to undertake an acoustic assessment for the proposed 5-storey Residential Apartment at 11 South Perth Esplanade, South Perth WA 6151.

This Acoustic report has been prepared as part of Development Application for the proposed development. The following acoustic assessments were undertaken, and recommendations are made to maintain compliance:

- Noise Intrusion to the project from external noise sources in accordance with State Planning Policy 5.4 – Road and Rail Noise.
- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

Site Survey

An on-site noise survey was conducted to measure the ambient noise levels to assist in the design of the façade of the building and for noise model calibration.

Noise Intrusion – SPP5.4

An evaluation of external noise impacts (road traffic) on the project site was conducted in line with SPP 5.4. The methodology and assessment criteria are outlined in the SPP 5.4 Guidelines (hereafter referred to as the Guidelines).

Noise intrusion calculations were conducted to establish the performance requirement of the façade. A summary of façade treatments is detailed below:

Façade Orientation	Acoustic Façade Type	Required Acoustic Rating (R_w)	Typical Equivalent Glass
Rear Apartments (Mill Point Rd)	Bedroom Glazing	Double Glazing – Rw 39	6mm Glass / 12mm air gap / 6.38mm Glass
	Living Room Glazing	Double Glazing – Rw 36	6mm Glass / 12mm air gap / 6mm Glass
Front Apartments (S Perth Esplanade)	Bedroom Glazing	Double Glazing – Rw 36	6mm Glass / 12mm air gap / 6mm Glass
	Living Room Glazing	Double Glazing – Rw 36	6mm Glass / 12mm air gap / 6mm Glass
-	Solid	Rw40	Masonry / Lightweight Construction

Outdoor balconies facing South Perth Esplanade are compliant with State Planning Policy 5.4 outdoor 'noise target' values.

Noise Emissions – WA EPNR

Mechanical services must comply with the Western Australian Environmental Protection (Noise) Regulations (WA EPNR) criteria at the nearest noise-sensitive receivers during all periods of the day. At this stage, detailed mechanical equipment selections are typically unavailable during the development application phase.

A detailed review of mechanical equipment noise emissions will be undertaken during the design phase, prior to the issuance of the Building Permit.

1. Introduction

1.1 Document Purpose

E-Lab Consulting has been commissioned by Space Collective Architects to undertake an acoustic assessment for the proposed 5-storey Residential Apartment at 11 South Perth Esplanade, South Perth WA 6151.

This Acoustic report has been prepared as part of Development Application for the proposed development. The following acoustic assessments were undertaken, and recommendations are made to maintain compliance:

- Noise Intrusion to the project from external noise sources (road traffic from Kwinana Freeway) in accordance with State Planning Policy 5.4 – Road and Rail Noise
- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

1.2 Relevant Documents

The following standards, regulations and guidelines have been used to establish the project specific acoustic design requirements for the development.

- Architectural documentation drawn by Space Collective Architects
- WAPC/DPLH, State Planning Policy 5.4 – Road and Rail Noise, Sep 2019 (SPP 5.4)
- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- Australian and New Zealand Standard AS/NZS 2107:2016 - Acoustics – Recommended design sound levels and reverberation times for building interiors (AS2107)
- National Construction Code 2022 Volume 1, Building Code of Australia (NCC 2022)

1.3 Project Description

The proposed project site is located of the foreshore of the Swan River at 11 South Perth Esplanade, South Perth WA 6151. The site is surrounded by residential dwellings that include mixed use complexes and double storey houses. There are select residential house that have been converted into commercial premises. The nearest noise sensitive receivers are shown in Figure 1.

The project location is within the trigger distance of State Planning Policy 5.4 - Road and Rail Noise due to its proximity to Kwinana Freeway.



Figure 1: Project Location and Nearest Noise Sensitive Receiver (Source: City of South Perth Intramaps)

2. Acoustic Design Criteria

This section presents the regulatory requirements, and acoustic design criteria for the proposed project.

2.1 Road Noise – State Planning Policy 5.4

The project site falls within the SPP 5.4 trigger zone (Figure 2) for Kwinana Freeway. SPP 5.4 establishes the indoor and outdoor noise criteria that apply to a noise sensitive land use due to noise emissions from road and rail transport.



Figure 2: Project Location and SPP 5.4 Zone (Department of Planning, Lands and Heritage)

The applicable noise level criteria are presented below in Table 1.

Table 1: State Planning Policy 5.4 Criteria

Proposal	New / Upgraded	Noise Target - Outdoor		Noise Target - Indoor
		DAY 6am – 10pm L_{Aeq},(Day) dB	NIGHT 6am – 10pm L_{Aeq},(Night) dB	
Noise-Sensitive Land-use and/or Development	New Noise-Sensitive Land-use and/or development within the trigger distance of an existing/proposed transport corridor	55	50	Day – L_{Aeq} 40 (Living and Working Areas) Night – L_{Aeq} 35 (Bedrooms)

SPP5.4 requires assessment of traffic impact for future traffic volumes for the next 20 year. Where predicted noise levels are exceeding the noise targets, mitigation measures are needed to meet the noise targets. The policy requires outdoor targets are to be met at all outdoor areas as far as is reasonable and practical to do so using the various noise mitigation measures outlined in the guidelines.

2.2 Internal Noise Levels

Recommended internal noise levels within the development are outlined by AS2107:2016 Acoustics - Recommended design sound levels and reverberation times for building interiors. The levels stated in AS 2107:2016 apply to the combined internal noise levels from building services and external sources.

The internal noise level criteria in AS2107 recommend continuous equivalent (L_{Aeq}) levels for background noise. A summary of the AS2107 criteria is presented in Table 2.

Table 2: Project Internal Noise Targes - Residential Spaces

Façade Orientation	Acoustic Façade Type	Required Acoustic Rating (R_w)	Typical Equivalent Glass
Sole Occupancy Unit (SOU)	Sleeping Areas	10pm to 7am	35 – 40 dB (A) L_{Aeq}
	Living Areas	Anytime	35 – 45 dB (A) L_{Aeq}

2.2.1 Rain Noise

There is no mandatory guidance in relation to internal noise limits due to rain noise. However, it is recommended that the internal noise levels are designed not to exceed the Internal ambient noise levels in Table 2 by 5dBA, for a rainfall of 15mm/hr.

2.3 Acoustic Separation and Internal Sound Insulation

2.3.1 NCC Criteria – Residential Spaces (Class 2 Buildings)

Inter-Tenancy and Common Walls and Floors Noise Requirements

Inter-tenancy walls and common walls and floors must be installed to meet the requirements of the National Construction Code (NCC) 2022.

The internal wall and floor airborne sound insulation matrix provided in Table 3 and Table 4 presents the sound transmission and insulation requirements of the deemed-to-satisfy provisions for inter-tenancy and common walls.

Table 3: Internal Wall Sound Insulation Matrix - Deemed to Satisfy Provisions

Internal wall airborne sound insulation – deemed to satisfy provisions					
Sole-occupancy unit space 1	Sole-occupancy unit/common space 2				
		Habitable Room	**Wet Area**	**Public Corridor Or Stairs**	**Plant Room Or Lift Shaft**
	Habitable Room	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$ Discontinuous Construction	$R_w \geq 50$	$R_w \geq 50$ Discontinuous Construction
	Wet Area	$R_w + C_{tr} \geq 50$ Discontinuous Construction	$R_w + C_{tr} \geq 50$	$R_w \geq 50$	$R_w \geq 50$ Discontinuous Construction

Table 4:Internal Floor Sound Insulation Matrix - Deemed to Satisfy Provisions

Internal Floor airborne sound insulation – deemed to satisfy provisions					
Sole-occupancy unit space 1	Sole-occupancy unit/common space 2				
		Habitable room	**Wet area**	**Public corridor or stairs**	**Plant room or lift shaft**
	Habitable room	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$
	Wet area	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$
	Public corridor or stairs	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	-	-
	Plant room or lift shaft	$R_w + C_{tr} \geq 50$	$R_w + C_{tr} \geq 50$	-	-

The internal wall and floor airborne sound insulation matrix provided in Table 5, presents the verification requirements for the performance solution pathway.

Table 5: Internal Wall sound Insulation Matrix - Performance Solution Verification Requirements

Internal Wall Airborne Sound Insulation – Deemed To Satisfy Provisions					
Sole-Occupancy Unit Space 1	Sole-Occupancy Unit/Common Space 2				
		Habitable Room	**Wet Area**	**Public Corridor Or Stairs**	**Plant Room Or Lift Shaft**
	Habitable Room	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$ Discontinuous Construction	$R_w \geq 45$	$R_w \geq 45$ Discontinuous Construction
	Wet Area	$R_w + C_{tr} \geq 45$ Discontinuous Construction	$R_w + C_{tr} \geq 45$	$R_w \geq 45$	$R_w \geq 45$ Discontinuous Construction
	Internal Floor Airborne Sound Insulation – Performance Solution Verification Requirements				
	Habitable Room	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$
	Wet Area	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$
	Public Corridor Or Stairs	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	-	-
	Plant Room Or Lift Shaft	$R_w + C_{tr} \geq 45$	$R_w + C_{tr} \geq 45$	-	-

For the purposes of understanding the classification of particular spaces under the NCC 2022, definitions are provided below:

- Habitable room – means a room used for normal domestic activities, and –
  - includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
  - excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.
- Wet area – means an area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries and sanitary compartments and excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.

2.3.2 Intra-Tenancy Walls

It should be noted that intra-tenancy walls do not have any specific acoustic performance requirements within the NCC, other than service riser. The following is noted:

- Where walls are not full height it will require the wastewater pipe work within the non-habitable spaces treated to meet R_w+C_{tr} 40 requirement.
- Where there are open bulk heads from non-habitable spaces to habitable spaces it will require the bulk head closed with a single layer plasterboard (min. 13mm thick, min weight 8kg/m^2)

2.3.3 Internal Riser Walls

If a duct, soil, storm water, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw + Ctr (airborne not less than):

- 40 if the adjacent room is a habitable room (other than a kitchen); or
- 25 if the adjacent room is a kitchen or non-habitable room / wet area

2.3.4 Apartment Entry Doors

Entry doors to apartments shall be designed and installed to achieve Rw 30 or above.

2.3.5 Inter-Tenancy and Common Floor / Ceilings Impact Requirements

Inter-tenancy and common floors/ceilings must be installed to meet the requirements of the National Construction Code (NCC) 2022, together with an additional uplift for impact noise.

The internal floor/ceiling sound insulation matrix provided in Table 6 presents the sound transmission and insulation requirements of the deemed-to-satisfy provisions for inter-tenancy and common walls.

Table 6: Internal floor/ceiling impact sound insulation matrix - deemed-to-satisfy provisions

Internal Floor/Ceiling Impact Sound Insulation – Deemed To Satisfy Provisions					
Sole-Occupancy Unit/Common Space Below	Sole-Occupancy Unit/Common Space Above				
		Habitable Room	Wet Area	Public Corridor Or Stairs	Plant Room Or Lift Shaft
	Habitable Room	Ln,w ≤ 62	Ln,w ≤ 62	Ln,w ≤ 62	Ln,w ≤ 62
	Wet Area	Ln,w ≤ 62	Ln,w ≤ 62	Ln,w ≤ 62	Ln,w ≤ 62

The internal floor/ceiling sound insulation matrix provided in Table 7 presents the verification requirements for the performance solution pathway.

Table 7: Internal floor/ceiling sound insulation matrix – performance solution verification requirements

Internal Floor/Ceiling Impact Sound Insulation – Deemed To Satisfy Provisions					
Sole-Occupancy Unit/Common Space	Sole-Occupancy Unit/Common Space Above				
		Habitable Room	Wet Area	Public Corridor Or Stairs	Plant Room Or Lift Shaft
	Habitable Room	LnT,w ≤ 62	LnT,w ≤ 62	LnT,w ≤ 62	LnT,w ≤ 62
	Wet Area	LnT,w ≤ 62	LnT,w ≤ 62	LnT,w ≤ 62	LnT,w ≤ 62

2.4 Noise Emissions – WA Environmental Protection (Noise) Regulations 1997

Environmental noise emissions resulting from the development are addressed through the Environmental Protection Act 1986 with the prescribed standards detailed in the Environmental Protection (Noise) Regulations 1997 (WA EPNR). The regulations are based on maximum allowable noise levels termed the 'assigned noise level".

According to the EPNR, noise emissions from any premises are deemed not to significantly impact the receiver if the emissions are 5 dB or less below the assigned levels. In summary, assigned noise levels are set by evaluating the presence of commercial and industrial zones, major transport routes, and sporting venues around noise-sensitive premises.

The assigned levels apply at premises receiving the noise (noise sensitive receiver) and not to areas within the project site or lot. In addition, the Environmental Protection (Noise) Regulations 1997 identify the following in Schedule 3, clause 2A.

- *"If the land within either of the circles is categorised on the land use map as land in respect of which mixed uses are permitted, the use of that land that results in the highest influencing factor is to be used in the determination of the influencing factor."*

City of South Perth's online mapping system (Local Planning Scheme 7) has been used to ascertain land use. Based on these maps the influencing factor at the nearest noise sensitive receivers has been calculated.

The nearest noise sensitive receivers have been identified as detailed below and shown in Figure 1.

- 16 Mill Point Rd, South Perth WA 6151
- 9 South Perth Esplanade, South Perth WA 6151

2.5 Influencing Factors

The zoning maps used for the calculation of influencing factor showing the land use types has been presented in Figure 3 and Figure 4.

Traffic data for roads surrounding the nearest noise sensitive receiver were obtained from Main Roads Western Australia (MRWA). Table 8 presents the traffic data of the nearby roads.

Table 8: Traffic Data (Source: Main Roads WA)

Road	WA EPNR Classification	Annual Average Daily Traffic Volumes / Year
Kwinana Freeway	Major Road	197,697 (2025 - 2026)

Table 9 presents the influencing factor for results from identifying major roads, commercial and industrial areas for the nearest noise sensitive receivers is detailed in Table 8.

Table 9: Influencing Factor (IF) Noise Sensitive Receivers

Noise Sensitive Receivers	Commercial	Industrial	Road	Influencing Factor
16 Mill Point Road South Perth	27% within 100m Radius 1% within 450m Radius	0% within 100m Radius 0% within 450m Radius	Kwinana Freeway within 450m Radius	3 dB
9 South Perth Esplanade South Perth	12% within 100m Radius 1% within 450m Radius	0% within 100m Radius 0% within 450m Radius	Kwinana Freeway within 450m Radius	3 dB



Figure 3: Zoning Maps for the Project and Surrounding Areas - 16 Mill Point Road (Source: City of South Perth Intramaps)

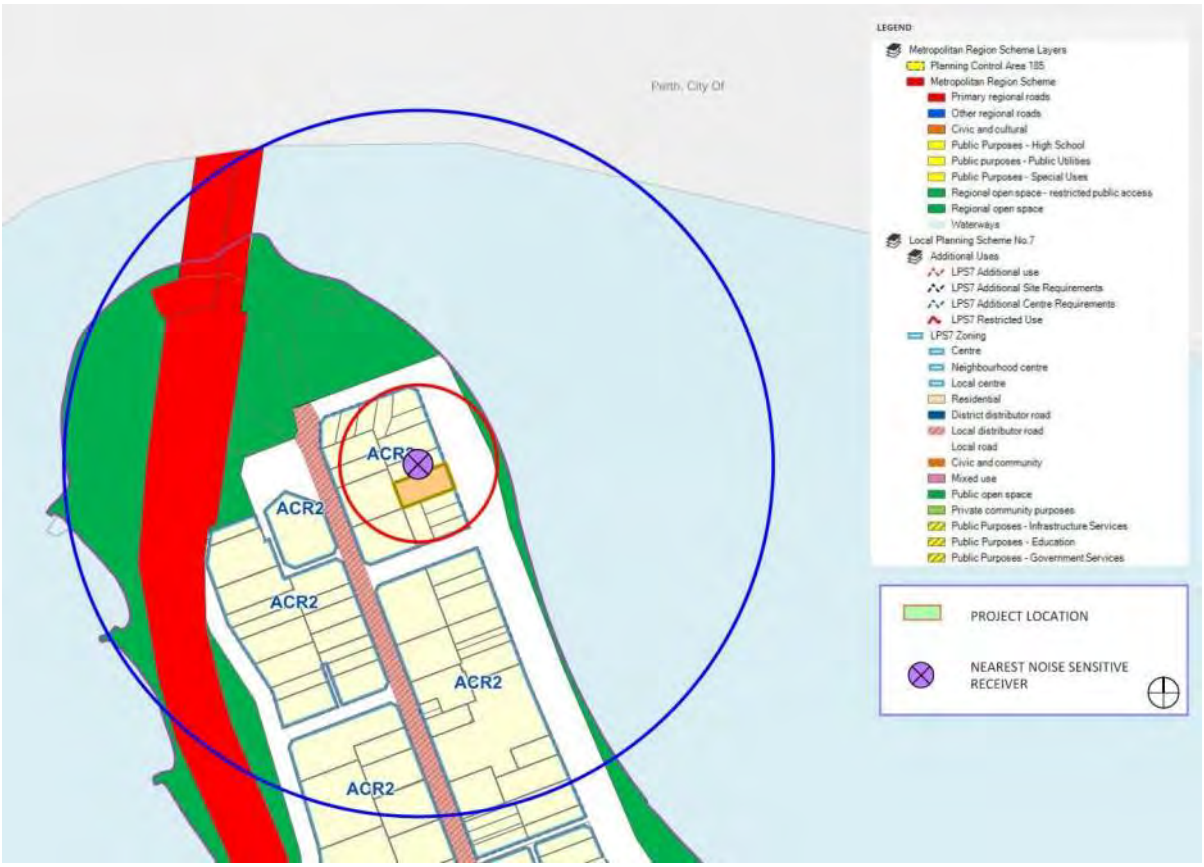


Figure 4: Zoning Maps for the Project and Surrounding Areas – 9 South Perth Esplanade (Source: City of South Perth Intramaps)

2.5.1 Assigned Noise Levels – Noise Sensitive Receivers

Table 10 and Table 11 summarises the assigned levels at the nearest noise sensitive receivers. All noise emissions from the development are below the assigned level criteria for all defined periods of the day and at the lot boundary of the receiver or 15m from any associated building.

Table 10: Assigned Levels - 16 Mill Point Road

Types of Premises Receiving Noise	Time of Day	Assigned Levels (dB)		
		L_{A10}	L_{A1}	L_{Aeq}
Noise Sensitive Premises: Highly Sensitive Area	0700 to 1900 hours Monday to Saturday	48	58	68
	0900 to 1900 hours Sunday & public holidays	43	53	68
	1900 to 2200 hours all days	43	53	58
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	38	48	58
Noise sensitive premises: any area other than highly sensitive areas	All Hours	60	75	80
Commercial premises	All Hours	60	75	80
Industrial and utility premises	All Hours	65	80	90

Table 11: Assigned Levels – 9 South Perth Esplanade

Types of Premises Receiving Noise	Time of Day	Assigned Levels (dB)		
		L_{A10}	L_{A1}	L_{Aeq}
Noise Sensitive Premises: Highly Sensitive Area	0700 to 1900 hours Monday to Saturday	48	58	68
	0900 to 1900 hours Sunday & public holidays	43	53	68
	1900 to 2200 hours all days	43	53	58
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	38	48	58
Noise sensitive premises: any area other than highly sensitive areas	All Hours	60	75	80
Commercial premises	All Hours	48	58	68
Industrial and utility premises	All Hours	43	53	68

2.5.2 Noise Character Adjustments

Regulation 7 states that the noise character must be “free” of annoying characteristics, namely —

- Tonality, e.g. whining, droning;
- Modulation, e.g. like a siren; and
- Impulsiveness, e.g. banging, thumping.

Regulation 9 (1) establishes the methodology for determining noise characteristics. If these characteristics cannot be reasonably and practicably removed, a series of adjustments to the measured levels are required, indicated in Table 12.

Table 12: Noise Character Adjustments

Adjustment Where Noise Emission Is Not Music These Adjustments Are Cumulative To A Maximum Of 15 Db			Adjustment Where Noise Emission Is Music		
Where tonality is present	Where modulation is present	Where impulsiveness	Where tonality is present	Where modulation is present	Where impulsiveness
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB	+ 5 dB

2.5.3 Mechanical Services Noise Emissions

Mechanical equipment serving the project is required to meet the assigned levels of the EPNR at the nearest sensitive receivers. It is important that noise emissions from the site do not present any form of tonality, modulation or impulsiveness (as defined by the EPNR).

3. Noise Survey

Attended noise measurements were conducted on 29th April 2026 to ascertain the existing acoustic environment at the project site. The primary objective was to assess noise contributions from traffic along Kwinana freeway to assist with the noise intrusion assessment, noise model calibration and design of external façade. The location of the measurements are shown in Figure 5.



Figure 5: Noise Survey Location and Nearest Noise Sensitive Receivers (Source: City of South Perth Intramaps)

3.1 Instrumentation

The equipment used for the noise survey is detailed below:

- NTi XL3 Class 1 Sound Level Meter, S/N: A3A-00650-D1
- Larson Davis Sound Calibrator, S/N: 22031

Sound level meter was calibrated before and after the measurements and no significant drift was found. Test measurements were performed using instrumentation equivalent to an integrating sound level meter which met the accuracy requirements of a Class 1 instrument as defined by IEC 60651 and IEC 60804. The sound level meter complied with the requirements documented in AS IEC 61672.1.

The sound level meter is calibrated by an authorised NATA (National Association of Testing Authorities) laboratory less than 2 years prior to assessment and has successfully passed all AS 1259 and AS/NZS 4476 standards and specifications.

The sound level meter was calibrated before and after the measurement session, using a Class 1 acoustic calibrator, also calibrated less than 2 years ago, and in compliance with AS IEC 60942-2004.

The filters complied with the requirements defined in IEC 61260.

3.2 Measurement Summary

Table 13 summaries the measured outdoor noise levels at the project site, accompanied by on-site observations of noise sources contributing to the acoustic environment.

Table 13: Noise Measurement Summary

Measurement Location	Measurement Time	Measured		Comments
		L_{Aeq} dB (A)	L_{A90} dB (A)	
Location 1 16 Mill Point Rd	1:55pm – 2:15pm	60	52	▪ Traffic from Kwinana Freeway, occasional trains. ▪ Light traffic on Mill Point Road
Location 2 1 Mill Point Cl	2:15 pm – 2:30pm	63	52	▪ Traffic from Kwinana Freeway, occasional trains. ▪ Light traffic on Mill Point Road
Location 3 11 South Perth Esplanade	2:45P pm – 3:00pm	48	41	▪ Occasional traffic on South Perth Esplanade. ▪ People Taking while cycling, jogging or walking along the shore.

The external noise levels obtained at location 2 (63 dB(A)) are to be used for the noise model calibration of this project.

4. Noise Intrusion

4.1 Traffic Noise Intrusion – SPP 5.4

An evaluation of external transport noise impacts on the site was conducted in line with SPP 5.4. The methodology and assessment criteria are outlined in the SPP 5.4 Guidelines (hereafter referred to as the Guidelines). Sound PLAN v9.0, a 3D noise modelling software, was used to simulate noise emissions from major roads and to assess the resulting noise levels at the building façades of the development.

The noise assessment accounts for both current and future traffic volumes that will impact the proposed development. The findings from this assessment were used to evaluate the level of noise intrusion into the apartments.

Noise levels were modelled 1 meter from the building façade. The predicted receiver noise levels at the façade also include a +2.5 dB façade correction, in accordance with SPP 5.4 requirements. Compliance with the relevant sections of the SPP 5.4 Noise Modelling Checklist is documented in Appendix A.

4.2 Modelling Inputs

4.2.1 Topography & Ground Absorption

Topographical data for areas surrounding the site (1m elevation contours) were sourced from Geoscience Australia Digital Elevation Model (DEM) 5 Metre Grid of Australia derived from LiDAR.

A ground condition of 0.6 has been used in the model, which is in between a soft ground condition (1) and a reflective ground condition (0).

A reflection order of 3 has been considered in all assessments.

4.2.2 Road Traffic

The road traffic noise assessment has been conducted based on the methodology described by the Calculation of Road Traffic Noise algorithm (CoRTN, UK Transport Agency).

The CoRTN algorithm has been developed to calculate $L_{A10,18hr}$ noise levels. However, SPP 5.4 requires road noise assessments to be based upon the energy averaged $L_{Aeq,16hr}$ and $L_{Aeq,8hr}$ noise descriptors for the daytime and night-time respectively. Conversions are applied using the method outlined in the DEFRA publication, *"Method for Converting the UK Road Traffic Noise Index $L_{A10,18hour}$ to the EU Noise Indices for Road Noise Mapping."*

- This algorithm considers the following parameters:
- Noise levels measured on site for calibration of the model
- Traffic volume during each period of the day, and for current and future scenarios
- Traffic speeds
- Percentage of heavy vehicles; and
- Gradient and surface of road

The noise model included the heights of road traffic noise sources as specified by the Guidelines. Below are the modelled heights of the vehicle "strings":

- Passenger vehicles: + 0.5 m
- Heavy vehicles — Engine noise: + 1.5 m
- Heavy vehicles — Exhaust: + 3.6 m

The modelled and observed average daily traffic volumes for 2026 and 2046 were sourced from Main Roads Western Australia (MRWA), Reference No. 43705. This data pertains to traffic on Kwinana Freeway.

SPP 5.4 requires that all noise assessments account for changes in traffic volumes anticipated over the next 20 years. The traffic volume projections provided by MRWA were utilized for this purpose. Table 14 summarises the current and projected future traffic volumes used in the assessment.

Table 14: Traffic Volumes - Current and Future

Road	year	daily vehicle count	daytime vehicle volume / hr	nighttime vehicle volume / hr	percentage of heavy vehicle	Speed (km / hr)
Kwinana Freeway	2026	204,126	11,788	1.939	Day – 8% Night – 10%	80
	2046	254,895	14,720	2,421	Day – 8% Night – 10%	80

4.2.3 Model Calibration

The noise model for the current year was calibrated using data obtained from the noise logging. A correction factor of -1.4 dB was applied to eliminate the discrepancy between the actual noise logger data and model predictions.

4.3 Noise Modelling Results

Road traffic noise impact for the future year (2046) predicted the highest external noise levels for the day and night-time periods:

- Day-time scenario 64 dB(A)
- Night-time scenario 65 dB(A)

Predicted noise levels on the facades (façade noise maps) are provided in Appendix B. The facade sections facing Kwinana Freeway are projected to experience noise levels exceeding the 'noise target' values outlined in SPP5.4. Noise intrusion assessment and recommendations for façade to meet the internal noise levels are provided in section 5.0.

4.3.1 SPP5.4 Outdoor Area Compliance

The predicted noise levels for the balconies facing South Perth Esplanade demonstrate compliance with the SPP 5.4 outdoor ‘noise target’ values. Refer to Appendix B for façade noise maps.

5. Noise Intrusion Assessment

5.1 External Façade

Noise intrusion calculations were conducted using the approach outlined in British Standard BS EN 12354:2000. The calculations were based on the highest on-site measured noise levels to select appropriate glazing for achieving the desired internal noise levels. Adjustments were made to the linear spectral noise levels to account for potential losses from flanking paths and façade corrections. The minimum required external façade configuration have been recommended based on highest measured outdoor noise levels.

5.2 Glazed Façade

The noise intrusion has been calculated for all façade elements, which is relevant to their surface area. Based on the highest measured noise levels, required façade performance is presented in Table 15.

Table 15: Acoustic Façade Categories and Glazing Arrangements

Façade Orientation	Acoustic Façade Type	Required Acoustic Rating (R_w)	Typical Equivalent Glass
Rear Apartments (Mill Point Rd)	Bedroom Glazing	Double Glazing – Rw 39	6mm Glass / 12mm Air Gap / 6.38mm Glass
	Living Room Glazing	Double Glazing – Rw 36	6mm Glass / 12mm Air Gap / 6mm Glass
Front Apartments (S Perth Esplanade)	Bedroom Glazing	Double Glazing – Rw 36	6mm Glass / 12mm Air Gap / 6mm Glass
	Living Room Glazing	Double Glazing – Rw 36	6mm Glass / 12mm Air Gap / 6mm Glass
-	Solid	Rw40	Masonry / Lightweight Construction

Note that additional components of the glazing system (e.g., frames, seals etc.) are also required to achieve the nominated performance ratings. There reduction in performance for glazing and frame as an overall should not be reduced by more than 3dB.

5.3 Rain Noise – Roof Treatment

In accordance with the project rain noise criteria for noise-sensitive areas such that internal noise criteria during rainfall of no greater than 5dB(A) above the AS2107 recommended internal noise levels, it has been determined that a system capable of reducing rain noise by circa 38dB(A) would be required.

Typical roof ceiling configuration for controlling rain noise is detailed below.

- Colorbond metal deck roof with 75mm thick High Density Anticon Insulation to be the underside, and a suspended plasterboard ceiling with R3.0 insulation laid directly above.

6. Noise Emissions

6.1 Mechanical Plant

Mechanical services will be expected to comply with the respective WA EPNR criteria at the nearest noise sensitive receivers for all periods of the day. At this stage no information has been provided regarding mechanical service equipment selection. Typically, this data is not available at the development application phase and review of mechanical equipment is conducted during the design phase prior to the issue of Building Permit.

The following major mechanical equipment generally requires acoustic reviews:

- Rooftop condenser outdoor units
- Mechanical Plant – Air Conditioning
- Fire Pumps

Mitigation measures for the mechanical plant shall be considered during the design development stage to ensure compliance with the outlined criteria at the nearest sensitive receivers. These mitigation measures could include but not limited to the following:

- Positioning mechanical plant away from nearby receivers
- Screening around mechanical plant
- Acoustic insulation within duct work

7. Conclusion

E-Lab Consulting has been commissioned by Space Collective Architects to undertake an acoustic assessment for the proposed 5-storey Residential Apartment at 11 South Perth Esplanade, South Perth WA 6151

This Acoustic report has been prepared as part of Development Application for the proposed development. The following acoustic assessments were undertaken, and recommendations are made to maintain compliance:

- Noise Intrusion to the project from external noise sources (road traffic from Kwinana Freeway) in accordance with State Planning Policy 5.4 – Road and Rail Noise
- Outdoor balconies facing South Perth Esplanade are compliant with State Planning Policy 5.4 outdoor 'noise target' values
- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

To assess each of the acoustic considerations for the proposed development, noise criteria has been established in Section 3 in accordance with the following documents:

- WAPC/DPLH, State Planning Policy 5.4 – Road and Rail Noise, Sep 2019 (SPP 5.4)
- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- Australian and New Zealand Standard AS/NZS 2107:2016 - Acoustics – Recommended design sound levels and reverberation times for building interiors (AS2107)
- National Construction Code 2022 Volume 1, Building Code of Australia (NCC 2022)

A road traffic noise assessment has been conducted, and the minimum recommended external façade construction has been specified to comply with internal noise level criteria. Predicted noise levels at the building façades were calculated using the 3D noise modelling software package SoundPLAN v9.0.

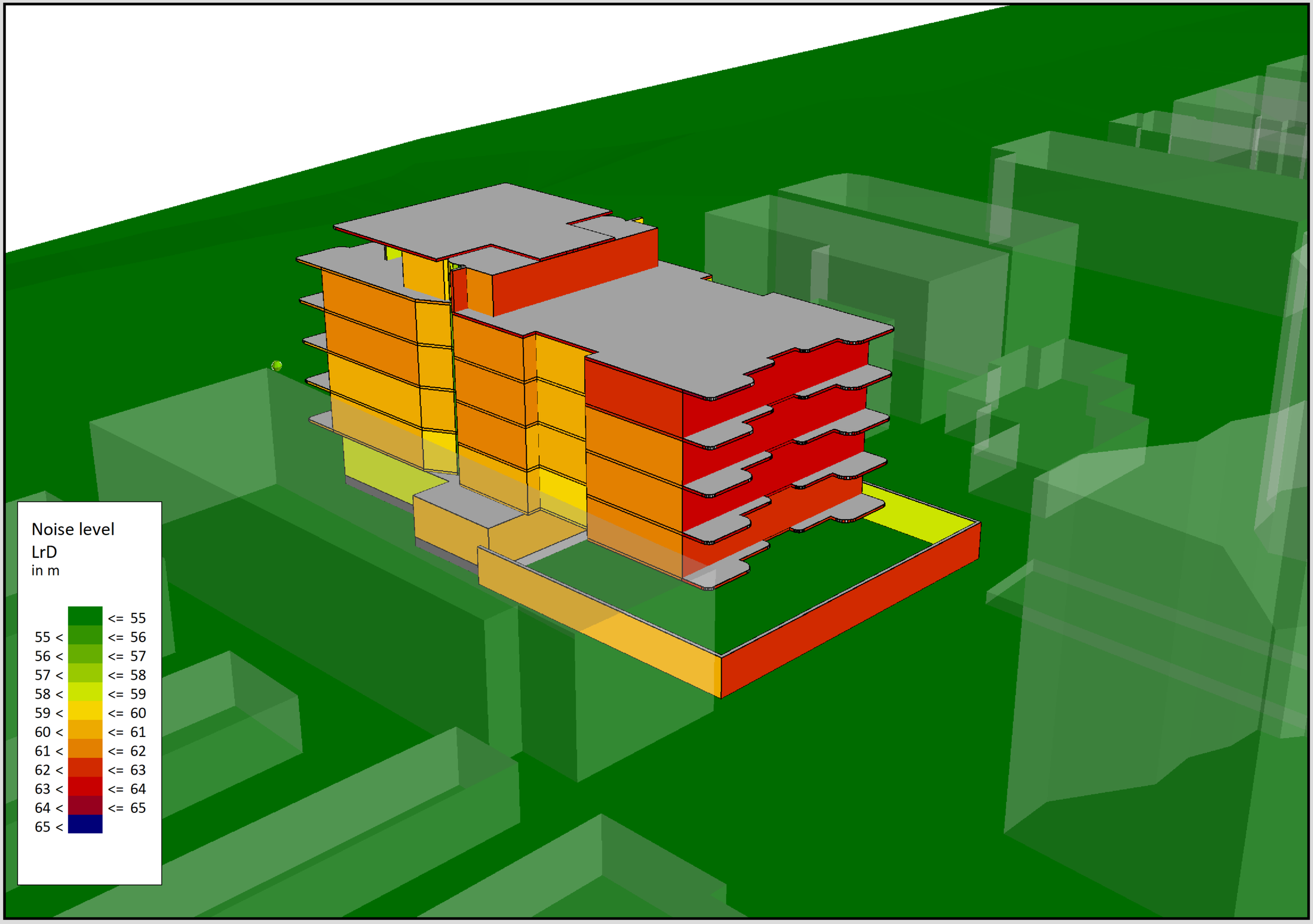
Regarding mechanical noise emissions, a comprehensive noise assessment will be undertaken following receipt of the complete mechanical equipment schedule and prior to the issuance of the Building Permit. Appropriate acoustic treatments shall be incorporated to ensure compliance with the applicable assigned noise limits at the nearest noise-sensitive receivers.

Appendix A Noise Modelling Checklist

Checklist Item	Action	
Road Traffic Input Data - Current		
Road Name	Kwinana Freeway 2026	
	16-hr daytime road traffic volume	204126
	Percentage of heavy vehicles (daytime)	8
	8-hr night-time road traffic volume	11788
Road Pavement	Open Graded Asphalt (-2.5 dB)	
Road traffic heights	Have the road emissions sources been modelled at the following heights?	
	Light and heavy vehicle tyre-road height at +0.5 m	Y
	Heavy vehicle engine height at +1.5 m	Y
	Heavy vehicle exhaust height at +3.6 m	Y
Traffic Speed	What is the modelled road posted (signal) traffic speed?	80 km / hr

Checklist Item	Action	
Road Traffic Input Data - Future		
Road Name	Kwinana Freeway 2046	
	16-hr daytime road traffic volume	254895
	Percentage of heavy vehicles (daytime)	8
	8-hr night-time road traffic volume	2421
Road Pavement	Open Graded Asphalt adjusted to - 3.9 dB	
Road traffic heights	Have the road emissions sources been modelled at the following heights?	
	Light and heavy vehicle tyre-road height at +0.5 m	Y
	Heavy vehicle engine height at +1.5 m	Y
	Heavy vehicle exhaust height at +3.6 m	Y
Traffic Speed	What is the modelled road posted (signal) traffic speed?	80 km / hr

Appendix B Façade Noise Maps

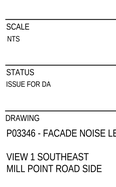


E-LAB CONSULTING

ISSUE	DATE	STATUS
1	01/05/2026	ISSUE FOR INFORMATION

LEGEND

Facade Noise Level - $L_{eq,day\,time}$ dB(A)



NOTES

PROJECT
11 SOUTH PERTH ESPLANADE

PROJECT NO.
P03346

ARCHITECT
SPACE COLLECTIVE ARCHITECTS

CLIENT
SPACE COLLECTIVE ARCHITECTS

SCALE
NTS

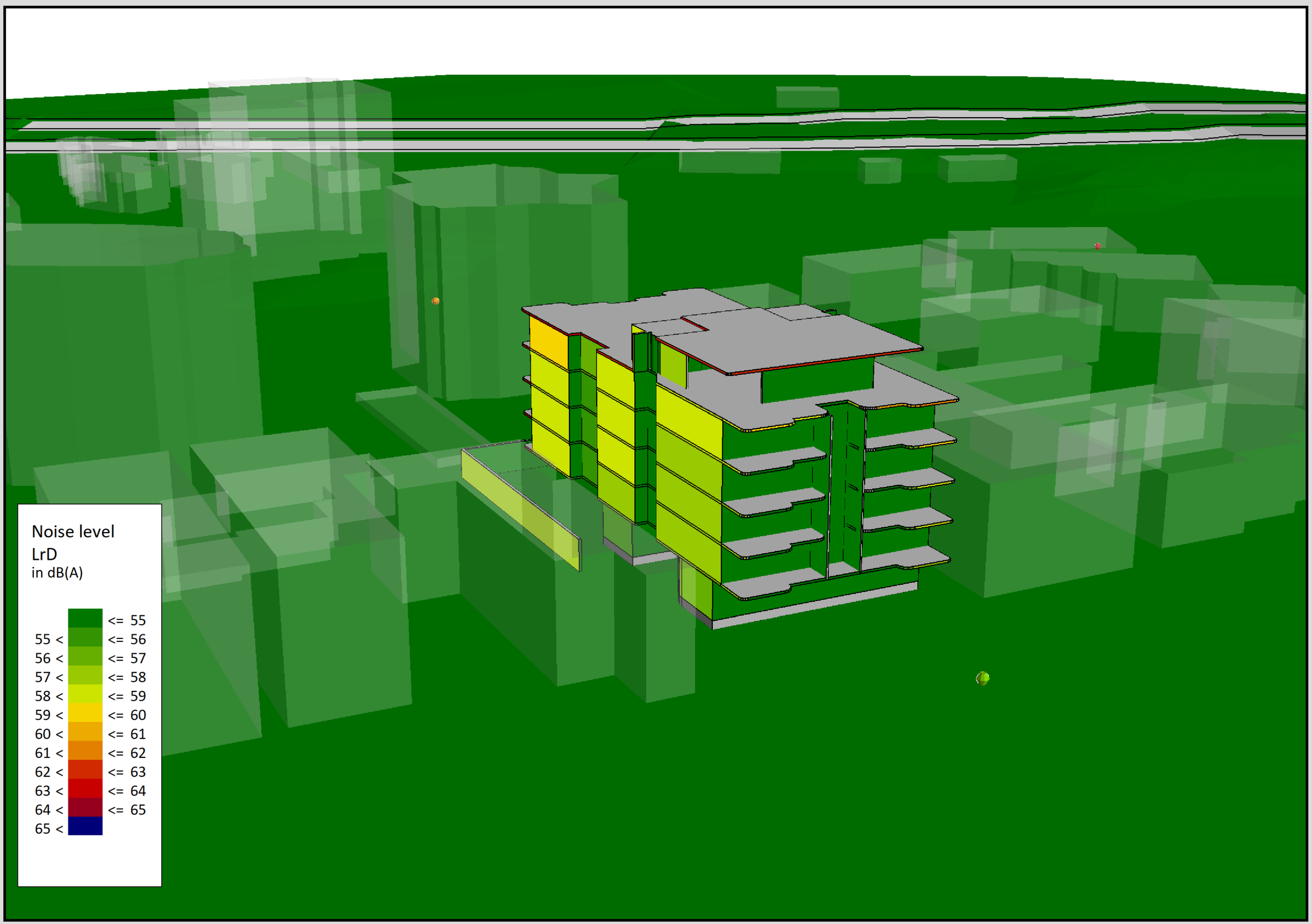
STATUS
ISSUE FOR DA

DRAWING
P03346 - FACADE NOISE LEVELS - DAY TIME

VIEW 1 SOUTHEAST
MILL POINT ROAD SIDE

DISCIPLINE
ACOUSTICS

DRAWING NUMBER	REVISION
AC-DWG-100-01-01	001



E-LAB CONSULTING

ISSUE	DATE	STATUS
1	01/05/2026	ISSUE FOR INFORMATION

LEGEND

Facade Noise Level - $L_{eq,period}$ dB(A)

<= 55
55 < <= 56
56 < <= 57
57 < <= 58
58 < <= 59
59 < <= 60
60 < <= 61
61 < <= 62
62 < <= 63
63 < <= 64
64 < <= 65
65 <

NOTES

PROJECT
11 SOUTH PERTH ESPLANADE

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NTS

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DRAWING
P03346 - FACADE NOISE LEVELS - DAY TIME

VIEW 2 NORTHWEST,
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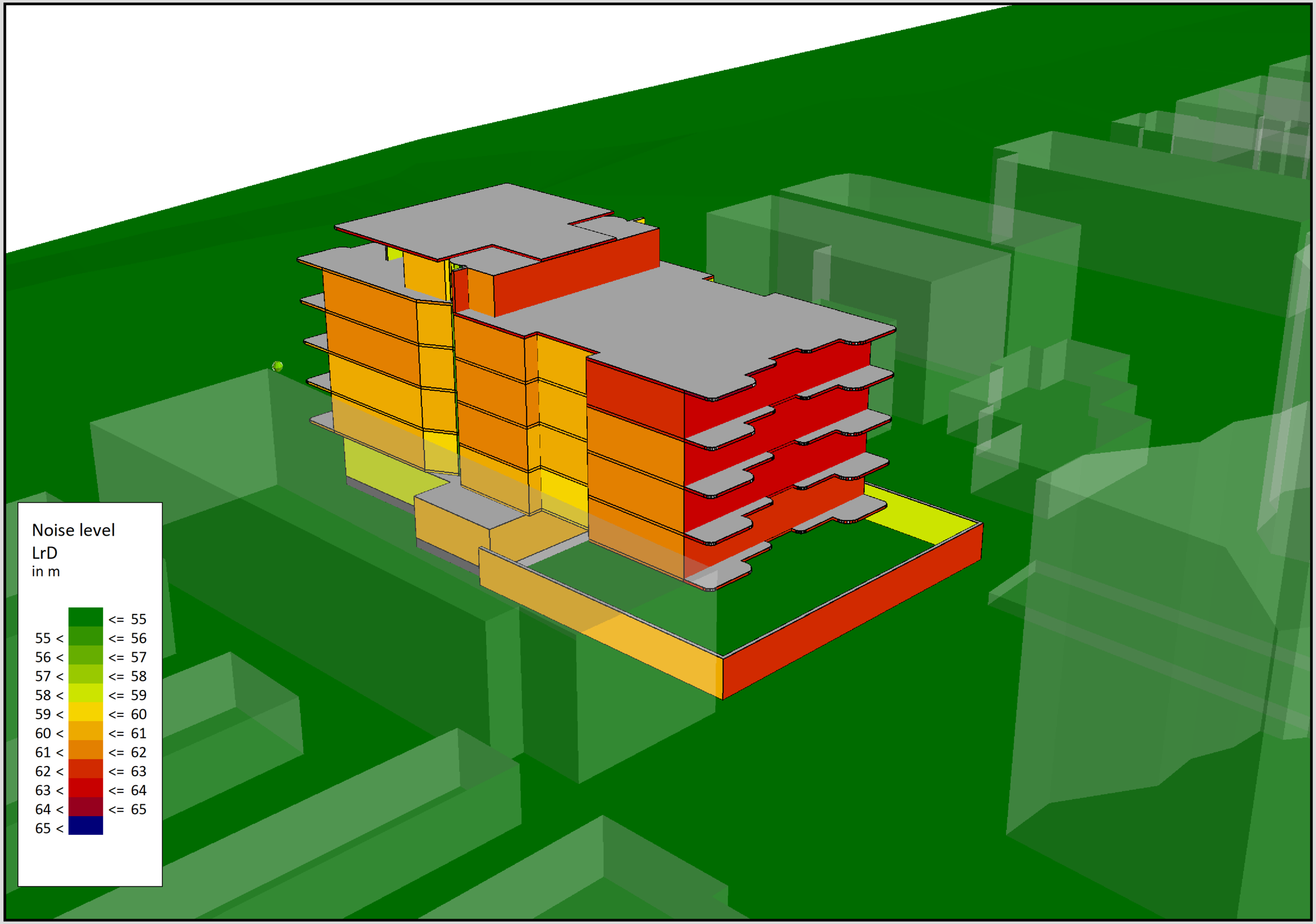
DISCIPLINE
ACOUSTICS

DRAWING NUMBER	REVISION
AC-DWG-100-01-01	001



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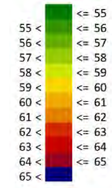
ISSUE	DATE	STATUS
1	01/05/2026	ISSUE FOR INFORMATION

LEGEND

Facade Noise Level - $L_{eq,night}$ dB(A)



NOTES

PROJECT
11 SOUTH PERTH ESPLANADE

PROJECT NO.
P03346

ARCHITECT
SPACE COLLECTIVE ARCHITECTS

CLIENT
SPACE COLLECTIVE ARCHITECTS

SCALE
NTS

STATUS
ISSUE FOR DA

DRAWING
P03346 - FACADE NOISE LEVELS - NIGHT TIME
VIEW 1 SOUTHEAST,
MILL POINT ROAD SIDE

DISCIPLINE
ACOUSTICS

DRAWING NUMBER	REVISION
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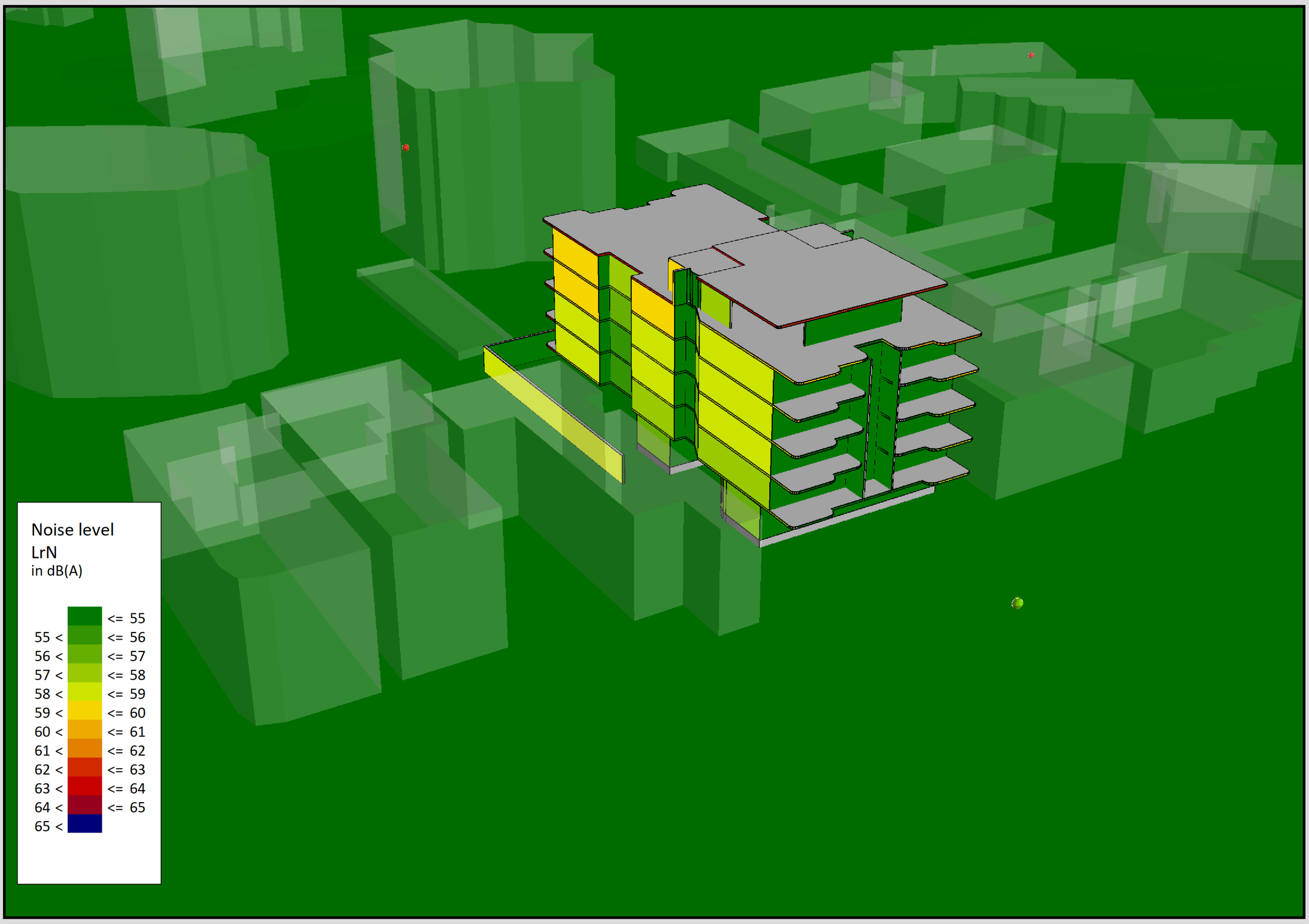

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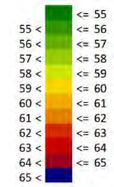
ISSUE	DATE	STATUS
1	01/05/2026	ISSUE FOR INFORMATION

LEGEND

Facade Noise Level - $L_{eq,night}$ dB(A)



NOTES

PROJECT
11 SOUTH PERTH ESPLANADE

PROJECT NO.
P03346

ARCHITECT
SPACE COLLECTIVE ARCHITECTS

CLIENT
SPACE COLLECTIVE ARCHITECTS

SCALE
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DRAWING
P03346 - FACADE NOISE LEVELS - NIGHT TIME
VIEW 2 NORTHWEST,
S PERTH ESPLANADE SIDE

DISCIPLINE
ACOUSTICS

DRAWING NUMBER	REVISION
AC-DWG-100-01-01	001



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Prepared for: Woodside Development Pty Ltd

Prepared by: ARBORITE TREE MANAGEMENT SOLUTIONS

13 August 2026

Tree Survey & Preliminary Impact Assessment



11 South Pert Esplanade,
South Perth WA 6151

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"Ancient trees are precious. There is little else on Earth that plays host to such a rich community of life within a single living organism."

— Sir David Attenborough

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Project & Report Particulars

1.1 Client

Woodside Development Pty Ltd
Unit 410, 88 Kirribilli Avenue, Kirribilli NSW 2061
C/- Planning Solutions
Level 8, 251 St Georges Terrace, Perth WA 6000
Attn: Milla Harris

1.2 Introduction

The purpose of this report is to provide an independent Arboricultural assessment of one (1) tree located at 5-7 Queen Street, South Perth WA 6151 (Fig. 1). Arborite Tree Management Solutions have been employed to determine the level of impact the proposed development will have on the subject trees and provide recommendations for their retention.

1.3 Report contents & Objectives

- Project & Report Particulars
- Tree Survey
- Tree Retention Values
- Preliminary Impact Assessment (Plan review)
- Tree Retention Proposal
- Closing & Recommendations
- Tree Photos
- Expanded Report Topics (Discussion)
- Appendix

1.4 Methodology

- The site was assessed from observations made from ground level on the 6th August 2026
- Field notes were taken and the information documented was an accurate account of the subject trees on the above specified date
- Australian Standards 4970-2025 – Protection of trees on development sites has been used as a reference for this Preliminary Impact Assessment
- A tape measure was used to determine relevant trees Diameter at Standard Height (DSH)
- The height and spread of the trees were estimated
- A walk by assessment (ISA Level 2 risk assessment) was performed on all trees on site and QTRA risk assessment model was applied to determine levels of risk
- A Samsung tablet and Geographic Information System (GIS) have been used to capture the tree and its location imposed on Google satellite imagery

1.5 Limitations

Information contained in this report pertains only to the trees examined on the above specified date of inspection. The tree assessment was performed by a suitably qualified arborist (AQF 8) using a recognised model (VTA) that aligns with the International Society of Arboriculture (ISA). The assessment was limited to a ground based VTA that did not extend to aerial inspections, nor below ground

evaluations. The documented, observations, results, recommendations and conclusions given may vary after the site visit due to environmental conditions or variances in site conditions. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree may not arise in the future.

1.6 Disclaimer

The conclusions and recommendations contained in this report refer to the trees' condition on the day of inspection only. The report should be read and considered in its entirety. All care has been taken using the most up to date arboricultural information in the preparation of this report. The report is based on visual inspection only. No guarantee can be given nor can it be predicted that branch failure or uprooting (windthrow) would not occur as a result of high winds and/or excessive rainfall and other unpredictable events. Tree health and environmental conditions can change at any time due to unforeseen circumstances.

1.7 Glossary of terms

ULE – Useful Life expectancy

DSH – Diameter at Standard Height

NRZ – Nominal Root Zone

TPZ – Tree protection Zone

SRZ – Structural root zone

VTA - Visual tree assessment

QTRA – Quantified tree risk assessment

DTW – Distance to works

TPP – Tree Protection Plan

TRP – Tree Retention Proposal

DSA – Deep soil area

Tree Survey

2.1 Site details

2.1.1 Site Map

The tree locations (Fig. 1) have been plotted using GIS software and are only accurate to that of standard GPS (4-8m). The points have been manually adjusted using aerial imagery to improve accuracy however, there is a margin of error and some points may not be in their correct (accurate) location. It is advised to cross reference these tree IDs with the feature survey to achieve their accurate locations.



Fig. 1 - Indicating subject trees at 13 South Perth Esplanade, South Perth (Google satellite)

2.2 Tree details

2.2.1 Tree 1



Scientific name:	*Ficus microcarpa*
Common name:	
Height:	16m
Width:	14m
DSH:	0.85m
Age class:	Mature
Health:	8
Structure:	7
ULE:	40-100 years
Risk rating:	Low
Works priority:	Medium
Retention value:	7.7
Regulated tree:	Yes
Observations:	Pruning history Tree located on boundary line

Fig. 2 - Tree 1 *Ficus microcarpa*

2.2.2 Visual Tree Assessment (VTA)

The subject tree is a large and mature Ficus that is currently in excellent health and has a reasonable structure. There have been some recent pruning operations on the tree that is of poor quality (7.1.5 Pruning to Australian standards (AS 4373:2007)), presumably to achieve property line clearance (7.1.15 Clearance Pruning). Fortunately, Ficus are very robust and able to tolerate significant pruning. Additionally works were halted in time so that the recent pruning works can be corrected, tree aesthetics can be maintained and a suitable clearance can be achieved.

2.2.3 Trees and the Law

It is technically legal to prune or remove branches and roots crossing into your property at any point up to the boundary of your land. However, this is often misinterpreted, and the following caveat is often over looked; *"You must not cut branches or roots on the neighbour's side without their consent, or cause unnecessary damage to the tree"*. Additionally, trees in the City of South Perth are protected by the local planning policy (LPP 3.2 – Tree retention (Regulated Trees).

2.2.4 Conclusion

Unfortunately, it may still take some time before new tree policies are made broadly aware, understood and accepted. Whilst ignorance is no excuse, it is understandable how situations like this arise

Arborite is confident that pruning can continue in a more structured approach to retain the aesthetics of the tree, achieve desired clearance outcomes and not be a detriment to the current health nor long term viability of the tree. However, this will require consent from the tree owner, the City of South Perth and involve a suitably qualified contracting Arborist (Min. cert 3 Arboriculture)

2.3 Tree Retention Values

2.3.1 Tree retention

There is always a compromise between retaining trees on a development site and the economic imperatives of land development. Retaining trees on development sites is a fine balance between sustaining that amenity and the economic development of the land. Establishing priorities for the retention of trees is an important part of the planning process if amenity is to be sustained in the long term. If the trees are found to have high significance, plans may be altered or construction methods changed to accommodate tree retention. Excavation within the NRZ can be conducted in a non-intrusive manner that can dramatically reduce disturbance to the trees' roots.

2.3.2 Tree retention matrix

The Arborite Tree Retention Value Matrix (8.3 Tree Retention Value Matrix) is data driven, aiming to objectively assign value through data input rather than a value being assigned subjectively by the Arborist.

The model generates a quantitative value (0.1 – 9.9) using the Australian Standard (AS 4970-2025) Tree Survey data (size, age, health, condition, ULE etc.).

Establishing Tree Retention Values is a valuable tool for achieving environmental outcomes throughout development. Existing tree retention value models are subjective, contributing to a lack of clarity around what constitutes a 'valuable' tree.

2.3.3 Retention value vs. priority

Retention values are established using a matrix (8.3 Tree Retention Value Matrix) that includes variables such as tree dimensions, species, health & condition, and ULE etc. The retention values can be independent from the priority assigned to retaining that tree. For example, a LOW valued tree can have a HIGH retention priority and vice versa.

Ultimately, a better long-term outcome will be achieved with a higher tree retention (TRP) irrespective of their current value. For example, a currently low valued tree may achieve a medium or high retention value status as it ages or improves in health (Retention Value Potential)

2.3.4 Retention Value Summary

The full list of trees and their respective retention values can be found in the Tree Survey section of this report (Tree Survey). The following table (Table 1) is a Tree Retention Value Summary

Tree Retention Value	Count
High	1

Table 1: Tree retention value summary

2.3.5 High retention value trees

1 tree has been classified as having a high retention value (Fig. 3). Typically trees in this category are of high quality with an estimated remaining life expectancy of at least 25 years, have high amenity value and may make significant environmental contributions. Additionally, this tree is considered a 'regulated tree' under the City of South Perth's local planning policy (LPP 3.2 – Tree retention (Regulated Trees).



Fig. 3 - Indicating high retention value tree 1 (Count 1)

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Preliminary Impact Assessment

3.1 Notional Root Zone (NRZ) & Tree Protection Zone (TPZ)

3.1.1 NRZ Summary

Tree ID	Species	DSH (m)	NRZ (m radius)	SRZ (m radius)	NRZ area (m^2)
1	*Ficus microcarpa*	0.85	10.20	3.09	326.85

3.1.2 Diameter at Standard Height (DSH)

The DSH refers to the diameter of the tree's trunk measured at 1.4m from ground level. The DSH is the principal measurement for determining the Notional Root Zone (NRZ)

3.1.3 Notional Root Zone (NRZ)

This term replaces what was previously largely understood as the Tree Protection Zone (TPZ) in the 2009 standard, in terms of its theoretical calculation. The NRZ represents the theoretical area required to sustain a tree's health and long-term viability.

The NRZ for an individual tree is determined as follows (Standards Australia 2025):

$$NRZ = DSH \times 12$$

A NRZ should not be less than 2 m nor greater than 15 m except where crown protection is required.

This area is considered essential for the tree's physiological processes, including the uptake of water and nutrients to sustain its health.

3.1.4 SRZ

The SRZ is a notional area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ shall be calculated when major encroachment (greater than 20%) into a NRZ is proposed. SRZ locations and dimensions may be included in arboriculture documentation.

Many factors affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). Natural or built structures, such as rocks and footings, can also influence the SRZ. An indicative SRZ radius can be determined from the trunk diameter, measured immediately above the root buttress using the following formula. Root investigation can provide more information on the extent of these roots.

$$SRZ\ radius = (D \times 50)^{0.42} \times 0.64$$

where:

D = trunk diameter, in meters, measured above the root buttress flare.

The SRZ calculation does not apply to palms, cycads, tree ferns and the like.

3.1.5 Incursions

An incursions is effectively any activity within the trees notional root zone (NRZ). Activities may include, but not limited to excavation, trenching, changes to soil levels, construction, paving, installation of services, vehicle or machinery access, material storage, landscaping and other ground-disturbing activities. An incursion does not necessarily mean that an activity is unacceptable; rather, it identifies an activity that requires arboricultural consideration and appropriate management. The extent, location and nature of the incursion should be assessed to determine its potential impact on the tree.

3.1.6 Tree Protection Zone (TPZ)

The TPZ refers to "the specified zone above and below ground and at given offsets from the trunk set aside to protect a tree's roots and crown where these might be damage by development" (AS 4970-2025).

Ultimately, the TPZ is an agreed upon (by relevant stakeholders) area that will allow the tree to remain viable in the context of development. This zone can be the entire NRZ or reduced pending guidance (viability assessment) from the project Arborist. Alternatively, the TPZ may be specified by the consent authority.

Establishing and maintaining a TPZ is the most important part of protecting trees during the onsite stages of work (e.g. site establishment, demolition, construction) and establishing physical barriers to the extremities of this zone should be performed before any onsite works commence.

3.2 Plan review and Preliminary Tree Viability Assessment

3.2.1 Anticipated incursions

Plans indicated an overall incursion of ~47% into trees NRZ (Fig. 4). The incursion closest to the tree (Fig. 5) represented as the access drive for the rear car park will breach the SRZ. However, the incursion (Fig. 6) is in the form of added fill (~1m) and will not require structural root removal, mitigating elevated risk of whole tree failure (7.1.11 Root severance; Risk and viability). Whilst still considered an incursion, adding fill is highly preferrable to excavations requiring root removal.

Excavations may be required (subject to detailed design review) at the location of the allotted setback (Fig. 7). Anticipated works represent an incursion of ~23% into the trees NRZ and will remain outside the SRZ.

3.2.2 Conclusion

Heavily influenced by the specimen characteristics of the subject tree (Ficus), it is of the opinion of Arborite that the tree will remain viable based on the proposed plans. It is highly recommended to perform remedial pruning on the tree to correct previous pruning efforts. The objectives will be to achieve appropriate property clearances whilst maintaining tree aesthetics, form and structure. A correct pruning program will ensure the trees compatibility with the surrounding infrastructure long into the future, resulting in less conflict and require minimal maintenance.

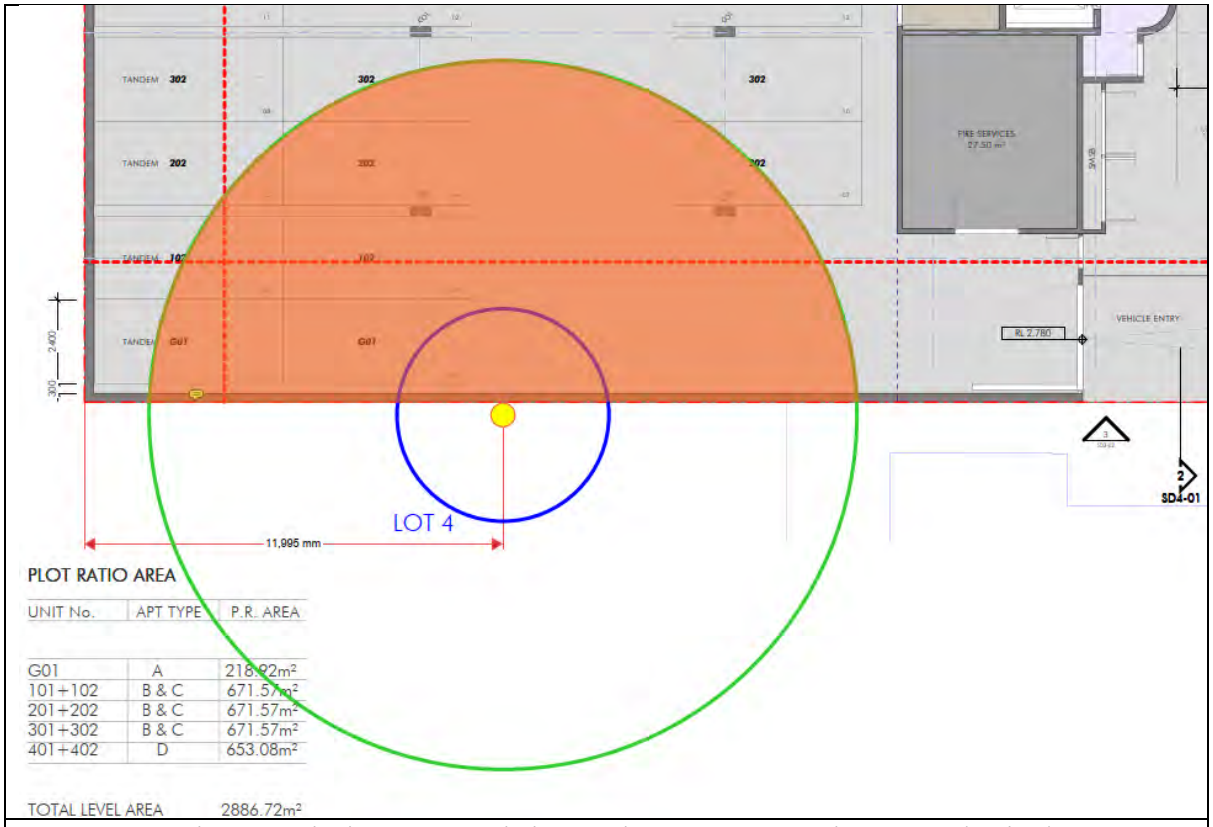

Fig. 4 - NRZ and SRZ overlaid on proposed plans, indicating anticpated incursion (amber)

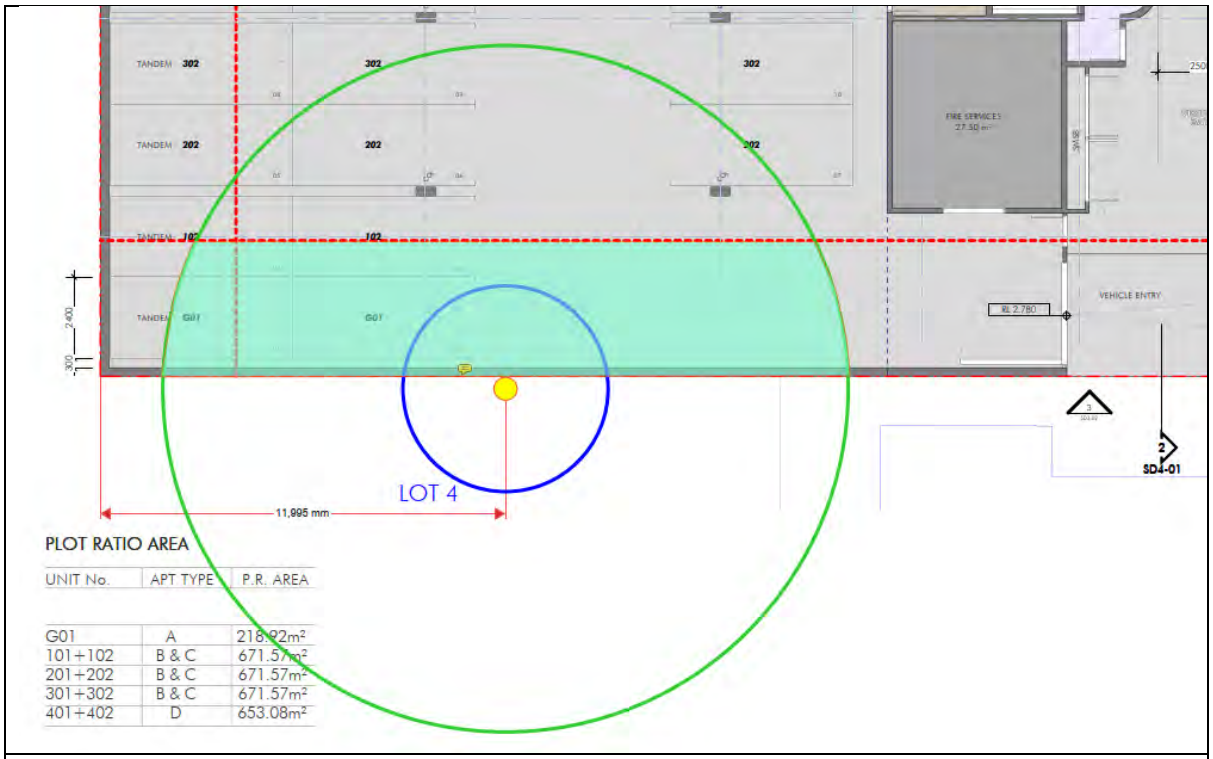

Fig. 5 – Inidcating proposed drive incursion & elevation detail

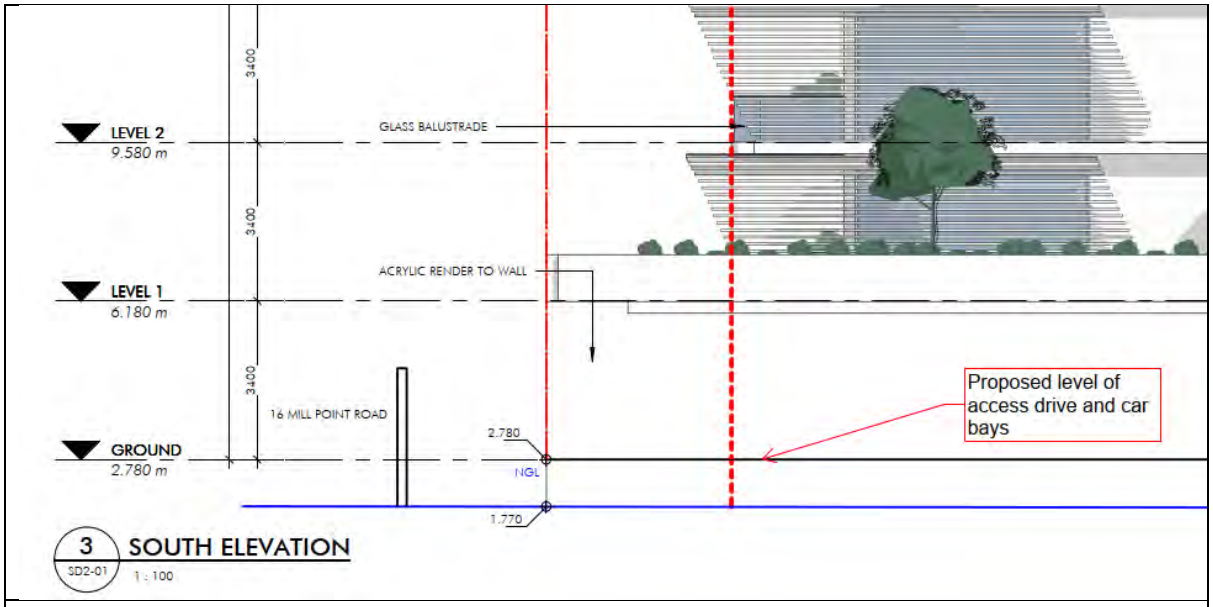

Fig. 6 – Indicating proposed drive elevation within NRZ (~1m)

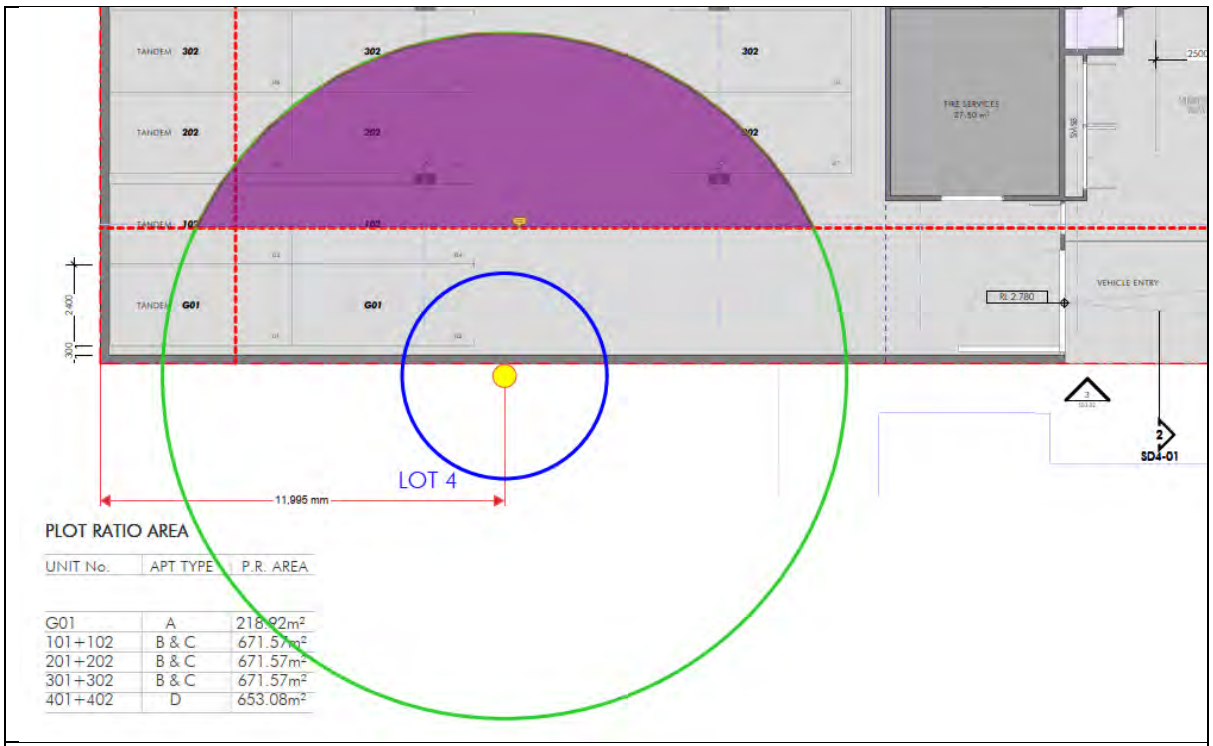

Fig. 7 - Inidcating proposed footing incursion (~23%)

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Tree Retention Proposal

4.1 Tree Retention Proposal (TRP)

4.1.1 Introduction

A tree retention proposal is an agreed upon set of trees that relevant stakeholders are committed to protecting and preserving on a development site. The TRP should be guided by a suitable Tree Survey and consider the positive aspects of trees (retention value) in relation to their probability of remaining viable.

4.1.2 Tree Viability

Tree viability is never guaranteed. Trees may suffer mortality where works are limited to outside of the NRZ and conversely, trees with heavy incursions into the NRZ may remain viable. Instead, a trees viability should be viewed in scales of probability (Table 2). Generally, trees with heavy incursions into their NRZ will typically have lower probabilities of remaining viable, however, they may still attain high retention priorities due to their age, size, amenity value, functionality etc.

1.		Works are not anticipated to influence tree viability
2.		Works will marginally impact the tree and viability has a high probability with little to no additional controls outside of NRZ establishment
3.		Works will have a moderate impact on the tree and the probability of tree viability will require additional, typically broad scale control measures such as; root mapping, pruning, minor design modifications, tree health amendments etc.
4.		Tree retention will be challenging, and a bespoke plan will be required to improve probabilities of the tree remaining viable. This may include major design review/changes, engineering controls and additional risk assessment

Table 2: Tree retention probability scale

4.1.3 Anticipated tree viability outcomes

The table below is a summary of the trees' NRZ and the probability of retention based on anticipated incursion levels.

Tag no.	Species	DSH (m)	NRZ	SRZ	NRZ area (m^2)	Viability probability	Comments	Mitigation considerations
1	*Ficus microcarpa*	0.85	10.20	3.09	326.85		No excavations within the SRZ. Potential excavations for footings at setback (~4m)	Recommendations: 1. Follow works method statement (appendix) for excavations within NRZ, or 2. Supervised excavations and root pruning subject to further viability assessment

Table 3: Tree viability outcomes & mitigation recommendations

Closing & Recommendations

5.1 Closing and recommendations

5.1.1 Summary

There is always a compromise between retaining trees on a development site and the economic imperatives of land development. Retaining trees on development sites is a fine balance between sustaining that amenity and the economic development of the land. Establishing priorities for the retention of trees is an important part of the planning process if amenity is to be sustained in the long term. If the trees are found to have high significance plans may be altered or construction methods changed to accommodate tree retention.

The subject tree has been awarded a high retention value based on its amenity value and protection status (regulated tree) under the local planning policy (LPP 3.2).

The proposed plans will make incursions into the trees NRZ. Arborite is confident that the tree will remain viable and retain a ULE of >25 years, provided necessary excavations are conducted in accordance with the work method statement below (8.4.1 Excavations within NRZ - Procedures (Civil))

The tree has suffered recent and poor pruning. Fortunately, this can be corrected to maintain aesthetics, form and achieve appropriate clearances without detriment to the tree. A successful pruning program will require co-operation from the tree owner, City of South Perth, a suitably qualified arborist and the client.

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Tree Photos

6.1.1 Tree photos





Fig. 8 – Tree 1

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Expanded Report Topics

7.1 Discussion

7.1.1 Regulated trees

The 'Regulated trees' policy is a localised legal framework that aims to preserve trees' ecological and aesthetic value.

A regulated tree is a living tree that meets specified size and species criteria under a local government's Local Planning Policy. Definitions differ between councils, but commonly include a tree that meets one or more of these criteria:

- **8 metres** or more in height
- **6 metres** or more average canopy diameter
- **1.5 metres** or more trunk circumference, measured about 1.4 metres above ground

A tree may need to satisfy only one of the criteria. Weed, pest, diseased or specifically exempt species may be excluded.

7.1.2 Tree amenity value

Tree amenity is described as a quality, feature, or attribute of the tree that makes it pleasant, attractive, and agreeable which is conducive to the comfort, convenience, and enjoyment of people. It is a physical feature which increases attractiveness and value of a site through contributions to the physical, psychological, or material comfort of people and which facilitates happiness, pleasure, enjoyment, and contentment. The greater amenity a tree has, the greater its respective value.

7.1.3 Benefit of trees

Trees provide many social, economic and environmental benefits. Trees service communities by improving air quality, mitigating storm water, supplying shade, enhancing aesthetic beauty, and providing wildlife habitat. Trees can lower energy consumption, offer transpirational cooling and can have a dramatic impact on our urban heat island. Furthermore, the effect of trees can significantly reduce stress levels and fatigue, calm traffic, and even decrease the recovery time needed after surgery. Studies have also shown a positive correlation between 'green areas' and lower crime rate as well as increased property values.

7.1.4 Mechanical damage

When equipment or machinery makes contact with a tree it can crush the cambium layer or tear off bark and break branches. Damage to the cambium layer through repeated contact with the trunk can interrupt sap that may result in dieback. Mechanical damage also opens the tree to pathogens, disease and pests that may have deleterious effects on the future health of the tree.

7.1.5 Pruning to Australian standards (AS 4373:2007)

Trees often require pruning to maintain clearance for utility services and buildings or to improve the safety, structure, and health of the tree. They are also often pruned to improve the amenity of sites in order to enable successful cohabitation between trees and people. Assessment of trees and specification of their pruning should be carried out by a suitably qualified arborist (AQF 5) and pruning should be carried out by arborists (AQF 3) or tree workers who are familiar with the principles, techniques and hazards of this work. The procedures in AS 4373-2007 are guided by theories of branch attachment and compartmentalization of decay in trees. Lopping, topping and flush cutting are unacceptable practices.

7.1.6 Canopy (Crown) lifting

Crown lifting is the removal of a tree's lower branches to achieve a greater clearance from the ground to the beginning of the lower canopy. This is usually conducted to achieve a risk reduction, or to protect assets and property such as vehicles and services. The larger the canopy, generally the higher the canopy can be lifted. Conversely, juvenile trees are best not to be uplifted as they have a greater dependence on that foliage to promote tree health and growth. Typically, a trees canopy should be lifted to 2.5m over foot paths and walk ways and 4m over roads to allow larger vehicles to pass under safely.

7.1.7 Root damage

Root damage is the most common cause of damage to trees on construction sites. Mechanical damage reduces the root:shoot ratio and subsequently inhibits the trees' ability to uptake water resulting in symptoms synonymous to drought and can be fatal.

7.1.8 Root mapping

Root mapping is the process of investigating the presence of subsurface tree roots in a specific location. This can be achieved by vacuum excavation, Ground Penetrating Radar or more commonly hand excavation. Roots are mapped down to a specified depth, usually the depth of the proposed development.Root mapping is used prior to development to locate structural woody roots so that the extent of root loss can be determined and minimised.

7.1.9 Viability assessment

A tree viability assessment is typically reserved for trees where a significant incursion into the NRZ is anticipated. This is best suited where root mapping is employed to expose all roots likely to be damaged/destroyed to facilitate proposed works. If the project arborist is satisfied that root removal will not increase the probability of whole tree failure to intolerable levels, then the tree may remain viable. Where extensive roots are removed, periodic monitoring and administering tree health amendments can increase the probability of retention.

7.1.10 Clean cutting roots

Damaged roots are very susceptible to pathogen infection so it is important to sterilize equipment before cutting each root, using sharp loppers or hand saws to encourage faster healing and good wound compartmentalisation. Aim to cut at root junctions where possible and after each cut has been made, remove the cutting and fill in soil around the remaining root. When the clean cutting has been completed, water the tree well.

7.1.11 Root severance; Risk and viability

Root disturbance/severance can be separated in categories; Elevated risk of whole tree failure (windthrow) and tree health decline.

Where a tree suffers extensive root loss, particularly within the SRZ, it may not be regarded as a risk where there are no targets present (i.e. structures, services, human occupation). In this instance the tree may remain viable and continue to provide utility where its health remains intact.

A tree's health following root severance is more complicated to predict as there are many variables and tree health does not always correspond to the level of root disturbance. There have been many instances where heavy root loss did not result in tree decline.

7.1.12 Excavation

Traditional excavation (levelling) can be very impactful to a tree's root system and typically results in shredding or tearing of the tree's roots. A torn or shredded root is much harder for the tree to compartmentalise and exposes the root to harmful pathogens for a longer period of time. Shredded roots should be 'clean cut' to minimise the risk of infection and facilitate healing. **Excavation close to or within the trees SRZ can be hazardous.** Anchorage roots destroyed in the process can render the tree unstable resulting in an elevated risk of whole tree failure. Backfilling will mask the trees hazardous state and whole tree failure may occur years after the root severance has occurred.

7.1.13 Manual excavation

Where excavation, demolition or the removal of material is necessary in the NRZ; this should be done manually without the use of heavy machinery to prevent damage to the tree and should be supervised by a suitably qualified arborist (AQF 5 or equiv.)

7.1.14 Root pruning

Most trees will tolerate root pruning up to 25% total mass and some species endure considerably more. Given they have space to do so, roots will regenerate in time to compensate for the loss and re-align the root:shoot ratio.

7.1.15 Clearance Pruning

To reduce or remove branches as required to achieve physical clearance of a certain target. Usually to maintain distance from utility service wires, gutters or of tree branches over the boundaries of neighbouring properties.

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Appendix

8.1 Health rating

Assessed trees are given a numerical value to signify their overall health. Several factors and/or symptoms are taken into consideration when assessing the health of a tree. It's vigour and seasonal extension growth, symptoms of decline like deadwood and/or dieback, foliage density, colour, size and intactness as well as signs of pests and/or disease are all appraised.

Rating	Health
10	Exceptional
9	
8	Good
7	
6	Average
5	
4	
3	Poor
2	
1	Dead

Classification	Description
Exceptional	Canopy is full with dense foliage coverage throughout, leaves are entire and are of an excellent size and colour for the species with no visible pathogen damage. Excellent growth indicators, e.g. seasonal extension growth.
Good	Canopy is full with minor variations in foliage density throughout, leaves are entire and are of good size and colour for the species with minimal or no visible pathogen damage. Some minor dead wood and epicormic growth. Good growth indicators.
Average	Canopy has moderate variations in foliage density throughout, leaves not entire with reduced size and/or atypical in colour, moderate pathogen damage. Reduced growth indicators, visible amounts of minor and major deadwood/dieback, and epicormic growth.
Poor	Canopy density significantly reduced throughout, leaves are not entire, are significantly reduced in size and/or are discoloured, significant pathogen damage. Significant amounts of deadwood and/or epicormic growth, noticeable dieback of branch tips, possibly extensive.
Dead	Dead. No live plant material observed throughout the canopy, bark may be visibly delaminating

8.2 Structure rating

Assessed trees are given a numerical rating to signify their overall structure. Several factors and/or conditions are taken into consideration when assessing a tree's structure. It's form, branching habit, trunk and lower stem are all appraised.

Rating	Structure
10	Exceptional
9	
8	Good
7	
6	
5	Average
4	
3	Unacceptable
2	
1	

Classification	Description
Exceptional	Good form and branching habit typical of the species. Structural defects are insignificant or undetected. All major unions appear well attached and devoid of anything that could be considered a weakness. All aspects of the tree exhibit no evidence of pathogens. No obvious damage to the trunk and roots.
Good	Canopy devoid of major defects but may exhibit minor damage, disease or decay in the crown, trunk and roots. Branching habit is well formed, spaced and tapered. May contain small amounts of deadwood or have evidence of previous limb failure.
Average	Moderate structural defects, damage, disease or decay that impact longevity. Defects may not reflect an imminent threat
Unacceptable	Serious structural defects that could cause failure within 12 months i.e., active splits, unstable/loose in ground, excessive branch end-weight. Immediate arboricultural intervention recommended to minimise risk.

8.3 Tree Retention Value Matrix

8.3.1 Summary

The Arborite Tree Retention Value Matrix is data driven, aiming to objectively assign value through data input rather than value being assigned subjectively by the Arborist.

The model generates a quantitative value (0.1 – 9.9) using the Australian Standard (AS 4970-2025) Tree Survey data (size, age, health, condition, ULE etc.).

Establishing Tree Retention Values is a valuable tool for achieving environmental outcomes throughout development. Existing tree retention value models are subjective, contributing to a lack of clarity around what constitutes a 'valuable' tree.

Arborite – Tree Retention Value Matrix

Tree retention Value (score)	Retention Gradient	Interpretation
8.8 – 9.9		Very High
7.7 – 8.7		High
6.7 – 7.6		High/Medium
5.6 – 6.6		Medium/High
4.5 – 5.5		Medium
3.4 – 4.4		Medium/Low
2.3 – 3.3		Low/Medium
1.2 – 2.2		Low
0.1 – 1.1		Very Low

Existing Model

Basic	Arborite interpretation
High	Very High
	High
	High/Medium
Med	Medium/High
	Medium
	Medium/Low
Low	Low/Medium
	Low
	Very Low

8.3.2 Fields (input data)

Arborite's matrix is based on the required fields for a Tree Survey as stipulated by the Australian Standards (AS 4970-2025).

The following fields have been determined, by Arborite, to have the most influence over tree retention values.

- Size (height & width), DSH, Health & structure, Age class and ULE.

8.3.3 Factor scores

Each field is assigned a factor score based on the data input. For example, the size (field) of the tree will receive a higher factor score, the larger it is.

Each factor score is then multiplied by a weighting to calculate the trees final Retention Value (0.1-9.9).

8.3.4 Weighting

The basis for weighting focuses primarily on Amenity Value (size, health & structure) and ULE. In essence, a large and healthy tree with a long ULE will typically receive the highest retention values.

However, the weighting is structured in a way that a smaller, more mature tree can still have as much (if not more) value than a large, less mature tree.

Each factor score is weighted as follows.

Age – 20%

Size (height & width) – 50%

DSH – 25%

Form (health & structure) – 5%

8.3.5 Variables (Stakeholders)

The Arborite Retention Value Matrix is an independent assessment and has been created to establish transparency and consistency. It is understood that stakeholders may have differing objectives or desired outcomes. For example, in more established suburbs the priority may be to retain older trees, regardless of their size and/or condition.

The Matrix is designed to be flexible and work in accordance with stakeholder objectives. It is Arborite's position that these variables are identified by the stakeholder, to allow for a collaborative effort in establishing retention values.

8.4 Works method statement

8.4.1 Excavations within NRZ - Procedures (Civil)

Where unavoidable & deep excavations are required within the NRZ of a tree, the following information, considerations and procedures will minimise the damage to the tree and maximise retention probabilities.

The aim is to expose and cut roots (Fig. 9) at the closest, most suitable location required to facilitate construction (excavation). One of the least intrusive methods for root mapping is through the use of vacuum truck excavation. However, if this is not viable, suitable root mapping and pruning can be achieved through careful machine excavation and manual digging.

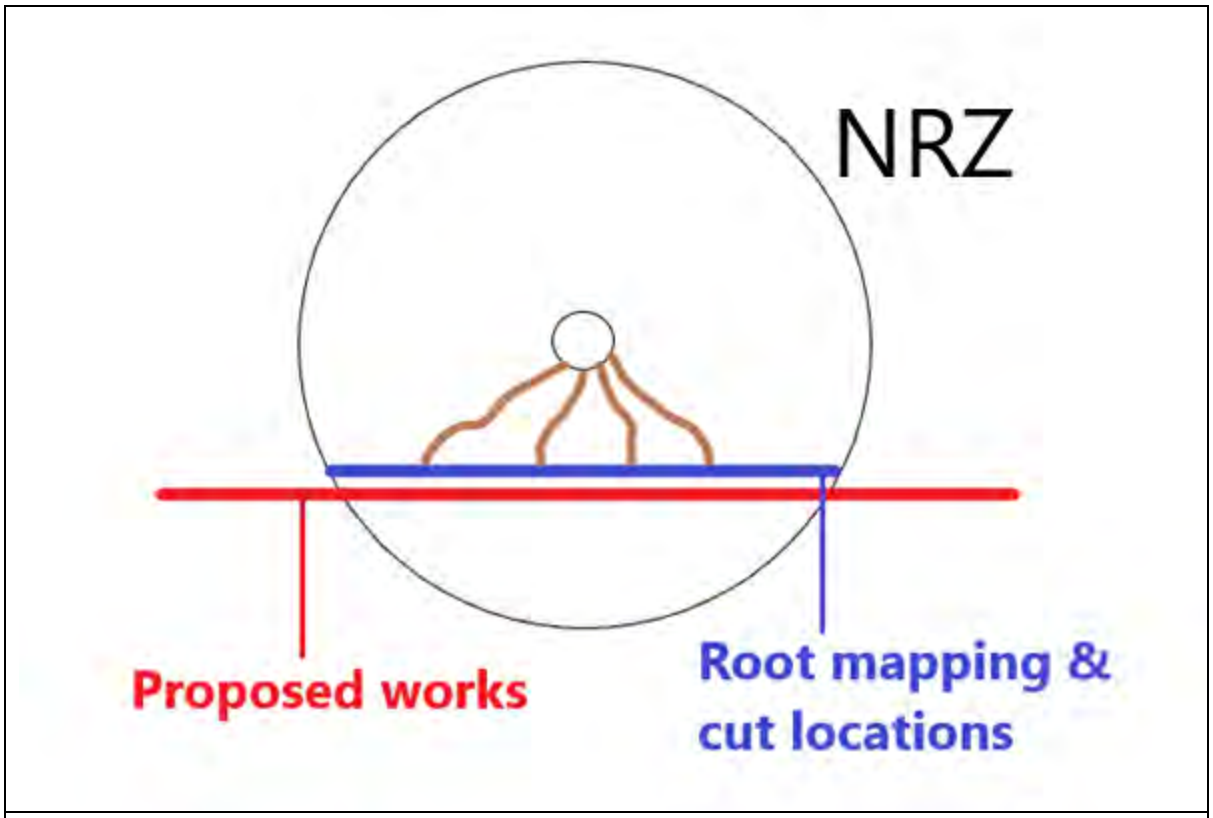

Fig. 9 - Indicating root mapping and pruning in relation the proposed works

8.4.1.1 Machine excavation procedure

1. Preferably, use a small excavator with a small bucket, allowing the operator a better feel for when a tree root is contacted.
2. Use a spotter that can help the operator identify when a root has been contacted.
3. Begin excavations parallel to the tree roots and outside of the NRZ working inwards towards the final destination of the required area (Fig. 10).
    a. Working perpendicular to the tree's roots can fracture them much closer to the tree and result in unnecessary damage (Fig. 11).
    b. Beginning outside the NRZ allows margin for error. If a root is discovered further away from the required distance, this root can be followed more careful (manual digging) to arrive at the necessary point of cutting.

4. Manually dig around exposed roots to the desired cut location and catalogue all roots (number and diameter (mm)) required for removal.
5. Have a suitably qualified arborist inspect the trench/root catalogue to determine tree viability (structure/health) post required root removal.
6. Clean cut all roots necessary to facilitate construction at a suitable distance away so that no additional damage occurs during the installation/construction process.
7. Backfill the trench as soon as practicable after the construction process with uncompacted soil, preferably containing 10-20% organic material.
8. Water the tree thoroughly (1000L/week) during the construction process & develop a watering program for after works have been completed.
9. Apply a soil drench of fish emulsion, kelp, minerals and humates post construction works. This solution is high in nitrogen to support new growth, promotes root development and encourages biodiversity. A soil wetting agent is also recommended to facilitate deep penetration of the nutrients into the soil profile. This should be applied at 100-200L per large tree over the entire NRZ.
10. Periodically monitor the tree (3 months, 6 months) and contact a suitably qualified Arborist if rapid/sudden canopy decline is observed.

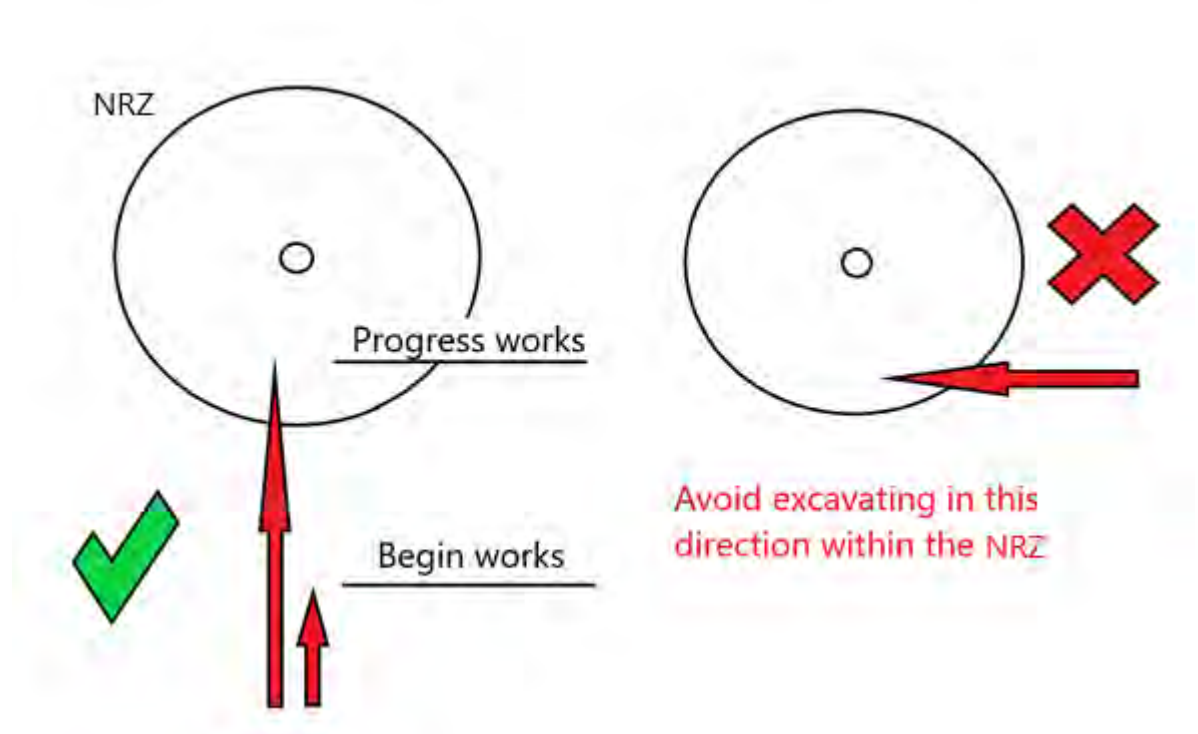

Fig. 10 - Excavation guidelines within the NRZ

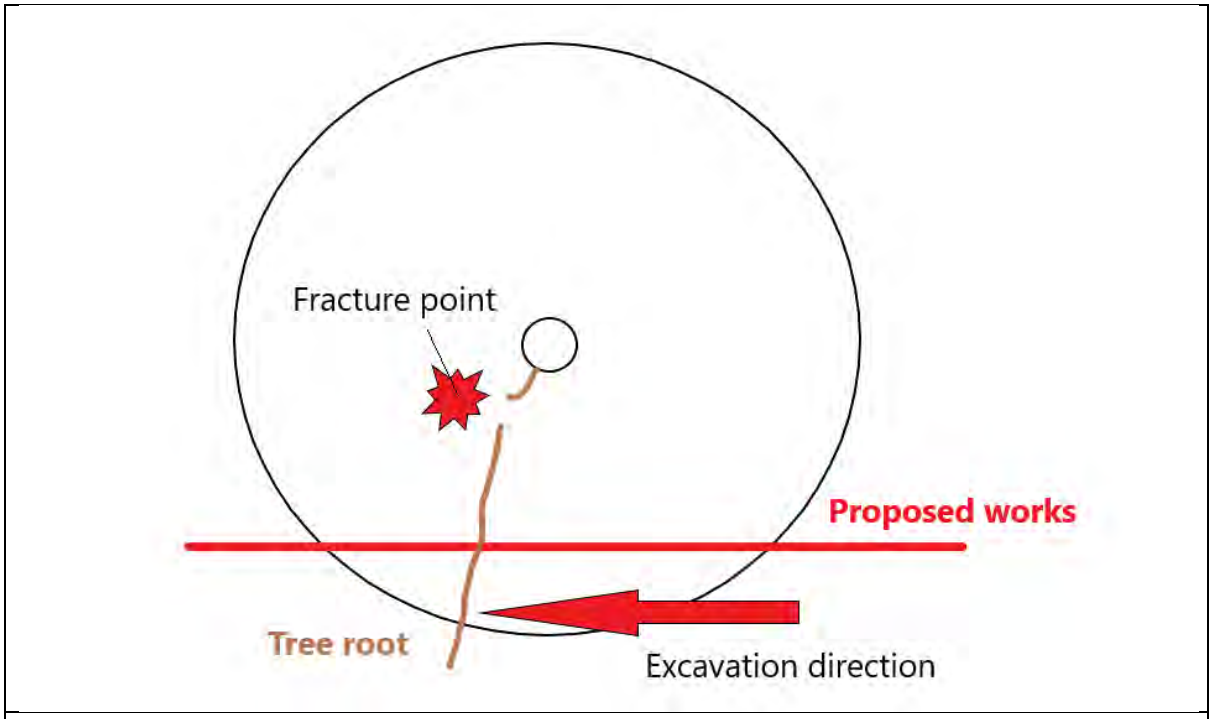

Fig. 11 - Indicating unnecessary damage (fracture point) whilst working perpendicular to tree roots

8.5 Preliminary Impact assessment (Flow Chart)

8.5.1 Introduction

A preliminary impact assessment is designed to assist with a Tree Retention Proposal (TRP) and form part of the Development Approval. It uses information gathered in the Tree Survey to calculate NRZ/SRZ that can be super imposed over plans/concept plans to determine anticipated incursion levels (**Error! Reference source not found.**) and tree viability probabilities (Table 3)

8.5.2 Preliminary Impact Assessment Flow Chart

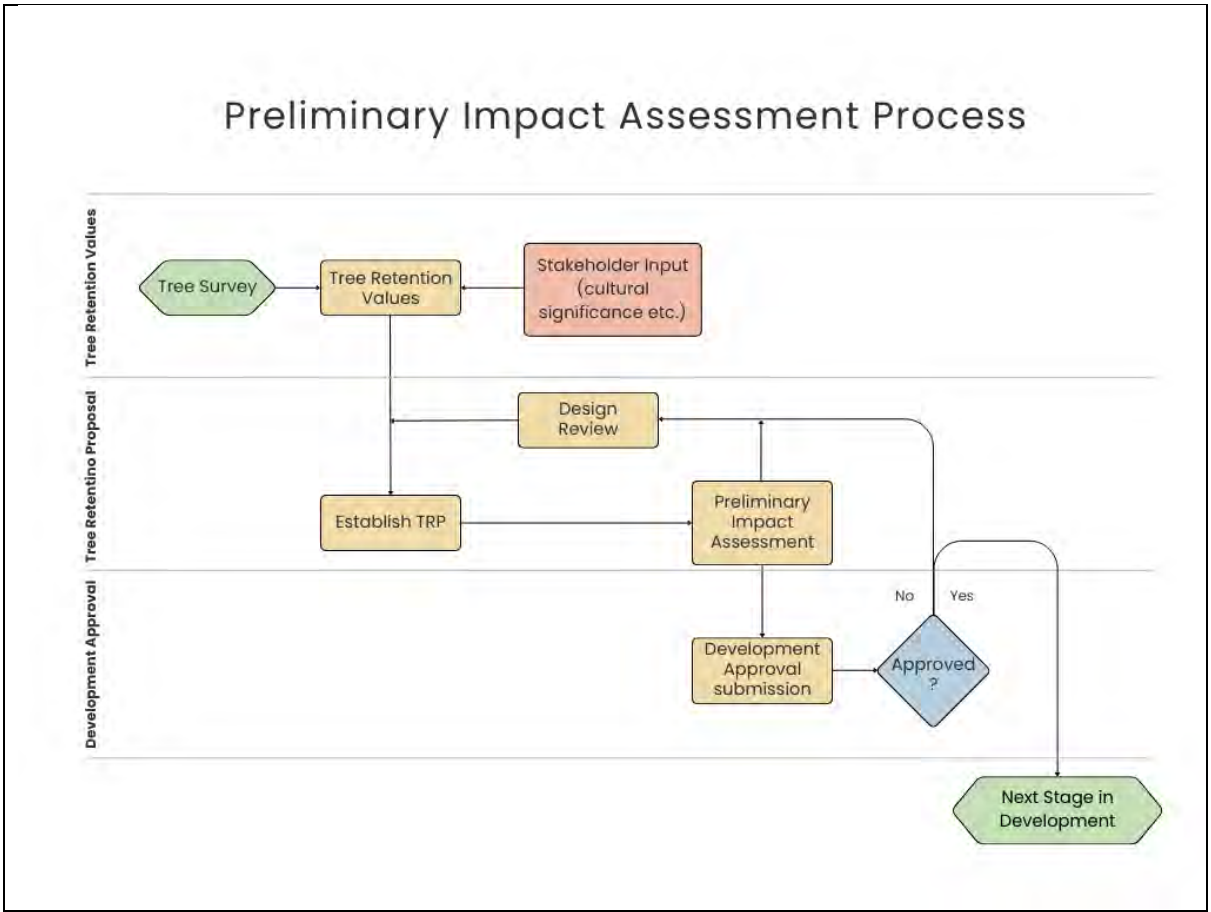

Fig. 12 – Preliminary Impact Assessment process

8.5.3 Objectives

- Develop a realistic and workable TRP that is uniformly agreed upon by relevant stakeholders
- Provide relevant stakeholders with evidence-based analysis to assist with decision making early in the development process
- Provide an opportunity to modify or reject proposals in line with statutory obligations, environmental sustainability, and community expectations
- Influence design before it becomes fixed or costly to amend
- Encourage proactive mitigation rather than reactive justification
- Provides councils and consent authorities with evidence of good faith efforts to retain valuable trees or features

8.5.4 Limitations

The preliminary impact assessment is called as such due to the stage that it is required in the development process. Often plans have not been finalised, or are not required to be, for the submission of the development application and may be subject to change or require more details (construction processes and methodologies). Therefore, only anticipated incursion levels can be applied to the TRP and controls to improve tree retention probabilities are only guidelines and considerations.

8.5.5 Benefits

Rather than attempting to retain every tree on site, a Preliminary Impact Assessment is designed to formulate a workable TRP that is uniformly agreed upon before development commences.

A Preliminary Impact Assessment helps the development process from a cost–benefit point of view by reducing avoidable risk, redesign costs, construction delays, and long-term liabilities whilst maximising tree retention outcomes.

8.5.6 Calculating incursions

Using the table below (**Error! Reference source not found.**), the relative NRZ values can be added to the feature survey and overlaid with concept/development plans to gain a more accurate NRZ incursion figure (**Error! Reference source not found.**). As a general rule;

ESD DA Brief

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Project:	11 South Perth Esplanade
Service:	Sustainable Design
Subject:	DA Brief
Revision:	C
Date:	23rd April 2026
Author:	Graham Agar

FCDS have been commissioned to assist the 11 South Perth Esplanade project team with developing and implementing sustainable design strategy for the proposed residential development at 11 South Perth Esplanade. This note is provided as a supplement to the DA package to explain and confirm the project ESD targets and intent.

Overarching Strategy

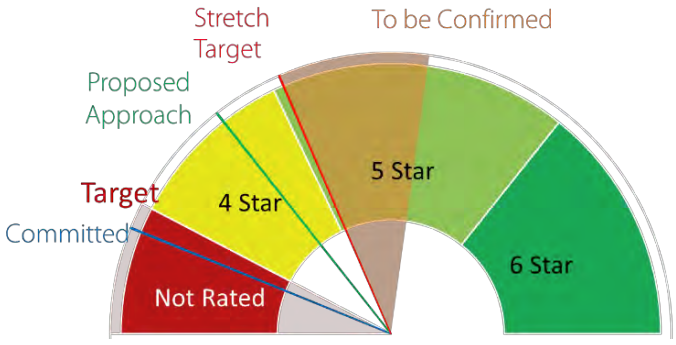
- Formal 4-Star Green Star Certification
- 30kW PV Array and Onsite Battery
- Ecological Assessment and Impact Minimisation
- Upfront Carbon Reduction
- Energy and Water Efficiency Improvement

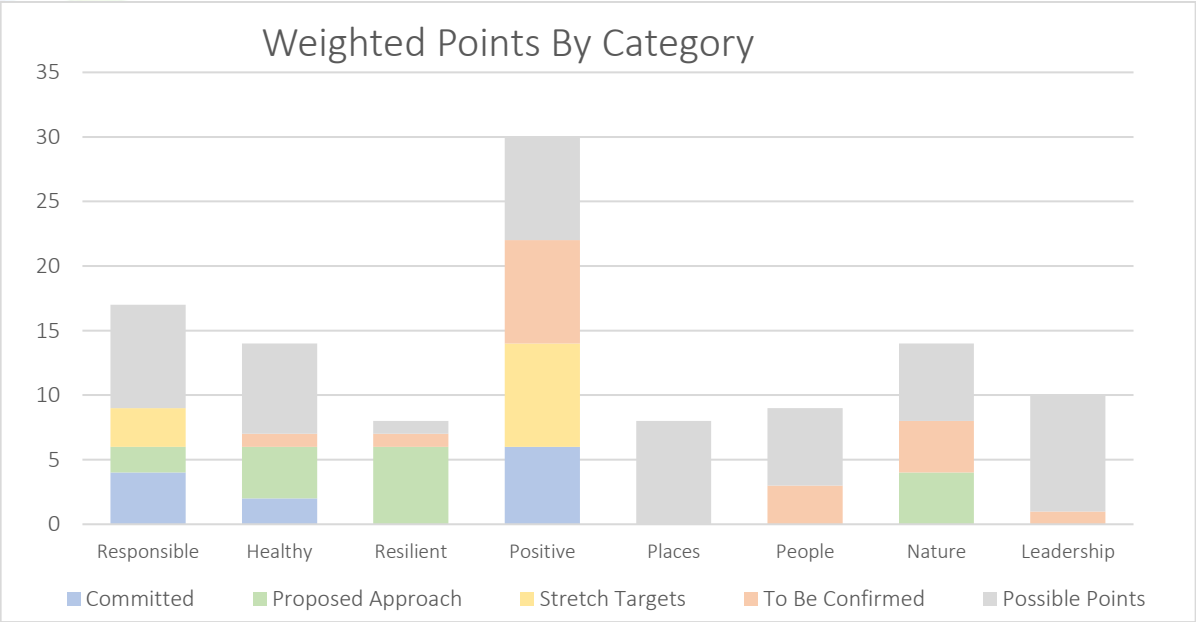
Certification Background

The project has elected to undertake formal Green Star assessment, targeting at least 15 points – the 4-Star threshold.

Proposed Approach

FCDS have identified a certification pathway which shows 28 possible credits, with a further 11 considered available if required. As the design is relatively early, there remain 18 which will be confirmed as the design progresses.





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Owners Project Requirements

The following table provides a summary of general performance targets for this project.

Category	Target	Initial Targets
Energy Consumption	10% Improvement over BCA – Envelope	- Roof > R6, Solar Absorbance < 0.35 - Walls – R2.2 batt insulation + Thermal break - Glass – High SHGC Double Glazing, High performance frames - Floors – R1.9 Board insulation to any exposed floors
	30% Improvement over BCA - - Overall	- 30% reduction in lighting power density - 35% improvement in minimum efficiency for HVAC - Central hot water system, high COP
	Façade leakage < 10m³/hr @ 50Pa	Design will include detailing to control air leakage and commissioning will include building pressurisation tests. DD Phase to include documented air barrier drawings. CD Phase to include air barrier penetration detailing
	Renewable Energy	The project should include a large solar photovoltaic array, comprising ~30kW of panels and inverters, to produce at least 50MWhrs of electricity per annum.
Water Consumption	Low Flow Tapware	Utilise low flow tapware throughout building.
	Irrigation	Utilise low water use planting and water efficient irrigation on site.
	Stormwater Management	Minimise stormwater pollutant outflow via infiltration and filtration systems
Waste Targets	75%+ Recycling in operation	Design to facilitate capture of recyclable goods and use of comingled recycling. Facilitate collection through nominated store with easy bin access.
	>90% Recycling in construction	Careful consideration of construction materials to avoid waste. Use of high efficiency resource recovery facility to sort waste in construction.
Material Selections	Ethical Certification	Prioritise materials which are; Locally / Ethically sourced, Certified – GECA / FSC / Green Tag, Renewable / Recycled – preferably from on site and Durable – 10 year+ Design Life for finishes
	Embodied Carbon	Select natural materials – such as timber. Minimise steel, cement and aluminium. Reduce upfront carbon by 10% against reference.
Durability	>10 Years	Internal finishes and flooring shall target >10 year life spans, with minimal repair and maintenance rather than regular replacement.
Indoor Environment Quality	Outside Air	Outside air at >15 l/s per person for common areas. All apartments to meet AS 1688.4
	Low VOC's	TVOC < 0.27ppm Formaldehyde < 0.02ppm
General Sustainability	Green Star	The project to achieve 4 Stars level, under the Green Star Buildings rating tool – Registration / commencement early 2026.
	Energy Use	Energy Use <5MHWhrs p.a. per dwelling.
	Water Use	Water Use <300kL per dwelling per annum

Refer also to the trial Green Star Scorecard attached.

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Designer Brief

The following sections outlines the key design features to be included for each design discipline.

Architecture / Main Contractor

FCDS present the following recommended design features for review and comment. Generally, features nominated are **minimum compliance and MUST** be achieved, or dispensation granted by the GBCA for the project to be eligible for certification:

Reference	Action
Marketing Excellence	Provide a location, close to the main entry, to displace any sustainable design certification and a case study for the building.
Design for Air Tightness	Complete design reviews at DD and CD for building air leakage pathways and document relevant details to ensure building can achieve <10m^3/hr @ 50Pa.
Specify Envelope Pressure Test	Include within PC requirements the completion of building envelope pressure test to a minimum of 50Pa and a contractual requirement to achieve <10m^3/hr @ 50Pa.
Building Tuning	Designer and contractor are to remain available to provide operational tuning for at least 12 months of stable operation following practical completion and be available for operator access for no less than three years.
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.
Operational Waste	Design building to cater for separation of at least three waste streams, with convenient access for occupants and collection contractors. Refer below for additional details.
Responsible Finishes	Ensure all finishes (paints, joinery, floor coverings, plaster board) are GECA or Green Tag certified, or similar.
Air Quality	Ensure all paints, adhesives, sealants, floor coverings, and composite timber products are low VOC and low formaldehyde.
Daylight – Glare Control	Provide blinds with <10% VLT for all vision glazing. Provide block-out blinds for all sleeping areas.
Acoustic Comfort – Noise Levels	Ensure detailing of building envelope achieves compliance with AS2107, excluding services under the direct control of the occupant. In buildings with sleeping areas noise levels must not exceed recommended Sleep Disturbance criteria as defined in the NSW EPA Road Noise Policy 2011: • Up to two noise events per night: maximum internal noise levels below 70 dB LAmax • All other events: maximum internal noise levels below 55 dB LAmax
Acoustic Comfort – Impact Noise	Ensure detailing achieves impact noise transfer measured in accordance with ISO 16283-2 through a floor where: • Floors are located above regularly occupied areas • Adjacent spaces belonging to different tenancies which share a floor must not exceed dB L'nT,w 55 for floors above Class 2 buildings accommodation spaces
Acoustic Comfort – Acoustic Separation	• All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5 points • Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction (discontinuous in accordance with the National Construction Code) • Entry doors must have perimeter and threshold seals
Climate Resilience	Ensure building envelope exceeds BCA requirements by at least 10%. - Roof > R6, Solar Absorbance < 0.35 - Walls – R2.2 batt insulation + Thermal break - Glass – High SHGC Double Glazing, High performance frames

Reference	Action
	- Floors – R1.9 Board insulation to any exposed floors
Energy Efficiency	Select high efficiency appliances where provided. Refer table below.
Water Use	Select low flow tapware and fittings as per table below.

Waste

Waste generation rates and management requirements are to be advised by the project waste consultant. Notwithstanding, the GBCA requires separation of at least three waste streams. The waste store at ground level would seem to have sufficient space to handle weekly collections. FCDS recommend the design team consider an additional stream for containers for change:

As a starting point, FCDS suggest the following bin provisions, noting bins must be provided at practical completion:

Location	General Waste	Mixed Recyclables	Fogo	Containers for Change
Kitchens	X	X	X	
Bathrooms	X			
Lobby	X			
Waste Store	X	X	X	X

Appliances:

Item	Reference	Reference Performance	Reference Annual Energy	Target Performance
Fridge / Freezer	Fresh Food – 250 L Freezer – 100L	2.5 Stars	436 kWhrs	3.5 Slars
Dish Washer	12 Setting	3 Stars	282 kWhrs	4 Stars
Clothes Washer	7kg	3.5 Stars	367 kWhrs	4.5 Stars
Clothes Dryer	6kg	4.5 Stars	200 kWhrs	5.5 Stars

Water Efficiency

Low flow tapware, sanitary fixtures and appliances (where provided):

Fixture Type	Minimum WELS rating	Target Flow Raes
Taps	5 stars	4.5 L/min
Urinals	5 stars	1.0 L / Flush + Smart demand flush device or waterless
Toilets	4 stars	<3.5 L average flush <4.7L full flush, <3.2 half flush
Showers	3 stars	6.0 L/min
Clothes Washing Machines	4 stars	
Dishwashers	5 stars	

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Mechanical

Credit and Reference	Action
Building Commissioning	Specify that all commissioning is undertaken to CIBSE commissioning codes or other internationally accepted commissioning standard;
Building Tuning	Designer and contractor are to remain available to provide operational tuning for at least 12 months of stable operation following practical completion and be available for operator access for no less than three years.
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.
Clean Air	Ventilation systems are to comply with AS 1668.2 2012 table 3.4 for minimum separation between openings, outdoor intakes and sources of pollution. All new and existing ductwork is to be cleaned prior to occupation.
Clean Air	Ensure all spaces exceed BCA minimum requirements for natural ventilation – AS 1668.4. Ground floor common areas provide 11.25 l/s per person OA (plus air filtration).
Exhaust of Pollutants	Provide exhaust systems for all bathrooms, kitchenettes, workshops etc.
Air Quality	Ensure all paints, adhesives, sealants, floor coverings, and composite timber products are low VOC and low formaldehyde.
Climate Change Resilience	Design mechanical plant to deliver full cooling capacity at 40°C ambient. Include 10% safety factor on mechanical loads.
Energy Efficiency	10% reduction in static pressure for mechanical systems 35% improvement in minimum efficiency for mechanical systems

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Acoustics

Reference	Action
Acoustic Comfort	Provide acoustic comfort strategy addressing: • Quiet enjoyment of space • Functional use of space • Control of intrusive or high levels of noise • Privacy • Noise transfer • Speech intelligibility The Acoustic Comfort Strategy is to include: • A summary of the Standards, legislation, guidelines, etc that apply to the project • The proposed performance metrics for each criteria and whether this exceeds minimum legislative or best practice guidelines • Description of how the design solution is intended to achieve the metrics
Acoustic Comfort – Noise Levels	Ensure detailing of building envelope achieves compliance with AS2107, excluding services under the direct control of the occupant. In buildings with sleeping areas noise levels must not exceed recommended Sleep Disturbance criteria as defined in the NSW EPA Road Noise Policy 2011: • Up to two noise events per night: maximum internal noise levels below 70 dB LAmax • All other events: maximum internal noise levels below 55 dB LAmax Verify Performance On Site
Acoustic Comfort – Impact Noise	Ensure detailing achieves impact noise transfer measured in accordance with ISO 16283-2 through a floor where: • Floors are located above regularly occupied areas • Adjacent spaces belonging to different tenancies which share a floor must not exceed dB L'nT,w 55 for floors above Class 2 buildings accommodation spaces Verify Performance by design review
Acoustic Comfort – Acoustic Separation	Ensure: • All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5 points (excluding impact noise – refer impact noise transfer credit) • Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction (discontinuous in accordance with the National Construction Code) • Entry doors must have perimeter and threshold seals Verify Performance by design review

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Landscape

FCDS present the following recommended design features for review and comment.

Credit and Reference	Action
Building Commissioning	Specify that all commissioning is undertaken to CIBSE commissioning codes or other internationally accepted commissioning standard;
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.
Building Tuning	Designer and contractor are to remain available to provide operational tuning for at least 12 months of stable operation following practical completion and be available for operator access for no less than three years.
Nature Interaction	Provide hose cocks and tools to allow occupants (or gardeners) to interact with nature at ground level.
Water Efficiency	Utilise water efficient, drought tolerant and local species as far as practical – achieve a minimum of 1% of site area as native planting. Limit turf as far as practical. All irrigation to be sub-soil drip style, with moisture sensing and override.
Wetland Management Plan	Generate and make public a site-specific Wetland Management Plan. The plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years
Ecological Value	Documenting the site's current ecological values by type and biomass. This includes terrestrial and aquatic ecological values, geologic features, and soils (including interaction with living things). When determining biodiversity value, the project must reference local, regional, state, and national priorities and strategies. The project should use this investigation as a foundation to appropriately identify if there is potential for any future ecological value to be incorporated on site.
Protection of Ecology	Based on the understanding of the site, the project team must show how ecological values will be protected including: • The proportion of existing vegetated area being retained and the biodiversity value of this area, including identifying species names. • Identifying local and regional threats and mitigation requirements. • Listing active management strategies to be employed to protect the integrity of ecological values throughout the project planning, construction, and occupancy. • Documenting the community engagement process, and outline risks and opportunities to enhance the site. • Detailing consultation outcomes with local stakeholders including Aboriginal or Torres Strait Islander groups and environmental groups.

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Electrical

FCDS present the following recommended design features for review and comment.

Credit and Reference	Action
Building Commissioning	Specify that all commissioning is undertaken to CIBSE commissioning codes or other internationally accepted commissioning standard;
Building Tuning	Designer and contractor are to remain available to provide operational tuning for at least 12 months of stable operation following practical completion and be available for operator access for no less than three years.
Metering and Monitoring	Provide a sophisticated metering and meter monitoring system. Electrical Meter system is to capture: • Incoming power • All feeds off the SMSB, expected to include: o Solar o Each Apartment (7 off) o Lifts (2 off) o Car Park (lighting and ventilation) o EV Charging o Ground Floor common areas o Ground Floor Mechanical o Pool / sauna energy (2 off) o Central hot water (if applicable) Water Meter system is to capture (meters by hydraulic): • Incoming Water • Central hot water (if applicable) • Apartment Hot water (7 off) (if central) • Apartment Cold water (7 off) • Irrigation • Pool cold water (2 off) All meters are to have accuracy certificates. Meters for billing (EV's, apartment power and water) to be NMI certified Monitoring system to have self-calibration capacity, ability to interface with offsite weather / grid management data sources, demand management dashboard page, automatic monthly reporting and user interface to customise report and analysis outputs.
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.
Air Quality	Ensure all paints, adhesives, sealants, floor coverings, and composite timber products are low VOC and low formaldehyde.

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Credit and Reference	Action
Lighting Quality	Ensure light fittings meet minimum performance requirements for lighting colour and quantity: • All lighting must be flicker-free and have no observable effect as per IEEE 1789-2015 - IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers; For occupied areas: • Apartment light sources must have a minimum Colour Rendering Index (CRI) > 90, SCDM < 2, common area light sources must have a minimum Colour Rendering Index (CRI) > 85 • Light sources must meet best practice illuminance levels for each task within each space type • The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006 • All common area light sources must have a maximum of 3 MacAdam Ellipses, apartments to have a maximum of 2 MacAdam Elipses • All dimmable LED drivers > 12 Bits • Manage glare from fittings: o Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means or Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. o Where the nature of the tasks, layout and surface reflectance in a space are not known (e.g. shell and core) the lighting system must comply with the Luminaire selection system as detailed in Clause 8.3.4 of AS/NZS 1680.1:2006. Provide detailed modelling and light fitting data sheets to support the above.
Climate Resilience	Include future provisions for central hot water plant at roof level.
Grid Resilience	Provide 27kWhr battery storage system and potential to operate in island mode on loss of power. Power hot water pumping and lighting from emergency power in blackout.
Energy Efficiency	Achieve 30% reduction on lighting power density against BCA requirements.
Energy Efficiency	Provide 30kW Peak solar
Light Spill	Design to comply with AS 4282:1997 for Control of the Obtrusive Effects of Outdoor Lighting and ensure no external light has an Upward Light Output Ratio (ULOR) of >5%. Provide lighting modelling report to demonstrate compliance.

In addition, please comment on potential to achieve:

- Exceptional Lighting Comfort
  - The walls within the field of view of occupants in regularly occupied spaces must have an average surface reflectance value of 0.70 and an average surface illuminance of at least 50% of the horizontal illuminance levels required for task.
  - Vertical illuminance in workspaces: ensure that 50% of the horizontal task illuminance reaches the average eye height for 90% of primary spaces using vertical illuminance calculation grid.

Fire

FCDS present the following design features for review and comment.

Credit and Reference	Action	Expected Cost
Building Commissioning	Specify that all commissioning is undertaken to CIBSE commissioning codes or other internationally accepted commissioning standard;	$0
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.	$0
Building Tuning	Designer and contractor are to remain available to provide operational tuning for at least 12 months of stable operation following practical completion and be available for operator access for no less than three years.	$5,000
Air Quality	Ensure all paints, adhesives, sealants, floor coverings, and composite timber products are low VOC and low formaldehyde.	$0
Water Efficiency	Ensure the project does not dispel water for fire testing. 100% of fire test water to be captured for reuse on site.	$0

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Hydraulic

FCDS present the following recommended design features for review and comment:

Credit and Reference	Action
Building Commissioning	Specify that all commissioning is undertaken to CIBSE commissioning codes or other internationally accepted commissioning standard;
Operation and Maintenance Information	Provision of Operation and Maintenance manuals in editable and electronic, online versions for future maintenance and management.
Metering and Monitoring	Water Meter system is to capture (meters by hydraulic): • Incoming Water • Central hot water (if applicable) • Apartment Hot water (7 off) (if central) • Apartment Cold water (7 off) • Irrigation • Pool cold water (2 off) All meters are to have accuracy certificates. Meters for billing (apartment water) to be NMI certified
Air Quality	Ensure all paints, adhesives, sealants, floor coverings, and composite timber products are low VOC and low formaldehyde.
Energy Efficiency	Central hot water system with COP > 3.5
Climate Resilience	Provide schematic design for central heat pump hot water – sufficient for spatial planning and electrical future-proofing
Water Use	Design for low flow tapware and fittings as per table below.

Design for low flow tapware, sanitary fixtures and appliances (where provided):

Fixture Type	Minimum WELS rating	Target Flow Raes
Taps	5 stars	4.5 L/min
Urinals	5 stars	1.0 L / Flush + Smart demand flush device or waterless
Toilets	4 stars	<3.5 L average flush <4.7L full flush, <3.2 half flush
Showers	3 stars	6.0 L/min
Clothes Washing Machines	4 stars	
Dishwashers	5 stars	

Note that there are not expected to be any clothes washing machines or dishwashers within the base building scope.

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Civil / Structural

FCDS provide the following features for review and comment.

Credit and Reference	Action	Expected Cost
Life Cycle Carbon	Target design efficiency and / or cement replacement to reduce steel and cement content. Refer table below for target cement content.	$0
Stormwater Management	Ensure development reduces current stormwater outflow by at least 40% through strategies including evaporation, transpiration, harvesting and retention.	$0
Stormwater Management	For any stormwater discharged offsite include filtration to achieve at least column B below:	$35,000

Concrete Performance

Concrete Strength Grade (MPa as per AS 1379)	Proposed Slab Cement Content (kg Portland Cement per m^3)	Proposed Footings / Beams / Columns Cement Content (kg Portland Cement per m^3)
20	168	140
25	186	155
32	216	180
40	264	220
50	330	275
65	330	275
80	366	305
100	396	330

Stormwater Design

Pollutant	Reduction Target (% of the typical urban annual load)		
	A	B	C
Total suspended solids (TSS)[1]	80%	**80%**	90%
Gross Pollutants	85%	**90%**	95%
Total Nitrogen (TN)[2]	30%	**45%**	60%
Total Phosphorus (TP)[2]	30%	**60%**	70%
Total Petroleum Hydrocarbons [3]	60%	90%	90%
Free Oils[3]	90%	90%	98%

[1] Load based on the following particulate size distribution (by mass): 20% <20 µm; 20% 2060 µm; 20% 60-150 µm; 20% 150-400 µm; 20% 400-2000 µm.

[2] Load includes particulate and dissolved fraction.

[3] This requirement is not applicable where the site contains less than a total of 200m^2 of uncovered areas where vehicles are likely to transit and/or park e.g. roads, loading docks, refuelling bays, car parking etc.

Full Circle Design Services

Owner Actions

FCDS note the following requirements for the building. Unless noted otherwise, these elements will be included in the ESD specification:

Reference	Action
Industry Development	Ensure ongoing design phase has qualified GSAP with full scope of works as per the Green Star technical manual. Scope to include preparation of zero carbon action plan, Building Log Book and Building Users Guide.
Responsible Construction	The main contractor will be required to implement an ISO 14001 certified and enforces a site-specific environmental management plan. Contractor to divert at least 90% of all construction and demolition waste from landfill.
Operational Waste	Review waste storage and collection requirements and have them certified, by a waste consultant or contractor as adequately sized and located for the safe and convenient storage and collection of the waste streams identified.
Responsible Procurement	Include responsible procurement requirements within the initial tender documentation and ensure contractor reports against metrics during construction. Formalisation of this procurement strategy must occur prior to tender and will require consultant engagement in the next few weeks.
Air Quality Verification	Undertake air quality measurement in occupied areas at completion. Measure TVOC and formaldehyde content – per target performance above.
Pollution Avoidance	Complete a hazardous materials survey on site and, where identified, decontaminate site by removing and disposing of (in accordance with legislation) an such materials.
Energy Source	Consider signing up to a 5-Year Green Energy Power Procurement contract for base building energy.
Inclusive Construction	The main contractor shall provide gender specific bathrooms and PPE on site and provide policies and training on discrimination, racism, bullying, drug and alcohol awareness and mental health.
Inclusive Construction	The contractor must complete a needs analysis of site workers and contractors to determine appropriate actions. The policies and programs should be relevant to all construction workers on site for the full duration of construction. A mix of programs is acceptable throughout the duration of construction period. The head contractor must introduce programs and solutions to address at least five of the following: • Suicide prevention; • Healthy eating and active living; • Reduce harmful alcohol and tobacco consumption and avoid drug use; • Increased social cohesion, community and cultural participation; • Understanding depression; • Preventing violence and injury; • Decreased psychological stress; and • Finding fulfilment at work or mindful meditation. And Provide an evaluation report to the client and sub-contractors including programs and initiatives delivered and whether they delivered the intended outcomes.
Wetland Management Plan	Commission a Wetland Management Plan (Refer Landscape) and display on public website for at least two years.

STRUCterre consulting

Geotechnical Investigation Report



Job No: J509108

Woodside Valley Development Pty Ltd

Proposed Apartment Complex

Lot 38 #11 South Perth Esplanade, South Perth, WA.

Wednesday 22 April 2026

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Disclaimer

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1. Project Details

1.1 Introduction

At the request of Woodside Valley Development Pty Ltd (The Client), Structerre Consulting (Structerre) have conducted a Geotechnical Investigation at Lot 38 #11 South Perth Esplanade, South Perth, WA. The purpose of the investigation was to provide the following for a proposed six-storey apartment complex:

- desktop study summarising the geology, groundwater, site history (obtained from historical photographs) and potential presence of Acid Sulphate Soils (ASS)
- summary of encountered ground and groundwater conditions
- site Classification in accordance with AS2870
- earthquake site factor in accordance with AS1170.4
- recommendations for stormwater drainage design
- soil design parameters for structural design
- site preparation requirements for earthworks, including site traffic, excavation, reuse of materials and batter slopes
- ground bearing capacity and estimated settlements for pad and strip footings founded at 0.5 m and 1.0 m
- geotechnical design parameters for retaining structures and or deep foundations
- preliminary pavement design parameter, indicative California Bearing Ratio (CBR) values determined from penetrometer results and ground conditions encountered.

This report details the scope of the geotechnical investigation, presents an interpretation of ground conditions and material properties across the site, provides geotechnical design parameters for the design of the proposed infrastructure, and evaluates the suitability of materials for use in earthworks. Interpretation of site conditions is based on the subsurface lithology revealed during the investigation programme, visual assessments of the in-situ materials and the results of in situ field tests.

Structerre were provided with plans and sections prepared by Space Collective Architects from The Client showing surface spot levels and contours, dimensions of the proposed apartment complex, the existing buildings surrounding the site, and the location of the apartment complex in relation to the site boundaries.

Terms of reference for this investigation were presented in a Structerre Consulting proposal reference Q119509 (dated 16 March 2026), which was submitted to and accepted by The Client.

1.2 Site Description

The site is located at Lot 38 #11 South Perth Esplanade, South Perth, within City of South Perth, WA adjacent to the Swan River. South Perth Esplanade lies to the northeast of the site with the elevated Narrows Bridge to the west and surrounded by existing residential developments.

The site is generally flat and level with its surrounding topography. At the time of the field investigation the site was occupied by an existing residential apartment complex with a hardstand driveway and rear parking area.

1.3 Field Investigation – Scope of Works

The field investigation was carried out on 26 March 2026 and comprised of the following field work:

- four (4) Sample Retrieval Probes (SRP) to a depth of 3.5 m over the site for material assessment and soil profiling,
- two (2) In situ percolation tests to determine the permeability of the materials within the upper 1.0 m, and
- four (4) Perth Sand Penetrometer (PSP) tests in accordance with AS 1289.6.3.3-1997 to a depth of 1.0 m for evaluation of relative densities of the upper layers.
- two (2) Electric Friction Cone Penetrometer Test's (EFCPT's) to a depth of 12.0 m over the site for material assessment and soil profiling,

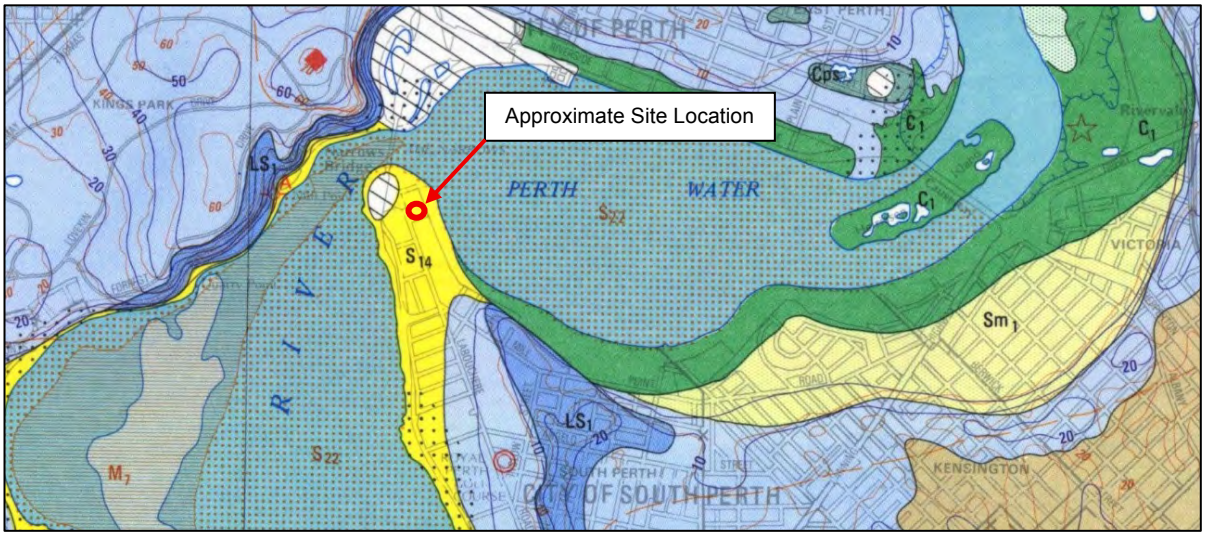
The test locations are shown on the attached site plan included in Appendix A of this report.

A geotechnical representative from Structerre supervised all the fieldwork, interpretation and terminology used in this report are in accordance with the guidelines presented in AS1726-2017, "Geotechnical Site Investigations".

2. Desk Study

2.1 Geological Setting

The Perth sheet 1: 50,000 Environmental Geology Series (Part Sheets 2034 III and 2134 III, 1986) prepared by the Geological Survey of Western Australia indicates that the following geological layers underlie the site:



S14 SAND (S14) – pale grey to white, medium-grained, sub-angular, quartz and felspar, well sorted, abundant whole and broken bivalves and gastropod shells, of alluvial origin (Alluvium, Qha).

2.2 Ground Surface and Groundwater Level

Publicly available Perth Groundwater Map indicates the ground surface level at this site was approximately 1.9 m Australian Height Datum (AHD). This is consistent with the survey data provided by the Client.

According to the Perth Groundwater Map, groundwater is expected to be intersected at 0.5m AHD. It should be noted that the groundwater levels can vary significantly due to sea level fluctuations and seasonal variation. This data recorded should be used only as a guide.

2.3 Acid Sulfate Soils

Information from publicly available Landgate website indicates that the site lies within a zone of moderate to low risk of ASS occurring within 3.0 m on the natural surface.

2.4 Earthquake Coefficient

In accordance with AS 1170.4-2007 Structural Design Actions the site is located within an area with an earthquake acceleration coefficient of between 0.09 and 0.10.

2.5 Site History

Historical aerial photographs dating back to 1953 are publicly available through Landgate Map Viewer were assessed and a summary is presented in Table 1.

Table 1 – Historical Site Information

Date	Description
1953	Existing residential property on site with surrounding residences
1961	Newly aligned South Perth Esplanade has been constructed
1970	New residential apartment constructed including driveway and rear parking on site
2001	Old apartment demolished and new apartment constructed on site
2012	Residential property to the north has been demolished and levelled
2014	Residential apartment north of the site completed
2025	Site remains unchanged to current date

3. Results of the Investigation

3.1 Subsurface Soil Profile

The subsurface soil profile presented below was determined from the ground conditions encountered during the investigation and laboratory test results:

Table 2 – Subsurface Soil Profile

Depth of Strata (m)	Geological Setting	Material Description
0.0 - 0.1	SURFICIAL	TOPSOIL
0.0 - 0.04	PAVEMENT	ASPHALT in BH03 only
0.1 – 1.5	FILL	SAND: fine to medium grained, trace gravel/ trace building rubble, pale brown, loose to dense.
0.9 - >3.5	NATURAL	SAND: fine to medium grained, grey, loose to medium dense
*Not Penetrated (>12.2)		*loose Silty sand to sandy silt

**Note: Soil Profile deeper than 12.2 m is inferred from Schertmann's Soil Behaviour Type (SBT) Graph (1978). SBT uses the ratio of the side friction to cone pressure of the EFCPT probe to determine the behaviour of the soil. Results of EFCPT are presented in Appendix E*

The soils encountered are consistent with the expected site conditions as predicted from the Environmental Geology Map. It is important to note that there may be pockets of fill on site that are deeper than that encountered by the investigation boreholes. The subsurface soil conditions encountered are presented in the bore logs, within Appendix C.

3.2 Groundwater/ Perched Water

Groundwater/ Perched water was encountered during the investigation below ground level, refer Table 3 below. These are consistent with the Perth Groundwater Map. It should be noted water level recorded in CPT01 which may suggest that the water may be perched. Groundwater levels can vary significantly due to sea level fluctuations and seasonal variation. Any published data should be used only as a guide.

Table 3 – Water Measured in Boreholes

Location	Depth (m)
BH01	-1.8
BH02	-1.5
BH03	-1.5
BH04	-1.5
CPT01	-0.2
CPT02	-1.3

3.3 Percolation Testing

Percolation testing of the in-situ soils was undertaken in two locations. Results of the testing are summarised below:

Table 4 – In Situ Percolation Test Results

Test Location	Testing Depth (m)	Soil Type	Permeability (m/day)
BH02	0.45 – 0.7	SAND	15.4
BH04	0.45 – 0.7	SAND	15.6

3.4 Laboratory Test Results

Samples were tested by Structerre's in-house NATA accredited laboratory for Particle Size Distribution as per AS1289.3.6.1, and the test certificate is presented in Appendix D.

3.4.1 Particle Size Distribution

Results of the testing are summarised below:

Table 5 – Particle Size Distribution Test Results

Test Hole	Depth (m)	Soil Description	Gravel Component (%)	Sand Component (%)	Silt Component (%)
BH03	1.7 – 2.2	SAND trace silt	0	99	1

Test results indicate that the sample tested is classified as SAND trace silt.

4. Geotechnical Construction Considerations

4.1 Site Classification

AS 2870-2011 Residential Slabs and Footings provides guidance on site classification for residential slabs and footing design based on the expected ground surface movement and depth of expected moisture changes.

Although the proposed development falls outside the scope of AS 2870, site classification can be used to assist in the design of foundations. The foundation design should be undertaken by a Structural Engineer, taking into consideration ground bearing capacity and the acceptable total and differential settlements of the proposed foundation system.

Based on results of this investigation the site can be classified as an equivalent Class "A" provided that all unsuitable materials are removed and replaced with engineer-controlled sand fill materials in accordance with earthwork recommendations outlined in Section 4.4 in this report. The site in its current (undeveloped) condition is classified as Class "P" due to loose sand encountered over the site.

4.2 Drainage

The site is suitable for on-site disposal of stormwater runoff subject to the proposed development. For on-site disposal of stormwater runoff, soak wells of sufficient sizes are required, and should be positioned a minimum of 1.2m or the depth of soak well (whichever is greater) from any proposed or existing foundations (including those beyond the boundaries of the site) to reduce the risk of differential settlement.

To aid with the design of on-site stormwater drainage, groundwater levels and field permeability results are presented in Section 3.3 of this report.

4.3 Seismic Site Subsoil Class

The seismic subsoil site class has been assessed in accordance with AS 1170.4-2007, using the results of this investigation and published information.

Table 6 – Summary of Seismic Parameters

Hazard Factor	Site Sub-soil Class
0.09	Class Ce – shallow soil site

4.4 Earthworks

All earthworks shall be undertaken in accordance with AS 3798-2007 Guidelines on earthworks for commercial and residential developments and are to include the following:

- All unsuitable materials to be stripped and removed from the site. Unsuitable materials include vegetation, topsoils, any uncontrolled filling, and any deleterious and organic materials.

- Due to the deep loose SAND material encountered to a depth of approximately or more than 12.2m on site (refer to EFCPT traces, Appendix E). It is recommended that the proposed foundations for the proposed apartment complex be deep foundations extending beyond the depth of the loose SAND into the underlying natural profile, significantly reducing earthworks and exposure to the underlying materials, and minimising required of open excavations.
- Excavations should not exceed 1.2m without adequate temporary shoring and/or safe excavation practices (e.g., benching, and / or batters) or undermine any surrounding structures. A 1V:2H slope should be maintained for temporary excavations. If excavation is required closer than the 1V:2H slope would allow, it is recommended that this office be contacted for retaining design.
- Proof compact the exposed base. The compaction requirements are set out in the table below, as per AS 3798-2007:

Table 7 – Minimum Relative Compaction Extracted from AS 3798 – 2007 Table 5.1

Item	Application	Minimum relative compaction
		Minimum density index (Cohesionless soils)
1	Residential - lot, fill, house, sites	70
2	Commercial – fills to support minor loadings, including floor loading of up to 20kPa and isolated pad or strip footings to 100kPa	75
3	Fill to support pavements General Fill Subgrade (to a depth of 0.3m)	 70 75

- After stripping, and proof compaction, it is recommended the exposed base is to be assessed and approved by an authorised representative from this office prior to backfilling. At this stage it can be assessed whether any further materials need to be removed or whether further compaction of the base is required.
- The ground level should be built up to design levels with any suitable stockpiled sand materials and imported fill. The imported fill should consist of free draining sand with not more than 5% passing a 75µm sieve and be free of organic matter and other deleterious materials.
- The fill sand materials should be placed in layers not exceeding 300mm loose thickness and compacted to achieve the values stated in the table above. As a guide a minimum of 7 PSP blows over the interval 150 – 450mm, 9 PSP blows over the interval 450 – 750mm and 11 PSP blows over the interval 750 – 1050mm should be

achieved, however it is recommended that this be verified with appropriate laboratory testing.

- For design loadings above 100kPa additional compactive effort may be required over the base. Bearing capacities as outlined in Section 4.7 of this report can be achieved with compaction of the base of foundation to a minimum of 95% modified maximum dry density as determined by AS1289 5.2.1 and 5.4.1, to a minimum depth of 0.5m below the base of foundation.
- After remedial earthworks have been completed, it is recommended the earthworks be assessed and approved by an authorised qualified representative from this office.

It is considered that standard small to medium sized earthmoving equipment would be appropriate for the proposed earthworks. The near surface ground is competent and should not pose an issue to site traffic movements.

The material encountered on site can be deemed as 'easy' to excavate with medium sized earthwork equipment (i.e., a 20t excavator). Should excavations encounter groundwater, dewatering will be necessary.

4.5 Retaining Walls

Retaining walls proposed to be installed at the site will likely support sandy soils. Where imported granular backfill is to be used in conjunction with retaining walls, the geotechnical properties will vary depending upon the nature of the granular materials imported.

For cohesion-less free draining sand, the following parameters can be used as a guide for design purposes:

Table 8 – Retaining Wall Design Parameters

Parameters	Design Values
Angle of internal friction (Ø)	32°
Coefficient of active earth pressure (Kpa)	0.307
Coefficient of passive earth pressure (Kpa)	3.255
At rest coefficient of earth pressure (K_O)	0.470
Bulk density (KN/m^3)	18

Retaining structures should be designed in accordance with AS 4678-2002 Earth Retaining Structures. Guidance on allowable footing bearing pressures is provided in Section 4.7. Where significant eccentric and /or horizontal loading is applied, further assessment will be required.

Retaining wall design should ensure adequate drainage to the rear of the wall via weepholes or proper designed drainage system. Handheld compaction equipment is utilised within 2.0m of the walls, to reduce the potential increase in lateral pressure on the retaining wall.

Experience indicates that excavation immediately in front of retaining walls may cause movement to the wall to occur. This can lead to cracking of adjoining structures and needs to be accounted for in the design and construction sequencing of the new works.

4.6 Geotechnical Design Parameters

Based on the field investigation and test results, the interpreted geotechnical soil parameters of the encountered materials and earthworks recommendation for Class "A" site are presented in the below table.

Table 9 – Geotechnical Design Parameters

Soil Type	Depths (m)	Friction Angle Ø (^{0})	Cohesion C (kPa)	Density Y (t/m^3)	Elastic Modulus E (MPa)
Controlled fill sand	0.0 – 0.6	32	0	1.8	20
SAND	0.6 – 12.0	32	0	1.8	20
SAND	12.0+	33	0	1.85	40

4.7 Shallow Footings – Allowable Soil Bearing Capacities

Based on the findings of the current preliminary geotechnical investigation, shallow pad and strip footings may be considered appropriate for the proposed development after earthworks recommendations for Class "A" site within the scope of AS2870 design..

Due to the proposed development being a six-storey apartment complex, with loose sand present, it is recommended that deep foundations be used.

4.8 Deep Foundation – Allowable Soil Bearing Capacities

Based on the findings of the preliminary geotechnical investigation, shallow pad foundations are considered inappropriate for the proposed apartments foundation due to the extent of uncontrolled fill material. Deep foundations would be appropriate for the apartment foundations and shall be founded in the natural material at a depth in excess of -12.0 m below current ground levels (refer to EFCPT results in Appendix D) subject to the design load imposed.

The Design of a pile loaded in compression for deep foundation accordance with AS 2159-2009 can only be considered on the natural SAND at the site which can be calculated as follows:

Rug = {(fs x As) + ((fb + Po) x Ab)} - W
Where,
fs = average shaft friction along pile in compression (kPa)
As = shaft area of the pile in contact with soil (m2)
fb = ultimate base pressure for compression pile (kPa)
Po = total overburden pressure at the pile base (kPa)
Ab = area of pile cross-section (m2)
W = weight of pile (kN)

The pile capacity comprising shaft friction (fs) and end bearing (qb) for soils are assessed in general accordance with the LCPC 1982 method (Bustamante and Gianeselli, 1982), with reduced end bearing factors (Lehane, 2017). Both the shaft friction (fs) and end bearing (qb) are obtained from correlation with the CPT data.

As the proposed pile capacity and depth of the floodlights have not finalised at the time of the geotechnical investigation, we are unable to provide any further information on the deep foundation system. We will be pleased to provide further information as such when loading on the deep foundation can be confirmed.

The actual allowable bearing capacity of a particular foundation will be dependent on its location, geometry and founding depth, as well as the founding horizon. Therefore, once specific foundation geometries have been determined, it is recommended that the allowable bearing capacity and associated settlements be verified.

4.9 Indicative California Bearing Ratio (CBR)

The indicative California Bearing Ratio (CBR) value of the subgrade material, following earthworks can be estimated from the site investigation results and would be appropriate for preliminary design purposes. The indicative value is shown in the below table:

Table 3 – Indicative CBR Values

Material	Indicative CBR (%)	Compaction
SAND (In situ or Imported Fill)	12	95% of MMDD*

** Implies the maximum dry density ratio using Modified compaction in accordance with AS 1289 5.2.1-2003.*

For detailed design and construction of the pavements, it is recommended that the CBR values be verified with laboratory Soaked CBR testing on the anticipated subgrade material.

5. Conclusions

A site investigation was carried out at the proposed development site to assess the geotechnical conditions. Parameter and design recommendations are incorporated in the body of the report. The following conclusions have been drawn from the site investigation:

- The subsurface soil profile encountered comprised of topsoil in BH01, BH03 & BH04 fom the surface to 0.1 m and asphalt in BH02 from surface to 0.04 m., followed by loose to dense sand fill to an average depth of 1.3 m, underlying loose sand to the investigated depth of 12.3m.
- Ground water/ Perched water was encountered below the existing ground refer to section 3.2, Table 3.
- The site classification is currently classified as Class "P", however can be upgraded to and equivalent Class "A" in accordance with AS 2870-2011 provided the recommended earthworks are undertaken provided in section 4.4, subjected to placement and compaction of non-reactive engineered fill (sand) cover above materials encountered onsite.
- It is considered that the site is suitable for on-site drainage in its current condition.
- Recommended earthworks include stripping of fill sand and unsuitable materials, excavation of loose materials and moisture conditioning, proof compaction of the base, followed by placement and compaction of engineered fill to final level.
- Allowable bearing capacities for deep foundations can be determined once the specific foundation geometries have been determined, it is recommended that the allowable bearing capacity and associated settlements be verified based on proposed pile design criteria.
- For heavy structures proposed (six-storey apartment complex) further soil investigation within the structure's footprint will be required to provide a suitable (deep) foundation system.
- The site therefore subject to proposed earthworks for the development, will require an Acid Sulfate Soil Management Plan (ASSMP).

6. Limitation of Field Investigations

This report has been prepared in accordance with general accepted consulting practice for The Client using information supplied at the time and for the project specific requirements as understood by Structerre. To the best of our knowledge the information contained in this report is accurate at the date of issue, however it should be emphasised that any changes to ground conditions and/or the proposed structures may invalidate the recommendations given herein.

The conclusions and recommendations in this report are based on the site conditions revealed through selective point sampling, representing the conditions of the site in total, although the area investigated represents only a small portion of the site. The actual characteristics may vary significantly between successive test locations and sample intervals other than where observations, explorations and investigations have been made.

The materials and their geotechnical properties presented in this report may not represent the full range of materials and strengths that exist on this site, and the recommendations should be regarded as preliminary in nature. Allowances should be made for variability in ground conditions and any consequent impact on the development. Structerre accepts no responsibility and shall not be liable for any consequence of variations in ground conditions. If ground conditions encountered during construction are different to that described in this report, this office should be notified immediately.

Should you require further information or clarification of any of the recommendations provided within this report, please contact the undersigned.

For and on behalf of Structerre Consulting.



Majid Ali
Graduate Geotechnical Engineer



Eddie Ng
Senior Geotechnical Engineer

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22 April 2026

Job #	Revision	Authored	Checked	Authorised
J509108	0	MAI	ENG	MEC

7. References

Landgate Map Viewer

Department of Water – Perth Groundwater Map

The Perth sheet 1: 50,000 Environmental Geology Series (Part Sheets 2034 III and 2134 III, 1986) prepared by the Geological Survey of Western Australia

AS 1726-2017 Geotechnical Site Investigation

AS 2870-2011 Residential Slabs and Footings

AS 4055-2012 Wind Loads for Housing

AS 3798-2007 Guidelines on Earthworks for Commercial and Residential Developments

AS 1170.4-2007 Structural design actions – Earthquake actions in Australia

AS 1289.6.7.1-2016 In-situ Percolation Test (Constant Head)

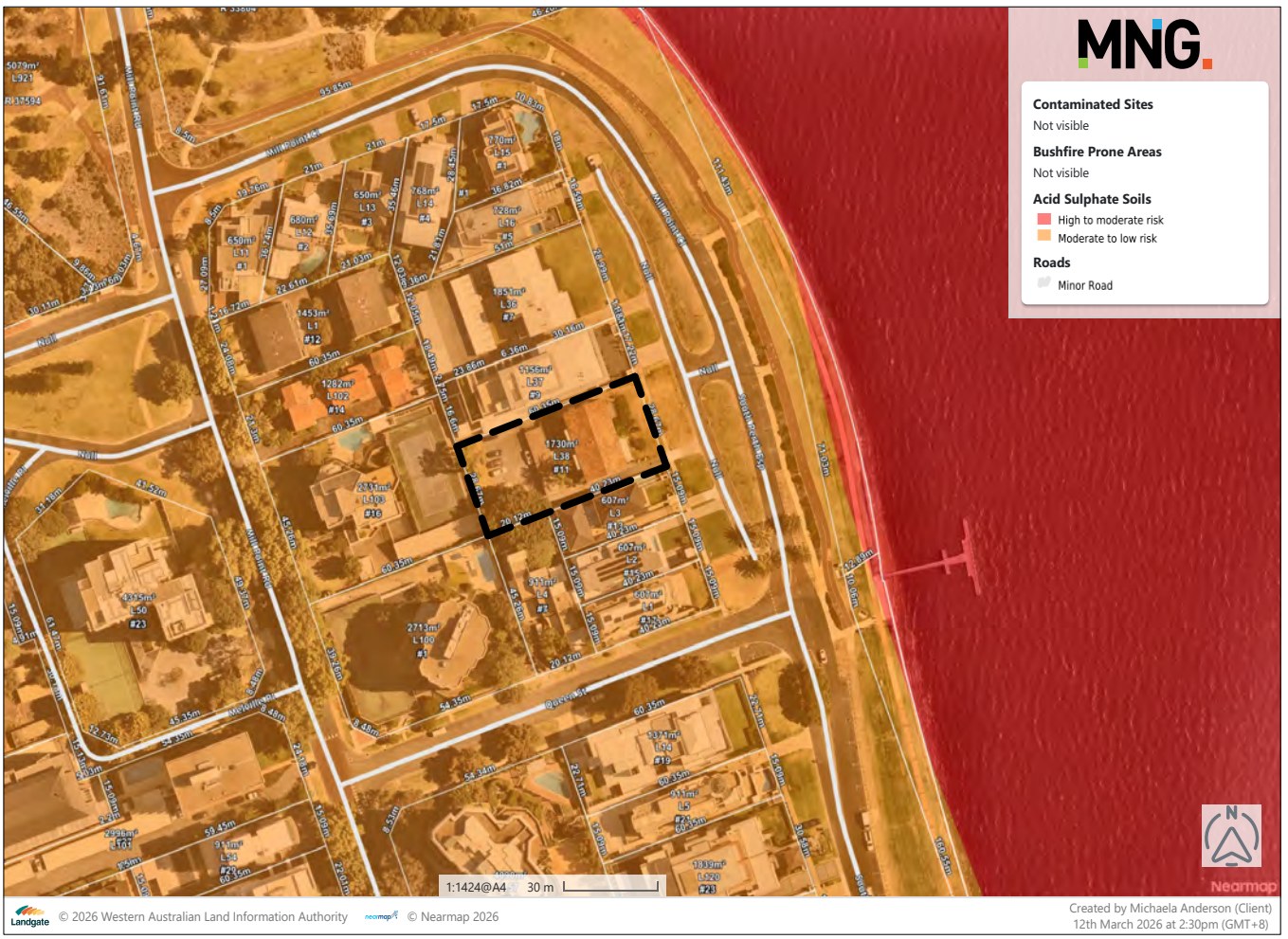
AS 1289.6.5.1-1999 Determination of the static cone penetration resistance of a soil - Field test using a mechanical and electrical cone or friction-cone penetrometer

AS 1289.6.3.3-1997 Methods of testing soils for engineering purposes – Soil strength and consolidation tests – Determination of the penetration resistance of a soil – Perth sand penetrometer test

AS 1289.3.6.1-2009 Soil classification tests – Determination of the particle size distribution of a soil – Standard method of analysis by sieving

Code of Practice – Excavation 2022 Government of Western Australia - Department of Mines, Industry Regulation and Safety

Appendix A – Site Plan



LEGEND

- Site Boundary

STRUCterre consulting	PROJECT: Proposed Apartment Complex Lot 38 #11 South Perth Esplanade, South Perth	
	PROJECT #: D387420	CLIENT: **City Of South Perth**
	JOB #: J509108	
Zemla Pty Ltd (ABN 71 349 772 837) ATF the Young Purich and Higham Unit Trust trading as Structerre Consulting 1 ERINDALE ROAD, BALCATTA, WA 6021 TEL 9205 4500 FAX 9205 4501 EMAIL: wageotecheng@structerre.com.au	SCALE: NTS	TITLE: Geotechnical - Acid Sulphate Soils
	DATE: 26 Mar '26	DRAWN BY: MAI / CHECKED BY: ENG

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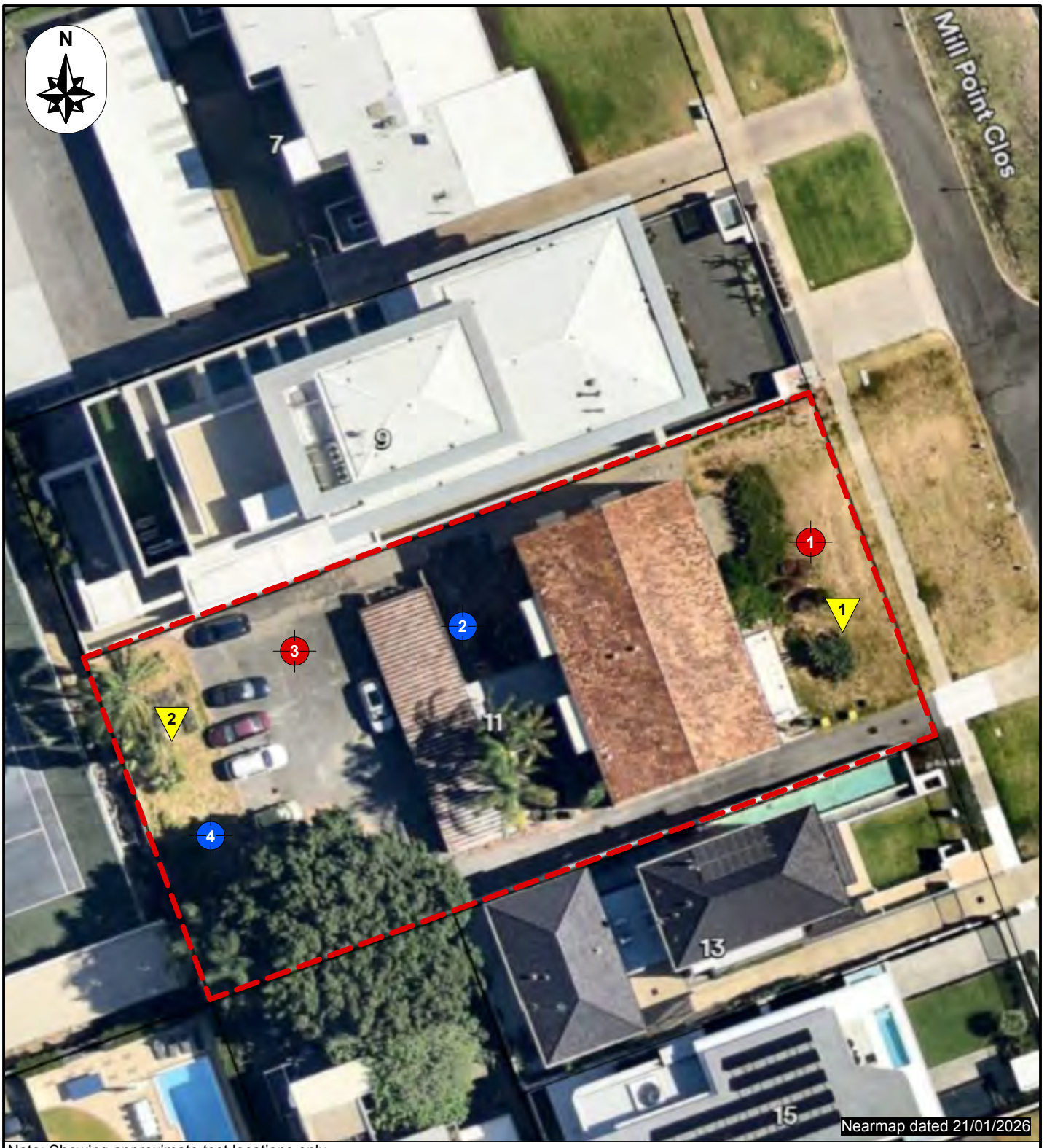

Note: Showing approximate test locations only

LEGEND

- Borehole
- Borehole and Percolation Test
- Electric Friction Cone Penetrometer Test
- Site Boundary

STRUCterre consulting

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PROJECT:	Proposed Apartment Complex Lot 38 #11 South Perth Esplanade, South Perth
PROJECT #:	D387420
JOB #:	J509108
CLIENT:	**City Of South Perth**
SCALE:	NTS
TITLE:	Geotechnical Investigation Site Plan
DATE:	26 Mar '26
DRAWN BY:	MAI
CHECKED BY:	ENG

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Appendix B – Site Photos



PHOTO 1 - Facing towards the site from South Perth Esplanade



PHOTO 2 - Facing southwest towards the BH3 location

STRUCterre consulting

Zemla Pty Ltd (ABN 71 349 772 837) ATF the Young Purich and Higham Unit Trust trading as Structerre Consulting
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PROJECT:
Proposed Apartment Complex
Lot 38 #11 South Perth Esplanade, South Perth

PROJECT #: D387420	CLIENT: **City Of South Perth**
JOB #: J509108	
SCALE: NTS	TITLE: Site Photographs
DATE: 26 Mar '26	DRAWN BY: MAI / CHECKED BY: ENG

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PHOTO 3 - Facing northwest from BH4 location



PHOTO 4 - Facing north towards the BH1 location

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SCALE: NTS

TITLE: Site Photographs

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CHECKED BY: ENG

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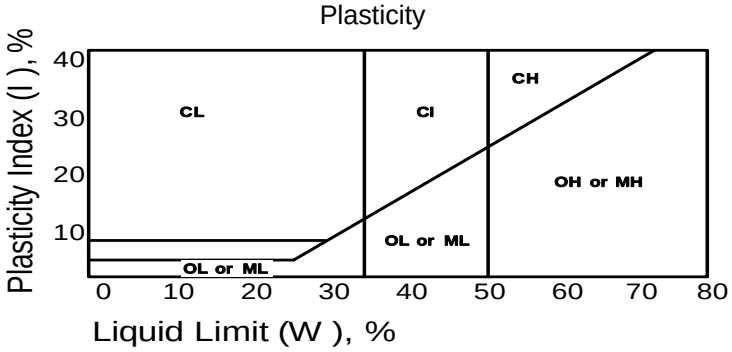
Appendix C – Borelogs & Terminology

BORELOG TERMINOLOGY

Particle Size Distribution

Major Division	Subdivision	Size
Boulders		>200mm
Cobbles		200 - 63mm
Gravel	Coarse	63 - 20mm
	Medium	20- 6mm
	Fine	6 - 2.36mm
Sand	Coarse	2.36 - 0.6mm
	Medium	0.6 - 0.2mm
	Fine	0.2 - 0.075mm

Plasticity



Consistency of Cohesive Soils

Term	Undrained Strength Su (kPa)	Field Guide
Very Soft	< 12	Exudes between the fingers when squeezed in hand
Soft	12 - 25	Can be moulded by light finger pressure
Firm	25 - 50	Can be moulded by strong finger pressure
Stiff	50 - 100	Cannot be moulded by Fingers. Can be indented by thumb.
Very Stiff	100 - 200	Can be indented by thumb nail
Hard	> 200	Can be indented with difficulty by thumb nail.
Friable	-	Crumbles or powders when scraped by thumbnail

Consistency/Density of Non-Cohesive Soils

Term	Density Index (%)	SPT "N" Value Comparison
Very Loose	< 15	0 - 4
Loose	15 - 35	4 - 10
Medium Dense	35 - 65	10 - 30
Dense	65 - 85	30 - 50
Very Dense	> 85	> 50

Moisture Content

D	Dry
M	Moist
W	Wet
S	Saturated

Minor Components

Term	Assessment Guide	Proportion of Minor Component In:
Trace	Presence just detectable by feel or eye, but soil properties little or no different to general properties of primary component	Coarse grained soils: < 5 % Fine grained soils: <15%
With	Presence easily detected by feel or eye, soil properties little different to general properties of primary component	Coarse grained soils: 5 - 12 % Fine grained soils: 15 - 30%

Soil Legend

FILL	CLAY	GRAVEL	CONCRETE
TOPSOIL	SILT	LIMESTONE	COMBINATIONS
PEAT	SAND	BEDROCK	eg: Clay, Silty, Sandy

USCS

GW	Well graded gravel	SC	Clayey sand	OL	Organic low plasticity silt	CL	Low plasticity clay
GP	Poorly graded gravel	SM	Silty sand	ML	Low plasticity silt	CI	Intermediate plasticity clay
SW	Well graded sand			MH	High plasticity silt	CH	High plasticity clay
SP	Poorly graded sand			OH	Organic high plasticity silt	PT	Peat

DOC:GE:3.003

WA | QLD | NSW | VIC

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ABN 71 349 772 837 Zemla Pty Ltd ACN 008 966 283 as trustee for the Young Purich and Higham Unit Trust trading as Structerre Consulting Engineers

Borehole Record: BH01

Project: Proposed Apartment Complex	**Position:** Easting: 391275.20	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462703.71	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): loose, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry.	D	L			
	1.0									
	1.2									
GWL	1.5	Natural		SP	Sand (SP): medium dense, poorly graded, fine to medium grained, grey, moist to wet.	W-M	MD			
	2.0									
	2.5			SP	Sand (SP): dense, poorly graded, fine to medium grained, grey, wet.	W	D			
	3.0									
					BH01 Terminated at 3.5 m (Target Depth)					

PSP: 0 5 10 15 20 25 30; 0, 3, 3, 4, 5, 6, 7



Depth: 3.5 m - BH01

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

Borehole Record: BH02

Project: Proposed Apartment Complex	**Position:** Easting: 391238.71	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462695.67	**Drill Rig** Hand-Auger
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): loose to dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, dry to moist.	M-D	L-D	0 2 3 4 7 8 7	15.4	
GWL	1.5	Natural		SP	Sand (SP): medium dense, poorly graded, fine to medium grained, grey, wet.	W	MD			
					BH02 Refusal at 2 m (Sand Collaspe - due to water table)					

PSP scale: 0 5 10 15 20 25 30



Depth: 2 m - BH02

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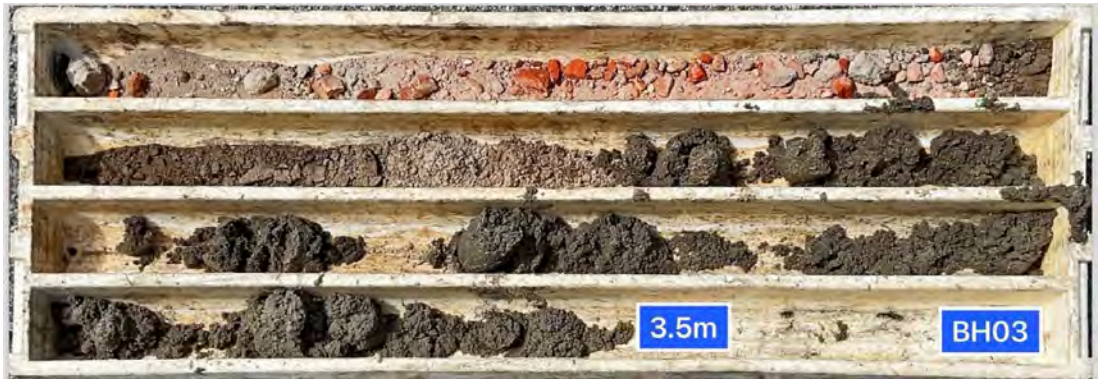
Borehole Record: BH03

Project: Proposed Apartment Complex	**Position:** Easting: 391227.12	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462692.55	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.04	Non-soil		PAV	Asphalt.					
	0.5	Fill		SP	Sand (SP): medium dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry.	D	MD	0 3 4 5 5 7 8		
	0.9									
	1.0	Natural		SP	Sand (SP): dense, poorly graded, fine to medium grained, grey, moist to wet.	W-M	D			
GWL	1.5				Sand (SP): dense, poorly graded, fine to medium grained, grey, wet.					
	2.0									
	2.5			SP		W	D			
	3.0									
					BH03 Terminated at 3.5 m (Target Depth)					

PSP: 0 5 10 15 20 25 30



Depth: 3.5 m - BH03

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Borehole Record: BH04

Project: Proposed Apartment Complex	**Position:** Easting: 391220.38	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462686.38	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): medium dense to dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry to moist.	M-D	MD-D	0 3 4 4 4 9 10	15.6	
GWL	1.5	Natural		SP	Sand (SP): medium dense, poorly graded, fine to medium grained, grey, wet.	W	MD			
	3.5				BH04 Terminated at 3.5 m (Target Depth)					



Depth: 3.5 m - BH04

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Borehole Record: BH01

Project: Proposed Apartment Complex	**Position:** Easting: 391275.20	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462703.71	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): loose to dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry.	D	L-D			
	1.0									
	1.2									
	1.5				Sand (SP): medium dense to dense, poorly graded, fine to medium grained, grey, moist to wet.					
GWL	2.0	Natural		SP		W-M	MD-D			
	2.5									
	3.0									
					BH01 Terminated at 3.5 m (Target Depth)					



Depth: 3.5 m - BH01

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

Borehole Record: BH02

Project: Proposed Apartment Complex	**Position:** Easting: 391238.71	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462695.67	**Drill Rig** Hand-Auger
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): loose to dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, dry to moist.	M-D	L-D		15.4	
GWL	1.5	Natural		SP	Sand (SP): medium dense to dense, poorly graded, fine to medium grained, grey, wet.	W	MD-D			
					BH02 Refusal at 2 m (Sand Collaspe - due to water table)					



Depth: 2 m - BH02

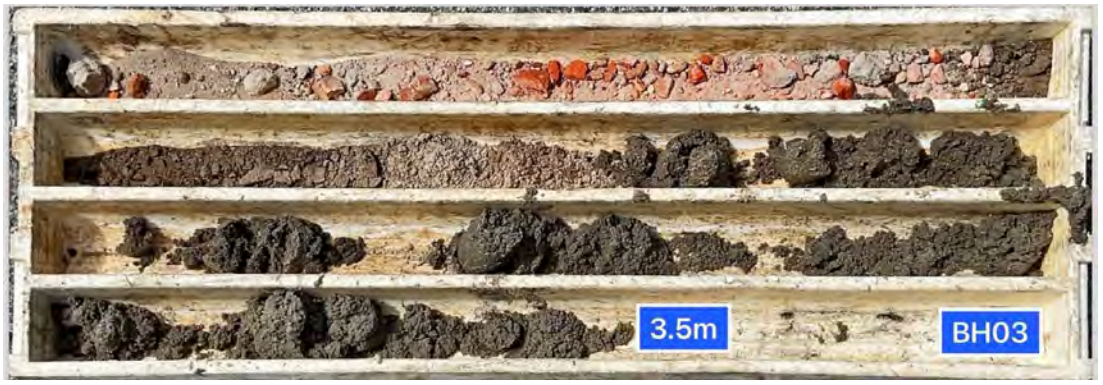
This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

Borehole Record: BH03

Project: Proposed Apartment Complex	**Position:** Easting: 391227.12	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462692.55	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.04	Non-soil		PAV	Asphalt.					
	0.5	Fill		SP	Sand (SP): medium dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry.	D	MD			
	0.9									
GWL	1.0	Natural		SP	Sand (SP): dense, poorly graded, fine to medium grained, grey, trace silt, moist to wet.	W-M	D			
	1.5									
	2.0									
	2.5									
	3.0									
					BH03 Terminated at 3.5 m (Target Depth)					

PSP: 0 5 10 15 20 25 30 — 0, 3, 4, 5, 5, 7, 8



Depth: 3.5 m - BH03

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

Borehole Record: BH04

Project: Proposed Apartment Complex	**Position:** Easting: 391220.38	**Date Drilled:** 30/03/2026
Location: Lot 38 #11 South Perth Esplanade, South Perth WA 6151, Australia	Northing: 6462686.38	**Drill Rig** SRP - 1IAY
Loc Comment:	**Elevation:** Not Surveyed	**Drill Supplier** Structerre Consulting
Job No: D387420 J509108	**Inclination:**	**Logged/Checked:** Tony Broadway/David Harding

Water	Depth (m)	Soil Origin	Graphic Log	USCS	Material Description	Moisture	Consistency	PSP	Percolation (m/day)	Samples
	0.1	Non-soil		TS	Topsoil.					
	0.5	Fill		SP	Sand (SP): medium dense to dense, poorly graded, fine to medium grained, pale brown, trace fine gravel, trace building rubble, dry to moist.	M-D	MD-D	0, 3, 4, 4, 4, 9, 10	15.6	
GWL	1.0									
	1.5									
	2.0				Sand (SP): medium dense to dense, poorly graded, fine to medium grained, grey, wet.					
	2.5	Natural		SP		W	MD-D			
	3.0									
					BH04 Terminated at 3.5 m (Target Depth)					



Depth: 3.5 m - BH04

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for geotechnical purposes only, without attempt to assess possible contamination. Any references to potential contamination are for information only and do not necessarily indicate the presence or absence of soil or groundwater contamination.

Appendix D – Laboratory Test Results

Malaga Laboratory
44 Crocker Drive, Malaga, WA 6090
Post: PO Box 792, Balcatta WA 6914
Ph : (08) 9205 4500
Email: wageotechlab@structerre.com.au
Website: www.structerre.com.au
ABN: 71 349 772 837 / ACN: 008 966 283

Material Test Report

Report Number: MAT:26S-03459
Date of Issue31/03/2026
Issue Number: 1

Client:	Woodside Valley Development Pty Ltd
Client Address:	36 The Circus Burswood WA 6100
Project:	PROPOSED APARTMENT COMPLEX - Lot 38 #11 SOUTH PERTH ESP SOUTH PERTH
Project No:	D387420

Accreditation Number 18742

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: Jonty Sargent

Accredited for compliance with ISO/IEC 17025

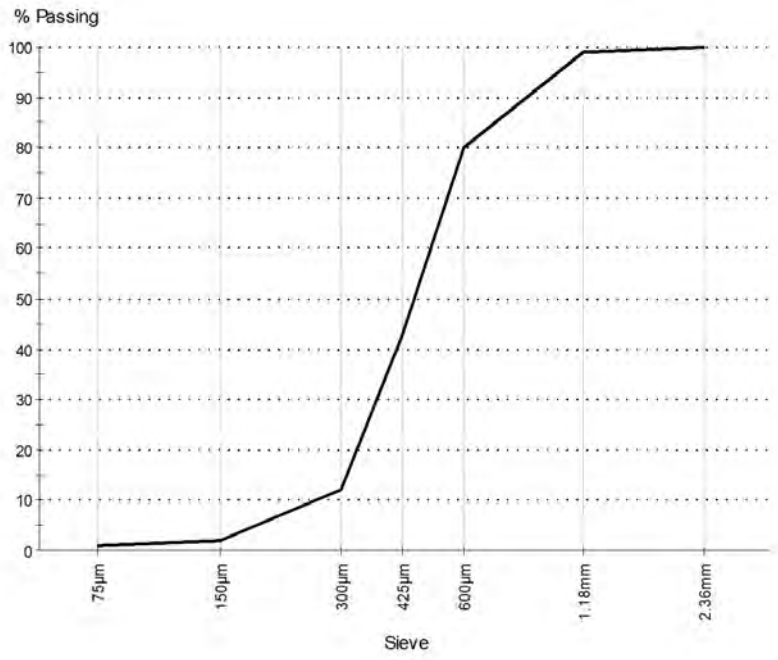
Sample Details

Sample ID	Material Assessment
Field Sample ID	BH03
Date Tested	30/03/2026
Date Sampled	27/03/2026
Soil Description	SAND trace silt
Proposed Use	Fill
Depth of Test	1700 - 2200
Depth of Layer	
Sampling Method	Sample submitted by client
TRN	-
Work Order ID	W26-01444

Other Test Results

Description	Method	Result	Limits

Particle Size Distribution



Method: AS 1289.3.6.1
Drying by: Oven
Date Tested: 30/03/2026

Note: Sample Washed

Sieve Size	% Passing	Limits
2.36mm	100	
1.18mm	99	
600µm	80	
425µm	43	
300µm	12	
150µm	2	
75µm	1	

Comments

N/A

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Appendix E – EFCPT Traces

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Woodside Valley Development

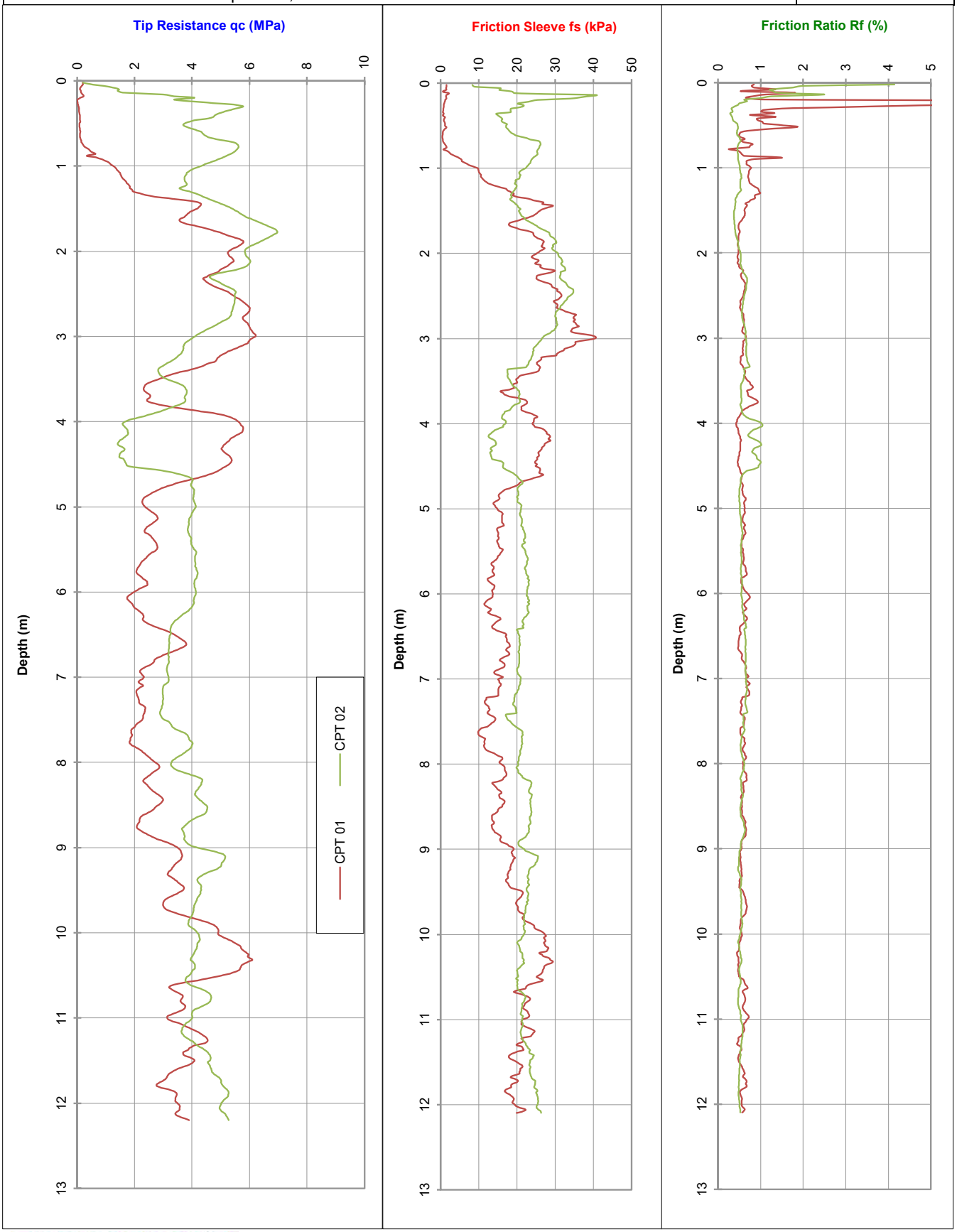
Job No.: J509108

PROJECT: D387420

Date/s: 26/Mar/2026

LOCATION: 11 South Perth Esplanade, South Perth

ALL DATA



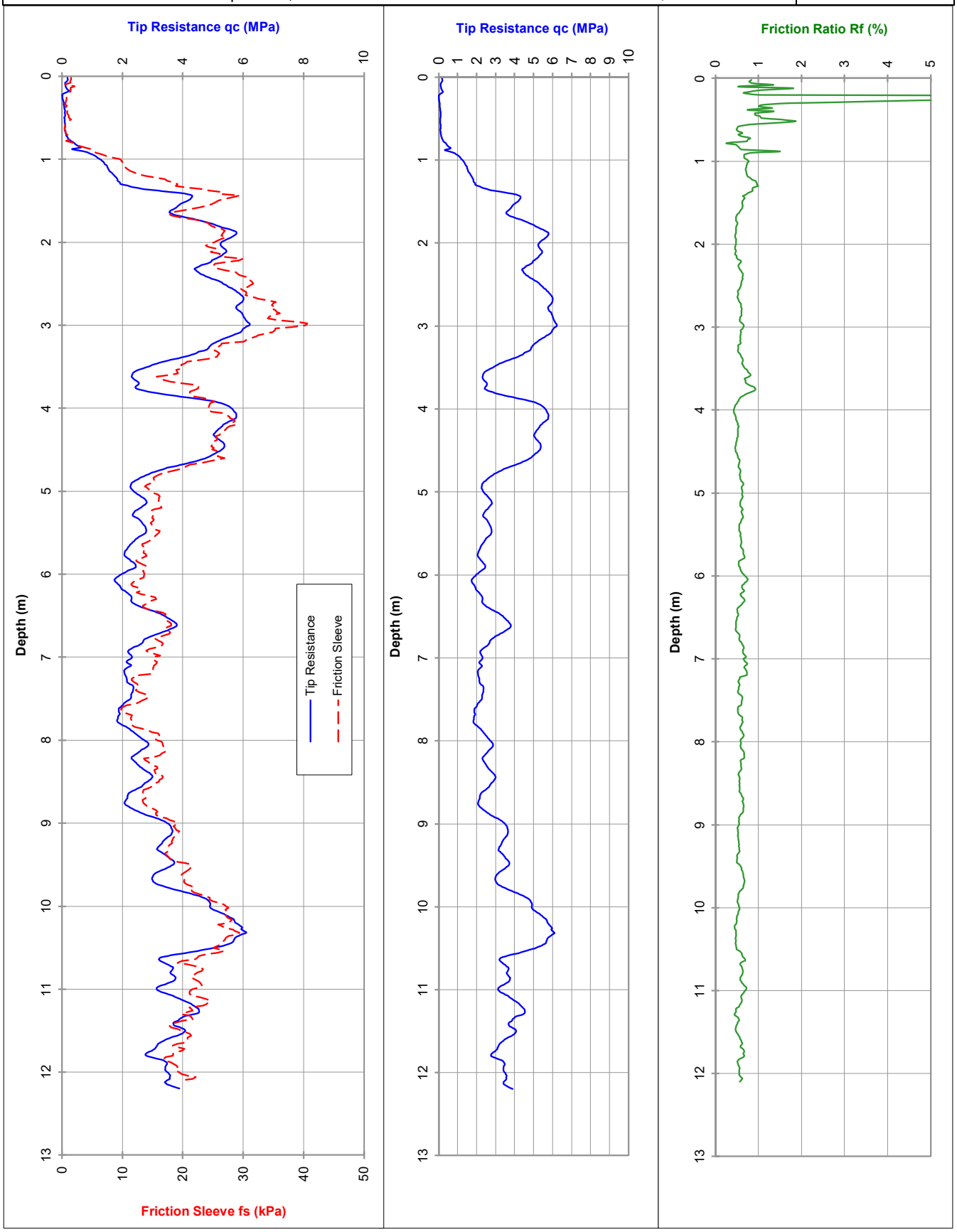
PROBEDRILL GEOTECHNICAL SURVEY

Tested in accordance with AS 1289.6.5.1-1999
and IRTP 2001 for friction reducer

Rig Type: 7t track

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Woodside Valley Development	Job No.: J509108	Probe I.D
PROJECT: D387420	RL (m): 3.1	**CPT 01**
LOCATION: 11 South Perth Esplanade, South Perth	Co-ords: 391221.9mE, 6462673.43mN	26-Mar-26



PROBEDRILL GEOTECHNICAL SURVEY

Tested in accordance with AS 1289.6.5.1-1999 and IRTP 2001 for friction reducer

Approx. water (m): Dry to 0.2

Pre-Drilled to (m): 1.5

Refusal:

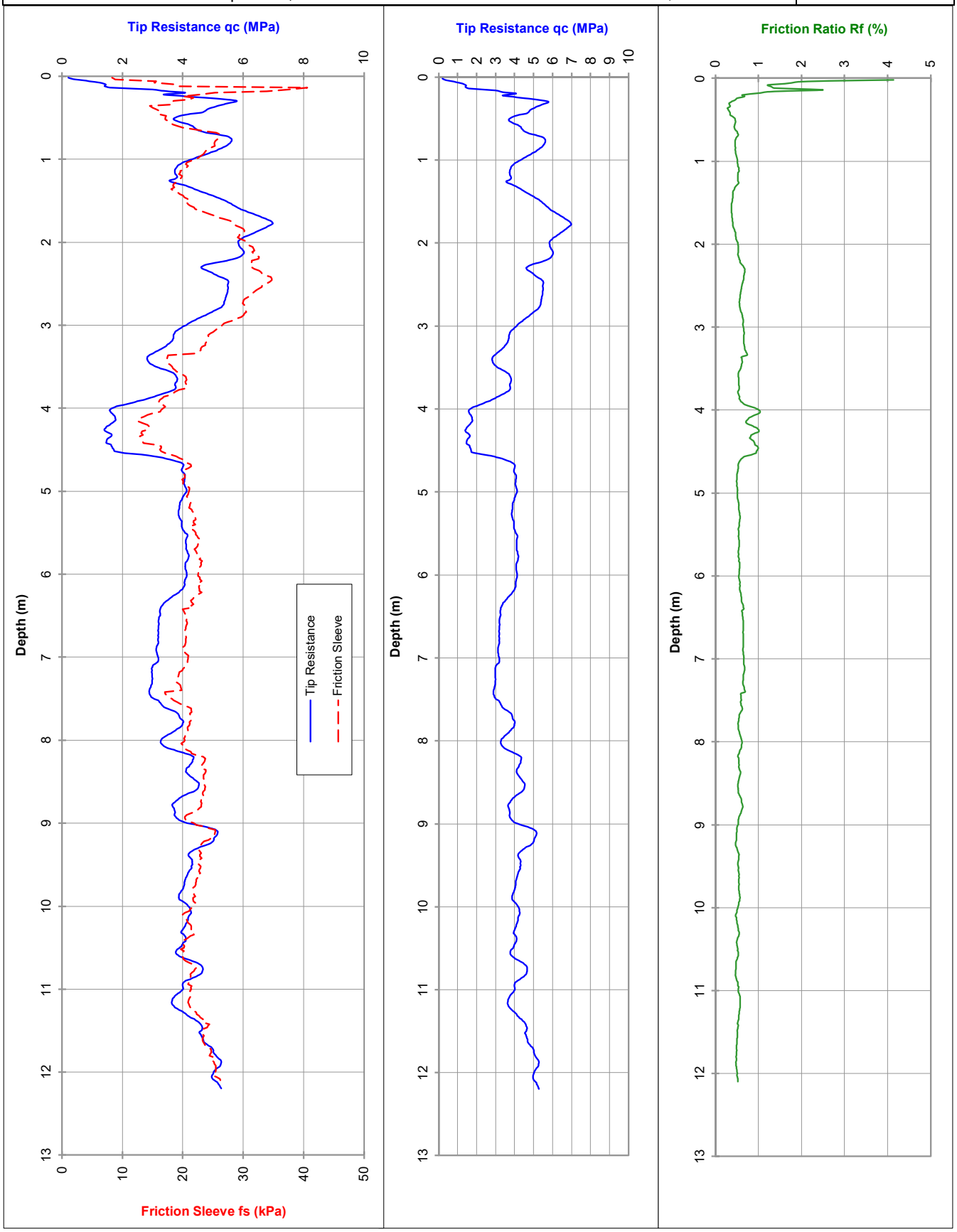
Cone I.D.: EC10

File: SC0273T

Rig Type: 7t track

ELECTRIC FRICTION-CONE PENETROMETER

CLIENT: Woodside Valley Development	Job No.: J509108	Probe I.D
PROJECT: D387420	RL (m): 1.82	**CPT 02**
LOCATION: 11 South Perth Esplanade, South Perth	Co-ords: 391271.77mE, 6462689.03mN	26-Mar-26



PROBEDRILL GEOTECHNICAL SURVEY

Tested in accordance with AS 1289.6.5.1-1999 and IRTP 2001 for friction reducer

Approx. water (m): Dry to 1.3

Pre-Drilled to (m): 1.5

Refusal:

Cone I.D.: EC10

File: SC0274T

Rig Type: 7t track



Transport Impact Statement

Project:	Proposed Residential Development 11 South Perth Esplanade, South Perth
Client:	Space Collective Architects
Author:	T. Yangden
Date:	6th May 2026
Shawmac Document #:	2602020-TIS-001

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Document Status: Client Review

Version	Prepared By	Reviewed By	Approved By	Date
A	T. Yangden	P. Nguyen	P. Nguyen	25/03/2026
B	T. Yangden	P. Nguyen	P. Nguyen	25/03/2026
C	T. Yangden	P. Nguyen	P. Nguyen	06/05/2026

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File Reference: Y:\Jobs Active 2026\T & T - Traffic & Parking\SCA_11 South Perth Esplanade_Sth Perth_TIS_2602020\3. Documents\3.20 TIS\2602020_Space_11 South Perth Esplanade_TIS_Rev C.docx

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1. Introduction

1.1. Proponent

Shawmac Pty Ltd has been engaged by Space Collective Architects to prepare a Transport Impact Statement (TIS) for a proposed residential development in South Perth.

This TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) *Transport Impact Assessment Guidelines Volume 4 – Individual Developments*. The assessment considers the following key matters:

- Details of the proposed development.
- Vehicle access and parking including sight distance assessment in accordance with relevant guidelines.
- Provision for service vehicles.
- Hours of operation.
- Daily traffic volumes and vehicle types.
- Traffic management on frontage streets.
- Public transport access.
- Pedestrian access.
- Cycle access and end of trip facilities.
- Site specific and safety issues.

1.2. Site Location

The site address is 11 South Perth Esplanade, South Perth. The local authority is the City of South Perth.

The general site location is shown in Figure 1. An aerial view of the existing site is shown in Figure 2.



Figure 1: Site Location



Figure 2: Aerial View (January 2026)

2. Proposed Development

2.1. Land Use

The site is located within the South Perth Activity Centre.

There is an existing residential apartment building on the site which will be demolished.

The proposal is a residential development comprising 9 multiple dwellings.

The site plan is shown in Figure 3.

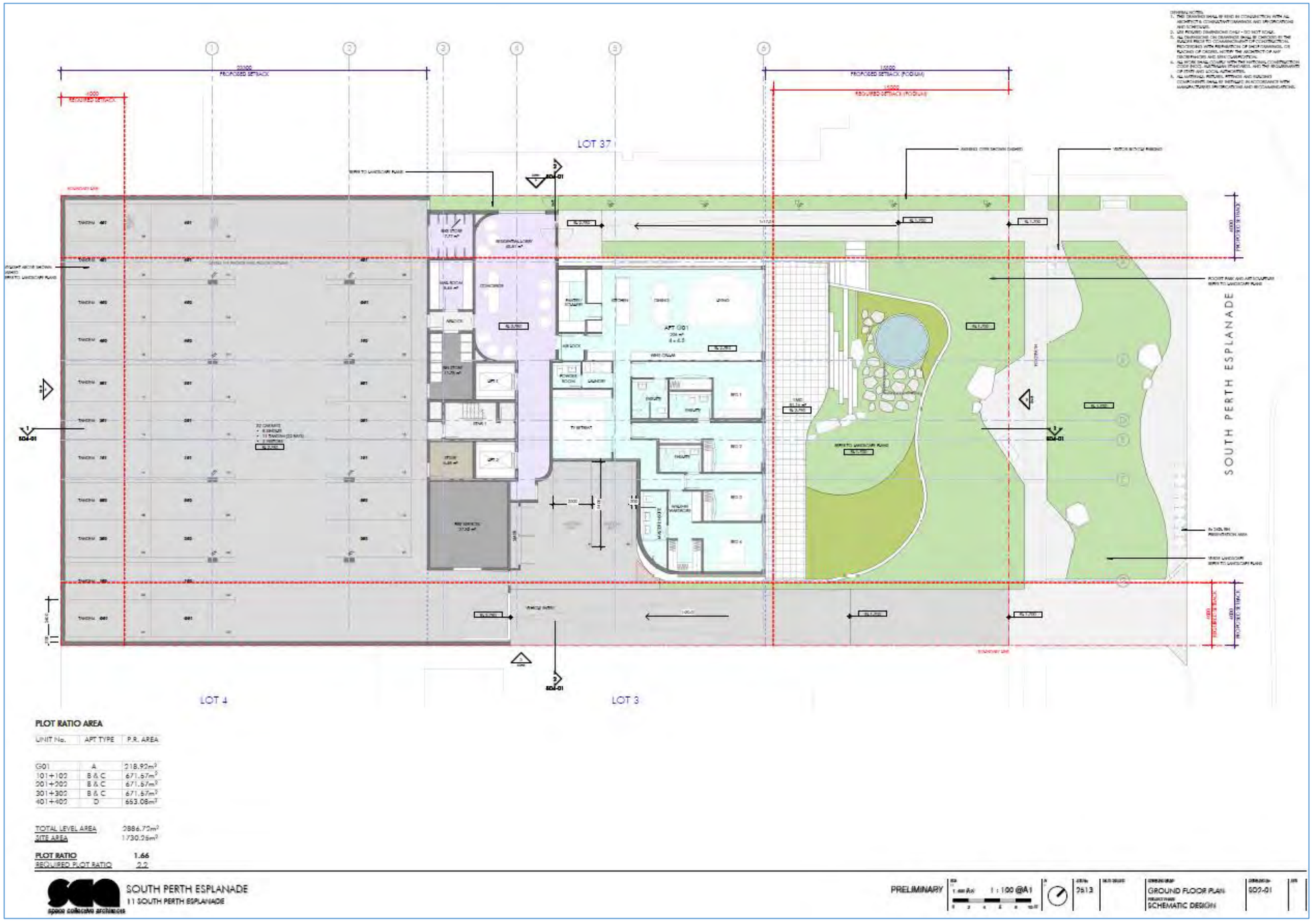


Figure 3: Site Plan

3. Traffic Management on Frontage Streets

3.1. Existing Road Layout and Hierarchy

The layout and hierarchy of the existing local road network according to the Main Roads WA *Road Information Mapping System* is shown in Figure 4.

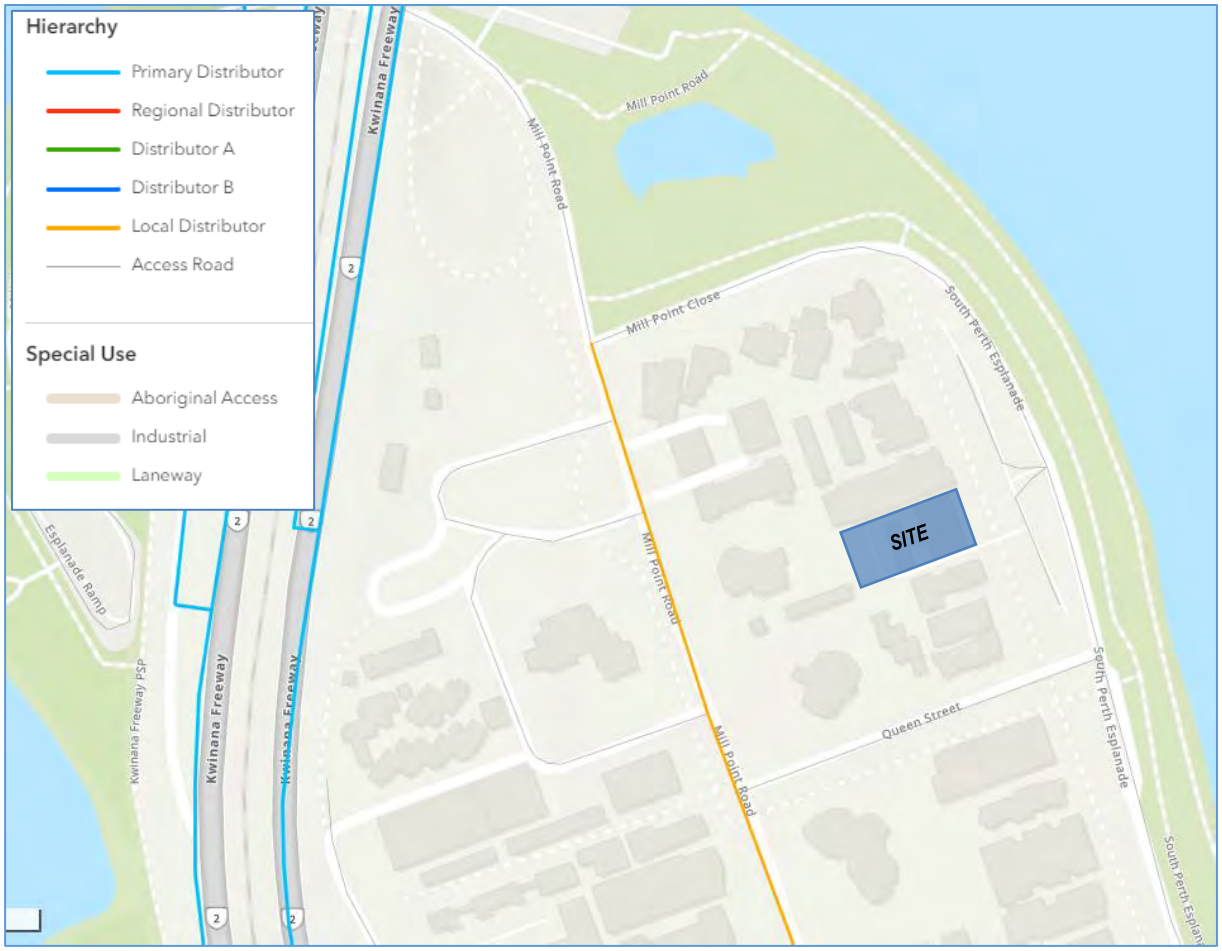


Figure 4: Existing Road Network Hierarchy

3.2. Speed Limits

The existing speed limits are shown in Figure 5.

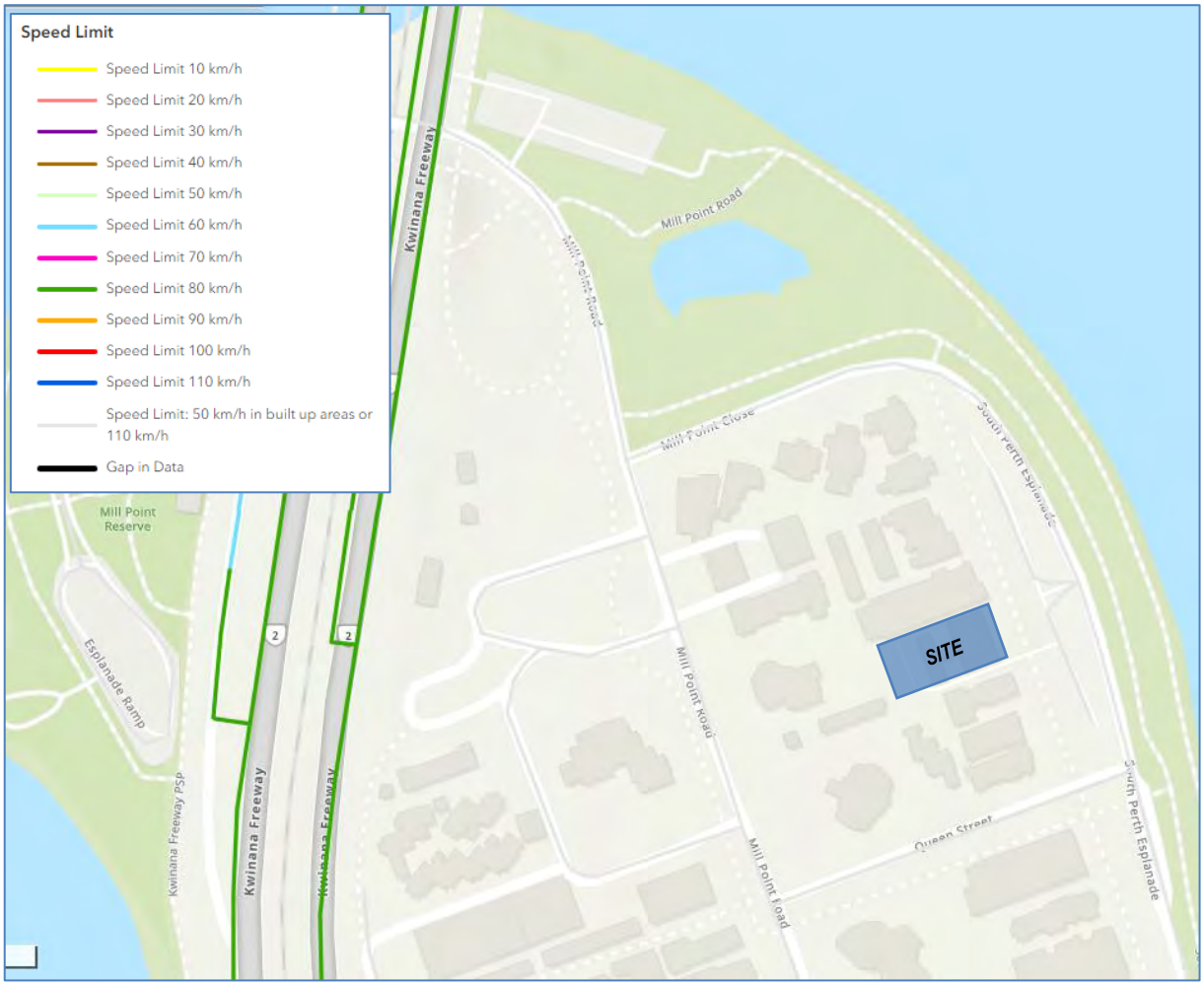


Figure 5: Existing Speed Limits

4. Vehicle Access and Parking

4.1. Vehicle Access

The site has existing crossover on the service road connecting to South Perth Esplanade. It is proposed to use the same crossover as shown in Figure 6.

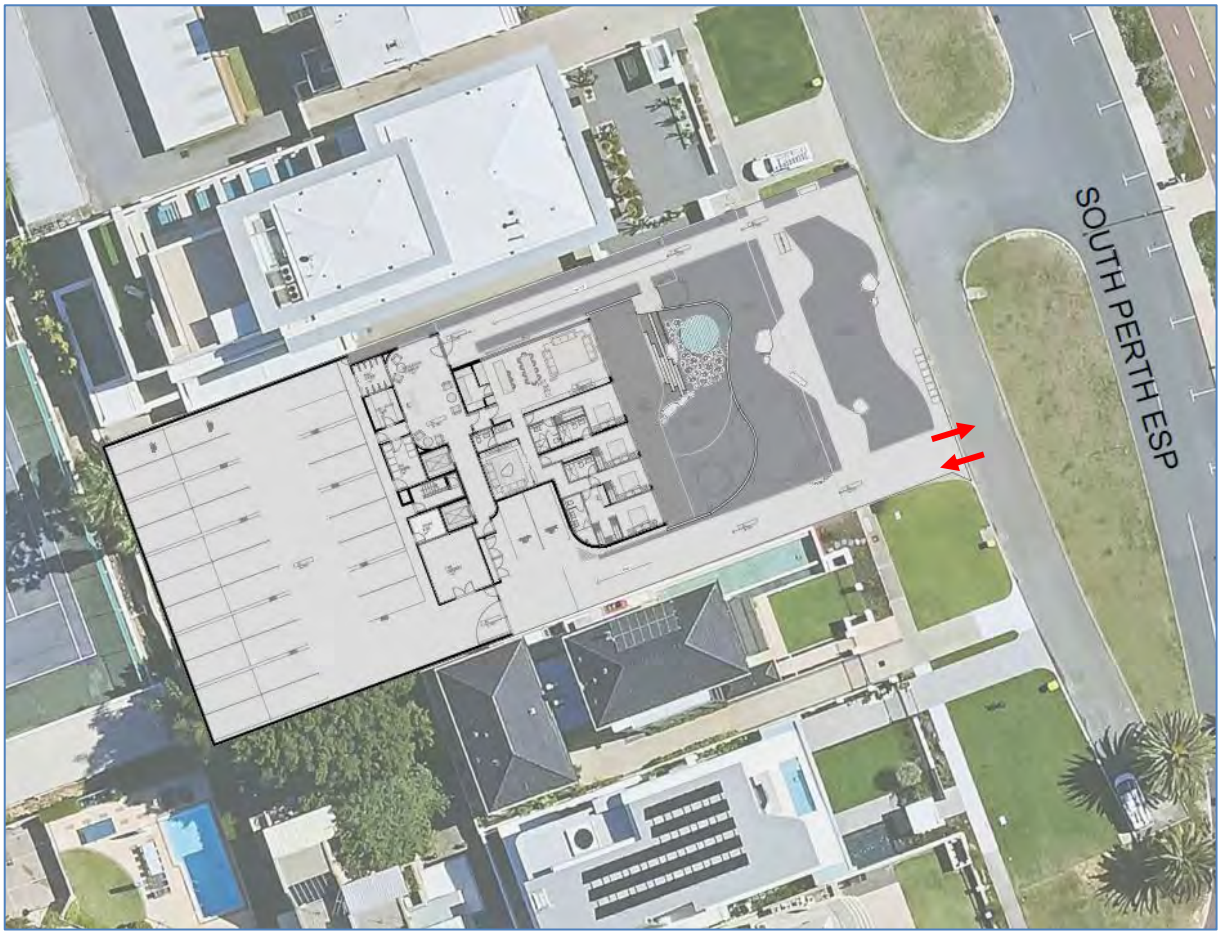


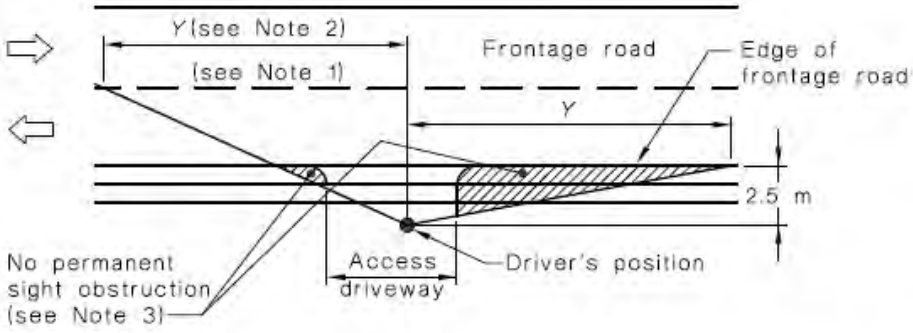
Figure 6: Vehicle Access Arrangement

The proposed driveway is 3.6m wide which is only wide enough for a single vehicle at any given time. Acceptable Outcome A 3.8.5 of the Residential Design Codes Volume 2 (RDC2) recommends that driveway widths are kept to functional minimum, relative to the traffic volumes and entry / egress requirements.

Australian Standard AS2890.1:2004 *Parking facilities Part 1: Off-street car parking* (AS2890.1) suggests that subject to consideration of traffic volumes, driveways less than 5.5m may be provided down to a minimum of 3.0m at a domestic property. As a guide, 30 or more movements in a peak hour would usually require provision for two vehicles to pass on the driveway. As calculated later in this assessment, the estimated number of movements during the peak hours is 3 to 4 vehicles which is well below the threshold and so the single lane driveway with no passing point is acceptable.

4.2. Vehicle Sight Distance

Sight distance requirements from vehicle exit points is defined in Figure 3.2 of AS2890.1 as shown in Figure 7.



Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2nd and 3rd columns
100	139	160	
110	153	190	

Figure 7: Sight Distance Requirements

Based on the 50 km/h speed limit on the South Perth Esplanade service road, the minimum required stopping sight distance is 45m. As shown in Figure 8, the minimum sight distance is achieved in both directions.

Vertically, the geometry of the South Perth Esplanade service road is relatively flat with no crests that would impede sight distance.

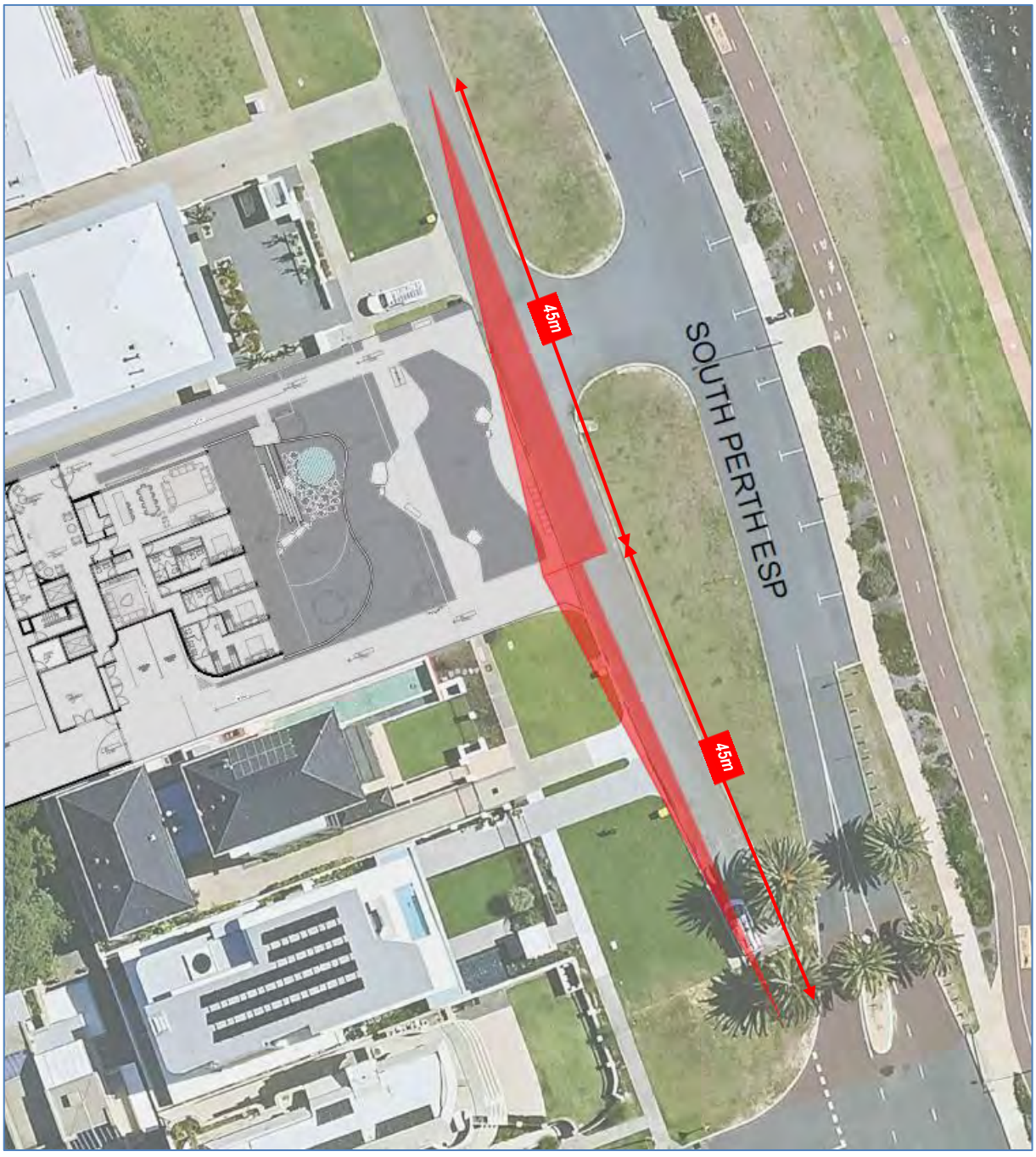


Figure 8: Sight Distance Check

4.3. Parking Supply

As the South Perth Activity Centre Plan does not specify requirements for residential car parking, based on the residential density of R-AC0, the Residential Design Codes Volume 2 (RDC2) Part 3 is assumed to be applicable. As the site is located within the defined boundaries of an activity centre, the Location A requirements of RDC2 have been applied.

The parking calculation is summarised in Table 1.

Table 1: RDC2 Car Parking Calculation (Multiple Dwellings – Location A)

Land Use	Bay Type	Minimum Requirement	Quantum	Required Bays
Residential – Multiple Dwellings	Resident	2+ Bedroom dwellings – 1 bay per dwelling	9	9
	Visitor	1 bay per four dwellings up to 12 dwellings	9	3
	Motorcycle / Scooter	1 motorcycle / scooter bay for every 10 car bays for developments exceeding 20 dwellings	NA	NA

As above, the development requires a minimum of 9 resident bays and 3 visitor bays. It is proposed to provide 30 resident bays and 2 visitor bays which satisfies the minimum requirements other than shortfall of one visitor bay.

With regards to residential visitor parking, Design Guidance 3.9.3 of RDC2 states that residential visitor parking may be reduced where there is adequate on-street parking or public parking in the near vicinity of the development. In this case, there is ample on-street parking in the vicinity of the site, including along South Perth Esplanade, Queen Street and Mill Point Close.

4.4. Parking Layout

The layout and dimensions of the car park have been assessed for compliance with AS2890.1 as detailed in Table 2. As the majority of bays are for resident use, the User Class 1A requirements have been applied which is the standard for long-term parking and User Class 2 has been applied for visitor parking.

There are no standard guidance on the length of tandem car bays. In practice, the preference is for the length to be equivalent to two standard bays (10.8m) but in many instances, a minimum length of 10m has been accepted on the basis that a household or tenancy is unlikely to have two vehicles larger than a B85.

Table 2: AS2890.1 Car Parking Compliance

Dimension	Requirement	Provided
90-degree parking – Class 1 or 1A – Residential, domestic parking		
Car Bay Width	2.4m	2.4m
Car Bay Length (Standard Bay)	5.4m	5.4m
Car Bay Length (Tandem Bay)	10.0m	10.8m
Parking Aisle Width	5.8m	5.8m minimum
Blind Aisle Extension	1.0m	0.3m
90-degree parking – Class 2 – Visitor Parking		
Car Bay Width	2.5m	2.5m
Car Bay Length	5.4m	5.4m
Parking Aisle Width	5.8m	6.2m
Blind Aisle Extension	1.0m	2.1m to sliding gate
Spaces for Small Cars		
Car Bay Width	2.3m	2.4m
Car Bay Length	5.0m	5.4m
Parking Aisle Width	5.8m	5.8m

As shown, the proposed parking layout complies with the minimum requirements of AS2890.1, except for the blind aisle at the end tandem bays, which is approximately 700mm short. The client has proposed to designate these end tandem bays for small cars only to compensate for the shortfall.

A vehicle swept path analysis has been undertaken to check manoeuvring for the visitor bays and the end tandem bay. The analysis was also undertaken in AutoTURN using the Australian Standard B85 vehicle for the visitor bays which is the standard for checking parking manoeuvres. The small car size is not clearly defined in AS2890.1 and so a custom template for a 4.25m long car was used to test the end tandem bays.

The results of the analysis are also attached as Appendix A and these demonstrate that the above vehicles can be accommodated. The residents or tenants who are allocated the end tandem bays should be notified of the potential limitations.

4.5. Provision for Service Vehicles

Waste is proposed to be collected from the kerbside along the South Perth Esplanade service road and so waste vehicles do not need to enter the site.

5. Traffic Volumes

5.1. Traffic Generation

The volume of traffic generated by the proposed development has been estimated using trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation* as detailed in Table 3.

The peak hour trip rates are based on the peak hour of the adjacent road network typically occurring between 7 to 9am and between 4 to 6pm.

Table 3: Proposed Development Vehicle Trip Generation

Land Use	Units	Quantity	Generation Rate		Number of Trips	
			AM Peak	PM Peak	AM Peak	PM Peak
Mid-Rise Multifamily Housing	Dwellings	9	0.37	0.39	3	4

As shown, the proposed development is estimated to generate approximately 3 vehicle trips during the morning peak hour and 4 during the afternoon peak hour.

According to the WAPC TIA guidelines, an increase of between 10 to 100 peak hour vehicles is considered to have a low to moderate impact and is generally deemed acceptable without requiring detailed capacity analysis.

The estimated 3 to 4 vehicles per hour is below the lower end of this range and so the development traffic will have a very low impact and can be accommodated within the existing capacity of the road network. It is also noted that the development is replacing an existing apartment building on the site with a similar number of dwellings and so the net traffic increase is expected to be minimal.

6. Pedestrian and Cyclist Access

6.1. Accessibility

All surrounding roads within the immediate area have at least one pedestrian footpath.

The external path network is well established and considered to be adequate for pedestrians and cyclists to safely travel between the site and surrounding areas.

Internally, pedestrian access is proposed from frontage footpath and proposed car park as shown in

Figure 9.

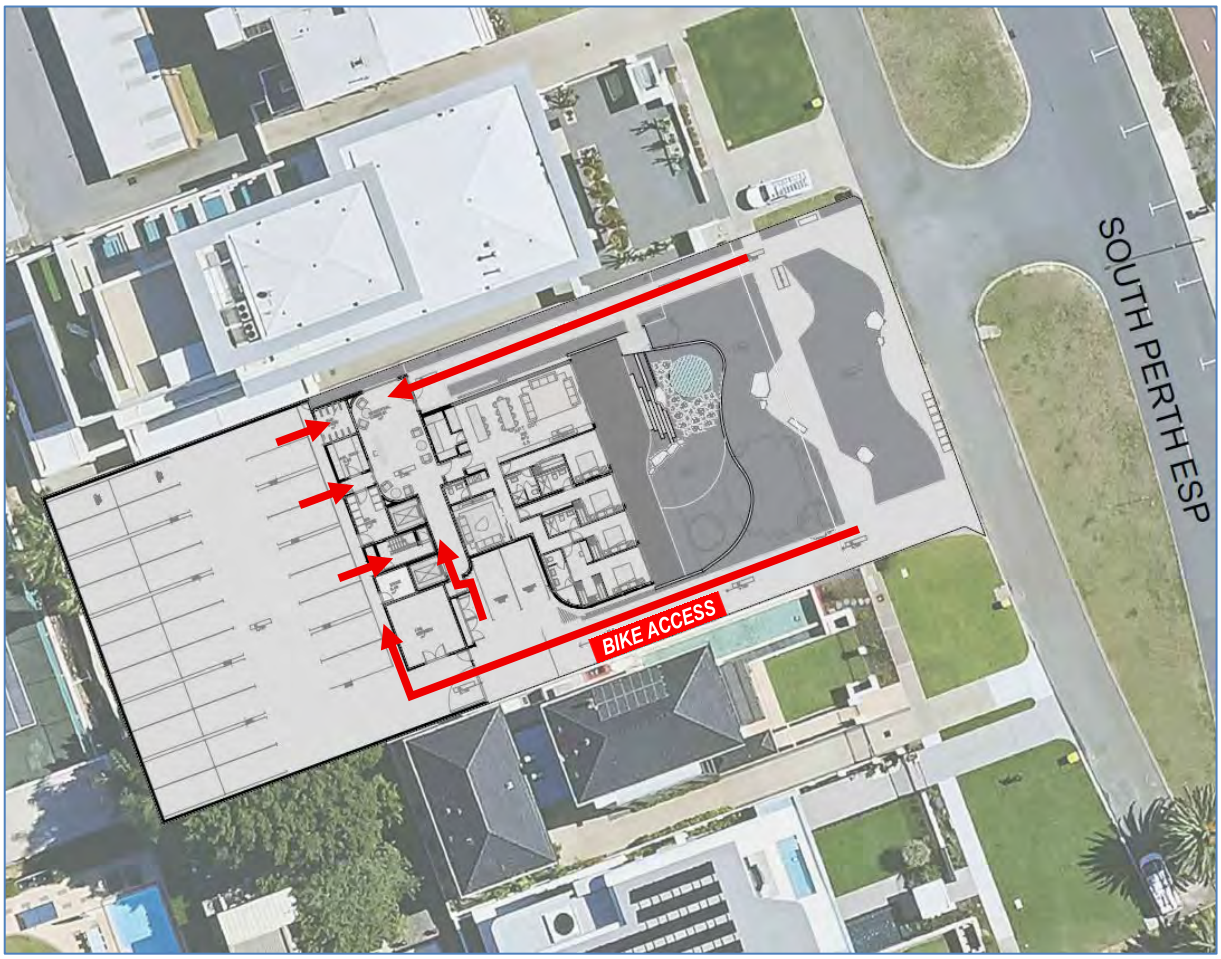


Figure 9: Pedestrian Access

6.2. Bicycle Parking

The bicycle parking requirements are also outlined in RDC2. The bicycle parking requirements are calculated in Table 4.

Table 4: Bicycle Parking Requirements

Land Use	Unit	Requirement	Quantum	Required Spaces
Residential	dwellings	0.5 spaces per dwelling	9	5 resident spaces
Residential Visitor	dwellings	1 space per 10 dwelling	9	1 visitor spaces

As above, the development requires a total of 5 resident bicycle spaces and 1 visitor bicycle space. It is proposed to provide a bicycle storeroom on the ground floor adjacent to car parking area with 8 bicycle spaces and 2 visitor bicycle parking spaces are proposed beside the frontage footpath which complies with the RDC2 minimum requirements.

7. Public Transport Access

A single Transperth bus service (Route 35) operates within vicinity to the site, with the nearest bus stop located approximately 300 metres walking distance from the site on Melville Place, west of Mill Point Road. This route provides connections between Elizabeth Quay and South Perth.

The existing available public transport services are considered to be adequate to meet the expected demand.

8. Site Specific Issues and Safety Issues

8.1. Crash History

The crash history of the adjacent road network was obtained from the MRWA Reporting Centre. The search included the adjacent section of South Perth Esplanade and Queen Street. A summary of the recorded incidents over the five-year period from January 2021 to December 2025 is shown in Figure 10.

The crash history is relatively low and does not appear to indicate a major safety issue with the road network. The proposed development will generate a very low volume of additional traffic and there is no indication that the development itself will increase the risk of crashes unacceptably.



Figure 10: Crash History January 2021 to December 2025

9. Conclusion

This Transport Impact Statement for the proposed residential development at 11 South Perth Esplanade in South Perth concluded the following:

- Vehicle access is proposed from the existing crossover on the service road connecting to South Perth Esplanade. The single lane width of the driveway is acceptable based on the low traffic volumes.
- The minimum required sight distance is achieved in both directions at the proposed vehicle access.
- The development requires a minimum of 9 resident bays and 3 residential visitor bays. It is proposed to provide 30 resident bays and 2 visitor bays which satisfies the minimum requirements other than shortfall of one visitor bay. With regards to residential visitor parking, Design Guidance 3.9.3 of RDC2 states that residential visitor parking may be reduced where there is adequate on-street parking or public parking in the near vicinity of the development. In this case, there is ample on-street parking in the vicinity of the site, including along South Perth Esplanade, Queen Street and Mill Point Close.
- The proposed parking layout complies with the minimum requirements of AS2890.1, except for the blind aisle at the end tandem bays, which is approximately 700mm short. The client has proposed to designate these end tandem bay for small cars only to compensate for the shortfall.
- A vehicle swept path analysis demonstrates adequate manoeuvring for a B85 vehicle to the visitor bays and a 4.25m car to the end tandem bay. The residents or tenants who are allocated the end tandem bays should be notified of the potential limitations.
- Waste is proposed to be collected from the kerbside along the South Perth Esplanade service road and so waste vehicles do not need to enter the site.
- The proposed development is estimated to generate approximately 3 vehicle trips during the morning peak hour and 4 during the afternoon peak hour. The development traffic will have a very low impact and can be accommodated within the existing capacity of the road network. It is also noted that the development is replacing an existing apartment building on the site with a similar number of dwellings and so the net traffic increase is expected to be minimal.
- All surrounding roads within the immediate area have at least one pedestrian footpath. The external path network is well established and considered to be adequate for pedestrians and cyclists to safely travel between the site and surrounding areas. Internally, appropriate pedestrian access is proposed from the frontage path and the proposed car park.
- The development requires a total of 5 resident bicycle spaces and 1 visitor bicycle spaces. It is proposed to provide a bicycle storeroom on the ground floor adjacent to car parking area with 8 bicycle spaces and 2 visitor bicycle parking spaces are proposed beside the frontage footpath which complies with the RDC2 minimum requirements.
- The existing public transport services are considered to be adequate to meet the expected demand.

- The crash history is relatively low and does not appear to indicate a major safety issue with the road network. The proposed development will generate a very low volume of additional traffic and there is no indication that the development itself will increase the risk of crashes unacceptably.

Appendix A – Vehicle Swept Path Analysis

SOUTH PERTH ESP

4250

940 2400

□1

	mm
Width	: 1650
Track	: 1650
Lock to Lock Time	: 6.0
Steering Angle	: 32.3

300mm CLEARANCE (GREEN DASHED)

VEHICLE BODY GREEN (FORWARD) RED (REVERSE)

WHEEL PATH (BLACK DASHED)

4910

920 2800

B85

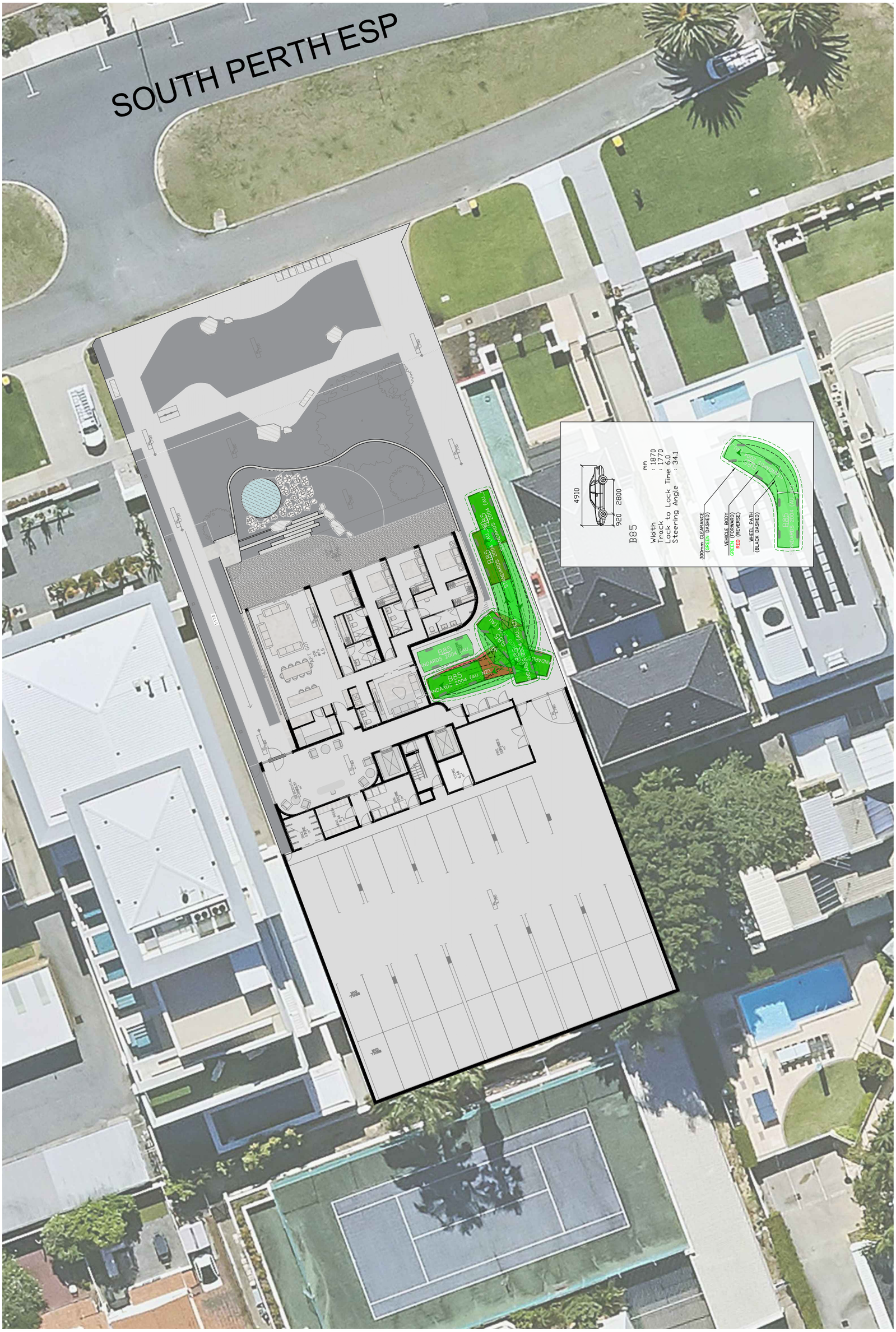
	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1

300mm CLEARANCE (GREEN DASHED)

VEHICLE BODY GREEN (FORWARD) RED (REVERSE)

WHEEL PATH (BLACK DASHED)

SOUTH PERTH ESP



Waste Management Plan

11 South Perth Esplanade

Prepared for Space Collective Architects

24 April 2026

Project Number: WMP26009

Assets | Engineering | Environment | Noise | Spatial | Waste

DOCUMENT CONTROL					
Version	**Description**	**Date**	**Author**	**Reviewer**	**Approver**
1.0	First Approved Release	19/03/2026	JL	AB	AB
2.0	Second Approved Release	24/04/2026	JL	AB	AB

Approval for Release

Name	**Position**	**File Reference**
Ann Brouwer	Project Manager – Waste Management Plan Lead (WA)	WMP26009-01_Waste Management Plan_2.0
Signature		

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Executive Summary

Space Collective Architects is seeking development approval for the proposed residential development located at 11 South Perth Esplanade, South Perth (the Proposal).

To satisfy the conditions of the development application the City of South Perth (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Refuse	2,160	240	Five	Twice each week	Private contractor
Recycling	1,080	240	Three	Twice each week	Private contractor

A private contractor will collect refuse and recyclables from the utilising its kerbside collection service. The private contractor's waste collection vehicle will service the bins from the Bin Presentation Area on South Perth Esplanade.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

Space Collective Architects is seeking development approval for the proposed residential development located at 11 South Perth Esplanade, South Perth (the Proposal).

To satisfy the conditions of the development application the City of South Perth (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by residential properties to the north, south and west, and South Perth Esplanade to the east, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide an adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the number of apartments at the Proposal. The Proposal consists of the following:

- Four Bedroom Apartments – 4; and
- Five Bedroom Apartments – 5.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the City of South Perth's *Local Planning Policy 3.1 – Waste Management.*

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Tenancy Use Type	City's Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Four Bedroom Apartments	3+ Bedroom Dwelling	240L/week	120L/week
Five Bedroom Apartments	3+ Bedroom Dwelling	240L/week	120L/week

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

Waste generation volumes in litres per week (L/week) adopted for this waste assessment is shown Table 2-2. It is estimated that the Proposal will generate 2,160L of refuse and 1,080L of recyclables each week.

Table 2-2: Estimated Waste Generation

Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
Four Bedroom Apartments	4	240	960
Five Bedroom Apartments	5	240	1,200
		Total	**2,160**
Recyclables			
Four Bedroom Apartments	4	120	480
Five Bedroom Apartments	5	120	600
		Total	**1,080**

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Area, as shown in Diagram 1, and discussed in the following sub-sections.

3.1 Bin Sizes

Table 3-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 3-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes		
	240L	660L	1,100L*
Depth	0.8	0.8	1.1
Width	0.6	1.3	1.3
Height	1.1	1.2	1.3

Reference: City of South Perth's Local Planning Policy 3.1 – Waste Management.

**Reference: SULO Bin Specification Data Sheets*

3.2 Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-2 the Bin Storage Area has been sized to accommodate:

- Five 240L refuse bins; and
- Three 240L recycling bins.

Table 3-2: Bin Requirements for Bin Storage Area

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	2,160	5	2	1
Recycling	1,080	3	1	1

The configuration of these bins within the Bin Storage Area is shown in Diagram 1. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 1 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 1: Bin Storage Area



3.3 Bin Storage Area Design

The design of the Bin Storage Area will take into consideration:

- Located within the development site and integrated into the design of the building;
- Screened from the view of public spaces, private residences and communal open space;
- Shall not encroach into areas required for the parking of vehicles;
- Located for convenient disposal of waste and recyclables by residents /cleaners/caretakers;
- Ventilated to a suitable standard in accordance with Australian Standard 1668.2: The Use of Ventilation and Air Conditioning in Buildings, where the outlet for vented air will not adversely impact residents;
- Functional to allow all bins to be easily moved, washed, and cleaned;
- All personnel access ways a minimum width of 900mm wide;
- All bins have a minimum 50mm clearance on all sides (between bins, against walls etc.);
- Smooth and impervious bin room walls no less than 1.8m in height and room access point of not less than 1m in width;
- Have a minimum 1500mm in width door opening to allow easy removal and return of all bin sizes;
- Doors to the Bin Storage Area should be vermin proof, self-closing but be able to be locked open;
- Bin Storage Area must have mains water supply and a smooth impervious floor of no less than 100mm in thickness, graded to plumbed sewer drainage outlet/s to allow for the washing of all room surfaces and for the cleaning of bins as required;
- Signage should identify allowable items and encourage positive waste management behaviour through stickers on bins and posters in and around the Bin Storage Area; and
- Bin Storage Areas shall be provided with artificial lighting, to comply with AS4282-1997, and include safety signing clearly identifying prohibited standing areas.

Bin numbers and storage space within the Bin Storage Area will be monitored by the strata manager/ caretaker during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

4 Waste Collection

A private waste collection contractor will service the Proposal and provide five 240L bins for refuse and three 240L bins for recyclables.

The private contractor will collect refuse and recyclables twice each week from the Proposal utilising a side arm waste collection vehicle.

The private contractor will service bins from the Bin Presentation Area on the verge on South Perth Esplanade at the front of the Proposal, as shown in Diagram 2. Note that eight bins are the maximum number of bins required on the verge on collection days.

Bins will be presented for collection 1m from the verge with the wheels and handles facing away from the street. The bins will remain clear of obstructions such as power poles, signs and street trees, and will be placed so as not to obstruct pedestrians, footpaths or bike lanes. Bins will be lined up neatly and in a single row along the verge, with sufficient space between each bin to facilitate collection by the side arm waste collection vehicle.

The strata manager/caretaker will ferry the bins to and from the Bin Presentation Area on collection days. The travel path between the Bin Storage Area and the Bin Presentation Area will be of flat surface and kept free of obstacles. The strata manager/caretaker will return the bins to the Bin Storage Area as soon as possible on the same day following collection.

Diagram 2: Bin Presentation Area



4.1 Residential Bulk Waste

To assist with the reduction of illegal dumping of bulk wastes, each apartment has an allocated storage room of at least 5m^2 and additional space has been allowed for within the Bin Storage Area for the temporary storage of bulk waste. Removal of bulk waste will be monitored by the strata manager/caretaker, who will liaise with residents on appropriate procedures.

5 Waste Management

A strata manager/caretaker will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Area;
- Cleaning of bins and Bin Storage Area, when required;
- Ensure all residents at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Ferrying of bins to and from the Bin Storage Area and Bin Presentation Area on collection days;
- Monitor resident behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with residents to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

6 Conclusion

As demonstrated within this WMP, the Proposal provides a sufficiently sized Bin Storage Area for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that an adequately designed Bin Storage Area has been provided, and collection of refuse and recyclables can be completed from the Proposal.

The above is achieved using:

- Five 240L refuse bins, collected twice each week; and
- Three 240L recycling bins, collected twice each week.

A private contractor will collect refuse and recyclables from the utilising its kerbside collection service. The private contractor's waste collection vehicle will service the bins from the Bin Presentation Area on South Perth Esplanade.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

Figures

Figure 1: Locality Plan

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LEGEND

- Site Boundary

Cadastre

- Crown Allotment
- Freehold
- Strata Plan or Lot
- Road
- Easement
- Reserve

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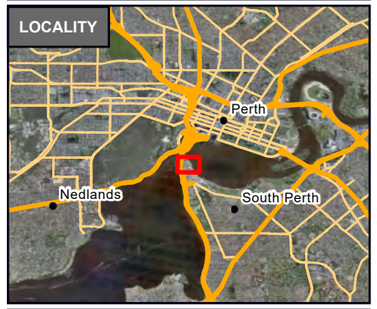


0 2 4 6 8 10 km

LOCALITY

11 Esplanade
South Perth WA 6151

Space Collective Architects (SCA)

N 0 10 20 30 40 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:1,000

Prepared:	Z O'Rourke	Date:	4/02/2026
Reviewed:	K Whelahan	Revision:	A
Project:	WMP26009		

talis consultants

Figure 01

Data source: Roads, Cadastre - Landgate, 2025. Imagery: Landgate 2025.

Assets | Engineering | Environment | Noise | Spatial | Waste

HEAD OFFICE
604 Newcastle Street,
Leederville, WA 6007

NSW OFFICES
Nowra
76 Bridge Road,
Nowra, NSW 2541

Newcastle
58 Cleary Street,
Hamilton, NSW 2303

QLD OFFICE
Brisbane
35 Boundary Street,
South Brisbane, QLD 4101

P: 1300 251 070 | E: enquiries@talisconsultants.com.au

ABN 85 967 691 321

11 SOUTH PERTH ESPLANADE

RESIDENTIAL DEVELOPMENT

SOLAR STUDIES

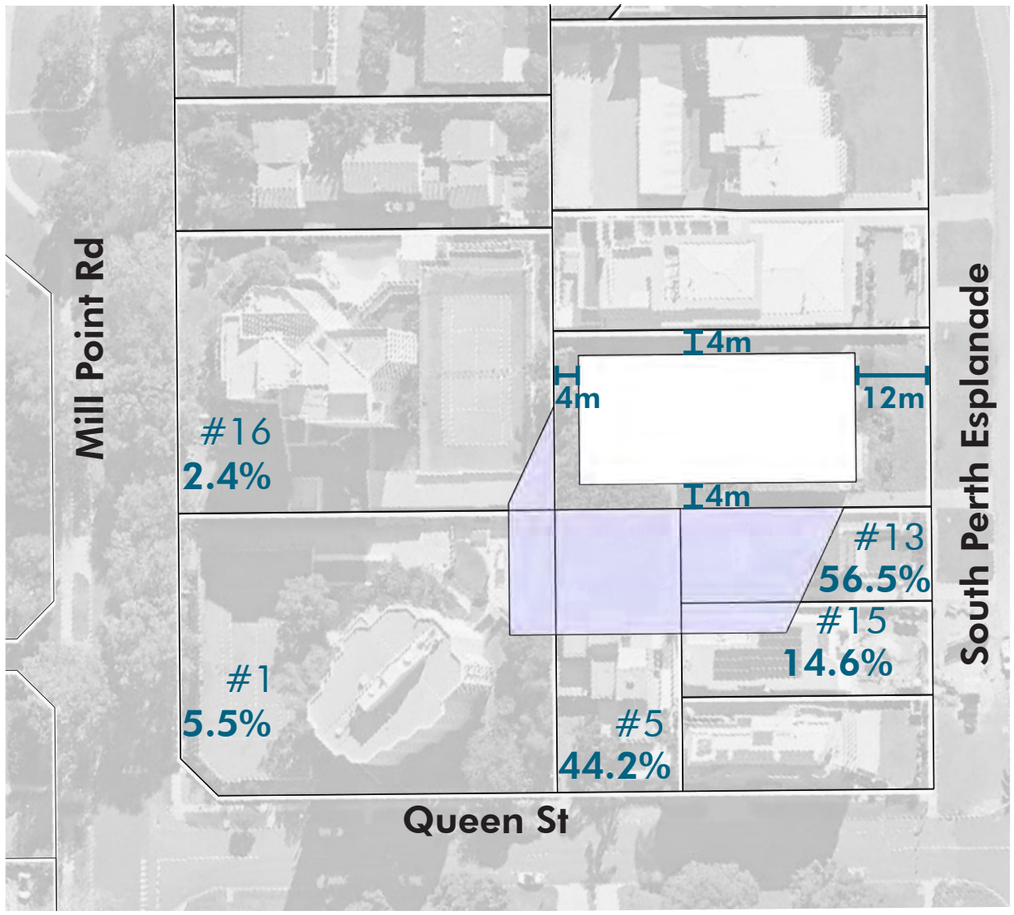
space collective architects

OCT 2026

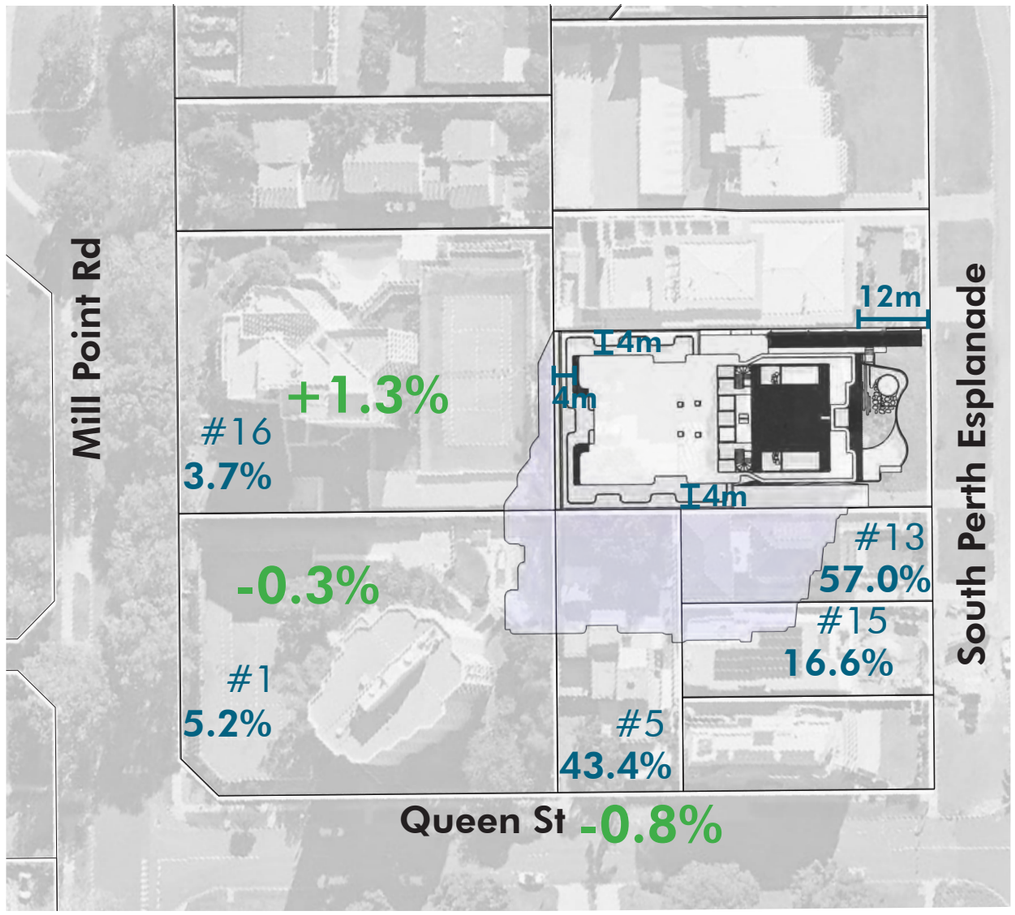
Overshadowing studies...

Winter Solstice

21st June - 12PM



DTC



PROPOSAL

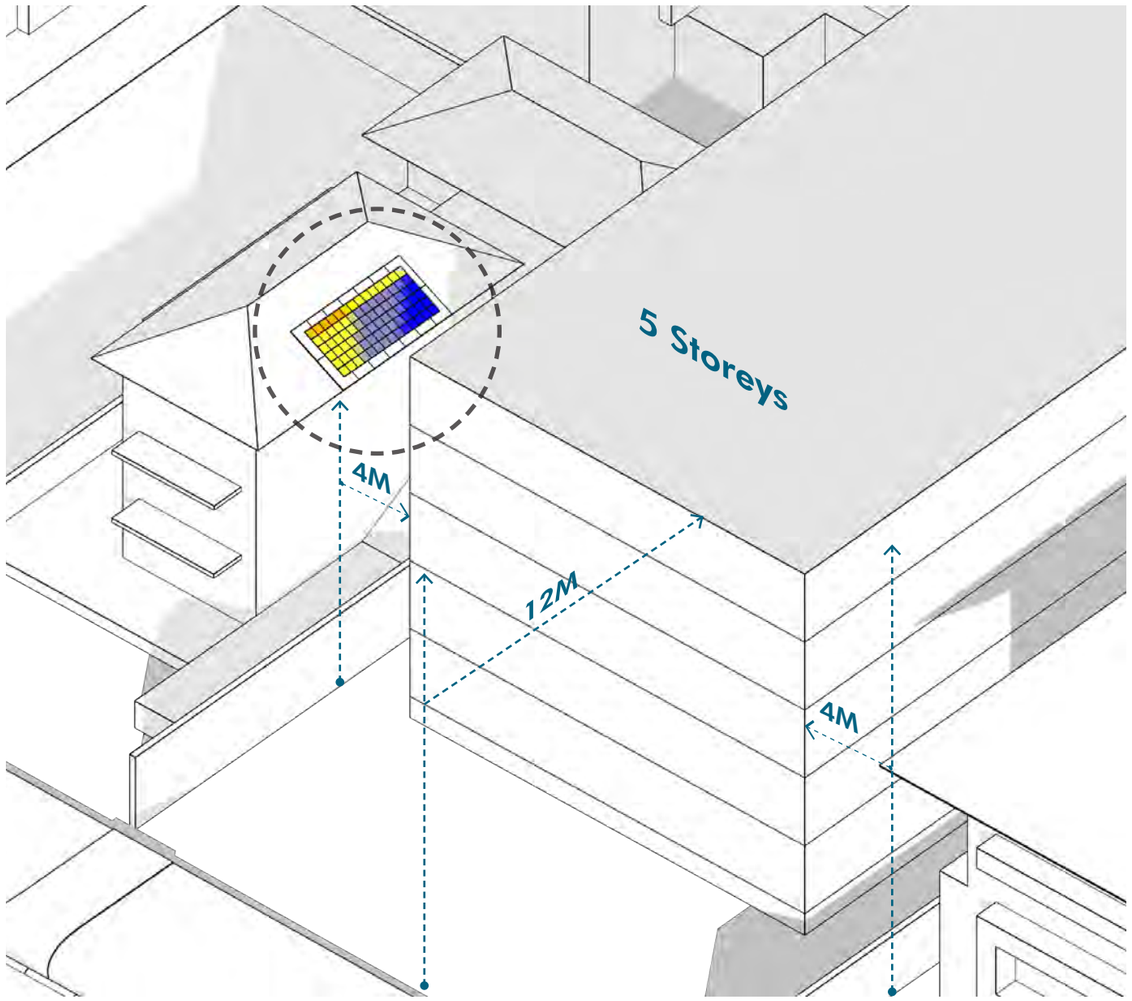
space collective architects

N

Solar Access studies...

Winter Solstice

21st June



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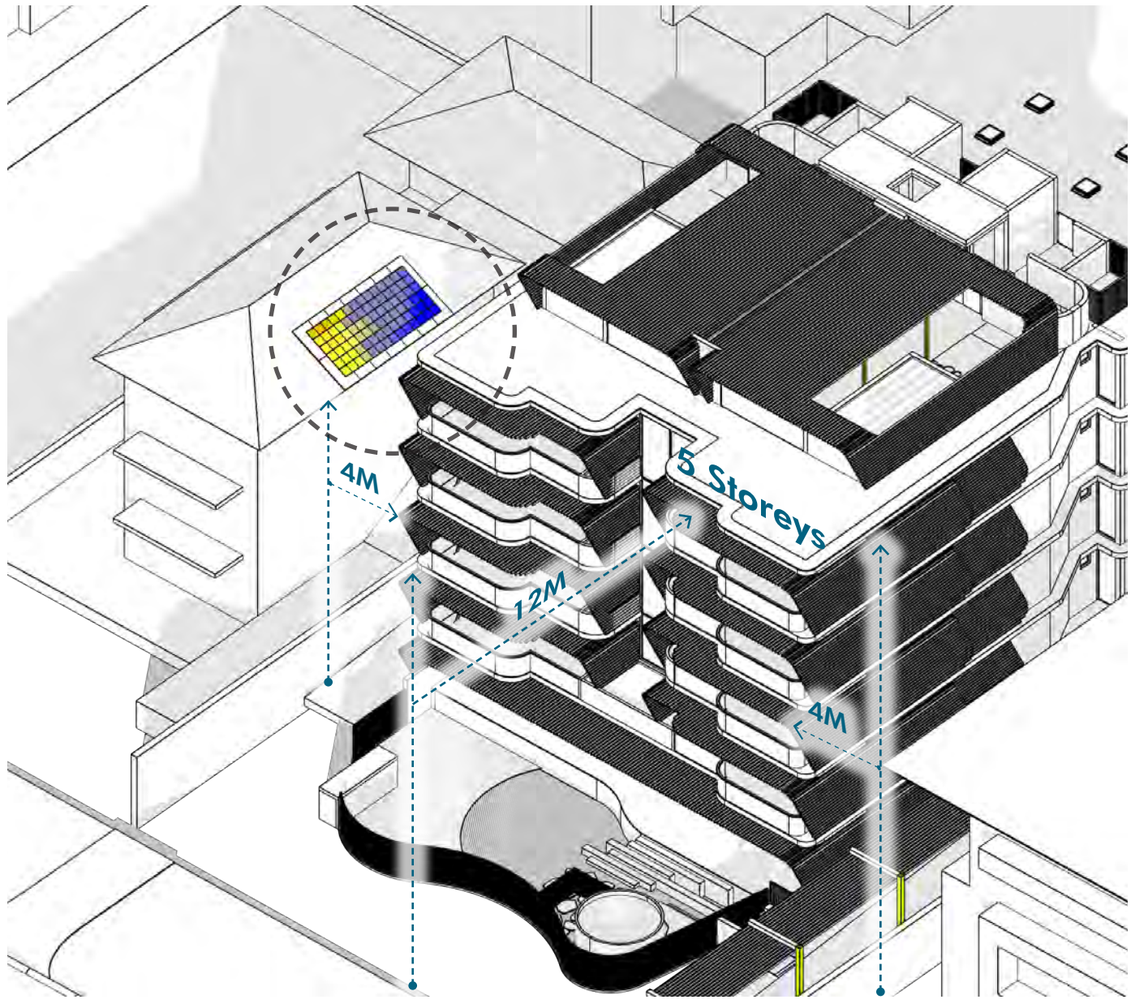

PROPOSAL

space collective architects

Monday, October 19, 2026 at 11:01:26 AM Australian Western Standard Time

Subject: Deferred Application | DAP/26/03118 | Nine Multiple Dwelling | Lot 38 (11) South Perth Esplanade, South Perth | City of South Perth
Date: Tuesday, 6 October 2026 at 1:23:20 pm Australian Western Standard Time
From: Development Assessment Panels
To: Scott van Ierland
CC: Matthew Cain, Steven DePiazzi, Development Assessment Panels
Attachments: image001.jpg

Good Afternoon,

The above mentioned application was deferred at the MIDAP/156 meeting held on 30 September 2026 for a period of up to 120 or 28th January 2027.

The application was deferred by the panel for the below reasons:

- Improved articulation or treatment of the rear boundary wall to soften its appearance and visual impact on the neighbours to the rear.
- Provision of renders to illustrate the visual impact of the rear of the building on the neighbouring properties on Mill Point Road.
- Inclusion of an on-site service bay or other suitable area to accommodate waste collection, loading, deliveries, and general servicing of the site.
- Redesign of the structures on the roof terrace to reduce and minimise the impact of overshadowing of the neighbours to the south.
- Any further amendments to the development required to ensure the health and ongoing viability of the tree on the adjoining property.
- Details of how the community benefit contribution could be included on site (suggested as an alternate pathway by the applicant).

A DAP meeting is to be held on or before 28th January 2027 to reconsider its decision of the above-mentioned application.

Therefore, the addendum to responsible authority report (RAR) is required to be submitted to the DAP Secretariat by **midday, Friday 15th January 2026.**

Please liaise with the DAP Secretariat if the RAR is to be submitted prior to the due date, in which case the meeting may be scheduled earlier than the date listed above.

Kind Regards,

Kristen Gray
Senior Committee Support Officer | Development Assessment Panels Secretariat
Department of Planning, Lands and Heritage
Boorloo (Perth)
W: dplh.wa.gov.au | P: 6551 9919



The Department of Planning, Lands and Heritage acknowledges Aboriginal people as the traditional custodians of Western Australia. We pay our respects to the Ancestors and Elders, both past and present, and the ongoing connection between people, land, waters and community. We acknowledge those who continue to share knowledge, their traditions and culture to support our journey for reconciliation. In particular, we recognise land and cultural heritage as places that hold great significance for Aboriginal people. Learn more about our Stretch Reconciliation Action Plan.

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11 SOUTH PERTH ESPLANADE

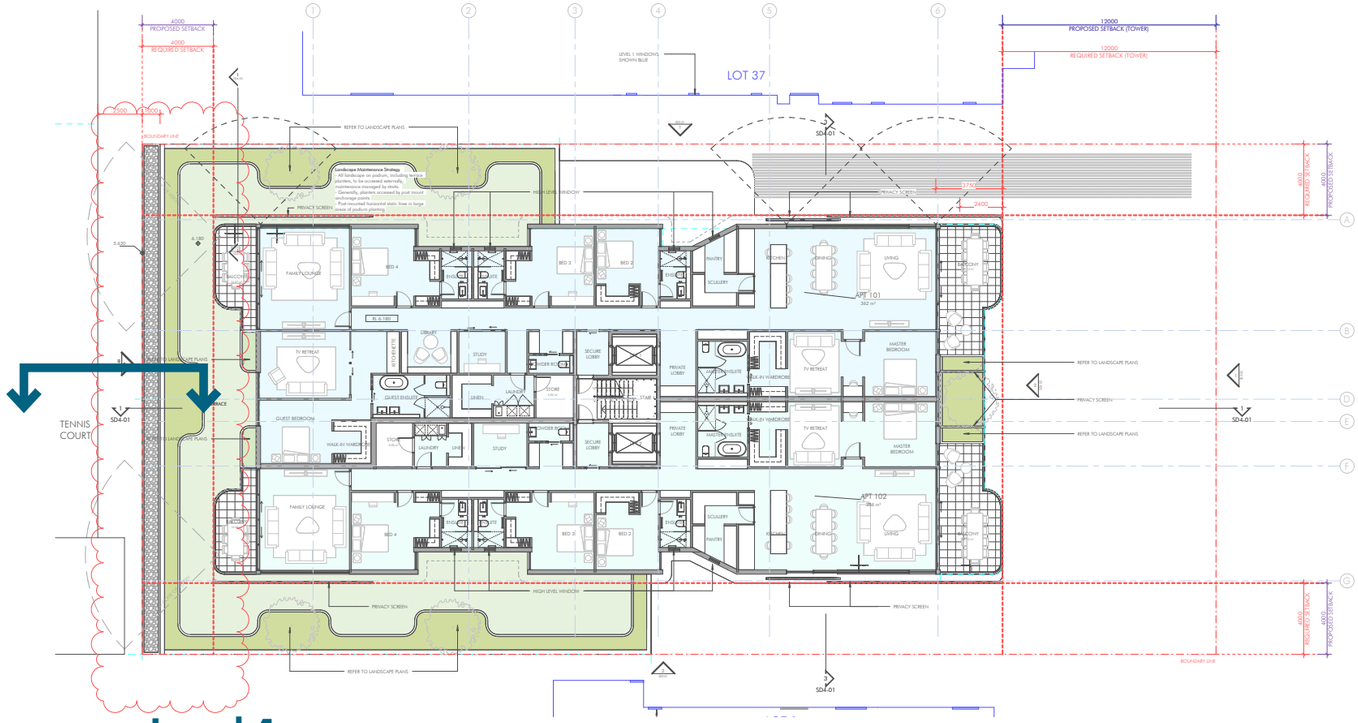
RESIDENTIAL DEVELOPMENT

Responding to the DAP Reasons for Referral

space collective architects

OCT 2026

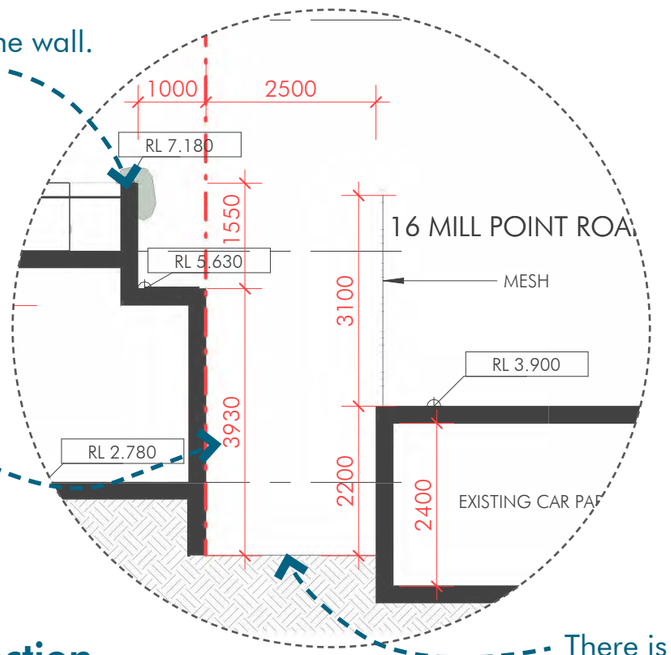
The rear Wall...



Level 1

We are stepping back the wall.

Boundary wall height reduced by 1.47m



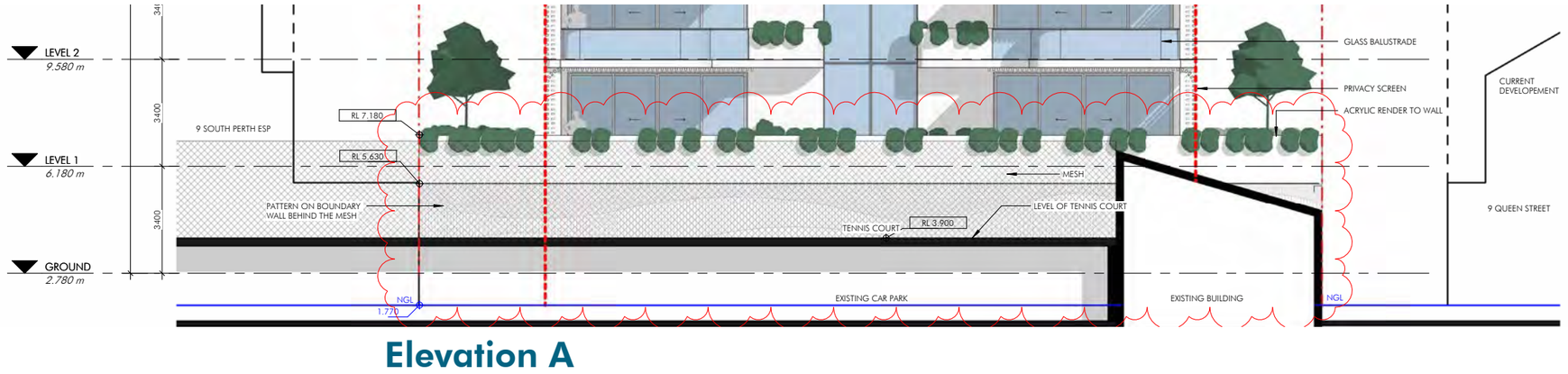
Section

There is a 2.5m setback.

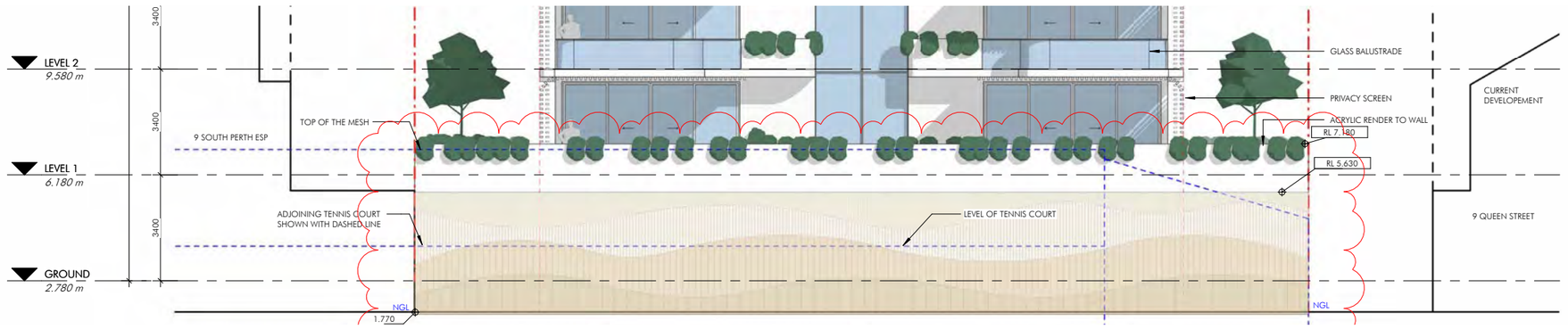


Existing Condition

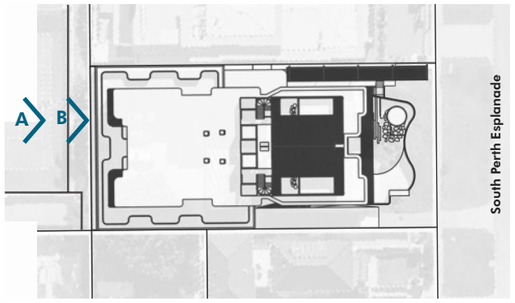
Revisiting the boundary wall...

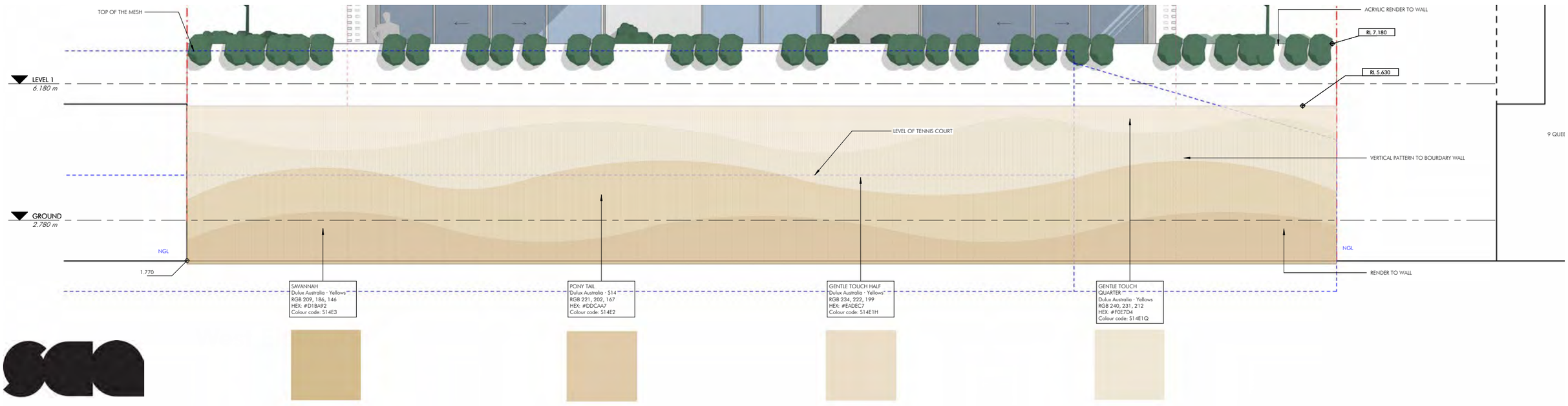


Elevation A

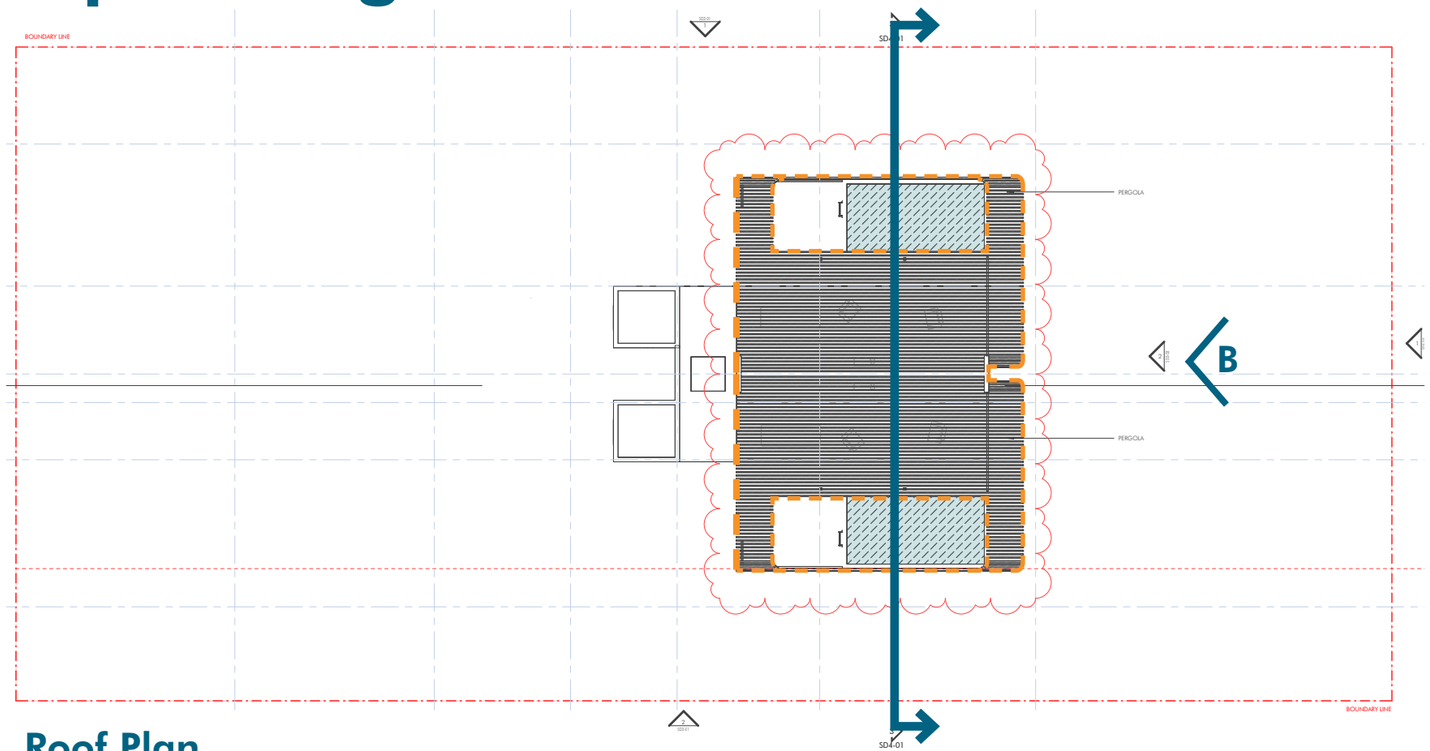


Elevation B

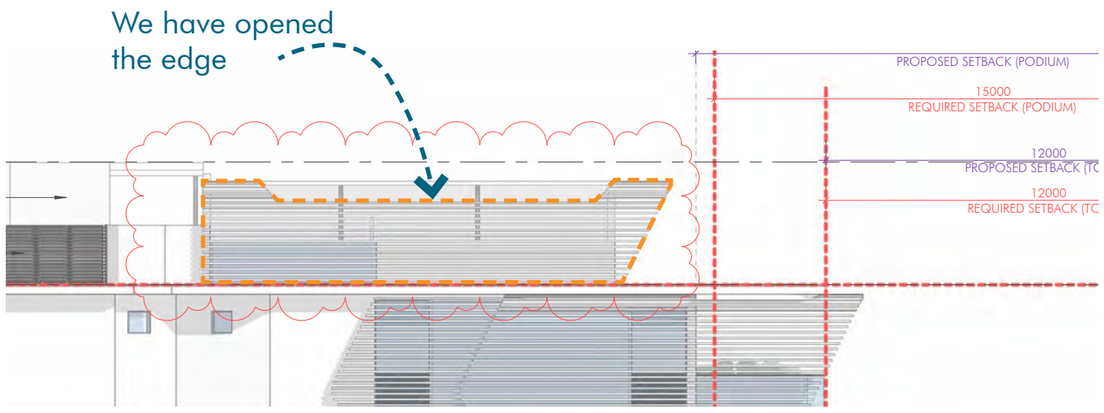




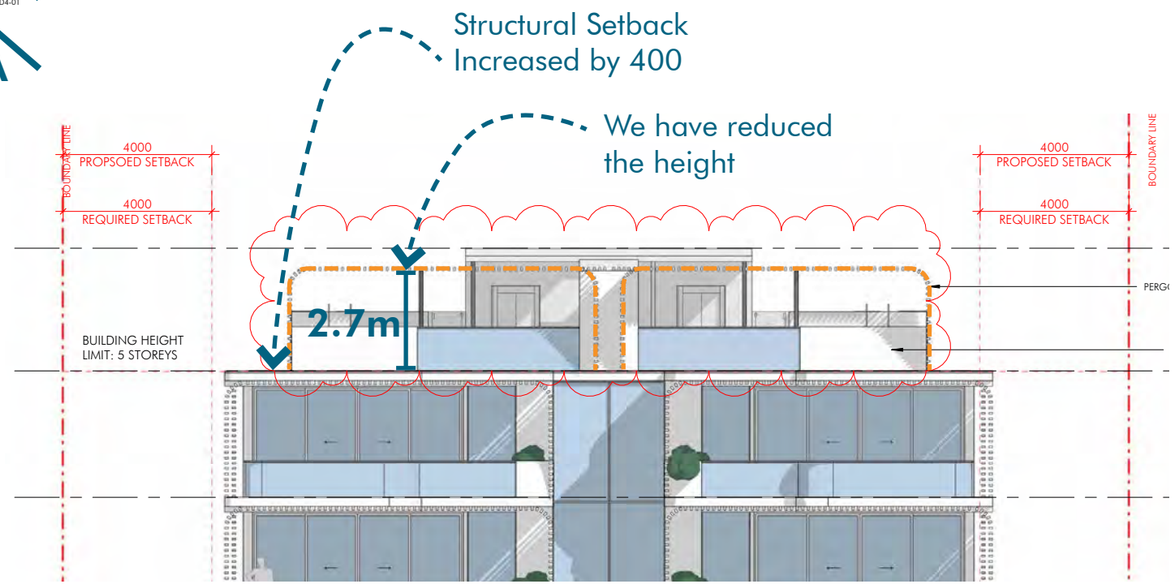
The Roof Top Changes...



Roof Plan

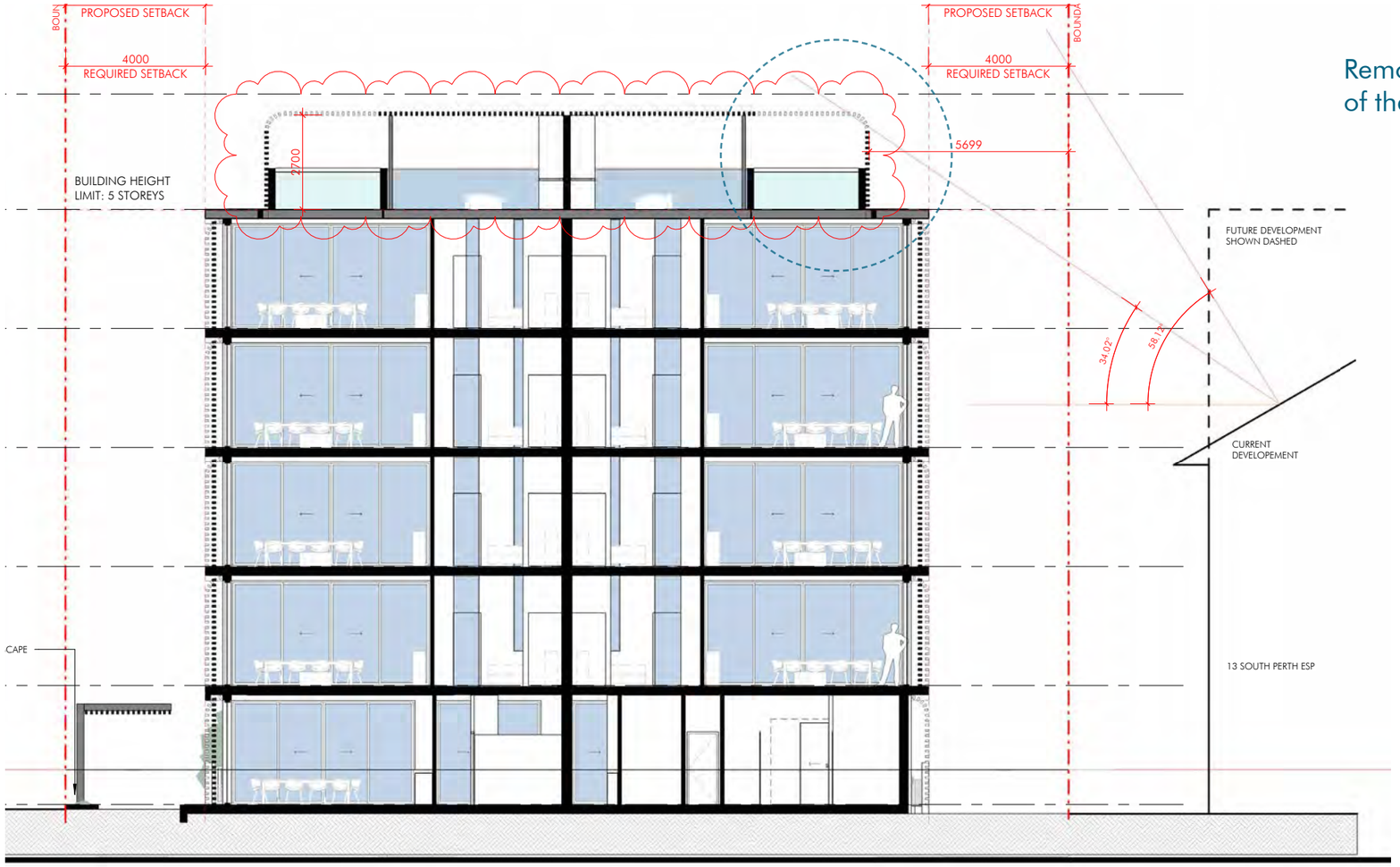


Elevation A - South



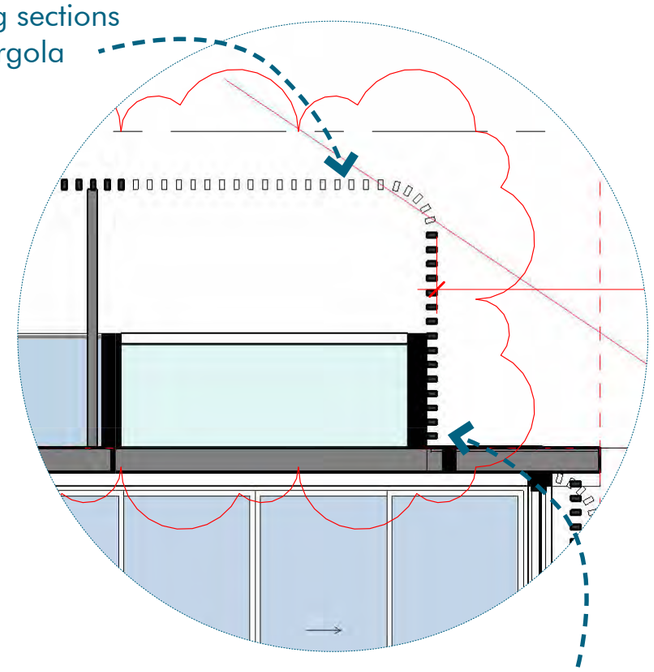
Elevation B - East

The Roof Top Changes...



Section

Removing sections
of the pergola

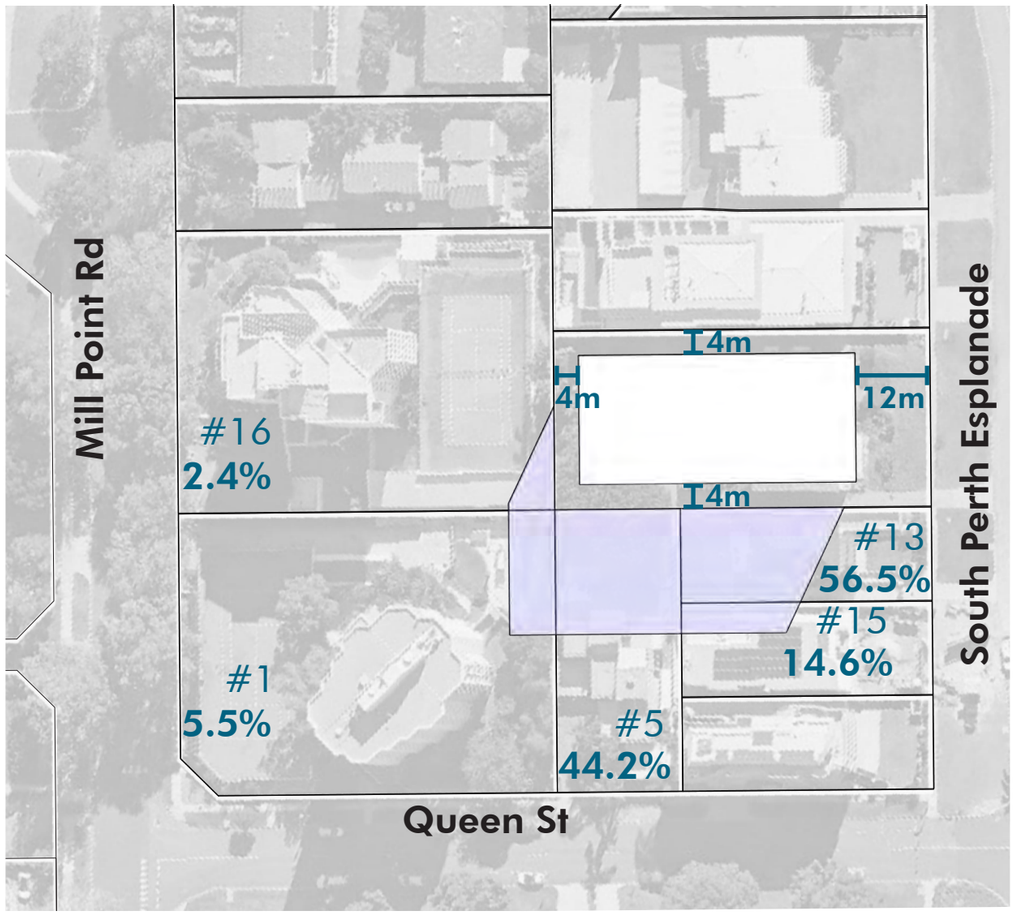


400 mm Increase in
Structural Setback

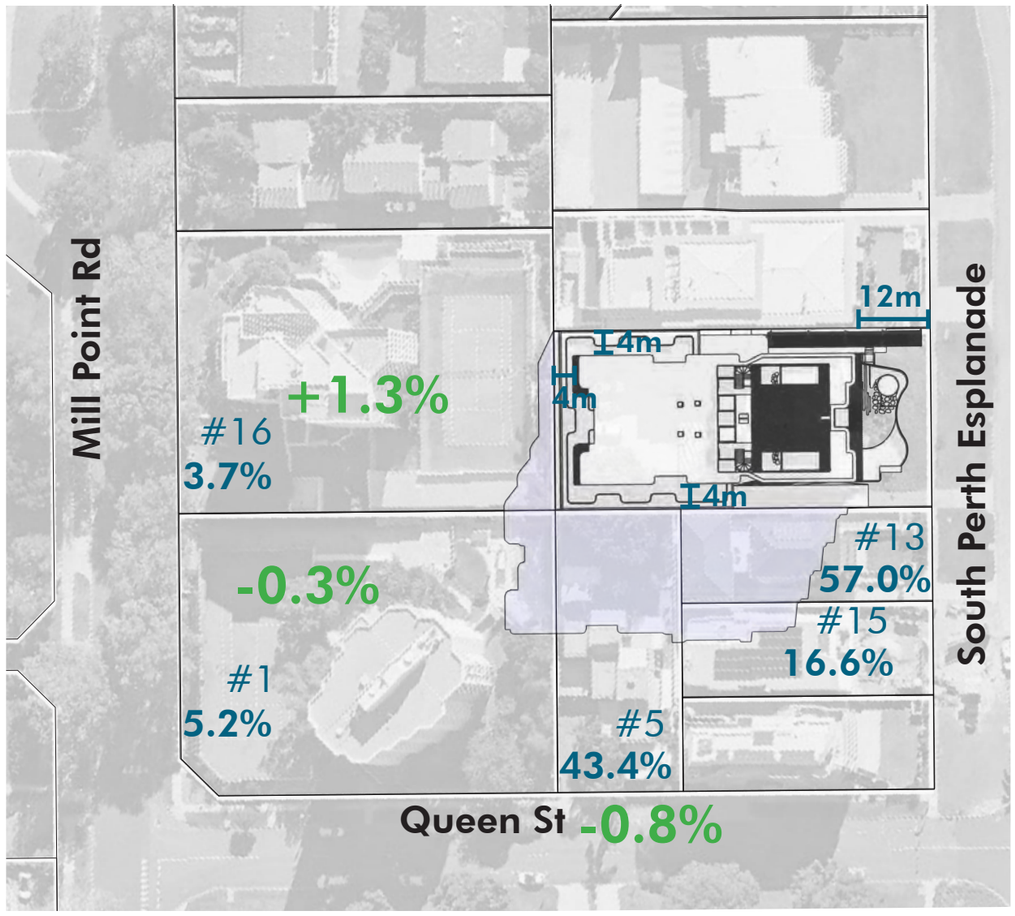
Overshadowing studies...

Winter Solstice

21st June - 12PM



DTC



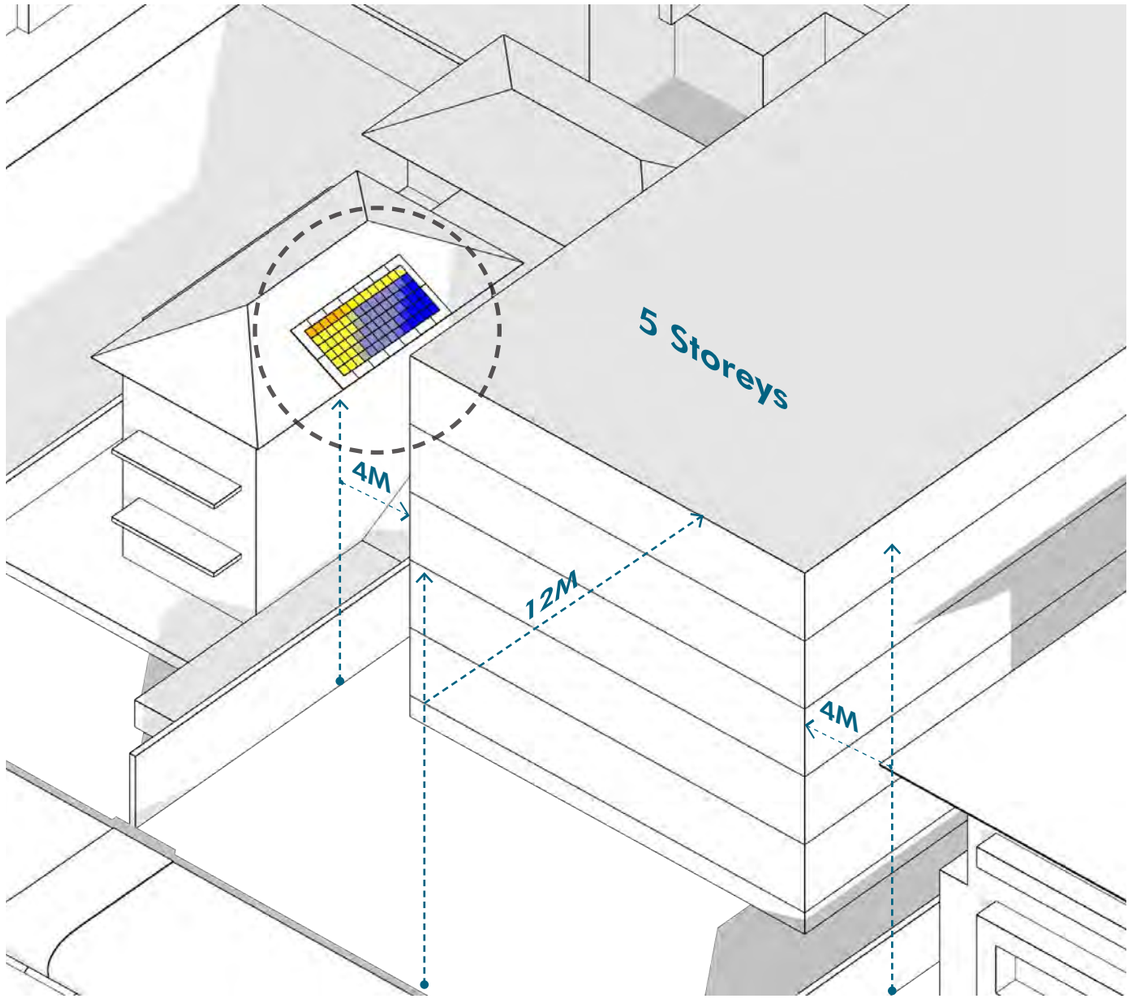
Proposal

N

Solar Access studies...

Winter Solstice

21st June



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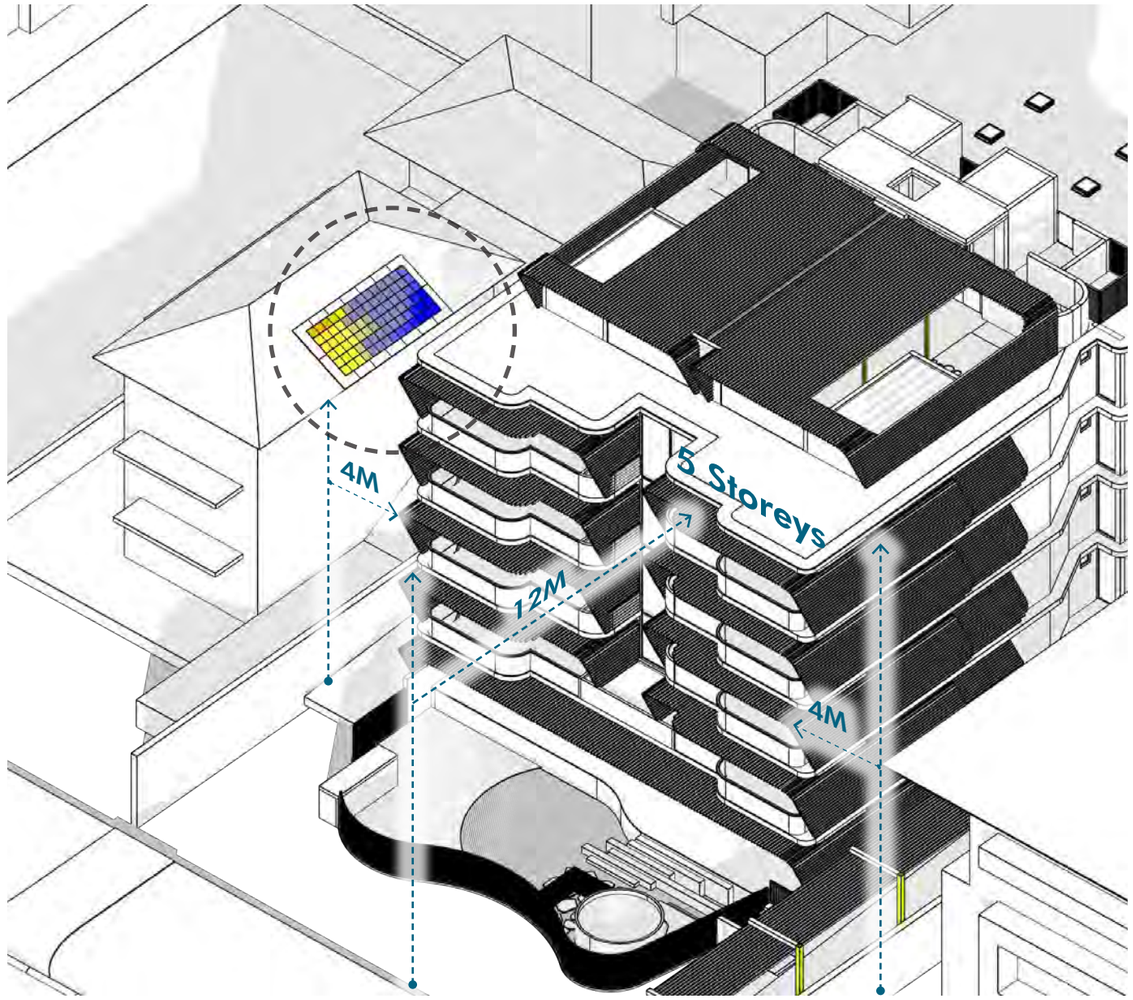
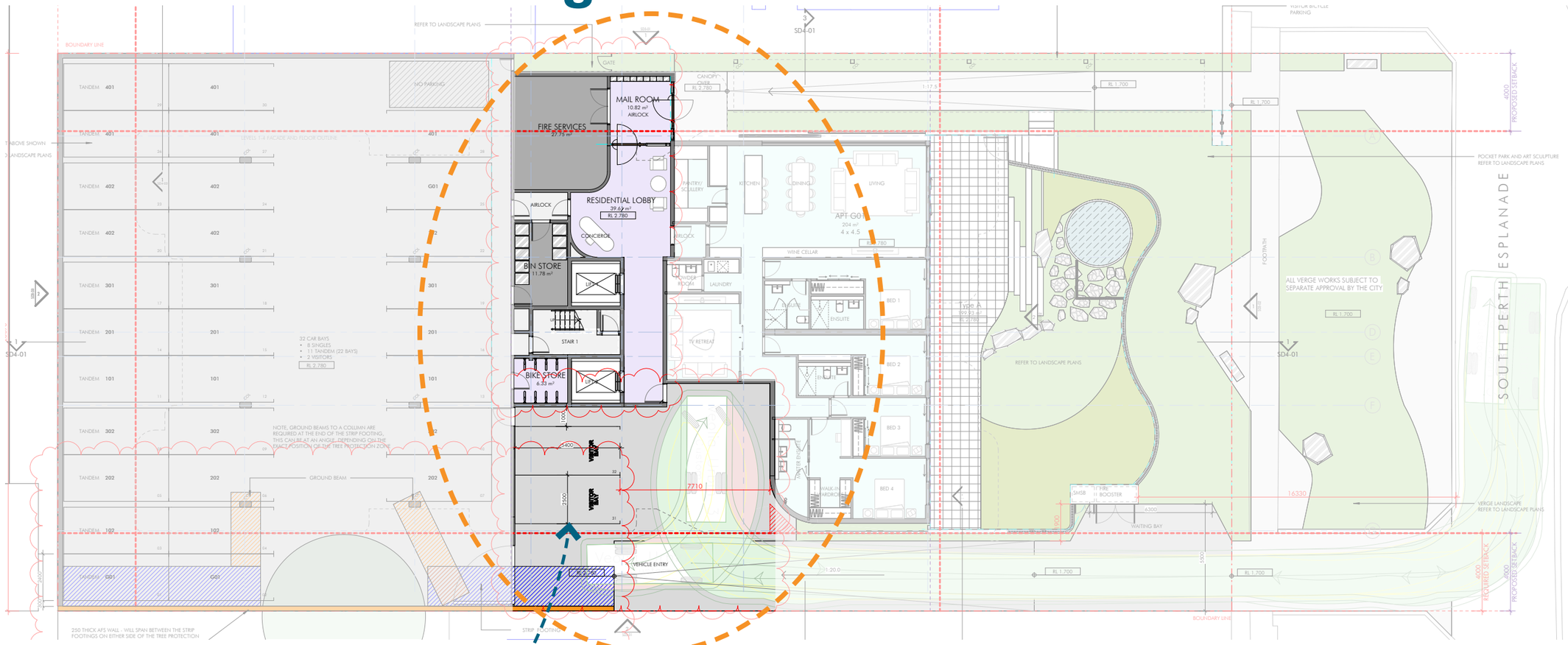


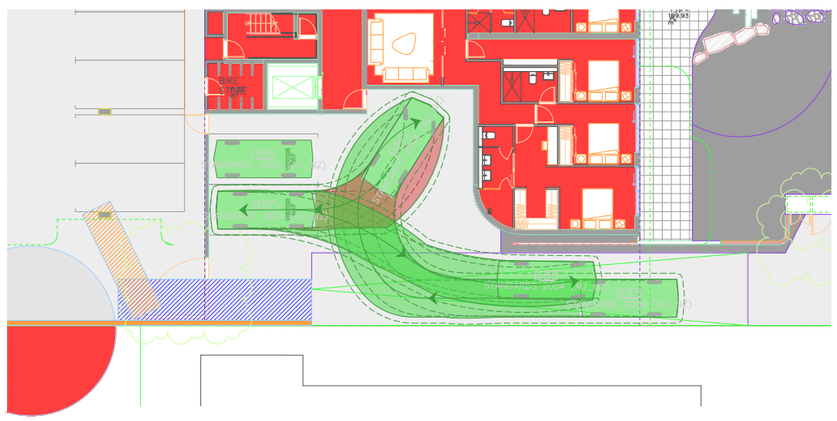
Proposal

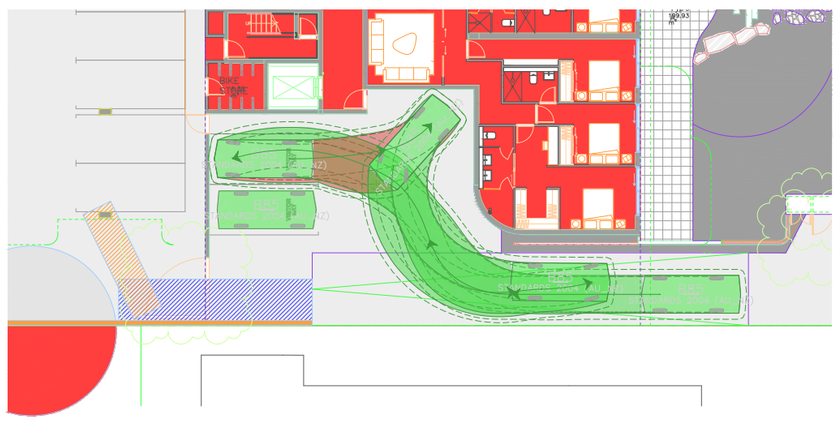
The Ground Floor Changes...



Ground Floor

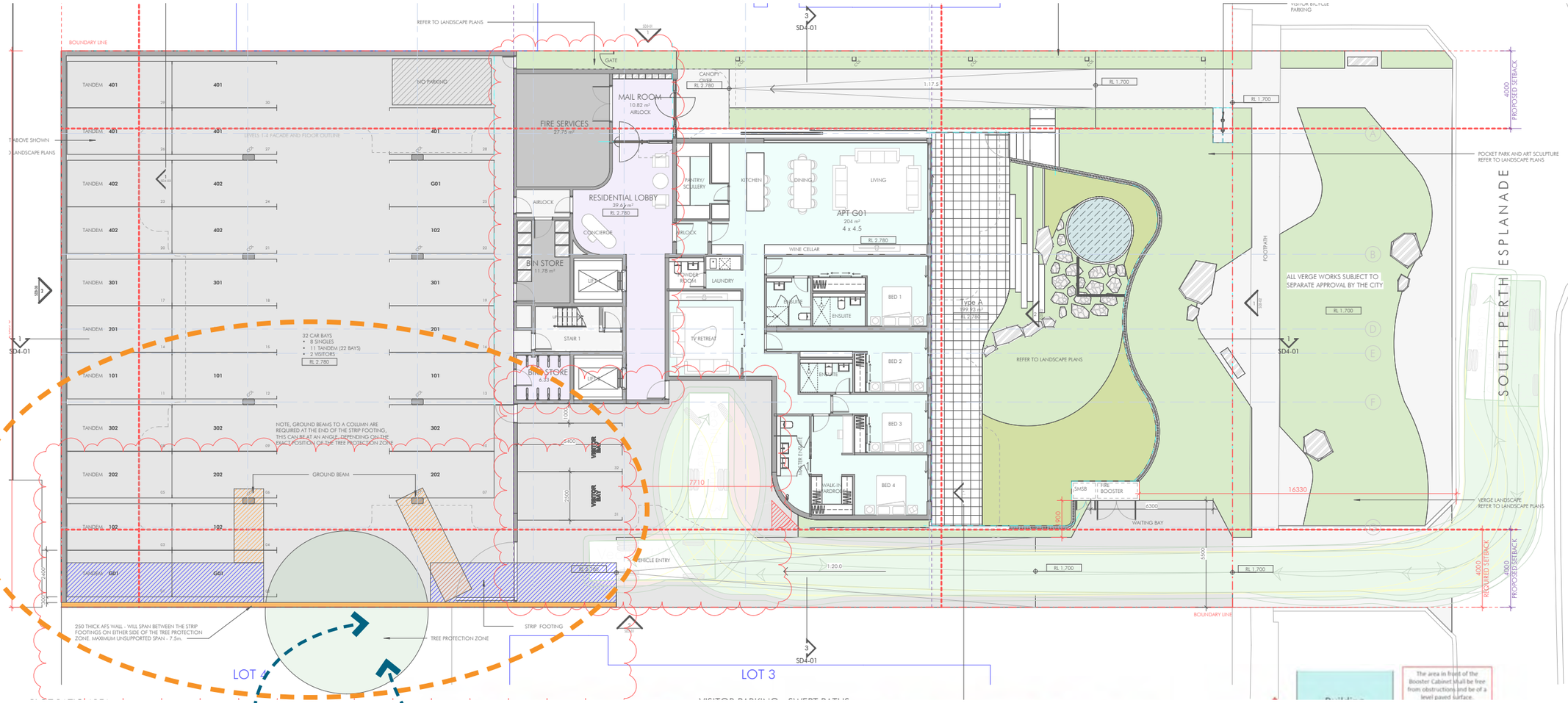
New location of visitor bays





Visitor Parking - Swept Paths

Protecting the Existing Tree...



Ground Floor

A construction methodology has been already considered to avoid excavation and footing requirements to mitigate any detrimental impact to the tree's roots.

We have allocated a Tree Protection Zone.

PART C – OTHER BUSINESS

1. State Administrative Tribunal Applications and Supreme Court Appeals

2. Meeting Closure