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ARBORICULTURAL IMPACT ASSESSMENT

Proposed SSDA for Mixed Use Development

215, 229-239 Pitt Street, Merrylands NSW 2035

Project No: H786
Date: 20 January 2026
Revision: B

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A	18 December 2025	For Approval
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Accreditations

Disclaimer

The Client acknowledges this Report, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data, inspections, measurements and analysis carried out or obtained by CPS and referred to in the Report. No guarantee is implied with respect to future tree safety. The Client should rely on the Report and its contents, only to that extent.

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APPENDICIES

1 EXECUTIVE SUMMARY

This Arboricultural Impact Assessment (AIA) was commissioned by Impact Group on behalf of Anglicare Community Services on the 4th of December 2025 and relates to a State Significant Development Application (SSDA) for a mixed-use development on the subject site at 215 and 229-239 Pitt Street, Merrylands within the Cumberland Council Local Government Area (LGA).

The report relates to four (4) trees located within the Council verge and roadway adjoining the subject site and provides an evaluation of the likely impact to existing trees (within the subject site, adjoining the site within 5m of the boundaries and within Council street verge areas) 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 their location, retention values and nominated retention/removal status under the proposal.

Table 1 *– Tree assessment summary*

Tree No.	*Genus & species* Common Name	Location	Retention Value	Retain/ Remove
1	***Ulmus parvifolia*** Chinese Elm	Council Street Verge McFarlane Street	Medium	Retain & Protect
2	***Ulmus parvifolia*** Chinese Elm	Council Street Verge McFarlane Street	Medium	Retain & Protect
3	***Ulmus parvifolia*** Chinese Elm	Council Street Verge McFarlane Street	Medium	Remove
4	***Platanus x acerifolia*** London Plane	Roadway Island McFarlane Street	High	Retain & Protect

Based on the plans supplied, should the proposed works proceed in their current form, it is recommended that one (1) Council street tree (**Tree 3**) be removed and three (3) Council street trees (**Trees 1, 2** & **4**) be retained and protected.

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

2 INTRODUCTION

2.1 Background

This Arboricultural Impact Assessment (AIA) was commissioned by Impact Group on behalf of Anglicare Community Services on the 4th of December 2025 to evaluate potential impacts to existing trees as a result of the proposed SSDA for a mixed-use development of the subject site at 215 and 229-239 Pitt Street, Merrylands within the Cumberland Council LGA (refer to ***Figure 1***).

Accordingly, the purpose of this report is to assess the potential impact of the proposed development on the subject trees, as well as provide recommendations for further amendments to the design or construction methodology where necessary to minimise any adverse impact. The report also provides recommended tree protection measures to ensure the long-term preservation of the trees to be retained where appropriate.

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;
- Provide guidance and recommendations for any replacement planting necessary.

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*
- *Cumberland Local Environmental Plan 2021 (Cumberland LEP 2021)*
- *Cumberland Development Control Plan 2021 (Cumberland DCP 2021)*
- *Greater Sydney Regional Strategic Weed Management Plan 2023-2027 (GSRSWMP)*

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
Site Survey	Beveridge Williams	- / 04.09.2024
Architectural Plans	Fuse Architects	A / 22/07/2025
Civil and Stormwater Plans	EI Australia	4 / 8.10.2025
Landscape Plans	Taylor Brammer	B / 19.01.2026

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 known as 215 and 229-239 Pitt Street, Merrylands and comprises five allotments that are legally described as Lot 2 in DP 501597, Lot 1 in DP 537031, Lot J in DP 10354 and Lot 1 in DP 1079960 (the site) and currently contains three (3) low-density (i.e. one- and two-storey) commercial development and at grade car parking (refer to ***Figure 1*** below).

The site has four road frontages comprising of two road frontages to Pitt Street MacFarlane Street to the east and north respectively, whilst secondary frontages are provided to Milne Lane and Reyes Lane to the south and west respectively.

2.6 Proposed Development

The proposed development includes the demolition of existing site structures and construction of a 35-storey mixed use housing development that includes in-fill affordable housing, retail, commercial floor space, communal open space and five levels of basement parking. Associated works include landscaping and public domain works including offsite stormwater mitigation works and tree removal (refer to ***Figure 2*** & ***3*** below).

2.7 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.

Figure 1 *– Aerial image indicating subject site (outlined red) Source: Landchecker– March 2025*

Figure 2 *– Demolition Plan extract showing the proposed demolition works within the subject site. Source: Fuse Architects 2025*

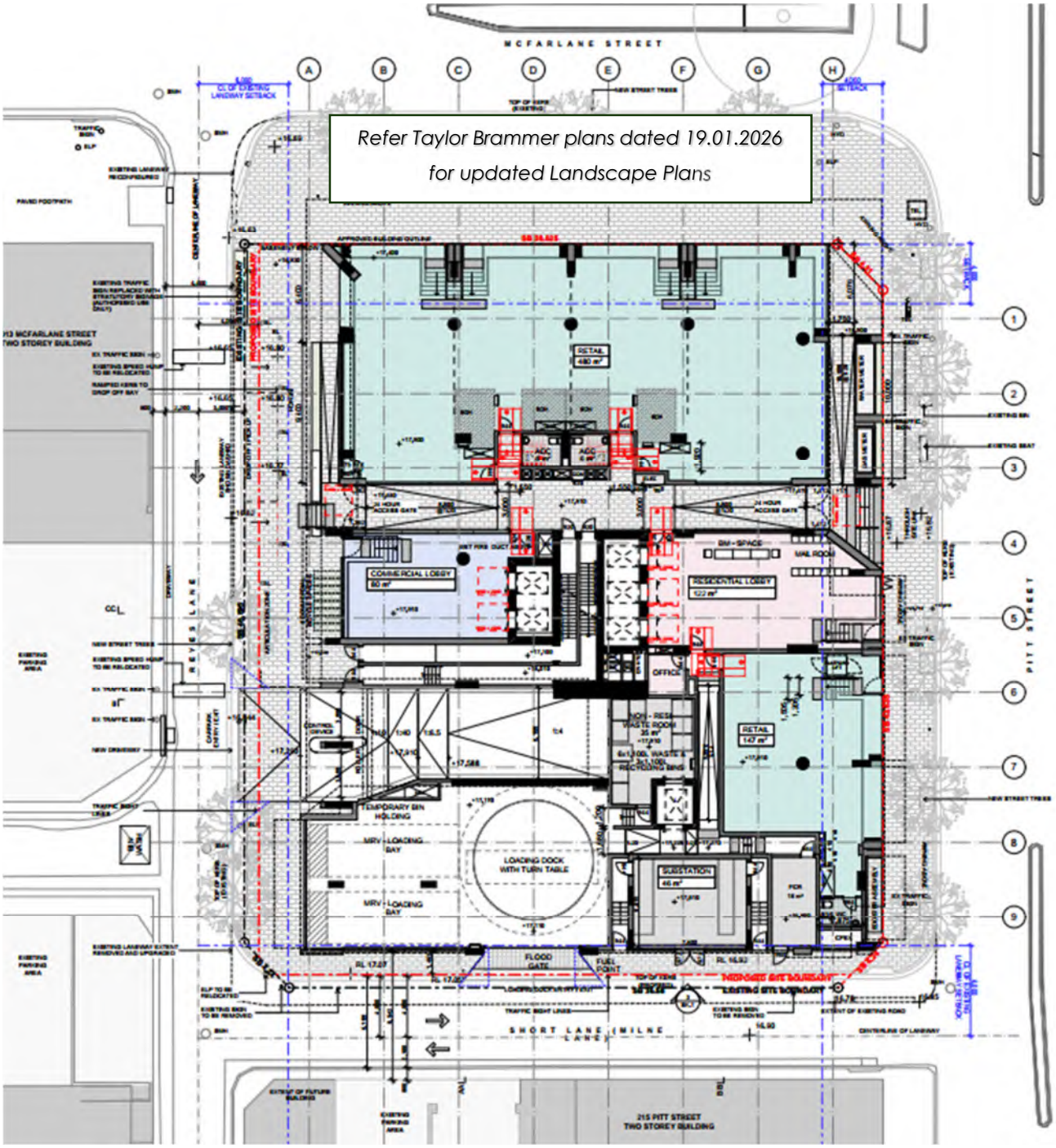

Figure 3 *– Ground Floor Plan extract showing the layout of the proposed development within the subject site. Source: Fuse Architects 22/07/2025.*

3 METHOD

3.1 Method

3.1.1 Site Inspection

A site inspection was carried out by Sophie Diller with the subject trees and the general growing environment evaluated on the 9th of December 2025. The weather at the time of inspection was sunny 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;
- Safe Useful Life Expectancy (SULE).

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 Australian of Consulting Arborists (IACA). No aerial inspections or major root excavations were undertaken.

3.1.3 Safe Useful Life Expectancy (SULE)

The remaining Safe 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 SULE of each tree is shown in ***Appendix 1***.

The following ranges have been allocated to each tree:

- Long SULE: Trees that appear to be retainable with an acceptable level of risk for > 40 years.
- Medium SULE: Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.
- Short SULE: Trees that appear to be retainable with an acceptable level of risk for 5–15 years.
- Remove: Trees with a high level of risk 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)
- Priority for Removal

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:

SRZ (Radius) = (D x 50)0.42 x 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 highly disturbed with no understorey present. Tree species observed were exotic planted species. Health, vigour and condition varied across the trees forming part of the assessment. Root zones of assessed trees were generally observed as sealed hard paving within restricted deep soil areas.

4.2 Tree Preservation Order

The provisions included within Part G7 – *Tree Management and Landscaping* of the Cumberland Development Control Plan 2021 generally protect trees and perennial vegetation with a self-supporting stem that correspond with the following criteria:

a) Height of 4m or more; measured from the base of the tree at ground level to the highest point of live foliage.

4.3 The Trees

A total of four (4) trees were observed adjoining the subject site within the Council street verge and roadway, which have been surveyed as part of this assessment.

- Three (3) trees (**Trees 1, 2** & **3**) located in tree pits on the McFarlane Street verge fronting site.
- One (1) tree (**Tree 4**) located within a road traffic island in McFarlane Street near the intersection with Pitt Street.

All tree data recorded on site has been tabulated and is contained in ***Appendix 1***. Each tree has been provided with an identification number for reference purposes and is denoted on the attached Tree 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 Schedule at ***Appendix 1***. Additionally, plans demonstrating the level of encroachment and conflict to NRZs and SRZs 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

Based on the plans supplied, should the proposed works proceed in their current form, it is recommended that one (1) tree (**Tree 3**) located on the McFarlane Street Council verge near the intersection with Pitt Street be removed.

Tree removal is recommended due to major impacts likely to be sustained from the demolition of surrounding structures including an existing retaining wall and other structure in the public domain. New public domain works inclusive of excavation for new paving are also likely to result in impacts to these trees which are not tolerable.

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

Table 3 *– Trees recommended for removal*

Tree No.	Genus & Species	Retention Value	Reason for Removal
3	***Ulmus parvifolia*** Chinese Elm	Medium	To facilitate demolition and construction inclusive of new public domain works.

5.3 Trees Recommended for Retention & Protection

Should the proposed works proceed in their current form, it is recommended that three (3) trees (**Trees 1, 2** & **4**) be retained and protected. The proposed new garden bed on the Mc Farlane Street site

frontage, as shown on the proposed landscape scheme by Taylor Brammer dated 19 January 2026, is similar to the existing garden bed siting. Therefore, the proposed design is not expected to result in direct development encroachment to retained trees. In spite of this, **Trees 1** & **2** are at high risk of impact during the demolition of existing structures, site access for materials and heavy machinery, and during the construction of new public domain works—specifically the Reyes laneway reconfiguration and outdoor paving and landscaping works on McFarlane Street.

Anticipated impacts may include:

- Sub-surface damage: Root severance, soil compaction, and level changes (cut/fill).
- Environmental stress: Soil sealing and potential chemical contamination.
- Physical damage: Mechanical injury to the above-ground canopy.

To ensure the maintenance of tree health and structure, root-sensitive demolition, design, and protective construction methodologies must be implemented as detailed in **Section 7**.

Tree 4 is subject to nil encroachment or impacts from the proposed development as the tree is located at a sufficient distance to be unaffected by the proposed demolition and construction works. No changes to the long-term health, condition or useful life expectancy are expected, subject to the implementation of general tree protection measures as described in **Section 7** and **Appendix 5** & **6**.

Refer to ***Appendix 2*** for a plan indicating the location of trees that are to be retained and protected (shaded green).

Table 4 – Trees recommended for retention & protection

Tree No.	Genus & Species	Retention Value	Works within the Notional Root Zone (NRZ)
1	***Ulmus parvifolia*** Chinese Elm	Medium	Demolition of existing structures, Reyes laneway reconfiguration, site access, and new public domain works.
2	***Ulmus parvifolia*** Chinese Elm	Medium	Demolition of existing structures, site access and new public domain works.
4	***Platanus x acerifolia*** London Plane	High	No impacts are anticipated, as tree is sufficiently distant from the proposed works.

5.4 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 Cumberland Council prior to the removal or pruning of any tree protected under the Cumberland Development Control Plan 2013.

Removal of one (1) Council street tree (**Tree 3**) on McFarlane Street. Removal has been recommended to facilitate demolition and construction inclusive of new public domain works.

Retention and protection of three (3) trees including:

- Two (2) Council street trees (**Trees 1** & **2**) located on the McFarlane street verge that may be impacted throughout all project phases; and
- One (1) Council street tree (**Tree 4**) within a roadway traffic island on McFarlane Street which is subject to nil encroachment to its NRZ from the proposed development works.

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

7 RECOMMENDATIONS

7.1 Tree Removal

Remove **Tree 3** (1 tree) to facilitate the proposed development works.

Development consent and relevant approvals must be obtained prior to the removal or pruning of any tree protected under Part G – Tree Management and Landscaping of the Cumberland DCP 2021.

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** & **4** (3 trees) in accordance with the Tree Location Plan & Tree Protection Specifications held at ***Appendix 2*** & ***5***, *AS4970-2025 Protection of trees on development sites.* The specific recommendations below provide a framework for root-sensitive design and low-impact construction. These measures are designed to mitigate the specific risks of soil compaction, root severance, and mechanical damage.

7.2.1 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 TPZ of retained trees throughout construction.

7.2.2 Specific Tree Protection Measures

Demolition is often the highest risk phase due to the proximity of heavy machinery to tree canopies and trunks. Tree trunk Protection and fencing must be installed prior to demolition works commencing as shown on the Tree Location & Protection Plan held at ***Appendix 2*** and in accordance with Section 4.3 of AS4970-2025 and ***Appendix 5*** and as described below. Tree protection must not be removed or altered without prior approval of the Project Arborist.

- **Tree Protection Fencing:** Erect 1.8m high chain-link fencing around the TPZ before any equipment arrives on site. This area must be a "no-go" zone for storage or stockpiling.
- **Trunk and Branch Protection:** Wrap tree trunks in padded timber battening and use "ground protection mats" (thick plywood or rubber bog mats) to distribute the weight of machinery and prevent soil compaction.
- **Demolition method:** Structures within the TPZ should be demolished toward the building footprint, away from the trees, to prevent falling debris from causing mechanical injury to the canopy.

7.2.3 Detailed Design Recommendations

Detailed design must prioritise the Tree Protection Zone (TPZ)—the area of soil surrounding a tree that contains the roots and soil volume necessary for its long-term viability.

- **Permeable Surfacing:** For the Reyes laneway reconstruction and McFarlane Street refurbishment, use porous paving or "no-fines" concrete within the TPZ of retained trees. This prevents soil sealing by allowing water and oxygen to reach the root system.
- **Suspended Slabs/Pier & Beam:** Where level changes or new structures overlap the TPZ, use pier-and-beam construction rather than continuous strip footings. All piers and retaining walls must be hand-dug to bridge over significant roots (>25mm diameter).
- **Finished Grade Adjustments:** Avoid "cut and fill." If levels must be raised, use structural soil or lightweight, aerated fill to prevent compaction.

7.2.4 Construction Methodology

The following are recommended during the construction phase:

- **Non-Destructive Excavation:** Any excavation for the Reyes laneway or public domain works within the TPZ of retained trees must be performed using hand-held tools or Air-spade. This exposes roots without severing them, allowing for pipes or cables to be threaded underneath.
- **Root Pruning:** If root severance is unavoidable, it must be performed by a qualified arborist (AQF Level 5) using sharp, sterilised hand tools. Ripping roots with an excavator bucket is strictly prohibited as it leads to fungal decay.
- **Contamination Control:** Concrete washout areas and chemical storage must be located at least 10 meters away from the TPZ to prevent soil contamination.

7.2.5 Replacement Planting

Replacement planting to the northern, eastern and western frontage is proposed as shown on the Landscape Plans prepared by Taylor Brammer dated July 2025 and January 2026. This includes 13 new 100L trees consisting of *Pistachia chinensis* (Chinese Pistachio) and *Magnolia grandiflora* 'Exmouth' (Southern Magnolia).

The proposed street tree plantings will satisfactorily offset the loss of any amenity associated with tree removal recommended to facilitate construction.

8 REFERENCES

Council of Standards Australia. 2025 AS 4970 - 2025 – *Protection of Trees on Development Sites* Standards Australia, Sydney.

Council of Standards Australia. 2007 AS 4373 – 2007 – *Pruning of Amenity Trees* Standards Australia, Sydney.

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APPENDIX 1: TREE ASSESSMENT DATA

Tree No.	*Genus & species*	Common Name	Height (m)	Crown Spread (m)	DSH (mm)	DGL (mm)	NRZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
1	***Ulmus parvifolia***	Chinese Elm	8	8	150, 250	350	3.50	2.13	M	Average	Average	Medium 15-40 years	Medium	Medium	Impacts likely during demolition, construction, and landscaping works including proposed reconfigure of Reves Laneway.	Retain	Crown raised for road and outdoor gazebo clearance.
2	***Ulmus parvifolia***	Chinese Elm	8	7	100, 200	300	2.68	2.00	M	Average	Average	Medium 15-40 years	Medium	Medium	Impacts likely during demolition, construction and landscaping works.	Retain	Crown raised for road and outdoor gazebo clearance.
3	***Ulmus parvifolia***	Chinese Elm	7	5	200	250	2.40	1.85	M	Average	Average	Medium 15-40 years	Medium	Medium	Major impacts likely during demolition and construction works. Removal proposed to facilitate site access during demolition and construction works and allow for future landscaping schedme of increased amenity value.	Remove	Crown raised for road and outdoor gazebo clearance.
4	***Platanus x acerifolia***	London Plane	12	14	600	700	7.20	2.85	M	Good	Average	Medium 15-40 years	High	High	Nil development encroachment	Retain	Large canopy, prominent crown raised for road clearance.

Tree Inspection Data Notes & Terminology

Tree No. (Tree Number)
The tree number associated to each tree located on or adjacent to the subject site.

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 DSH
- The trees height and crown spread is recorded in metres (m);
- The tree DSH is recorded in millimetres (mm). DSH is an abbreviation of Diameter (of the trunk) measured at Standard Height (or 1.4m from the base of the trunk). If more than one trunk is present the DSH is calculated in accordance with AS4970-2025 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
Fair - 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
Poor - 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 – 2025 Protection of Trees on Development Sites): (D x 50)0.42 x 0.64

NRZ (Notional Root Zone)
The NRZ is a radial area measured by multiplying the DSH 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 NRZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2025 Protection of Trees in Development Sites. NRZ encroachment is potentially acceptable if no other option is available and is classified under AS4970-2025 as 'Minor' (≤10%), 'Moderate' (>10≤20%) or 'Major' (>20%). A major encroachment (in excess of 20%) 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 *Barrell* 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 to15 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.

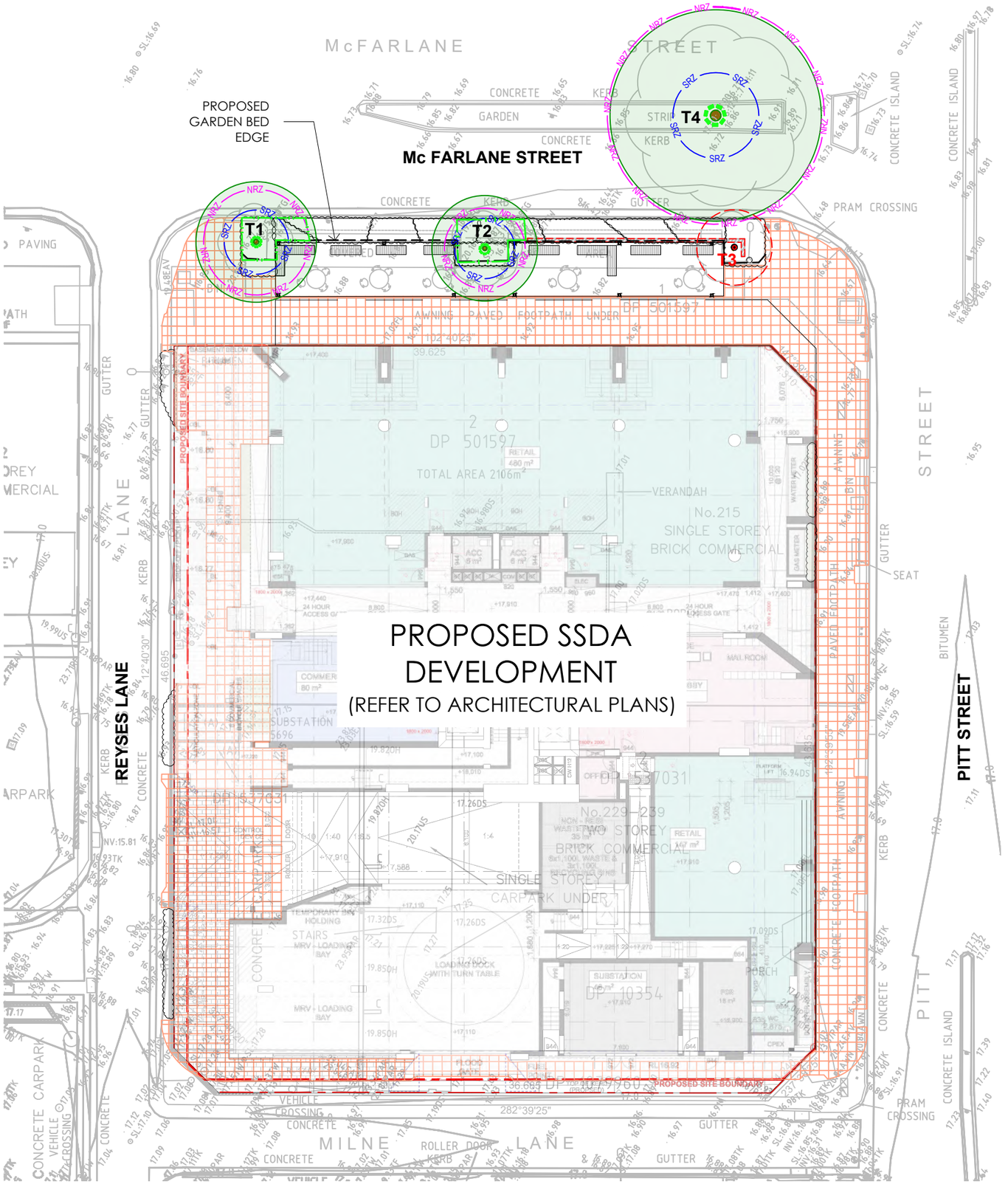
NOTES: This report acknowledges the current Australian Standard 'Protection of Trees on Development Sites' AS 4970 – 2025 with reference to the Notional Root Zone (NRZ): being a combination of the root and crown area requiring protection. The NRZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. The standard states where a greater than 20% encroachment occur,s the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.2.
Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). To retain specific trees and ensure their viability, development must take into consideration protection of the NRZ radius.

APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

LEGEND

- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- NOTIONAL ROOT ZONE (NRZ)
- STRUCTURAL ROOT ZONE (SRZ)
- SITE BOUNDARY
- TRUNK PROTECTION *(AS PER APPENDIX 1)*
- TPZ — TREE PROTECTION FENCING *(AS PER APPENDIX 1)*



CPS
CREATIVEPLANNINGSOLUTIONS

LEVEL 3
397 RILEY STREET
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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
B	-	FOR APPROVAL	SD	GT	20.01.26
A	-	FOR APPROVAL	JMO	GT	15.12.25

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

PROJECT

PROPOSED DEVELOPMENT

215, 238-239 PITT STREET, MERRYLANDS

DRAWING TITLE

TREE LOCATION PLAN

CLIENT

Anglicare

Drawn : JMO
Designed : -
Project No. : H786
Bar Scale

1:300 @ A3

SHEET NUMBER H786_TLP_01

REVISION B

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.

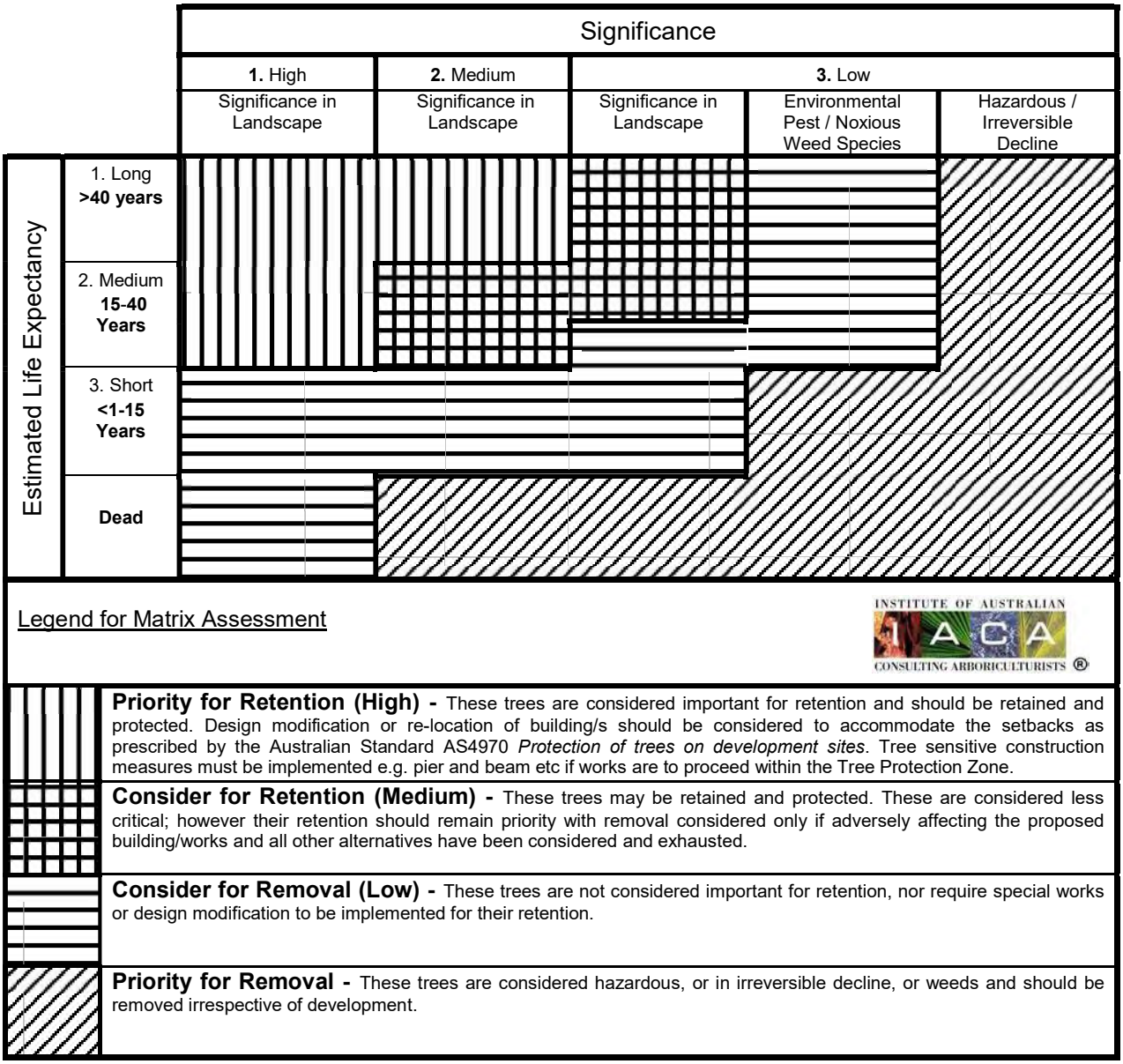
Hazardous/Irreversible Decline

- 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.



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

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 from 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.

Radius of the NRZ = DSH × 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.

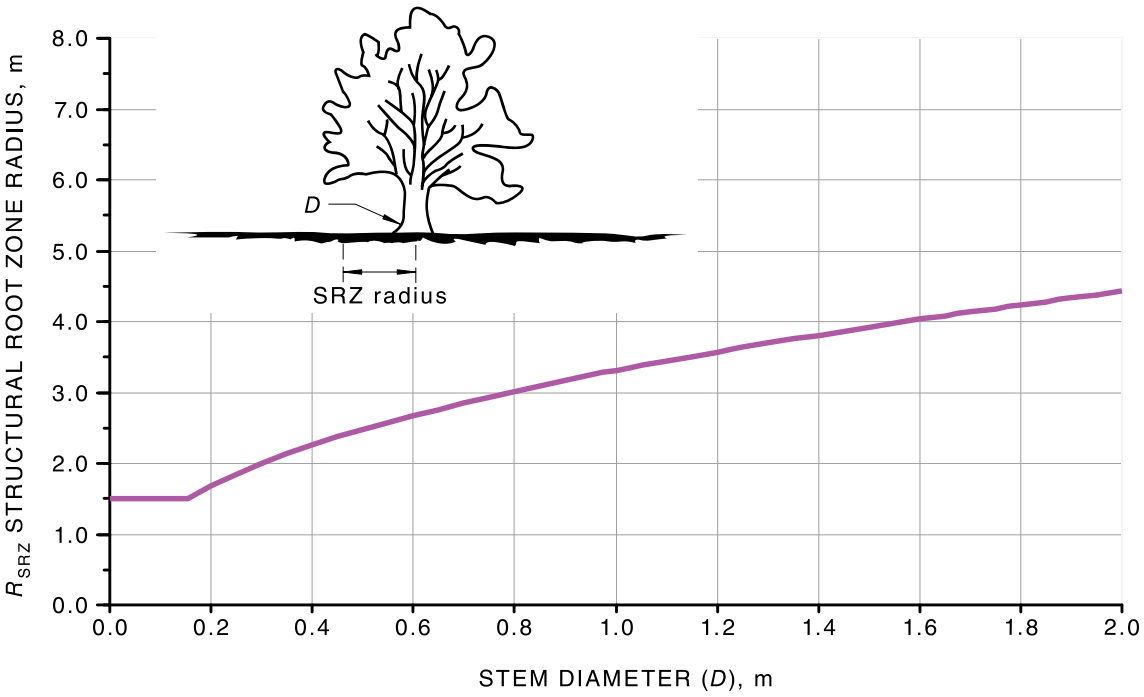
$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

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** 6*).

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** 6*).

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** 6*).

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** 6*).

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.

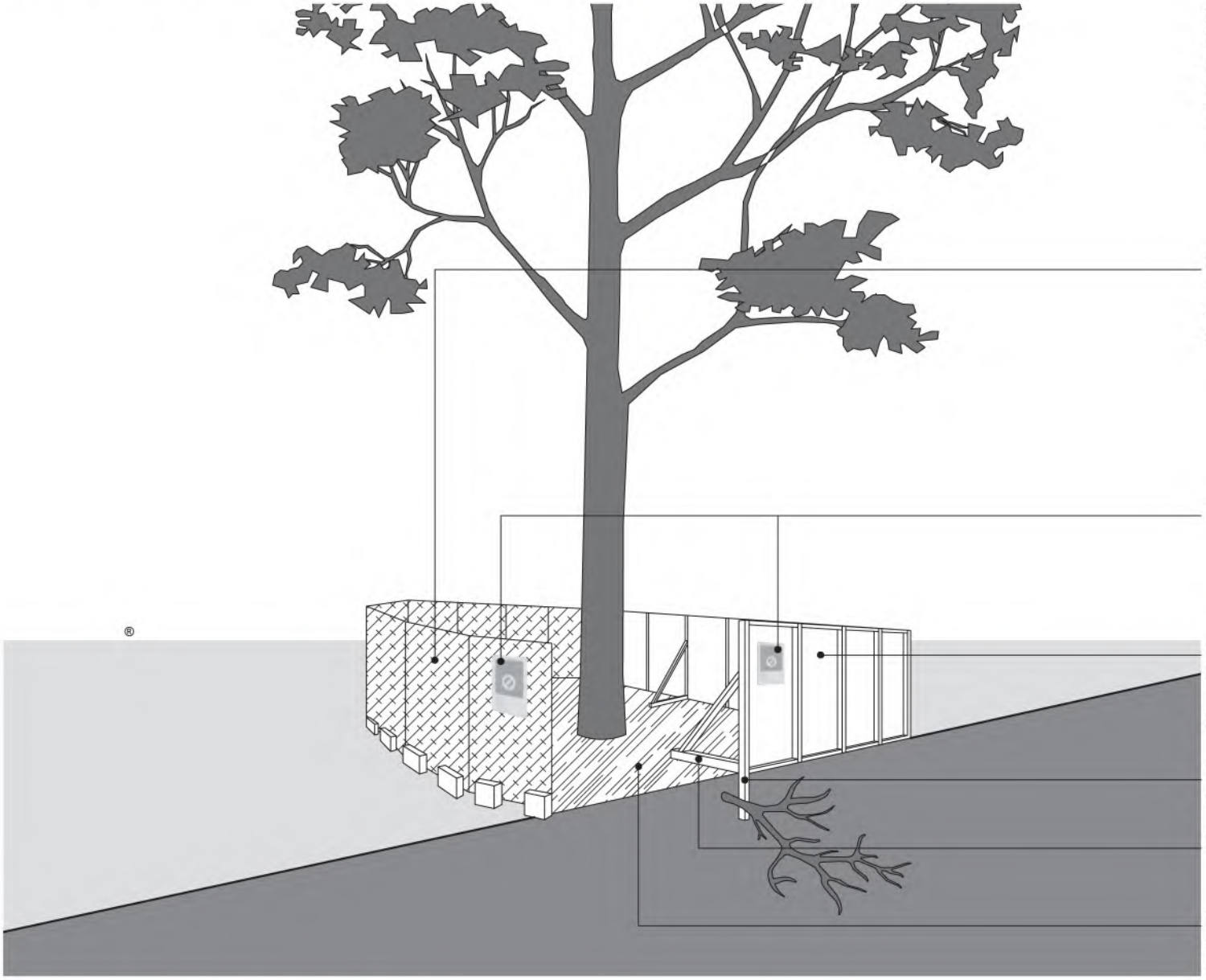
11.0 Underground Services

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



Note:
No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.

Option 1 - Fencing
1.8m high chain wire mesh panels with shade cloth attached (if required), held in place with concrete feet.

Tree Protection Zone (TPZ) sign

Option 2 - Fencing
Plywood or wooden panel paling fence. This type of fencing material also prevents building materials or soil entering the TPZ.

Installation of supports should avoid damaging roots.

Bracing is permissible within the TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer installed across surface of TPZ.

01 Tree Protection Fencing

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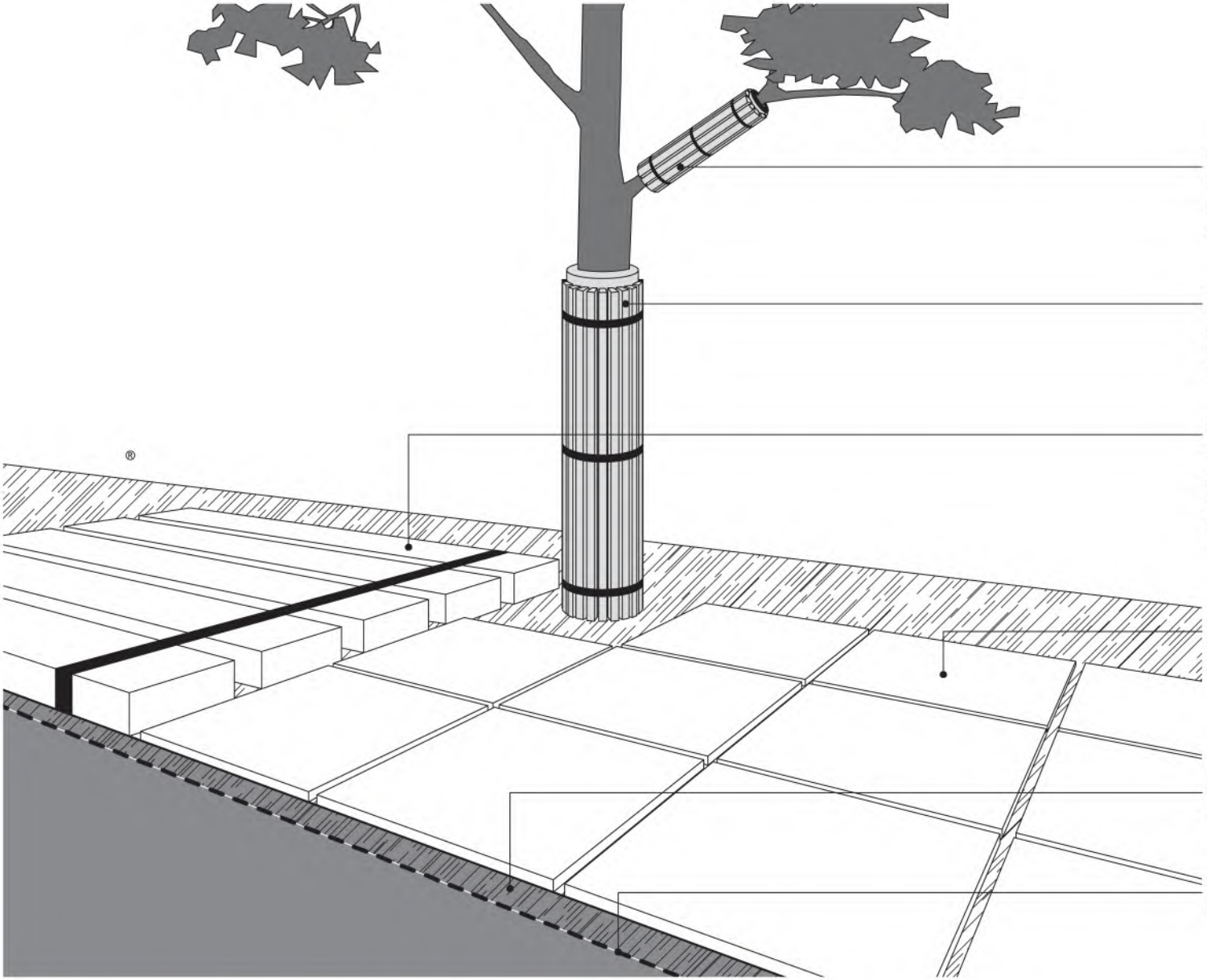

Branch Protection - use boards and padding to prevent damage to bark on branch. Boards are to be strapped, not screwed or nailed to the branch.

Trunk Protection - use boards and padding to prevent damage to bark (minimum 2m). Boards are to be strapped, not screwed or nailed to the trunk.

Ground Protection - use device strapped over mulch or aggregate layer. Ground protection device should be of a suitable thickness to prevent soil compaction and root damage.

Steel plates (or approved equivalent) with or without mulch or aggregate layer below.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer.

Geotextile fabric underneath mulch or aggregate layer.

02 Examples of Branch, Trunk and Ground Protection

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Branches may require pruning to erect scaffolding. Pruning may be subject to local regulations. Flexible branches should be tied back in preference to pruning.

Minimum 1.8m high hoarding. Temporary fencing may be incorporated into scaffolding as either containment screening or as hoarding.

Note:
If excavation is required for installation of support post for fencing, the Project Arborist should assess any pruning of roots greater than 20mm diameter.

Scaffold planks

Boards or plywood to be installed over mulch or aggregate layer for any areas requiring access within the TPZ.

Soleplate over geotextile. No excavation for soleplate within TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer within TPZ.

Geotextile fabric

03 Indicative Scaffolding within a Tree Protection Zone (TPZ)

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