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CREATIVE **PLANNING** SOLUTIONS

ARBORICULTURAL IMPACT ASSESSMENT

Mixed Use Development

300 Burns Bay Road,
Lane Cove NSW 2066

Project No: G498

Date: 11 December 2025

Rev: A

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1 EXECUTIVE SUMMARY

This Arboricultural Impact Assessment (AIA) was commissioned by Lane Cove Developments No.1 Pty Ltd on the 8th of May 2024 and relates to the proposed mixed-use development at the subject site being: 300 Burns Bay Road, Lane Cove within the Lane Cove Council Local Government Area (LGA).

The report relates to eighty-five (85) trees located on and adjoining the subject site and provides an evaluation of the likely impact to existing trees as a result of the proposed development.

A summary of those trees identified has been provided in **Table 1** below along with a description of, retention values and nominated retention/removal status under the proposal.

Table 1 – Tree assessment summary

Retain / Remove	Location	Identified Retention Values				Number of Trees	Canopy Cover
		High	Medium	Low	Priority for Removal		
Retain & Protect	Subject Site	6 trees Trees 4, 6, 16, 20, 33, 63 & 85	5 trees Trees 15, 18, 19, 21 & 34	8 trees Trees 14, 29, 30, 31, 32, 62, 74 & 75	-	19 trees	727m²
	Neighbour Allotments	6 trees Trees 1, 8, 11, 82 & 83	9 trees Trees 2, 3, 9, 10, 55, 78, 79, 80 & 81	19 trees Trees 7, 12, 22, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 56, 73, 76, 77 & 84	-	34 trees	1,172m²
Total						53 trees	1,899m²
Remove	Subject Site	6 trees Trees 36, 38, 39, 40, 60 & 61	5 trees Trees 35, 37, 57, 58 & 59	19 trees Trees 13, 23, 24, 25, 26, 27, 28, 46, 47, 50, 64, 65, 66, 67, 68, 69, 70, 71 & 72	2 trees Trees 5 & 17	32 trees	822m²
	Neighbour Allotments	-	-	-	-	-	32m² Pruning Only
Total						32 trees	854m²

Based on the plans supplied and should the proposed works proceed in their current form, it is recommended that fifty-three (53) trees (**Trees 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 32, 33, 34, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 55, 56, 62, 63, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85**) be retained and protected.

Thirty-two (32) trees from the subject site have been recommended to be removed, including (**Trees 5, 13, 17, 23, 24, 25, 26, 27, 28, 35, 36, 37, 38, 39, 40, 46, 47, 50, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71 & 72**).

This report concludes that the implementation of the following recommendations and mitigation measures will need to be adopted to mitigate potential negative impacts to retained trees:

- Project Arborist engagement, consultation and participation to ensure that development-related impacts to retained trees are appropriately managed for their long-term preservation;
- Preparation of a Tree Protection Plan and Tree Protection Specification as part of Construction Certificate (CC) to ensure trees are appropriately maintained throughout the development;

2 INTRODUCTION

2.1 Background

This Arboricultural Impact Assessment (AIA) prepared by Creative Planning Solutions (CPS) on behalf of Lane Cove Developments No.1 Pty Ltd ('the Applicant') in support of a concurrent Rezoning Proposal and State Significant Development Application (Rezoning and SSDA) for a mixed-use development for the site at 300 Burns Bay Road, Lane Cove (the site).

This SSDA seeks approval for:

- Demolition of existing structures on the site, tree removal and site excavation for basement levels.
- Construction of a new residential flat building ranging from 7-15 storeys and comprising 225 apartments including:
 - 198 market apartments;
 - 34 affordable apartments; and
 - Communal areas at lower ground, ground level with new recreation park at the eastern edge of the site, rooftop levels including a pool.
- Car and bicycle parking for residents and visitors at lower ground and two (2) basement levels, including:
 - 237 car parking spaces;
 - Garbage storage; and
 - Plant rooms and other associated services.
 - Public domain and landscaping improvements, including:
 - New open space at the eastern edge of the site; and
 - Hard and soft landscaping works.

The concurrent Rezoning seeks the following amendments to the Lane Cove Local Environmental Plan 2010 (LCLEP 2010) to facilitate the proposed development:

- Amend the Height of Buildings Map under Clause 4.3 to increase the building height from 21m to 54m; and
- Amend the Maximum Floor Space Ratio Map under Clause 4.4 to change the maximum Floorspace Ratio (FSR) from 2:1 to 3.22:1.

For a further detailed project description, please refer to the Environmental Impact Statement and Rezoning Report prepared by Colliers Urban Planning.

This report should be read in conjunction with the Rezoning Request and Environmental Impact Statement prepared by Colliers Urban Planning, the Architectural Plans prepared by PBD Architects, and the other accompanying technical documents that form part of the State Significant Development Application.

2.2 Objectives

This report has been prepared to assess the level of impact development works are likely to cause to existing trees and make a determination as to whether trees will be adversely affected. The report will provide guidance as to those trees requiring removal, retention or protection in accordance with the provisions of *AS4970:2025 Protection of trees on development sites*. Where necessary, it will also provide recommendations for design modifications and any replacement planting. As such, the objectives of this report are as follows:

- Assess the current site and growing conditions of trees;
- Assess the current health, condition, lifespan & significance of the trees within the site;
- Identify relative retention values of trees within the site;
- Calculate anticipated encroachment levels resulting from proposed works;
- Determine the likely impact as a result of the calculated encroachments;
- Assess potential for retention and protection of trees where possible;
- Advise any design modifications necessary to retain important trees;
- Recommend tree and root sensitive design and construction methodologies to mitigate impacts to trees to be retained;
- Inform of any tree removal necessary due to unsustainable impacts;

No aerial inspection, root mapping or internal diagnostic testing have been carried out as part of this report. Additionally, no cation exchange capacity testing or plant tissue analysis has been undertaken.

2.3 Legislation & Regulating Documents

This Arboricultural Impact Assessment has considered the following regulatory documents:

- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
- *Lane Cove Local Environmental Plan 2010 (LCLEP 2010)*
- *Lane Cove Development Control Plan 2010 (LCDCP 2010)*
- *Greater Sydney Regional Strategic Weed Management Plan 2023-2027*

2.4 Documentation Received

The following documents were received and have been relied upon for this Assessment:

Table 2 – Documentation received and reviewed as part of the Arboricultural Impact Assessment

Document Description	Author	Revision No. / Date
Architectural Plans	PBD Architects	P2 / 29 October 2025
Stormwater Plans	S&G Consultants	P1 / 26 November 2025
Landscape Plans	Land + Form	1 / 12 November 2025
Bushfire Assessment Report	Australian Bushfire Consulting Services	- / 29 November 2025
Detail Survey	Exceed Consulting Group	A / 30 May 2024

Note: care has been taken to obtain all information from reliable sources; however, the author makes no representations, guarantees or warranties as to the accuracy of information provided by others. No other information has been reviewed, should this become available impacts may be subject to change.

2.5 The Site

The site is located at 300 Burns Bay Road, Lane Cove NSW 2066 and is legally described as Lot 15 DP1230609.

Situated within the Lane Cove Council (LCC) Local Government Area (LGA), the site is zoned R4 High Density Residential within the Lane Cove Local Environmental Plan 2009 (LCLEP). It has an area of 7,595 m² and comprises an existing office building and warehouse extension on the eastern portion of the site. A single storey structure providing car parking occupies the western part of the site. Car parking is also provided at grade along the southern site boundary and a tennis court is located on the western part of the site.

The site has a sloping topography, with a high point at 22.15m (AHD) along the boundary with the properties to the north, sloping south to a low point of 18.83m (AHD) along the southern boundary, representing an approx. 3.5m level change across the site from north to south.

Vehicle and pedestrian access to the site is via Burns Bay Road. A right of carriageway extends along the western site boundary for driveway access to the neighbouring buildings at 292-298 Burns Bay Road.

An aerial photo of the site is shown at **Figure 1** below).



Figure 1 - Site Aerial.

Source: Nearmap, edits by Colliers Urban Planning

2.6 Secretary’s Environmental Assessment Requirements

This report has been prepared to respond to the Secretary’s Environmental Assessment Requirements (SEARS) dated 18 July 2025 for SSD-27925706. Specifically, this report has been prepared to respond to those SEARS outlined in Table below.

Table 1 - Secretary’s Environmental Assessment Requirements relevant to this Report

SEAR	Response
14. Trees and Landscaping	
<ul style="list-style-type: none"> • Provide an Arboricultural Impact Assessment that assesses the number, location, condition and significance of trees to be removed and retained including: <ul style="list-style-type: none"> ○ existing canopy coverage to be retained on-site ○ tree root mapping. If the proposal involves significant impacts to tree protection zones of retained trees identified as being significant 	<ul style="list-style-type: none"> • Section 1 – Executive Summary; • Section 5.3 – Tree Retention & Protection

2.7 Bushfire Prone Land

The site has been identified as a designated bush fire prone area (refer to **Figure 2** below). The Bush Fire Assessment Report prepared by Australian Bushfire Consulting Services dated 29 November 2025 recommends that all grounds within the subject site that are not built upon from the front western boundary and for a minimum distance of 27 metres east of the building footprint be managed to Inner Protection Area (IPA) standards. As such, **Section 5.4** of this AIA demonstrates how compliance is achieved with the recommendations contained within the RFS documents *Planning for Bush Fire Protection 2019* and *Standards for Asset Protection Zones*.



Figure 2 – NSW Planning Portal extract showing areas of Bushfire Prone Land.
Source: NSW Government Planning Portal Spatial Viewer, Accessed – 1 December 2025.

2.8 Limitations

Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations in this report are valid for one (1) year only from the date of the report, unless otherwise stated. Any changes to the site as it stands at present, for example building extensions, excavation works, importing of soils, extreme weather events etc. will invalidate this report. Any reproduction of this report must be in full colour using the report in its entirety.

3 METHOD

3.1 Method

3.1.1 Site Inspection

A site inspection was carried out by the author with the subject trees and the general growing environment evaluated on the 15th of May 2024. The weather at the time of inspection was sunny and clear with good visibility.

The subject trees were inspected visually from ground level with the following information recorded and provided in tabulated form at **Appendix 1**:

- Tree Species (Botanical & Common Name);
- Approximate height;
- Approximate canopy spread;
- Trunk Diameter at standard height (measured at 1.4 metres from ground level);
- Trunk Diameter at base (above root crown);
- Age class;
- Health & vigour; using foliage size, colour, extension growth, presence of disease or pest infestation, canopy density, presence of deadwood, dieback and epicormic growth as indicators;
- Condition; using visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators;
- Suitability of the tree to the site and its existing location;
- Useful Life Expectancy (ULE).

3.1.2 Visual Tree Assessment (VTA)

The modified Level 1 limited Visual Tree Assessment (VTA) was undertaken for all trees during the site inspection. The VTA consists of a detailed inspection of the subject tree from ground level to the upper canopy. This method of tree evaluation is adapted from Matheny and Clark, 1994 and is recognised by The International Society of Arboriculture (ISA), Arboriculture Australia and The Institute of Australian Consulting Arboriculturists (IACA). No aerial inspections or major root excavations were undertaken.

3.1.3 Useful Life Expectancy (ULE)

The remaining Useful Life Expectancy of a tree is an estimate of the sustainability of the tree in the landscape, calculated based on an estimate of the average age of the species in an urban area, less its estimated current age. The life expectancy of each tree has been further modified where necessary in consideration of its current health, vigour, condition and suitability to the site. The estimated ULE of each tree is shown in **Appendix 1**.

The following ranges have been allocated to each tree:

- Long ULE: Trees that appear to be retainable for > 40 years.
- Medium ULE: Trees that appear to be retainable for 15 to 40 years.
- Short ULE: Trees that appear to be retainable for 5–15 years.
- Remove: Trees that would need removing within the next 5 years.
- Small, Young or Regularly Pruned.

3.1.4 Landscape Significance

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. Several factors contribute towards the assessment of a tree's significance including but not limited to condition and vigour, form, visual prominence, heritage status, indigeneity, legislative protection, cultural sentiment and future growth potential.

For the purposes of this report the Australian Institute of Consulting Arborists (IACA) Significance of a Tree, Assessment Rating System (STARS)® has been utilised. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

Appendix 3 provides a full outline of assessment criteria for each significance rating as per IACA STARS (2010).

3.1.5 Retention Value

Retention values have been determined for each tree on site to establish a hierarchy for tree retention. Retention values are based on estimated life spans and their associated landscape significance rating in accordance with the Tree Retention Value Priority Matrix. This matrix established the following retention values and can be found at **Appendix 3** with attributed retention values found within **Appendix 1**:

- Priority for Retention (High)
- Consider for Retention (Medium)
- Consider for Removal (Low)
- Dead

3.1.6 Notional Root Zone

The assessed trees have been allocated a Notional Root Zone (NRZ). The Australian Standard, AS4970-2025- 'Protection of trees on development sites', has been used as a guide in the allocation of NRZs for the assessed trees. The NRZ is calculated based on trunk (stem) diameter at standard height (DSH), measured at 1.4 metres above ground level. The radius of the NRZ is calculated by multiplying the trees DSH by 12. The method provides a NRZ that addresses health and growing requirements of a tree as well as the trees stability. NRZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The maximum NRZ should be no more than 15m radius and the minimum NRZ should be no less than 2m radius.

An extract of the AS4970-2025 for calculating NRZ has been provided at **Appendix 6** for reference.

3.1.7 Structural Root Zone

The assessed trees have been allocated a Structural Root Zone (SRZ). The Australian Standard, AS4970-2025 - 'Protection of trees on development sites', has been used as a guide in the allocation of SRZ's for the assessed trees. The SRZ is a radial area extending outwards from the centre of the trunk and is calculated as follows:

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

3.1.8 Tree Protection Zone

Using the NRZ as a starting point, a Tree Protection Zone (TPZ) is a specified area located both above and below ground that is required for the protection of trees during development works. The purpose of a TPZ is to protect of a tree's roots and crown throughout the development process via the installation of tree protection measures and appropriate site management. The location and alignment of specified TPZs are shown in the Tree Location Plans held at **Appendix 2**.

4 OBSERVATIONS

4.1 General

The site area subject to this assessment was observed as moderately disturbed with landscaped garden areas and a portion of relatively undisturbed bushland within the rear eastern part of the site. Tree species observed varied including locally indigenous trees as well as exotic and native species. Health, vigour and condition was also variable across the trees forming part of the assessment. Root zones of assessed trees were generally observed as modified groundcover within deep soil areas.

No heritage listed trees were identified on site and no endangered or critically endangered ecological communities were observed.

4.2 Tree Preservation Order

Part J – Landscaping and Tree Preservation of the LCDP 2010 applies to all trees and native vegetation within the Lane Cove Local Government Area. The provisions included within the LCDP 2010 generally protect any tree, whether:

- i. *indigenous or exotic, which has a height exceeding 4 metres, and/or a canopy spread greater than 5 metres, and/or a trunk diameter greater than 150mm (measured at 1 metre above the ground), and/or roots 40mm or greater in diameter; and/or;*
- ii. *located on Council land (irrespective of dimension).*

4.3 The Trees

A total of eighty-five (85) trees were observed within the subject site and adjoining the site within 5m of the boundaries that have been surveyed as part of this assessment.

This includes fifty-four (54) site trees (**Trees 4, 5, 6, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 46, 47, 50, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 84 & 85**), and thirty-one (31) neighbouring trees (**Trees 1, 2, 3, 7, 8, 9, 10, 11, 12, 22, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 55, 56, 73, 76, 77, 78, 79, 80, 81, 82 & 83**).

Where provided, the location of assessed trees has been informed by the Detail Survey prepared by Exceed Consulting Group dated 23 May 2024. Where trees were not formally surveyed, their locations have been obtained onsite using a Trimble TDC600 GNSS Receiver delivering sub-metre accuracy.

All tree data recorded on site has been tabulated and is contained at **Appendix 1**. Each tree has been provided with an identification number for reference purposes and is denoted on the attached Tree Location Plan at **Appendix 2**.

5 DISCUSSION

5.1 Impact Assessment

The impact assessment is to calculate the encroachments to the root zones and canopies as a result of the proposed demolition and construction works and evaluate the likely impact of the proposed works on the subject trees. A summary of the impacts anticipated is contained within the Tree Assessment Schedule at **Appendix 1**. Additionally, plans demonstrating the level of encroachment and conflict to NRZ's and SRZ's can be found at **Appendix 2**. As part of the assessment the following criteria have been considered:

- Existing Relative Levels (R.L.);
- Proposed Relative Levels;
- Nominal Root Zones (NRZ);
- Structural Root Zones (SRZ);
- Footprint of the proposed development (incl. stormwater and services) and temporary structures (scaffolding, hoardings etc.);
- Encroachments to the NRZ & SRZ, including estimated cut & fill beyond the building footprint;
- Encroachments to the tree canopy from the building envelope and temporary structures;
- Pruning necessary for building clearance;
- Remediation works for soil contaminants;
- Species tolerance to disturbance; and
- Assessment of the likely impact of the works on existing trees.

5.2 Trees Recommended for Removal

Should the proposed works proceed in their current form, it is recommended that thirty-two (32) site trees (**Trees 5, 13, 17, 23, 24, 25, 26, 27, 28, 35, 36, 37, 38, 39, 40, 46, 47, 50, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71 & 72**) be removed. Removals have been recommended based upon;

- Trees being located within the indicative footprint of the proposed building/basement footprint, pathways or retaining wall and landscaped areas (**Trees 13, 36, 37, 38, 39, 40, 46, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70 & 71**);
- Trees being subject to 'major' and unsustainable encroachment as per AS4970-2025 from proposed retaining walls, stormwater lines or pathways (**Trees 35 & 72**);
- Trees being dead with no habitat or hollows observed (**Trees 5 & 17**);
- Trees being removed to comply with bushfire requirements recommended within the Bush Fire Assessment Report prepared by Australian Bushfire Consulting Services (**Trees 23, 24, 25, 26, 27, 28, 47 & 50**).

Refer to **Appendix 2** for a plan indicating the location of trees that will require removal (dashed red).

Table 3 – Trees recommended for removal

Reason for Removal	Trees Recommended for Removal				
	High Retention Value	Medium Retention Value	Low Retention Value	Priority for Removal	Total
Trees being located within the indicative footprint of the proposed building/basement footprint, pathways or retaining wall and landscaped areas	6 Trees: Trees 36, 38, 39, 40, 60 & 61	4 Trees: Trees 37, 57, 58 & 59	10 Trees: Trees 13, 46, 64, 65, 66, 67, 68, 69, 70 & 71	-	20 Trees
Trees being subject to 'major' and unsustainable encroachment as per AS4970-2025 from proposed retaining walls, stormwater line or pathways	-	1 Tree: Tree 35	1 Tree: Tree 72	-	2 Trees
Trees being dead with no habitat or hollows observed	-	-	-	2 Trees: Trees 5 & 17	2 Trees
Trees being removed to comply with bushfire requirements recommended within the Bush Fire Assessment Report prepared by Australian Bushfire Consulting Services	-	-	8 Trees: Trees 23, 24, 25, 26, 27, 28, 47 & 50	-	8 Trees
Total					32 Trees

5.3 Trees Recommended for Retention & Protection

Should the proposed works proceed in their current form, it is recommended that fifty-three (53) trees (**Trees 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 32, 33, 34, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 55, 56, 62, 63, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85**) be retained and protected.

Refer to **Appendix 2** for a plan indicating the location of trees that are to be retained and protected (shaded green). Retention of each of these trees is contingent on implementation of the tree protection measures and recommendations outlined within **Section 7** below.

Table 4 – Trees recommended for retention & protection

Works Within the Notional Root Zone (NRZ)	Trees Recommended for Retention & Protection				
	High Retention Value	Medium Retention Value	Low Retention Value	Dead	Total
Major 9% NRZ + 4% SRZ encroachment (as per AS4970-2025) as a result of the proposed pathway and stormwater infrastructure.	-	-	1 Tree: Tree 32	-	1 Tree
Moderate, sustainable 14% NRZ encroachment (as per AS4970-2025) as a result of the proposed pathway.	-	-	1 Tree: Tree 14	-	1 Tree
Minor, sustainable 1-9% NRZ encroachment (as per AS4970-2025) as a result of the proposed pathways, driveway, building/basement footprint or stormwater lines	1 Tree: Tree 33	1 Trees: Tree 34	2 Trees: Tree 41 & 73	-	4 Trees
No works proposed within the NRZ.	10 Trees: Trees 1, 4, 6, 8, 11, 16, 20, 82, 83 & 85	13 Trees: Trees 2, 3, 9, 10, 15, 18, 19, 21, 55, 78, 79, 80 & 81	18 Trees: Trees 7, 12, 22, 29, 30, 31, 42, 43, 44, 48, 49, 54, 56, 74, 75, 76, 77 & 84	-	41 Trees
Nil impacts anticipated due to existing retaining wall likely to have restricted root development into site	1 Tree: Tree 63	-	5 Trees: Tree 45, 51, 52, 53 & 62	-	6 Trees
				Total	53 Trees

5.3.1 Major Impacts

As per AS4970-2009 *Protection of trees on development sites*, the proposed development works will result in 'Major' encroachment to one (1) tree (**Tree 32**) as a result of the proposed pathway and stormwater infrastructure.

With regard to the level of encroachment set to be imposed upon this tree, it is considered that root-sensitive recommendations for installation of stormwater services and construction the pathway is likely to reduce impacts to a sustainable level as detailed within **Section 7** below.

5.4 Asset Protection Zone – Inner Protection Area Requirements

As part of an overall assessment of the potential arboricultural implications of the proposal, CPS has undertaken a review of the Bush Fire Assessment Report prepared by Australian Bushfire Consulting Services dated 29 November 2025. Included within this assessment is a recommendation that all grounds within the subject site that are not built upon from the front western boundary and for a minimum distance of 27 metres east of the building footprint are to be maintained as an Asset Protection Zone / Inner Protection Area as detailed in Appendix 4 of *Planning for Bush Fire Protection 2019* and the NSW Rural Fire Service publication *Standards for Asset Protection Zones*. In accordance with this documentation, the following provisions apply for an IPA:

- Tree canopy cover should be less than 15% at maturity;
- Trees at maturity should not touch or overhang the building;
- Lower limbs should be removed up to a height of 2m above the ground;
- Tree canopies should be separated by 2 to 5m; and
- Preference should be given to retaining smooth barked and evergreen trees.

Should the proposed development be approved, **Trees 24, 25, 26, 27, 28, 47 & 50** will be required to be removed to reduce canopy cover and provide adequate canopy separation clearance.

Selective canopy pruning of up to 15% of **Tree 63** is also required to ensure that the trees canopy will not overhang or touch any future buildings.

Provided that pruning works are carried out in accordance with AS4373-2007 Pruning of amenity trees, it is considered that this tree will be capable of tolerating the required level of pruning given the works are generally of a minor nature. Further, it is not expected that the works will result in a significant impact to the existing form or crown balance or trigger any associated instability issues.

5.5 Ancillary Construction Related Impacts

Vehicles, machinery and equipment requiring access to the site have potential to result in inadvertent impacts to those trees being retained including compaction of the root zone, soil disturbance, physical damage to roots, trunk damage etc. and as such will require management.

Furthermore, storage and stockpiling of material may result in similar impacts and will require management. In this regard, protection for those trees to be retained is to be carried out in accordance with **Appendix 5**.

6 CONCLUSION

6.1 Proposed Development Impact

Development consent and relevant approvals must be obtained from Lane Cove Council prior to the removal or pruning of any tree protected under *Part J – Landscaping and Tree Preservation* of the LCDP 2010.

Removal of thirty-two (32) site trees (**Trees 5, 13, 17, 23, 24, 25, 26, 27, 28, 35, 36, 37, 38, 39, 40, 46, 47, 50, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71 & 72**). Removals have been recommended based upon;

- Trees being located within the indicative footprint of the proposed building/basement footprint, pathways or retaining wall and landscaped areas (**Trees 13, 36, 37, 38, 39, 40, 46, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70 & 71**);
- Trees being subject to 'major' and unsustainable encroachment as per AS4970-2025 from proposed retaining walls, stormwater line or pathways (**Trees 35 & 72**);
- Trees being dead with no habitat or hollows observed (**Trees 5 & 17**);
- Trees being removed to comply with bushfire requirements recommended within the Bush Fire Assessment Report prepared by Australian Bushfire Consulting Services (**Trees 23, 24, 25, 26, 27, 28, 47 & 50**).

Retention and protection of fifty-three (53) trees (**Trees 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 32, 33, 34, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 55, 56, 62, 63, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85**) including:

- One (1) tree (**Tree 32**) which is to be subject to 'major' (9% NRZ + 4% SRZ) encroachment as a result of the proposed pathway and stormwater infrastructure. Retention and future viability of these trees is contingent on successful implementation of mitigation measures and management during construction as detailed within **Section 7** below;
- One (1) tree (**Tree 14**) which is to be subject to 'moderate' (14%) and sustainable encroachment to its NRZ due to a proposed pathway. As per Section 3.3.2 of AS4970-2025 it is considered unlikely that there will be significant impact to health, longevity or structure due to the good-average health and vitality of this tree as well as contiguous deep soil areas able to be incorporated to the Tree Protection Zones.
- Four (4) trees (**Trees 33, 34, 41 & 73**) subject to 'minor' (<10%) encroachment to their respective NRZ, as per AS4970-2025 is considered tolerable and sustainable given the low-level root loss and contiguous areas of deep soil able to be incorporated into the TPZ.
- Forty-one (41) trees (**Trees 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 42, 43, 44, 48, 49, 54, 55, 56, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85**) which are generally located away from the proposed construction works and are anticipated to have nil encroachments to their respective NRZs.

- Six (6) trees (**Trees 45, 51, 52, 53, 62 & 63**) which are to have nil impacts anticipated due to an existing retaining wall that is likely to have restricted root development into site.

Specific recommendations as per **Section 7** will need to be adopted to ensure root-sensitive construction methods and adequate tree protection measures are employed which mitigate any potential negative impacts to retained trees.

7 RECOMMENDATIONS

7.1 Tree Removal

Remove **Trees 5, 13, 17, 23, 24, 25, 26, 27, 28, 35, 36, 37, 38, 39, 40, 46, 47, 50, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71 & 72** (32 trees) to facilitate the proposed development works.

Development consent and relevant approvals must be obtained from Lane Cove Council prior to the removal or pruning of any tree protected under *Part J – Landscaping and Tree Preservation* of the LCDP 2010.

All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - *Pruning of Amenity Trees*, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation.

7.2 Tree Retention & Protection

Retain and protect **Trees 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 32, 33, 34, 41, 42, 43, 44, 45, 48, 49, 51, 52, 53, 54, 55, 56, 62, 63, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84 & 85** (53 trees) in accordance with the Tree Location Plan & Tree Protection Specifications held at **Appendix 2 & 5**, AS4970:2025 *Protection of trees on development sites* and the specific recommendations below.

7.2.1 Tree Protection Plan and Tree Protection Specification

Following design development and prior to the issue of Construction Certificate (CC), a dedicated Tree Protection Plan and Tree Protection Specification is to be prepared by a suitably qualified AQF Level 5 Arborist. The purpose of this document is to provide a suitable framework for tree protection and management to ensure all trees nominated for retention are not adversely impacted by the proposed works.

7.2.2 Project Arborist Engagement

A Project Arborist experienced in tree protection on construction sites should be engaged prior to the commencement of any works on site. The Project Arborist shall monitor and report regularly to the Principal Certifying Authority (PCA) and the Applicant on the condition and protection of the retained trees during the works. The Project Arborist is to supervise and monitor any excavation, machine trenching or compacted fill placement within the Tree Protection Zone (TPZ) of retained trees throughout construction.

7.2.3 Root-Sensitive Construction of Pathway

The proposed pathway within the NRZ of **Tree 32** is to be constructed in a root-sensitive manner. The pathway is to be constructed entirely above the existing ground levels with minimal excavation to mitigate potential impacts within the root zone.

7.2.4 Root-Sensitive Installation of Stormwater Infrastructure

Excavation for the stormwater lines within the NRZ of **Tree 32** must be undertaken in a root sensitive manner to minimise root disturbance and severance. Trenching should be supervised by the Project Arborist and employ a method of hand digging with non-motorised hand tools or via pneumatic

device (i.e. Air Spade) to ensure roots are maintained intact without damage. Once excavated, pipes, lines and services are to be laid above, below or threaded through existing roots identified.

7.2.5 Tree Pruning Specification

A detailed pruning specification for **Tree 63** should be prepared to outline the extent of canopy pruning necessary to achieve clearance for the proposed building and associated scaffolding with the following information provided:

- Tree species;
- Branch number;
- Branch order;
- Diameter of branch being pruned;
- Height above ground level;
- Location on tree;
- Pruning class;
- Final cut locations for each individual branch;
- Estimated % of canopy to be removed.

The specification of canopy pruning works is to comply with the requirements of AS4373-2007: Pruning of amenity trees. The potential impacts of the proposed pruning on the health, structure and amenity of the tree should be considered. The Tree Pruning Specification must be reviewed and approved by the Project Arborist certifying impacts to **Tree 63** are tolerable.

8 REFERENCES

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APPENDIX 1: PRELIMINARY TREE ASSESSMENT DATA - 300 Burns Bay Road, Lane Cove

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DBH (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Protection Status	Comments
1	<i>Cinnamomum camphora</i>	Camphor Laurel	12	10	500, 400	900	7.68	3.17	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Bifurcated from 1m
2	<i>Syncarpia glomulifera</i>	Turpentine	10	7	350	400	4.20	2.25	M	Average	Fair	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Protected	Included co-dominant stems fro 7m. Past pruning events
3	<i>Glochidion ferdinandi</i>	Cheese Tree	12	11	400	450	4.80	2.37	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Minor defoliation by pest
4	<i>Syncarpia glomulifera</i>	Turpentine	13	8	450	500	5.40	2.47	M	Average	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Included co-dominant stems from 6m
5	Dead tree	-	6	2	200	250	-	-	-	-	-	Dead	Low	Priority for Removal	No works proposed within proximity	Remove	Protected	Nil
6	<i>Syncarpia glomulifera</i>	Turpentine	12	8	450	500	5.40	2.47	M	Good	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Included co-dominant stems from 3m
7	<i>Cinnamomum camphora</i>	Camphor Laurel	7	7	200, 150	300	3.00	2.00	SM	Good	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Included co-dominant stems from base
8	<i>Casuarina glauca</i>	Swamp Oak	17	8	550	650	6.60	2.76	M	Average	Average	Medium 15-40 years	High	High	No works proposed within NRZ	Retain	Protected	Dominant in group
9	<i>Casuarina glauca</i>	Swamp Oak	15	6	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Co-dominant crown with bias to north
10	<i>Casuarina glauca</i>	Swamp Oak	15	6	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Co-dominant crown with bias to east
11	<i>Cinnamomum camphora</i>	Camphor Laurel	9	11	400, 200, 200, 200	500	6.35	2.47	M	Good	Average	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Multi-stemmed from 1m
12	<i>Casuarina glauca</i>	Swamp Oak	11	8	300	350	3.60	2.13	OM	Fair	Fair	Short 5-15 years	Medium	Low	No works proposed within NRZ	Retain	Protected	Reduced foliage density
13	<i>Syncarpia glomulifera</i>	Turpentine	7	5	200	250	2.40	1.85	SM	Average	Poor	Medium 15-40 years	Low	Low	Within footprint of proposed building/basement	Remove	Protected	Previously topped
14	<i>Syncarpia glomulifera</i>	Turpentine	6	4	250, 250	350	4.24	2.13	SM	Average	Poor	Short 5-15 years	Low	Low	Moderate 14% NRZ encroachment from proposed pathway	Retain	Protected	Previously topped
15	<i>Syncarpia glomulifera</i>	Turpentine	13	7	300, 250	400	4.69	2.25	M	Average	Fair	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Protected	Bifurcated from base. Crown bias to south-east
16	<i>Syncarpia glomulifera</i>	Turpentine	14	8	350, 250	450	5.16	2.37	M	Average	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Included co-dominant stems from base. Crown bias to north
17	Dead tree	-	9	8	350	400	-	-	-	-	-	Dead	Low	Priority for Removal	No works proposed within proximity	Remove	Protected	Dead tree
18	<i>Syncarpia glomulifera</i>	Turpentine	14	6	300	350	3.60	2.13	M	Average	Average	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Protected	Slender form
19	<i>Syncarpia glomulifera</i>	Turpentine	14	5	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Protected	Slender form
20	<i>Syncarpia glomulifera</i>	Turpentine	15	10	550	650	6.60	2.76	M	Good	Fair	Long 40 years +	Medium	High	No works proposed within NRZ	Retain	Protected	Included co-dominant stems from 4m
21	<i>Syncarpia glomulifera</i>	Turpentine	15	10	450, 200	500	5.91	2.47	M	Fair	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Dieback in upper crown
22	<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	7	4	250	300	3.00	2.00	M	Fair	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Multiple past pruning events. Poor form
23	<i>Callistemon citrinus</i>	Crimson Bottlebrush	5	4	50, 50, 50, 50	150	2.00	1.50	OM	Poor	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Significantly reduced crown density. In decline

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DBH (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Protection Status	Comments
24	<i>Callistemon citrinus</i>	Crimson Bottlebrush	5	3	100, 50	150	2.00	1.50	M	Fair	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Impacted by vine
25	<i>Callistemon citrinus</i>	Crimson Bottlebrush	5	5	100, 100, 50	250	2.00	1.85	M	Fair	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Multi-stemmed from base. Impacted by vine
26	<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	6	4	200	250	2.40	1.85	SM	Fair	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Slender form. Suppressed
27	<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	9	6	350	400	4.20	2.25	M	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Past branch tear outs
28	<i>Callistemon citrinus</i>	Crimson Bottlebrush	5	4	100, 100	250	2.00	1.85	M	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ. Removal proposed to comply with bushfire requirements	Remove	Protected	Bifurcated from base. Impacted by vine
29	<i>Callistemon citrinus</i>	Crimson Bottlebrush	5	5	100, 100	250	2.00	1.85	M	Average	Fair	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Bifurcated from base. Impacted by vine
30	<i>Callistemon citrinus</i>	Crimson Bottlebrush	4	3	100, 100, 100	250	2.08	1.85	OM	Fair	Poor	Very Short < 5 years	Low	Low	No works proposed within NRZ	Retain	Protected	Multi-stemmed from base. Heavily impacted by vine
31	<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	8	5	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Mechanical damage to base of trunk on southern side
32	<i>Brachychiton acerifolius</i>	Illawarra Flame Tree	9	7	300	350	3.60	2.13	M	Average	Average	Medium 15-40 years	Low	Low	Major 9% NRZ + 4% SRZ encroachment from proposed pathway and stormwater line	Retain	Protected	Nil
33	<i>Syncarpia glomulifera</i>	Turpentine	14	9	450	550	5.40	2.57	M	Average	Average	Long 40 years +	Medium	High	Minor 9% NRZ encroachment from proposed pathway	Retain	Protected	Vine ascending stem
34	<i>Syncarpia glomulifera</i>	Turpentine	12	5	250	300	3.00	2.00	M	Average	Average	Long 40 years +	Low	Medium	Minor 6% NRZ encroachment from proposed pathway	Retain	Protected	Slender form. Vine ascending stem
35	<i>Syncarpia glomulifera</i>	Turpentine	12	7	250	350	3.00	2.13	M	Average	Average	Long 40 years +	Low	Medium	Major 21% NRZ + 8% SRZ encroachment from proposed pathway and stormwater line	Remove	Protected	Vine ascending stem
36	<i>Syncarpia glomulifera</i>	Turpentine	14	12	500	600	6.00	2.67	M	Good	Fair	Long 40 years +	Medium	High	Within footprint of proposed pathway	Remove	Protected	Included co-dominant stems from 1.8m
37	<i>Syncarpia glomulifera</i>	Turpentine	12	8	350	400	4.20	2.25	M	Average	Average	Long 40 years +	Low	Medium	Within footprint of proposed basement	Remove	Protected	Minor crown bias to north
38	<i>Syncarpia glomulifera</i>	Turpentine	12	10	450	550	5.40	2.57	M	Good	Average	Long 40 years +	Medium	High	Within footprint of proposed basement	Remove	Protected	Nil
39	<i>Syncarpia glomulifera</i>	Turpentine	13	10	500	600	6.00	2.67	M	Good	Average	Long 40 years +	Medium	High	Within footprint of proposed basement	Remove	Protected	Moderate trunk lean and crown bias to south
40	<i>Syncarpia glomulifera</i>	Turpentine	14	9	500	600	6.00	2.67	M	Average	Average	Long 40 years +	Medium	High	Within footprint of proposed basement	Remove	Protected	Nil
41	<i>Syzygium australe</i>	Brush Cherry	8	7	150, 150	250	2.55	1.85	M	Good	Average	Medium 15-40 years	Low	Low	Minor 1% NRZ encroachment from proposed substation	Retain	Protected	Bifurcated from 1m
42	<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle	9	6	300	350	3.60	2.13	M	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Multi-stemmed from 2m
43	<i>Cyathea cooperi</i>	Lacy Tree Fern	9	4	250	300	3.00	N/A	M	Good	Good	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Nil
44	<i>Cotoneaster sp.</i>	Cotoneaster	4	3	50	100	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Trunk lean and crown bias to south
45	<i>Cyathea cooperi</i>	Lacy Tree Fern	7	4	150	200	3.00	N/A	M	Good	Good	Medium 15-40 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Nil
46	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	4	5	200, 200	300	3.39	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Within footprint of proposed pathway/stormwater line	Remove	Protected	Growing within podium planter. Stunted
47	<i>Cyathea cooperi</i>	Lacy Tree Fern	3	3	100	150	2.50	N/A	SM	Average	Fair	Medium 15-40 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site. Removal proposed to comply with bushfire requirements	Remove	Protected	Crown bias to west

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DBH (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Protection Status	Comments
48	<i>Casuarina glauca</i>	Swamp Oak	6	3	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Crown bias to south-west
49	<i>Casuarina glauca</i>	Swamp Oak	9	4	150	200	2.00	1.68	SM	Fair	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Slender form. Moderate deadwood
50	<i>Cyathea cooperi</i>	Lacy Tree Fern	9	4	250	300	3.00	N/A	M	Good	Good	Medium 15-40 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site. Removal proposed to comply with bushfire requirements	Remove	Protected	Nil.
51	<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle	8	5	300	350	3.60	2.13	M	Average	Average	Medium 15-40 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Included co-dominant stems from 3m
52	<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle	7	4	200	250	2.40	1.85	M	Fair	Fair	Short 5-15 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Moderate deadwood. Reduced foliage density
53	<i>Acacia saligna</i>	Coojong	3	3	50	100	2.00	1.50	SM	Average	Fair	Short 5-15 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Previously topped. Crown bias to south
54	<i>Casuarina glauca</i>	Swamp Oak	9	4	100	150	2.00	1.50	SM	Average	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Slender form
55	<i>Eucalyptus microcorys</i>	Tallowwood	12	7	250	300	3.00	2.00	SM	Average	Good	Long 40 years +	Low	Medium	No works proposed within NRZ	Retain	Protected	Nil
56	<i>Casuarina glauca</i>	Swamp Oak	11	5	250	300	3.00	2.00	M	Fair	Average	Medium 15-40 years	Low	Low	No works proposed within NRZ	Retain	Protected	Reduced foliage density. Crown bias to south
57	<i>Angophora floribunda</i>	Rough-barked Apple	14	8	400	450	4.80	2.37	M	Fair	Fair	Medium 15-40 years	Medium	Medium	Within footprint of proposed building/basement	Remove	Protected	Reduced foliage density. Moderate level of epicormic growth
58	<i>Angophora floribunda</i>	Rough-barked Apple	13	8	400	450	4.80	2.37	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within footprint of proposed building/basement	Remove	Protected	Reduced foliage density
59	<i>Angophora floribunda</i>	Rough-barked Apple	14	8	400	450	4.80	2.37	M	Fair	Average	Medium 15-40 years	Medium	Medium	Within footprint of proposed building/basement	Remove	Protected	Moderately reduced foliage density
60	<i>Eucalyptus saligna</i>	Sydney Blue Gum	13	10	350	400	4.20	2.25	M	Average	Good	Long 40 years +	Medium	High	Within footprint of proposed building/basement	Remove	Protected	Minor kink in main stem @ 3m
61	<i>Angophora floribunda</i>	Rough-barked Apple	15	10	450	500	5.40	2.47	M	Average	Average	Long 40 years +	Medium	High	Within footprint of proposed building/basement	Remove	Protected	Bifurcated from 6m
62	<i>Casuarina glauca</i>	Swamp Oak	5	4	100, 100, 100	250	2.08	1.85	SM	Average	Average	Medium 15-40 years	Low	Low	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Growing at top of rock face
63	<i>Eucalyptus microcorys</i>	Tallowwood	18	15	600	700	7.20	2.85	M	Good	Good	Long 40 years +	High	High	Existing retaining wall likely to have restricted root development into subject site	Retain	Protected	Growing at top of rock face / retaining wall. Crown extending into subject site
64	<i>Pittosporum undulatum</i>	Sweet Pittosporum	8	5	200	300	2.40	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Within footprint of proposed basement	Remove	Protected	Nil
65	<i>Pittosporum undulatum</i>	Sweet Pittosporum	9	6	200	300	2.40	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Within footprint of proposed basement	Remove	Protected	Nil
66	<i>Homalanthus populifolius</i>	Bleeding Heart	7	7	150, 150, 100	250	2.81	1.85	M	Good	Average	Medium 15-40 years	Low	Low	Within footprint of proposed basement	Remove	Protected	Crown bias to south
67	<i>Pittosporum undulatum</i>	Sweet Pittosporum	8	5	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Within footprint of proposed basement	Remove	Protected	Minor defoliation from pest
68	<i>Unknown species</i>	-	8	4	150	200	2.00	1.68	M	Average	Average	Medium 15-40 years	Low	Low	Within proposed retaining walls and landscaped area	Remove	Protected	Slender form
69	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	7	4	150	200	2.00	1.68	M	Good	Average	Medium 15-40 years	Low	Low	Within proposed retaining walls and landscaped area	Remove	Protected	Nil
70	<i>Cotoneaster sp.</i>	Cotoneaster	6	7	200, 100, 100	300	2.94	2.00	M	Good	Average	Medium 15-40 years	Low	Low	Within proposed retaining walls and landscaped area	Remove	Exempt	Multi-stemmed from base. Exempt species under Lane Cove DCP 2011.
71	<i>Pittosporum sp.</i>	Pittosporum	10	7	250	300	3.00	2.00	M	Average	Average	Medium 15-40 years	Low	Low	Within proposed retaining walls and landscaped area	Remove	Protected	Multiple past pruning events

Tree No.	Genus & species	Common Name	Height (m)	Crown Spread (m)	DBH (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Protection Status	Comments
72	<i>Pittosporum undulatum</i>	Sweet Pittosporum	10	7	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Low	Low	Major 13% NRZ + 4% SRZ encroachment from proposed retaining walls and stormwater line	Remove	Protected	Multiple past pruning events
73	<i>Glochidion ferdinandi</i>	Cheese Tree	7	7	250	300	3.00	2.00	M	Fair	Average	Medium 15-40 years	Low	Low	Minor 7% NRZ encroachment from proposed stormwater line	Retain	Protected	Moderate defoliation by pest
74	<i>Populus nigra 'Italica'</i>	Lombardy Poplar	12	4	350, 50, 50, 50	450	4.33	2.37	OM	Poor	Fair	Very Short < 5 years	Low	Low	No works proposed within NRZ	Retain	Exempt	In decline. Exempt species under Lane Cove DCP 2011.
75	<i>Pittosporum undulatum</i>	Sweet Pittosporum	7	4	200	250	2.40	1.85	M	Poor	Fair	Short 5-15 years	Low	Low	No works proposed within NRZ	Retain	Protected	Reduced foliage density. In decline
76	<i>Pittosporum undulatum</i>	Sweet Pittosporum	9	7	250	300	3.00	2.00	OM	Poor	Fair	Very Short < 5 years	Low	Low	No works proposed within NRZ	Retain	Protected	Significantly reduced foliage density. In decline
77	<i>Pittosporum undulatum</i>	Sweet Pittosporum	10	8	250, 100	400	3.23	2.25	OM	Poor	Fair	Very Short < 5 years	Low	Low	No works proposed within NRZ	Retain	Protected	Significantly reduced foliage density. In decline
78	<i>Acacia elata</i>	Mountain Cedar Wattle	14	11	350	450	4.20	2.37	M	Good	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Failed co-dominant leader at base. Wound occluding well. Good vitality
79	<i>Acacia elata</i>	Mountain Cedar Wattle	15	8	400	500	4.80	2.47	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Main stem skewed at base due to growing position on steep slope
80	<i>Acacia elata</i>	Mountain Cedar Wattle	18	8	450	550	5.40	2.57	M	Average	Average	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Apical dieback. Vine ascending trunk
81	<i>Casuarina glauca</i>	Swamp Oak	18	7	350	400	4.20	2.25	M	Average	Fair	Medium 15-40 years	Medium	Medium	No works proposed within NRZ	Retain	Protected	Slender form. Past branch tear-outs
82	<i>Eucalyptus piperita</i>	Sydney Peppermint	19	13	600, 450	750	9.00	2.93	M	Average	Average	Long 40 years +	High	High	No works proposed within NRZ	Retain	Protected	Bifurcated from base
83	<i>Angophora costata</i>	Sydney Red Gum	16	14	700	900	8.40	3.17	M	Good	Fair	Long 40 years +	High	High	No works proposed within NRZ	Retain	Protected	Multiple past branch failures. Habitat tree
84	<i>Acacia elata</i>	Mountain Cedar Wattle	10	4	250	300	3.00	2.00	S	Poor	Poor	Very Short < 5 years	Low	Low	No works proposed within NRZ	Retain	Protected	Failed central leader. In severe decline
85	<i>Eucalyptus pilularis</i>	Blackbutt	20	20	1400, 750	2200	15.00	4.60	M	Good	Average	Long 40 years +	High	High	No works proposed within NRZ	Retain	Protected	Historical basal failure of co-dominant leader on eastern side of tree. Multiple past pruning events and branch failures. Advanced specimen - assume remnant

Tree Inspection Data Notes & Terminology**Tree No. (Tree Number)**

The tree number associated to each tree located on or adjacent to the subject site. Relates to the Tree Location Plan held at Appendix 2.

Botanical Name and Common Name

The botanical and common name of each tree is identified and recorded. Occasionally the exact species name is unknown; sp. is recorded to indicate this.

Height, Crown Width and DBH

- The trees height and crown spread is recorded in metres (m);
- The tree DBH is recorded in millimetres (mm). DBH is an abbreviation of Diameter (of the trunk) measured at Breast Height (or 1.4m from the base of the trunk). If more than one trunk is present the DBH is calculated in accordance with AS4970-2009 Protection of Trees on Development Sites

Age Class

The age class of each tree is estimated as either:

- J – Juvenile refers to a well established but young tree
- SM – Semi Mature, a tree that has not grown to mature size
- M – Mature, a tree that has reached mature size and will slowly increase in size over time
- OM – Over Mature, a tree that has been mature for a long period and is beginning to display signs of decline, e.g. large dead branches
- S – Senescent, an over mature tree that is now in decline

Health & Condition

The trees health and vigour is recorded as a measurement of:

Good - the tree does not appear to appear stressed with no excessive dieback, insect infestation, decay, deadwood or epicormic shoots

Average - the tree appears stressed and has some crown dieback, and/or a few epicormic shoots, and/or some deadwood in the crown and some new growth at branch tips. These trees may benefit from remediation of the growing environment to reduce stress and return it to good health

Poor - the tree may have areas of crown dieback, and/or epicormic shoots, and/or areas of decay, and/or reduced new growth at branch tips. These trees have been stressed for a short period of time, remediation of the growing environment may improve trees health

For - the tree may have large areas of crown dieback, and/or many epicormic shoots, and/or reduced new growth at branch tips. These trees have been stressed for a long period of time, remediation of the growing environment would not return the tree to good health.

SRZ (Structural Root Zone)

The SRZ is a radial area extending outwards from the centre of the trunk. This area contains the majority of the structural woody roots. This area is responsible primarily for stability. Root damage or root loss within this zone greatly increases the opportunity for decay fungi to ingress into the heartwood, causing internal decay in addition to destabilising the trees structural integrity. The SRZ is calculated as follows (This calculation is taken from the Australian Standard 4970 – 2009 Protection of Trees on Development Sites): $(D \times 50) / 0.42 \times 0.64$

TPZ (Tree Protection Zone)

The TPZ is a radial area measured by multiplying the DBH by twelve (12) or a circular area the size of the trees drip line, whichever is greater. This area contains the majority of the structural and feeder roots responsible for stability, gaseous exchange and water and nutrient uptake. Excavation, back filling, compaction or other disturbance should not occur in this area. The TPZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2009 Protection of Trees in Development Sites. An incursion up to 10% within the TPZ is potentially acceptable if no other option is available. A major encroachment (in excess of 10%) is required to be clearly justified by the Project Arborist and compensated for elsewhere. Justification methodology may vary depending on site or individual tree's health, vigour and ability to withstand disturbance and may require root investigation.

Landscape Significance

The landscape significance of a tree or group of trees is determined using a combination of health/vigour/condition, amenity, heritage and ecological values in accordance with IACA Significance of a Tree, Assessment Rating System (STARS)® (IACA 2010)®.

1. High Significance in Landscape**2. Medium Significance in Landscape****3. Low Significance in Landscape****Retention Value (RV)**

Determined by [1] tree free of visual defects and viable for retention, [2] viable for retention with minor faults which may reduce SULE, [3] trees which should not restrict development applications containing faults that are likely to become problematic in the short term, [4] trees to be considered for removal due to average condition.

High Retention - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented e.g. pier and beam etc. if works are to proceed within the Tree Protection Zone.

Medium Retention - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.

Low Retention - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

S.U.L.E. Categories

Safe Useful Life Expectancy (after *Barnill 1996*, modified by the author). A trees S.U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. S.U.L.E. assessments may be modified as dictated by changes in trees health and environment.

Long - Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.

Medium - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.

Short - Trees appear to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk assuming reasonable maintenance.

Very Short - Removal - Trees which should be scheduled for removal within the very short term or as specified within this report.

Small, Young or Regularly Pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

Development Impact

Brief outline of the impact of the proposed development works or ancillary construction related activities likely to impact the tree.

Retain/Remove

The proposed removal or retention recommendation in light of the proposed development related impacts.

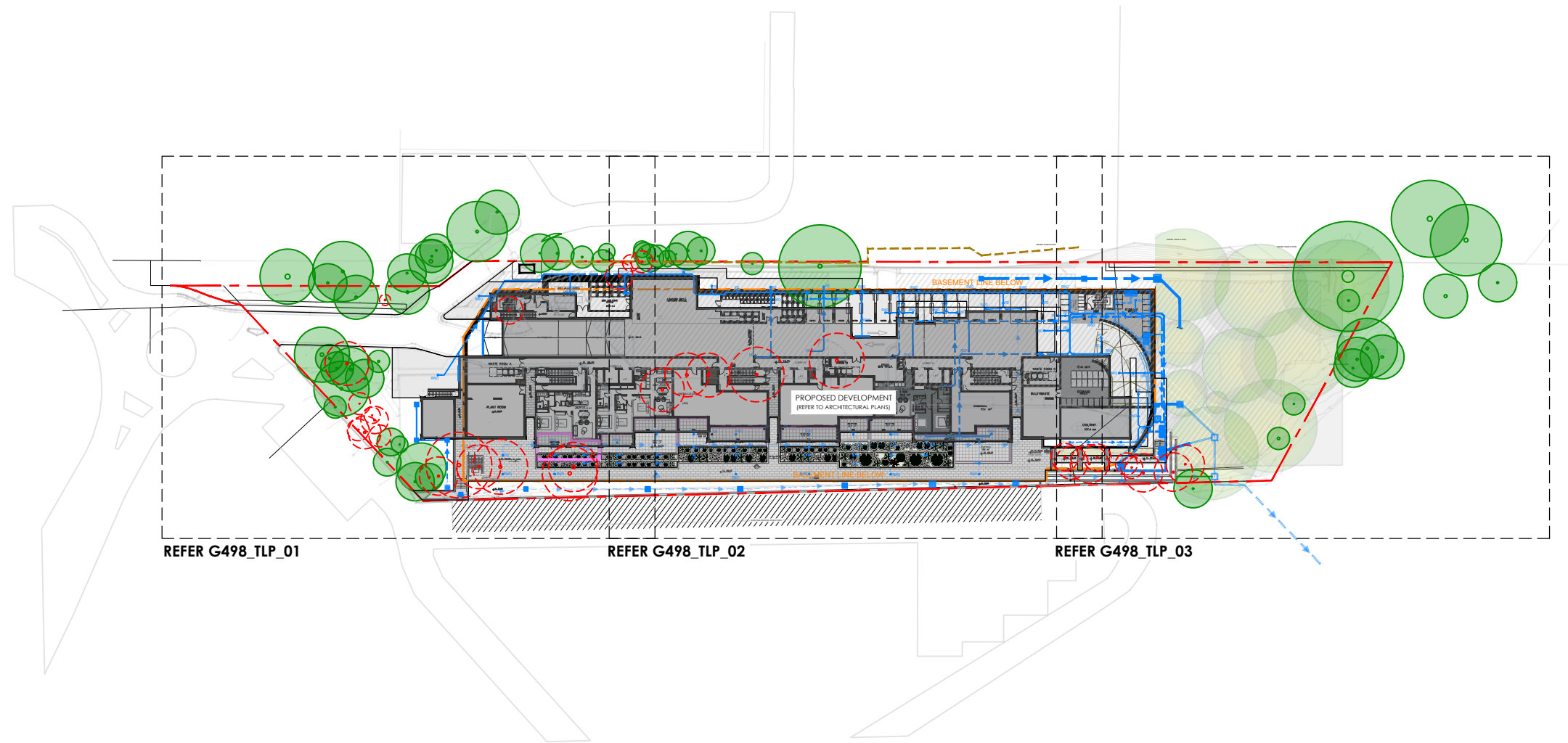
NOTES: This report acknowledges the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ); being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ); The area required for tree stability. Determined by AS4970 – 2009 Figure 1, Table of determining the SRZ section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability, development must take into consideration protection of the TPZ radius. The extent of inclusion within the TPZ radius has been categorised within this report as follows:

APPENDIX 2 - TREE LOCATION PLANS

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

DRAWING LIST -

SHEET:	TITLE:
G498_TLP_00	COVER SHEET
G498_TLP_01	TREE LOCATION PLAN 01
G498_TLP_02	TREE LOCATION PLAN 02
G498_TLP_03	TREE LOCATION PLAN 03



CPS

CREATIVE PLANNING SOLUTIONS
 LEVEL 3
 397 RILEY STREET
 SURRY HILLS NSW 2010
 PO BOX 1074 BROADWAY NSW 2007
 TEL: + (61) 2 8039 7461
 INFO@CPSPLANNING.COM.AU
 CPSPLANNING.COM.AU

DIMENSIONS :
 All dimensions are in millimetres unless otherwise noted. Do not scale from this drawing.

Verify all dimensions on site prior to construction.

CIVIL, STRUCTURAL, HYDRAULIC, ELECTRICAL AND SPECIALIST WATER FEATURE WORKS :
 Refer to specialist and consultant's drawings for all information contained within these documents relating to and nominated as specialist and consultant work. Specialist and consultant drawing information contained in the landscape documents are indicative only and not for construction or certification purposes.

Issue Code	Issue Description	By	Chk	Date
A	CA FOR APPROVAL	JHG	TP	05.12.25

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT
MIXED-USE DEVELOPMENT
 300 BURNS BAY ROAD,
 LANE COVE

DRAWING TITLE
 COVER SHEET

CLIENT
LEVEL

Drawn : JHG
 Designed : NZ
 Project No. : G498
 Bar Scale






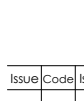
1:1000 @ A3
 SHEET NUMBER
 G498_TLP_00
 REVISION
 A

DIMENSIONS :
 All dimensions are in millimetres unless otherwise noted. Do not scale from this drawing.

Verify all dimensions on site prior to construction.

CIVIL, STRUCTURAL, HYDRAULIC, ELECTRICAL AND SPECIALIST WATER FEATURE WORKS :
 Refer to specialist and consultant's drawings for all information contained within these documents relating to and nominated as specialist and consultant work. Specialist and consultant drawing information contained in the landscape drawings are indicative only and not for construction or certification purposes.

LEGEND

-  EXISTING TREE TO BE RETAINED
-  EXISTING TREE TO BE REMOVED
-  NOTIONAL ROOT ZONE
-  STRUCTURAL ROOT ZONE
-  NRZ ENCROACHMENT ZONE
-  SITE BOUNDARY

Issue Code	Issue Description	By	Chk	Date
A	CA FOR APPROVAL	JHG	TP	05.12.25

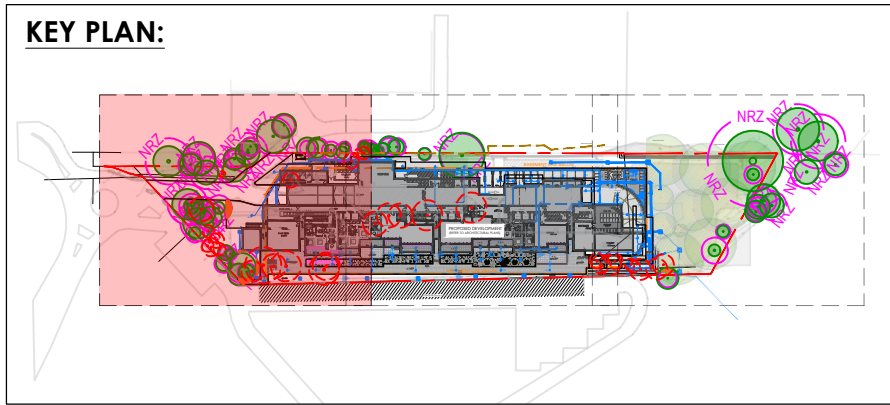
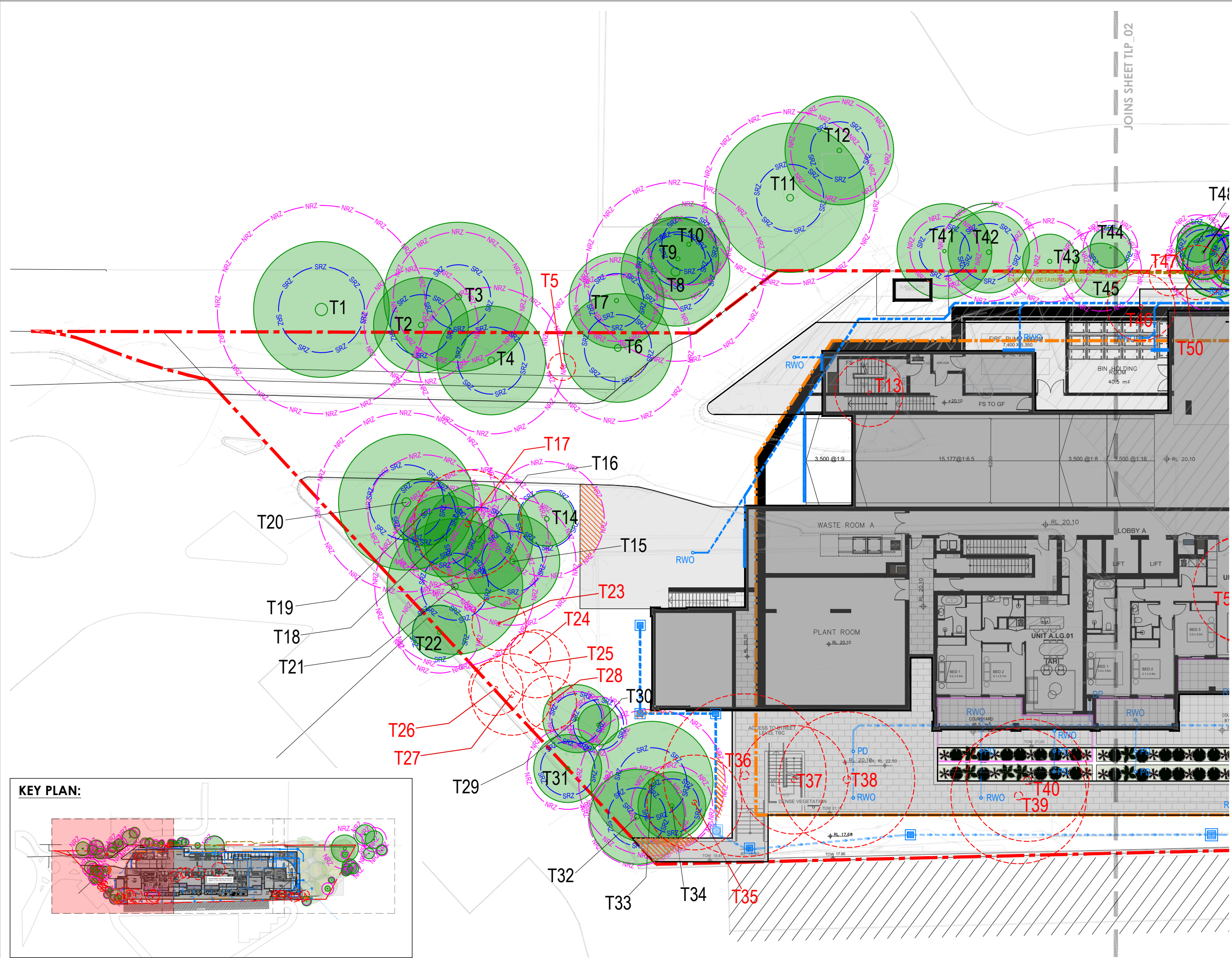
PRE - Preliminary CA - Council Approval T - Tender CON - Construction PROJECT

MIXED-USE DEVELOPMENT
 300 BURNS BAY ROAD,
 LANE COVE

DRAWING TITLE
TREE LOCATION PLAN
 01

CLIENT
LEVEL

Drawn : JHG
 Designed : NZ
 Project No. : G498
 Bar Scale
 1:250 @ A3
 SHEET NUMBER : G498_TLP_01
 REVISION : A









JOINS SHEET TLP_02

DIMENSIONS :
 All dimensions are in millimetres unless otherwise noted. Do not scale from this drawing.

Verify all dimensions on site prior to construction.

CIVIL, STRUCTURAL, HYDRAULIC, ELECTRICAL AND SPECIALIST WATER FEATURE WORKS :
 Refer to specialist and consultant's drawings for all information contained within these documents relating to and nominated as specialist and consultant work. Specialist and consultant drawing information contained in the landscape documents are indicative only and not for construction or certification purposes.

LEGEND

-  EXISTING TREE TO BE RETAINED
-  EXISTING TREE TO BE REMOVED
-  NOTIONAL ROOT ZONE
-  STRUCTURAL ROOT ZONE
-  NRZ ENCROACHMENT ZONE
-  SITE BOUNDARY

Issue Code	Issue Description	By	Chk	Date
A	CA FOR APPROVAL	JHG	TP	05.12.25

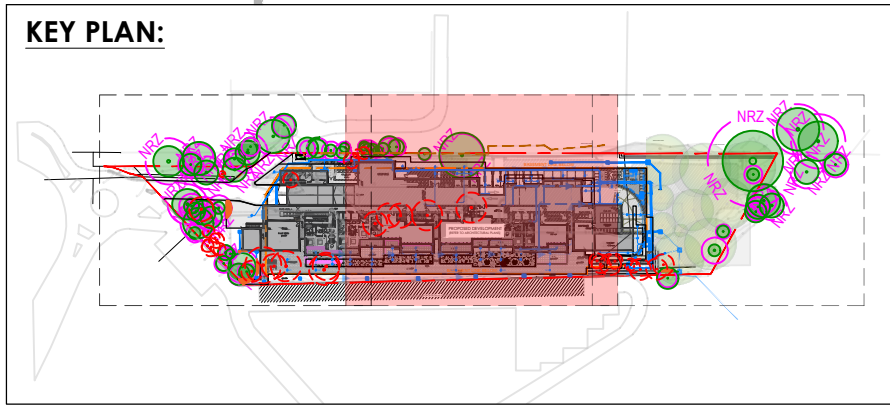
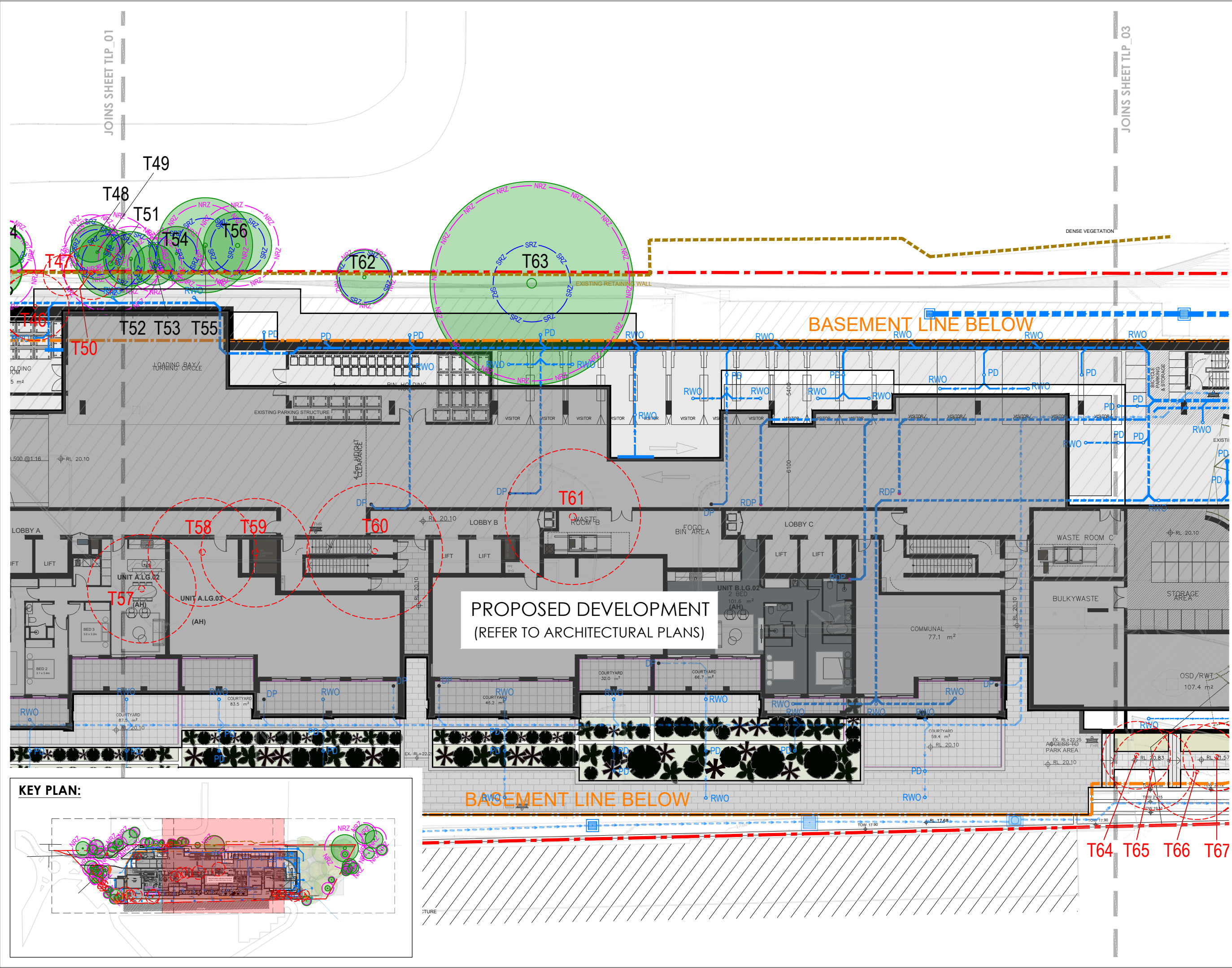
PRE - Preliminary CA - Council Approval T - Tender CON - Construction PROJECT

MIXED-USE DEVELOPMENT
 300 BURNS BAY ROAD,
 LANE COVE

DRAWING TITLE
TREE LOCATION PLAN
 02

CLIENT
LEVEL

Drawn : JHG
 Designed : NZ
 Project No. : G498
 Bar Scale
 1:250 @ A3
 SHEET NUMBER
 G498_TLP_02
 REVISION
 A



JOINS SHEET TLP_01

JOINS SHEET TLP_03

BASEMENT LINE BELOW

PROPOSED DEVELOPMENT
 (REFER TO ARCHITECTURAL PLANS)

BASEMENT LINE BELOW

T64 T65 T66 T67

APPENDIX 3

IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria and Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria



1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Table 1.0 Tree Retention Value - Priority Matrix.

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					

Legend for Matrix Assessment



	Priority for Retention (High) - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.
	Consider for Retention (Medium) - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
	Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

The following example shows the IACA **Significance** of a **Tree, Assessment Rating System (STARS)** used in an Arboricultural report.

Tree Significance

Determined by using the Tree Significance - Assessment Criteria of the *IACA Significance of a Tree, Assessment Rating System (STARS)©* (IACA, 2010), Appendix B.

Trees 14, 16, 17/3, 19 and 20/4 are of high significance with the remaining majority of medium significance and a few of low significance. Tree 14 is significant as a prominent specimen and a food source for indigenous avian fauna. Tree 16 as a non-locally indigenous planting is of good form and prominent *in situ*; Tree 17/3 as a stand of 6 street trees along the Davey Street frontage screening views to and from the site and contiguous with trees in Victoria Park extending the aesthetic influence of the urban canopy to the site. Similarly for Trees 20/4 as street trees in Long Road and Tree 19 as an extant exotic planting as a senescent component of the original landscaping. The trees of low significance are recent plantings as fruit trees – Avocados, and 1 Cootamundra Wattle as a non-locally indigenous tree in irreversible decline and potentially structurally unsound.

Significance Scale

- 1 – High
- 2 – Medium
- 3 – Low

Significance Scale	1	2	3
Tree No. / Stand No.	14, 16, 17/3, 19, 20/4	1/1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12/2, 15, 18, 21/5	3, 13, 22

Tree Retention Value

Determined by using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System (STARS)©* (IACA, 2010), Appendix B.

Retention Value

- High** – Priority for Retention
- Medium** – Consider for Retention
- Low** – Consider for Removal
- Remove** - Priority for Removal

Retention Value	High Priority for Retention	Medium Consider for Retention	Low Consider for Removal	Remove Priority for Removal
Tree No. / Stand No.	1/1, 5, 17/3*, 19	2, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20/4*, 21/5	3, 12/2, 13,	22

* Trees located within the neighbouring property and should be retained and protected.

APPENDIX 4 - EXTRACT FROM AS4970-2025: PROTECTION OF TREES ON DEVELOPMENT SITES

Section 3 Determining protection zones

3.1 Tree Protection Zone (TPZ)

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). The TPZ is the zone determined by the project arborist using the process set out below. It shall be shown on the TPP to be isolated or managed so that the tree remains viable.

The NRZ is the starting point for determining the TPZ, along with the considerations in [Clause 3.3.2](#). Alternatively, the TPZ may be specified by the consent authority.

3.2 Calculating the Notional Root Zone (NRZ)

The radius of the NRZ is calculated for each tree by multiplying its diameter at standard height (DSH) by 12.

$$\text{Radius of the NRZ} = \text{DSH} \times 12$$

where

DSH = trunk diameter measured at 1.4 m above ground

The radius of the NRZ is measured from the centre of the stem.

The NRZ for palms, cycads, tree ferns and the like, is not calculated but shall not be less than 2 m.

Any NRZ radius shall not be less than 2 m nor greater than 15 m. [Clause 3.3](#) details the methods to produce the TPZ based on the NRZ.

3.4 Structural Root Zone (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 an NRZ is proposed. SRZ locations and dimensions may be included on 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 or [Figure 2](#). Root investigation can provide more information on the extent of these roots.

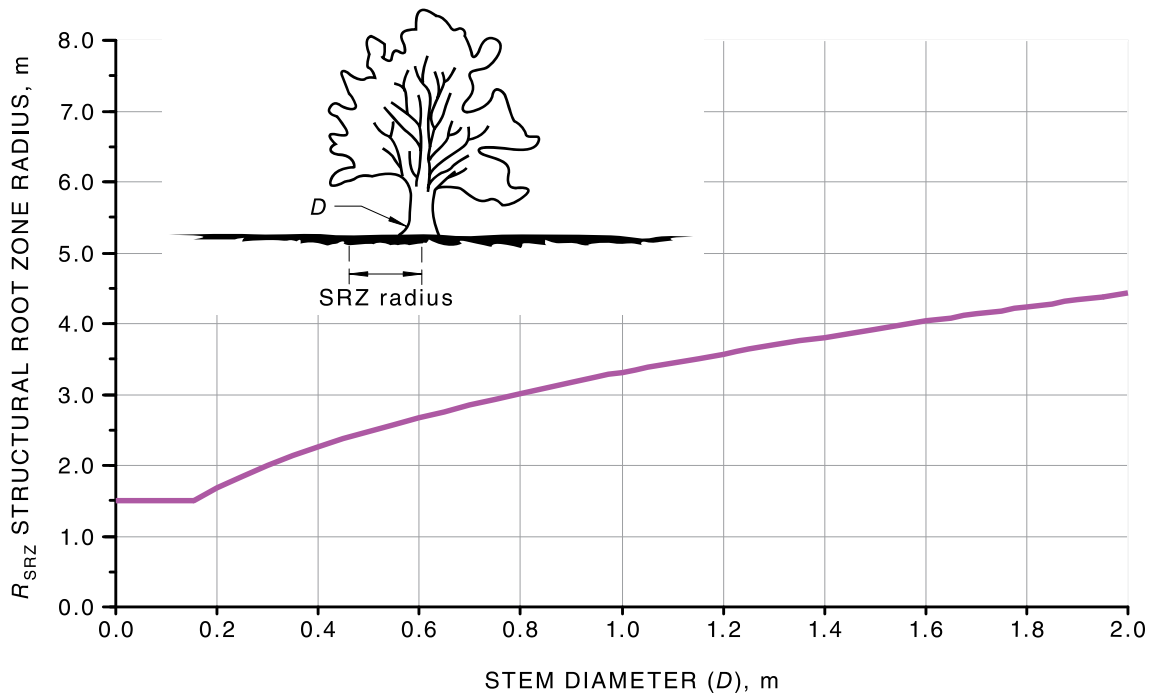
$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

where

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

Where the tree is multi-stemmed, the project arborist should determine if they will measure around all stems or work out the cross-sectional area, as noted in [Figure A.1](#), and provide their reasons for the method selected. The SRZ calculation does not apply to palms, cycads, tree ferns and the like.

NOTE The SRZ for trees with trunk diameters less than 0.15 m is 1.5 m, as shown in [Figure 2](#).



The curve can be expressed by the following formula:
 $R_{SRZ} = (D \times 50)^{0.42} \times 0.64$

Figure 2 — Structural Root Zone (SRZ) calculation

APPENDIX 5 – GENERAL TREE PROTECTION SPECIFICATION

1.0 Project Arborist

A Project Arborist with AQF Level 5 qualifications may be appointed prior to works commencing to ensure trees to be retained are appropriately monitored and protected throughout the proposed works. The Project Arborist shall review all tree protection measures, ensure compliance with requirements set out by the Principal Certifying Authority and provide compliance reports as per the schedule of works and responsibilities below.

Table 5 - Schedule of Works and Responsibilities

HOLD POINT	TASK	RESPONSIBILITY	CERTIFICATION	TIMING OF INSPECTION
1	Review & certification of all tree protection measures	Principal Contractor	Project Arborist (AQF5)	Prior to demolition or site establishment
2	Supervise all excavation works proposed within the TPZ	Principal Contractor	Project Arborist (AQF5)	As required prior to works proceeding within TPZ
3	Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Quarterly during construction
4	Final Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Following removal of tree protection measures prior to Occupation Certificate

2.0 Compliance

Compliance Documentation shall be prepared by the Project Arborist following each site inspection. The Compliance Documentation shall include documentary evidence of compliance with the tree protection measures and methods as outlined within this Specification. Upon the completion of the works, a final assessment of the trees shall be undertaken by the Project Arborist and future management strategies recommended.

3.0 Tree Removal

The trees to be removed shall be removed prior to the establishment of the tree protection measures. Tree removal works shall be undertaken in accordance with the *Workcover Code of Practice for the Amenity Tree Industry (1998)*. All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - Pruning of Amenity Trees, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation. Care should be taken to avoid damaging trees to be retained.

4.0 Tree Protection Zone

The Tree Protection Zone (TPZ) is a specified area above and below ground set aside for the protection of a tree. The TPZ should be protected to ensure development activities do not have an adverse effect on the viability and stability of trees to be retained. Activities restricted within the TPZ include:

- Soil cutting or filling, including excavation and trenching
- Soil compaction and modification
- Storage of materials and waste
- Parking of vehicles and plant
- Temporary or permanent installation of sheds, utilities and signs
- Cement or chemical preparation
- Refuelling
- Any other action leading to damage of the tree

5.0 Tree Protection Fencing

TPZ fencing shall be located at the perimeter of the TPZ. Where TPZ areas overlap, TPZ fencing may be combined to form a single larger TPZ area. The exact location of the fencing shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.

Fencing may be setback to allow for demolition/construction access only where appropriate ground protection is installed and approved by the Project Arborist.

Tree Protection Fencing shall consist of galvanised steel temporary fencing panels supported by concrete feet with panels coupled together. Care should be taken to avoid damaging the tree during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (**Appendix 2**).

6.0 Scaffolding

Scaffolding shall be erected outside of the TPZ. If scaffolding is deemed essential within the TPZ, the ground shall be protected, and branch removal minimised. Ground below scaffolding shall be protected by boarding placed over a layer of mulch to prevent soil compaction. Scaffolding shall be designed to avoid branches or branches tied back. Refer to Typical Tree Protection Details (**Appendix 2**).

7.0 Ground Protection

Where deemed necessary by the Project Arborist, temporary ground protection, such as ground mats or steel road plates placed over a mulch layer with geotextile fabric underneath, shall be utilised to prevent damage to tree roots during construction. Refer to Typical Tree Protection Details (**Appendix 2**).

8.0 Trunk Protection

Trunk protection shall be installed by wrapping padding around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (**Appendix 2**).

9.0 Works within the Tree Protection Zones

The Principal Certifying Authority may approve works within Tree Protection Zones. The Project Arborist shall ensure compliance with the prescribed requirements as set out by the Principal Certifying Authority to ensure trees nominated for retention are adequately retained and protected throughout the works.

10.0 Structure & Pavement Demolition

Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing slabs, pavements or areas of ground protection.

Pavement is to be shattered with a hand-operated pneumatic/electric breaker prior to removal taking place and carefully lifted to minimise damage to the underlying soil profile and tree roots. The underlying soil profile and existing sub-base materials shall remain in-situ.

When removing slab sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un-demolished sections of slab at all times. Machinery should not contact the tree's roots, trunk, branches and crown.

Exposed roots shall be irrigated by hand and covered with a 75-100mm layer of mulch as soon as possible after being exposed. The mulch must remain in place until new surfaces are put into place.

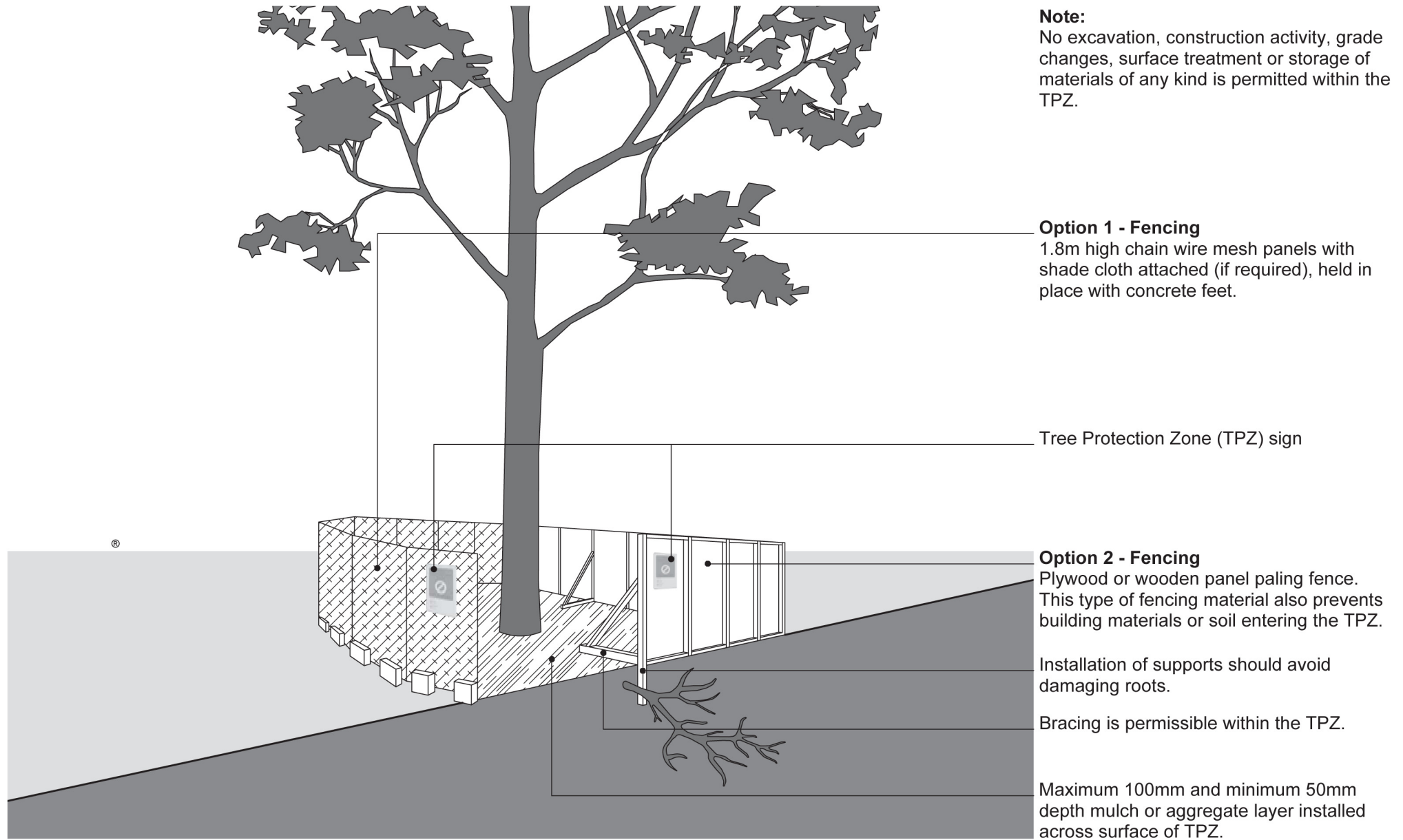
11.0 Underground Services

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using in a root-sensitive manner utilising manual hand excavation methods or employ a pneumatic excavation device to ensure roots are maintained and undamaged under supervision of the Project Arborist. Services are to be threaded in between and/or under to preserve existing roots.

13.0 Excavations, Root Protection & Root Pruning

Excavation required within the TPZ shall be undertaken using non-motorised hand tools or a pneumatic excavation device under supervision of the Project Arborist. Excavation must be undertaken in a root sensitive manner to ensure roots are maintained and un-damaged. Should significant roots be identified (>25mmØ) during construction, works are to cease and direction sought from the Project Arborist with regards to root pruning, modification of construction methodology or design alteration.

APPENDIX 6 - TYPICAL TREE PROTECTION DETAILS



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Tree Protection Fencing

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