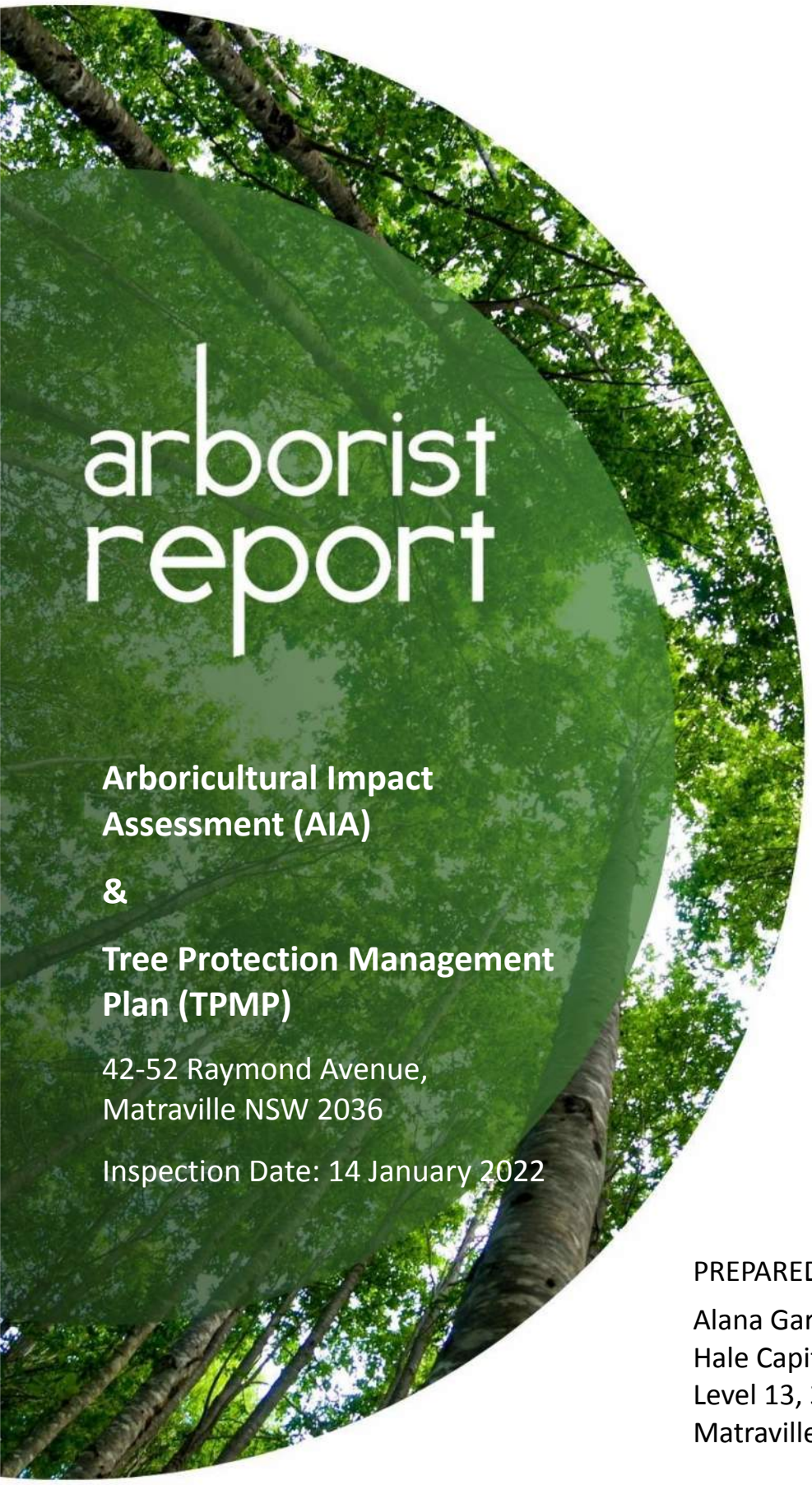

canopy consulting

arborist report

Arboricultural Impact Assessment (AIA)

&

Tree Protection Management Plan (TPMP)

42-52 Raymond Avenue,
Matraville NSW 2036

Inspection Date: 14 January 2022

PREPARED FOR:

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Document Information

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Project Name:	**Proposed Industrial Development - SSD-31552370**
Reference #:	**E- 001501-22**
Client:	**Hale Capital Partners - Alana Garrick**
Site:	**42-52 Raymond Avenue, Matraville NSW 2036**
Prepared by:	**Kane Hollstein** Senior Consulting Arborist Dip. Arb., AQF Level 5 ISA TRAQ | QTRA | VALID | IACA Accredited Member
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Document Status

Status	Date	Revision type
Version 1 - Draft	17 January 2022	
Version 2 - Issue	18 January 2022	Minor text edits. Included DP1082623 in site plans
Version 3	9 March 2022	Updates to reflect amended plans

Report Assumptions and Limitations

1. Any description or information provided to the consultant by the client or third party is assumed to be correct.
2. All information has been sourced with care and verified to the best of the consultant's knowledge. Any opinions not duly researched is based upon the consultant's experience and observations.
3. The consultant shall not be required to give testimony or attend court by reason of this report unless under a contractual agreement, including payment of additional fees and charges for such services.
4. Modification or extraction of key contextual components invalidates the entire report.
5. There is no warranty, explicit or implicit that the problems and deficiencies associated with the site or vegetation may not arise in future.
6. Unless stated otherwise, the information contained within the report will address the items outlined in the project brief or that were examined during any site assessment and reflect the condition of those items at the time of inspection.
7. Unless otherwise specified, the inspection is limited to ground-based inspection of accessible areas without dissection, excavation or probing.
8. This report and its recommendations reflect an impartial assessment of the tree and its condition based on the available evidence and projected outcomes.

Executive Summary

The following report examines the potential impacts of the proposed development within 42-52 Raymond Avenue, Matraville NSW 2036, on existing trees in the vicinity of the development site. The client proposes to undertake an industrial development.

An inspection was undertaken by Kane Hollstein on 14 January 2022. This was undertaken to derive tree retention values within the landscape, based on any heritage, environmental and arboricultural principles.

This report is designed to provide information about the relative retention values of all trees that may be affected by the project, assess the impacts of the project and provide recommendations for alteration to design or construction methods where necessary to minimise negative impacts. The report also provides recommended tree protection measures to ensure the viable, long-term retention of trees to be retained where appropriate.

The report has applied the Australian Standard AS4970-2009 *Protection of trees on development site*s which provides radial offsets to ensure the viability of trees where they are to be retained. These offsets are known as the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ). An encroachment of less than 10% of the entire TPZ is considered minor provided it is outside the SRZ, and the area lost is compensated for elsewhere and contiguous to the TPZ. A major TPZ encroachment is considered to be greater than 10% of the entire TPZ area.

The trees have been allocated a significance rating and retention value as determined by using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010). An explanation of attributes required to achieve each category can be found in Appendix A. The encroachment type relative to tree retention value is summarised in Table 1.

Table 1: Retention Value

	Retention Value		
Encroachment Type	High - Priority for Retention	Low - Consider for Removal	Grand Total
Major	2	5	7
Nil		1	1
Grand Total	**2**	**6**	**8**

A total of five trees are to be retained and protected in accordance with the Australian Standard 4970–2009: Protection of Trees on Development Sites and Appendix C – Tree Protection Management Plan.

Three trees numbered 3, 5 and 6 are recommended for removal to facilitate the proposed development. Of these, tree 3 is exempt under the provisions of the RDCP, and one tree is of High Retention Value.

The loss of the High Retention Value tree 5 is proposed to be offset with sixty-seven species largely of indigenous origin. On this basis, the proposed development is likely to enhance the amenity and environmental value of the site, local area and LGA and offset the loss of this tree.

Four trees numbered 1, 2, 4 and 8 are recommended for retention with specific tree protection measures. These include:

- Tree protection fencing.
- Landscaping activities are to be low impact and sensitive to tree roots. See sections 8.2 - Excavations Within Tree Protection Zones and 8.10 - Landscaping Works within Tree Protection Zone.
- Supervision of works within the fenced TPZ.
- Retention of the existing concrete slab *in situ* within the TPZ of tree 8.

One tree numbered 7 is to be retained with tree protection fencing.

Table Of Contents

1. Background

1.1. Introduction

Hale Capital Partners proposes to undertake an industrial redevelopment of the site at 42-52 Raymond Avenue, Matraville NSW 2036. The proposal is considered a State Significant Development (SSD).

Alana Garrick of Hale Capital Partners has engaged Canopy Consulting to investigate trees adjacent to the proposed works where they may be adversely affected by the project (hereafter 'the site' or 'the project').

The purpose of this report is to:

- identify trees within the study area
- assign retention values of all trees that may be effected within the site and those on adjoining properties
- assess the arboricultural impacts of the project
- provide recommendations for alteration to design or construction methods where necessary to minimise negative impacts
- make recommendations in accordance with Australian Standard 4970–2009: *Protection of Trees on Development Sites* to ensure the viable, long-term retention of trees to be retained where appropriate.

1.2. Project Location

The site is managed by Hale Capital Partners and comprises Lots 1 in DP369668, 1 in DP511092 and 32 in B/DP8313. It is currently used as a vehicle parking and storage area. The address of the site is 42-52 Raymond Avenue, Matraville NSW 2036, which is within the Randwick City Council local government area (LGA) (Figure 1). The site is zone IN1 - General Industrial under the Randwick Local Environment Plan.

Figure 1: Project Area. (Nearmap/Open Street Map, 2022)

1.3. Project Area

The project area comprises the overall potential area of direct disturbance or impact by the project. This will be contained within the site boundary.

This may be temporary for construction or permanent for operational infrastructure and extend below the ground surface.

This includes the location of temporary and permanent infrastructure work sites for;

- the construction of the proposed industrial development
- associated enabling infrastructure
- site access and laydown areas

1.4. Reviewed Plans and Documents

This report has relied on the following plans and documents:

Table 2: Reviewed Plans and Documents

Title	Author	Dwg. / Doc No.	Date
ARCHITECTURAL DRAWINGS	SBA ARCHITECTS	DA000-DA601 REV A-E	01/03/2022
CIVIL ENGINEERING REPORT INCORPORATING WATER CYCLE MANAGEMENT STRATEGY	COSTIN ROE CONSULTING	Co14452.00	23/12/2021
BDAR WAIVER	ECOLOGIQUE	SSD-31552370	20/12/2021
LANDSCAPE PLANS	GEOSCAPES	SSD-00 - SSD-07	20/12/2021
RANDWICK CITY COUNCIL TREE MANAGEMENT TECHNICAL MANUAL	RANDWICK CITY COUNCIL	N/A	2017
RANDWICK CITY COUNCIL DEVELOPMENT CONTROL PLAN - PART 5	RANDWICK CITY COUNCIL	N/A	2013

1.5. Proposed Works

Proposed plans indicate the site will be subject to:

- Construction, fit out and operation of a two-storey warehouse and distribution centre comprising approximately 19,460 m2 GFA including:
    - 17,789 m2 of warehouse and distribution GFA; and
    - 1,671 m2 GFA ancillary office space.

- Provision of 11 bicycle parking spaces and 101 car parking spaces at ground.
- Approximately 2,250 m2 of hard and soft landscaping at ground.
- Provision of one additional access crossover from Raymond Avenue.
- Provision of internal vehicle access route and loading docks.
- Upgrades to existing on-site infrastructure.
- Building identification signage.
- Operation 24 hours per day seven days per week.

Construction activities associated with the project include:

- Retention of the existing concrete slab which spans the site
- Importing of fill material to raise the overall R.L
- Construction of the warehouse and distribution centre
- Stormwater and flood mitigation
- Erosion and sediment control
- Landscaping

Landscaping works will include:

- Planting of upper canopy trees and understory shrubs and plants
- Retaining walls
- Mulching

The proposed tree planting schedule from the landscape plan is shown in Figure 2.

Botanical Name	Common Name	Mature Height	Native	Endemic	Spacing	Pot Size	Quantity
Banksia aemula	Wallum Banksia	8m	✓	✓	As shown	75L	4
Banksia integrifolia	Coastal Banksia	4m	✓	✓	As shown	75L	4
Banksia serrata	Old Man Banksia	16m	✓	✓	As shown	75L	4
Corymbia gummifera	Red Bloodwood	20m	✓	✓	As shown	75L	8
Elaeocarpus eumundi	Eumundi Quandong	12m	✓		As shown	75L	8
Elaeocarpus reticulatus	Blueberry Ash	3-15m	✓	✓	As shown	75L	10
Eucalyptus botryoides	Bangalay	40m	✓	✓	As shown	75L	7
Eucalyptus haemastoma	Broad-Leaved Scribbly Gum	12m	✓	✓	As shown	75L	8
Eucalyptus piperita	Sydney Peppermint	12m	✓	✓	As shown	75L	7
Tristaniopsis laurina 'Luscious'	Water Gum	8m	✓		As shown	75L	7

Figure 2: Tree planting schedule. Excerpt from Landscape Plan. (Geoscapes, 2021)

1.6. Legislative Context

The report has been prepared considering the provisions of the Randwick Local Environmental Plan 2012 (RLEP) and the Randwick Development Control Plan 2013 (RDCP) made pursuant to the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (the VSEPP).

Prescribed trees within the Randwick LGA are protected under Part B5 of the RDCP made pursuant to Clause 9 of the VSEPP. The RDCP generally protects all trees and palms as 'declared vegetation' that meet the following:

- any palm tree, cycad or tree fern of any size;
- any tree on 'public land' (as defined in the Local Government Act 1993) by any persons not authorised by Council;
- any hollow-bearing trees; or
- any other tree with:

  - a height equal to or exceeding 6 metres;

  - a canopy width equal to or exceeding 4 metres;

    - for a single trunk tree species, a trunk circumference equal to or exceeding one (1) metre at a height of one (1) metre above ground level; or
    - for a multi-trunk tree species, a combined trunk circumference (measured around the outer girth of the group of trunks) equal to or exceeding one (1) metre at a height of one (1) metre above ground level.

2. Scope

Detail the health and condition of site trees and those on adjoining properties that may be affected by the proposed works. This will be undertaken to derive tree retention values within the landscape, based on any heritage, environmental and arboricultural principles.

Provide as an outcome of the assessment, the following:

- a description of the trees
- observations made
- retention values
- discussion of the effects the location of the proposed works may have on the trees
- make recommendations required for remedial or other works to the trees, if and where appropriate
- provide a description of the works or measures required to ameliorate the impact upon the trees to be retained; by the proposed building works or future impacts the trees may have upon the new building works if and where appropriate;
- or discuss the possible benefits of removal and replacement, if appropriate, for the medium to long-term amenity of the site.

3. Method

3.1. Data Collection

To record the above-ground health and condition of each tree, a Visual Tree Assessment (VTA), adapted from (Lonsdale, 1999), was undertaken from ground level on 14 January 2022 by Kane Hollstein, Principal Consultant of Canopy Consulting.

This involved an inspection of:

- Tree health and structural condition; both long and short term
- Site conditions
- Amenity value
- Heritage value
- Habitat value
- Environmental value

All diameter measurements were taken with a diameter tape or forestry calipers where access to trees was possible. Diameter measurements of trees on adjoining properties were estimated. All height and canopy spread values were estimated. Any offset measurements were measured with a tape measure or forestry calipers.

Data was collected in GIS software.

3.2. Useful Life Expectancy

Estimated remaining Useful Life Expectancy (ULE) has been derived using a modified version of the TreeAZ SULE method (Barrell, 2009). An explanation of attributes required to achieve each category can be found in Appendix A.

3.3. Retention Value

The trees have been allocated a landscape significance rating determined using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)©. An explanation of attributes required to achieve each category can be found in Appendix A.

Tree retention value has been assessed using the Retention Value - Priority Matrix of the IACA Significance of a Tree, Assessment Rating System (STARS) © which is a matrix assessment of landscape significance and estimated Useful Life Expectancy. An explanation of attributes required to achieve each category can be found in Appendix A.

3.4. Tree Protection Zone and Structural Root Zone

The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) methods have been derived from the Australian Standard 4970–2009: Protection of Trees on Development Sites (Standards Australia Limited, 2009). The radius of the TPZ is calculated for each tree by multiplying its Diameter at Breast Height (DBH) by 12.

$$\text{TPZ radius} = \text{DBH} \times 12$$

In the event the crown spread of the tree extends beyond this offset; the TPZ may be adjusted to the outer extent of the crown spread.

The SRZ is the area around the base of a tree required for the tree's stability in the ground. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres.

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

4. Observations

4.1. The Site

Site buildings have been previously demolished and the extant concrete slab and driveway retained *in situ.*

4.2. Site Soils

The site is located on the 'Disturbed Terrain' soil landscape which is described as 'level plain to hummocky terrain, extensively disturbed by human activity, including complete disturbance, removal or burial of soil. Local relief <10 m, slopes <30%. Landfill includes soil, rock, building and waste materials. Original vegetation completely cleared, replaced with turf or grassland.' (Department of Planning, Industry and Environment, 2020)

Soils of the Disturbed Terrain landscape are characterised by 'turfed fill areas commonly capped with up to 40 cm of sandy loam or up to 60 cm of compacted clay over fill or waste materials.' (Department of Planning, Industry and Environment, 2020)

Vegetation of this soil landscape is described as 'This unit has been completely cleared. Disturbed terrain may be bare or covered with opportunist weeds such as cobbler's peg *Bidens pilosa*, purple top *Verbena bonariensis* and ribwort *Plantago lanceolata*. Most areas are eventually turned to grassland or lawn. Species typically include kikuyu *Pennisetum clandestinum*, couch *Cynodon dactylon* and paspalum *Paspalum dilatatum*.' (Department of Planning, Industry and Environment, 2020)

4.3. Additional Legislative Protections

The following relevant Government environmental and heritage mapping and overlays have been reviewed (SEED - NSW Government, 2022). Table 3 indicates the presence of the items on site.

Table 3: Mapping Overlays

NSW OEH	Present on Site
NSW Threatened Ecological Communities (TEC)	☐
State Heritage Register	☐
DCP/LEP	
Heritage	☐
Terrestrial Biodiversity	☐

The site is not a listed heritage item or within a heritage conservation area.

The site is not mapped to contain any vegetation of heightened environmental significance.

The 10/50 Vegetation Clearing Scheme was introduced following the devastating 2013 bush fires in which more than 200 properties were destroyed. The entitlement allows landowners within a designated 10/50 vegetation clearing entitlement area to clear trees if any part of the trunk that measures more than 30 centimetres in circumference (around the trunk) at a height of 1.3 metres above the ground, is within 10 metres of the external wall of a building (NSW Rural Fire Service, 2020). This also applies to multi-stemmed trees.

The site is not within a designated 10/50 vegetation clearing entitlement area.

No site trees are listed under the Randwick City Council Register of Significant Trees.

4.4. Summary of Tree Observations

Complete tree attributes and observations can be found in Appendix B - Tree Assessment Schedule. Tree locations are shown Section 4.8.

Aside from tree 3, all inspected trees were located within adjoining properties to the south and south-east of the site.

Table 4 summarises tree species and origin.

Table 4: Species origin

	Origin		
Botanical Name	**Exotic**	**Native**	**Grand Total**
Afrocarpus falcatus	1		1
Ficus microcarpa var hilli		2	2
Fraxinus griffithii	1		1
Morus nigra	1		1
Nerium Oleander	1		1
Robinia pseudoacacia	1		1
Robinia pseudoacacia 'Frisia'	1		1
Grand Total	**6**	**2**	**8**

No trees were observed to possess hollow-bearing parts capable of supporting large fauna.

4.5. Exempt Trees under the RDCP

Trees 3 and 7, being *Nerium oleander* (Oleander) and *Morus nigra* (Mulberry), are exempt under the RDCP due to their species.

4.6. Tree Significance

Tree significance has been determined using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010).

Trees 5 and 8 were determined to possess a High Landscape Significance Rating due to them being:

- in good condition and good vigour;
- having a form typical for the species;
- 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;
- 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;

Table 5: Landscape Significance Rating

Landscape Rating	No. of trees	Tree Numbers
1 (High)	2	5 8
2 (Medium)	0	
3 (Low)	6	1 2 3 4 6 7
4 (Environmental Pest / Noxious Weed)	0	
5 (Hazardous / Irreversible Decline)	0	
Total	**8**	

4.7. Retention Value

Determined using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System* (STARS) © (IACA, 2010) which is a matrix assessment of landscape significance and estimated Useful Life Expectancy. Tree retention values are summarised in Table 6.

Table 6: Retention Value

Retention Value	No. of trees	Tree Numbers
High - Priority for Retention	2	5 8
Medium - Consider for Retention	0	
Low - Consider for Removal	6	1 2 3 4 6 7
Priority for Removal	0	
Total	**8**	

4.8. Tree Location Map

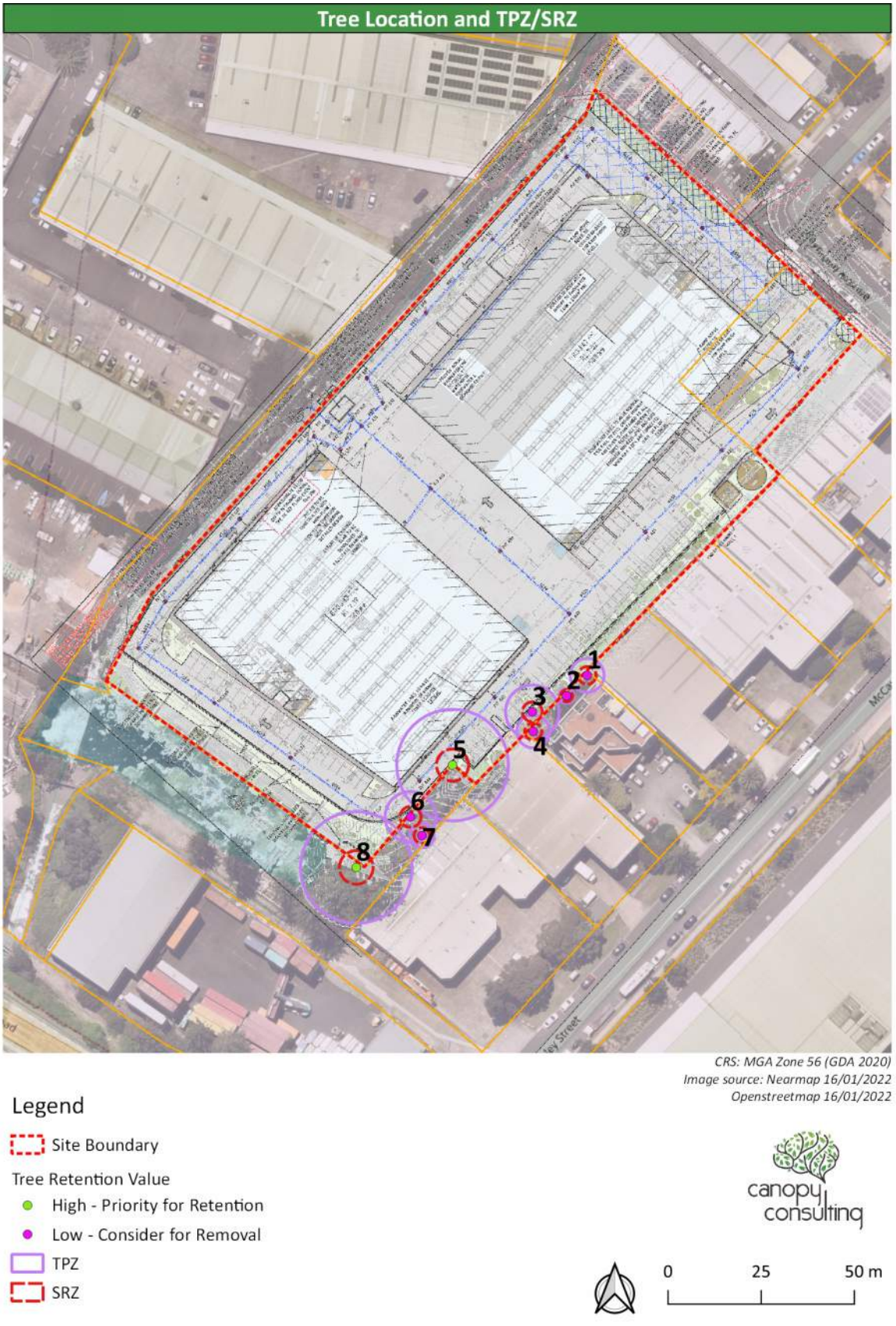

Figure 3: Tree Location showing Tree Protection Zone and Structural Root Zones with site plans. (Nearmap/Open Street Map, 2022)

5. Discussion

5.1. Tree Protection Zone (TPZ)

The Tree Protection Zone (TPZ) is a radial distance measured from the centre of the trunk. Application of the TPZ is intended to ensure the protection of the root system and canopy from potential damage incurred from construction works and ensure the long-term health, stability and landscape viability of each tree to be retained.

Incursions into the TPZ may occur due to excavation, modification of existing ground levels, trenching or inverting the soil profile. Such works may damage part or all of the root system or affect soil structure and growing conditions required for long-term growth.

5.2. Structural Root Zone (SRZ)

The Structural Root Zone (SRZ) is the area required for mechanical support and anchorage of a tree. The woody root growth and soil cohesion in this area are required to hold a tree upright.

Incursions into the SRZ are not recommended as they are likely to result in loss or damage to woody roots which may significantly affect stability. However, fully elevated, pier and beam type construction or hand-dug services are possible within the SRZ.

5.3. Acceptable Encroachments into the TPZ

An encroachment of less than 10% of the entire TPZ is considered minor provided it is outside the SRZ and the area lost is compensated for elsewhere and contiguous to the TPZ.

A major encroachment is considered to be greater than 10% of the entire TPZ area. Where unavoidable, exploratory excavation using non-destructive methods such as pneumatic, hydraulic or hand digging may be required to evaluate the extent of potential damage to the root system and determine whether the tree(s) will remain viable. The area lost to encroachment should be compensated for elsewhere and contiguous to the TPZ.

Additional encroachments within the TPZ are acceptable, provided the arborist can demonstrate the tree(s) will remain viable.

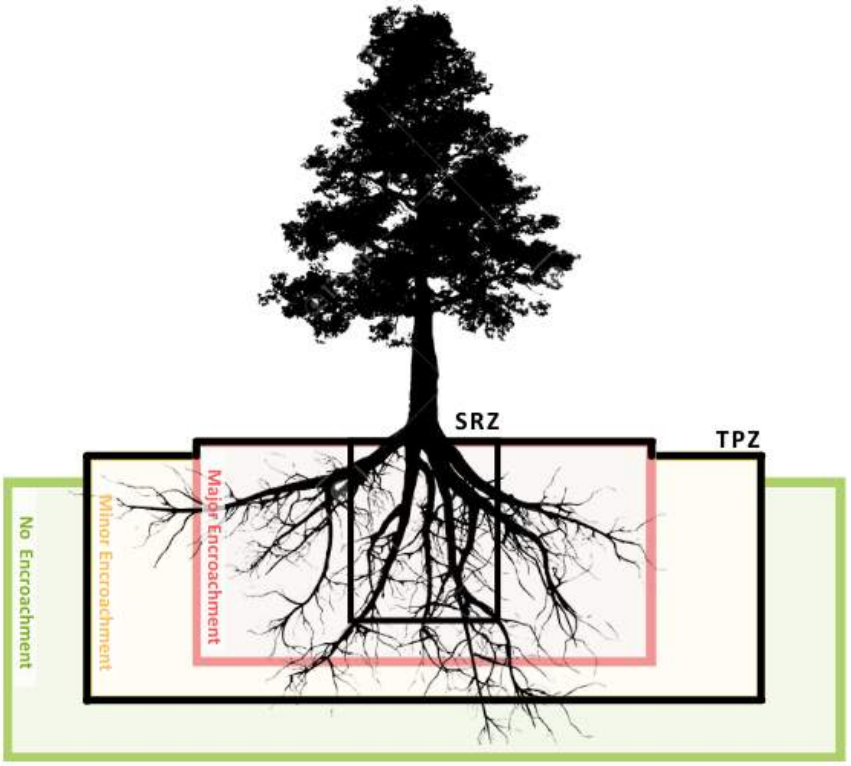

Figure 4: Indicative zones of TPZ and SRZ encroachment.

5.4. Impact Assessment

The following criteria have been considered to determine the impact to site trees that may occur due to the proposed development:

- Existing ground levels (R.L)
- Footprint of the proposed development, temporary structures, and laydown areas.
- Extent of the TPZ/SRZ
- Incursion into the TPZ including any cut, fill, benching and shoring activities beyond the development footprint.
- Incursions to the tree canopy from the building or temporary structures (scaffolding)
- Existing site and soil conditions

The impacts of the proposed development are summarised in Table 7.

Table 7: Impact Assessment Schedule

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment %	Encroachment Type	Likely Impact
1	Low - Consider for Removal	Encroachment into TPZ/SRZ for landscaping	35%	Major	Provided landscaping is sensitive to roots, tree is viable for retention
2		Encroachment into TPZ/SRZ for landscaping	22%		
3		Tree within development footprint	72%		Tree not viable for retention due to root loss
4		Encroachment into TPZ/SRZ for landscaping	32%		Provided landscaping is sensitive to roots, tree is viable for retention
5	High - Priority for Retention	56% TPZ encroachment for hardstand which is into the SRZ. Additional encroachment for stormwater pipe within hardstand area	56%	Major	Tree not viable for retention due to root loss
6	Low - Consider for Removal	Combined 43% TPZ encroachment which is into the SRZ for hardstand and landscaping	43%	Major	
7		No direct impact	0%	Nil	No significant impact expected provided tree protection measures are installed and maintained
8	High - Priority for Retention	23% TPZ encroachment which is into the SRZ for landscaping. 2% TPZ encroachment for hardstand	25%	Major	The existing, robust concrete edging is likely to have deflected root growth. No significant impact is expected provided tree protection measures are installed and maintained.

The loss of the High Retention Value tree 5 is proposed to be offset with sixty-seven species largely of indigenous origin. On this basis, the proposed development is likely to enhance the amenity and environmental value of the site, local area and LGA and offset the loss of this tree.

5.5. Impact Mitigation Measures

TPZ encroachments should be offset and mitigated using a range of possible measures to ensure impacts are minimised and therefore trees remain viable post construction. Mitigation measures should be increased relative to the level of encroachment within the TPZ.

AS 4970-2009 outlines the types of TPZ encroachment and mitigation measures required to ensure long term viability which are summarised in Table 8. These measures are only required if a tree is to be retained.

Table 8: Mitigation Measures

Encroachment Type	Mitigation Measures
Nil	• Where indirect or inadvertent encroachments may occur due to haul routes or machinery movement tree protection should be installed.
Minor	• The area lost to encroachment must be offset elsewhere and contiguous to the TPZ. • Detailed root investigations should not be required. • Tree protection must be installed and maintained.
Major	• The Project Arborist must demonstrate the tree(s) will remain viable. • Root investigations using non-destructive methods may be required to clarify or confirm the impacts to trees to be retained. • The area lost to encroachment must be offset elsewhere and contiguous to the TPZ. • All works and excavations within the TPZ must be supervised by the Project Arborist. • Tree protection must be installed and maintained for the duration of the project. • Additional measures such as mulching or temporary irrigation may be required.

6. Recommendations - General

6.1. Tree Protection Management Plan

The following Tree Protection Measures are to be read in conjunction with Appendix C – Tree Protection Management Plan (TPMP). The TPMP indicates the position of tree protection devices and other measures to ensure the protection of trees within the site to be retained as part of the proposed development.

Tree protection zone offsets and requirements must be updated on current construction and survey plans.

6.2. Project Arborist

An official "Project Arborist" must be commissioned to oversee the tree protection, any works within the TPZ's and complete regular monitoring compliance certification.

The project arborist must have minimum five (5) years industry experience in the field of arboriculture, horticulture with relevant demonstrated experience in tree management on construction sites, and Diploma level qualifications in arboriculture – AQF Level 5.

6.3. Compliance Inspection and Reporting

Compliance inspections are recommended to be completed on a quarterly basis through the construction stage.

Following each inspection, the project arborist shall prepare a document detailing the condition of the trees. These documents should certify whether the works have been completed in compliance with the approved consent conditions relating to tree protection. These reports should contain photographic evidence where necessary.

Inspections are to be conducted by the project arborist at several key points during the construction in order to ensure that protection measures are being adhered to during construction stages and decline in tree health or additional remediation measures can be identified.

Any works within tree protection zones are to be monitored and supervised by the Project Arborist.

6.4. Compliance and Certification Reporting – Hold Points

The following project milestones are recommended to be carried out by the project arborist.

These inspections are summarised below and expanded upon in the following sections.

Table 9: Compliance and Certification Table

Hold Point	Task	Responsibility	Certification	Timing of Inspection	Construction Stage
1	Indicate clearly (with spray paint or tape on trunks) trees approved for removal only	Principal Contractor	Project Arborist	Prior to site establishment	Pre-construction
2	Install tree protection measures			Prior to site establishment	
3	Induct construction staff into Tree Protection Management Plan			Prior to site establishment	
4	Supervise all excavation works proposed within the TPZ of trees to be retained			As required prior to the works proceeding adjacent to trees to be retained	During Construction
5	Inspection of trees by Project Arborist			Quarterly during construction period	
6	Final Inspection of trees by Project Arborist			Following practical completion of works	Post-construction

7. Recommendations – Pre-Construction

7.1. Tree Retention and Removal

Table 10 summarises tree removal, retention, and protection measure recommendations.

Table 10: Tree Retention and Removal

Recommendation	No. of tree	Tree Numbers
Remove and replace - Tree located within proposed development footprint or has major unmitigable encroachment into its TPZ	3	3 5 6
Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).	4	1 2 4 8
Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).	1	7
Total	**8**	

Three trees numbered 3, 5 and 6 are recommended for removal to facilitate the proposed development. Of these, tree 3 is exempt under the provisioning of the RDCP.

Four trees numbered 1, 2, 4 and 8 are recommended for retention with specific tree protection measures. These include:

- Tree protection fencing.
- Landscaping activities are to be low impact and sensitive to tree roots. See sections 8.2 - Excavations Within Tree Protection Zones and 8.10 - Landscaping Works within Tree Protection Zone.
- Supervision of works within the fenced TPZ.
- Retention of the existing concrete slab *in situ* within the TPZ of tree 8.

One tree numbered 7 is to be retained with tree protection fencing.

Trees marked for removal are to be physically marked with paint prior to site establishment as per the approved TPMP. Before removal, the Project Arborist must confirm that all marked trees correspond with those shown in Appendix B - Tree Assessment Schedule and Appendix C – Tree Protection Management Plan.

Tree removal is to be carried out prior to the erection of protection fencing. Under no circumstances are trees marked for retention within protection areas to be damaged. Vehicles and heavy machinery used by contractors are also to be kept clear of these protection areas.

Stumps to be removed from within protection areas are to be removed in a manner that avoids damaging or disturbing roots of trees to be retained. This may include stump grinding or careful 'picking' of the stumps with machinery. Both methods are to be approved by the Project Arborist.

7.2. Exploratory Root Investigation

Where trees are intended to be retained and potential works areas may enter the TPZ or SRZ, determining root location and therefore the impact to the trees is an important process.

Exploratory root excavation should be undertaken in a manner that causes the least amount of damage to root material in the process. This may include use of air excavation (air-spade) or hydro or dry-vac excavation. Root investigations should be undertaken at pre-agreed locations that will most effectively guide the design.

Findings of the root investigation should be compiled into a report which identifies significant roots that should be retained and less significant roots that may be appropriate for severance. The size and volume of roots which may be cut needs to be assessed by an arborist and consider tree physiology, existing site and soil conditions and species traits and tolerance of root pruning.

7.3. Tree Protection Zone Fencing

Protective fencing is to be installed as per Appendix C – Tree Protection Management Plan. Fencing is to comply with Australian Standard AS 4687-2007 *Temporary fencing and hoardings* (Standards Australia, 2007).

Once erected, protective fencing must not be removed or altered without approval from the project arborist. The TPZ fencing should be secured to restrict access.

TPZ fencing is to be a minimum of 1.8m high, and mesh or wire between posts must be highly visible. Fence posts and supports should have a diameter greater than 20mm and should ideally be freestanding, otherwise be located clear of the roots.

Tree protection fencing must remain intact throughout all proposed construction works and must only be dismantled after their conclusion. The temporary dismantling of tree protection fencing must only be done with the authorisation of the Project Arborist and/or the responsible authority.

An example of tree protection fencing is shown in Figure 5.

Any works to be undertaken within the Tree Protection Zone fencing are to be monitored and certified by the project arborist.

Legend:

1. Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2. Alternative plywood or wooden paling fence panels. The fencing material also prevents building materials or soil entering the TPZ.
3. Mulch installation across the surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4. Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

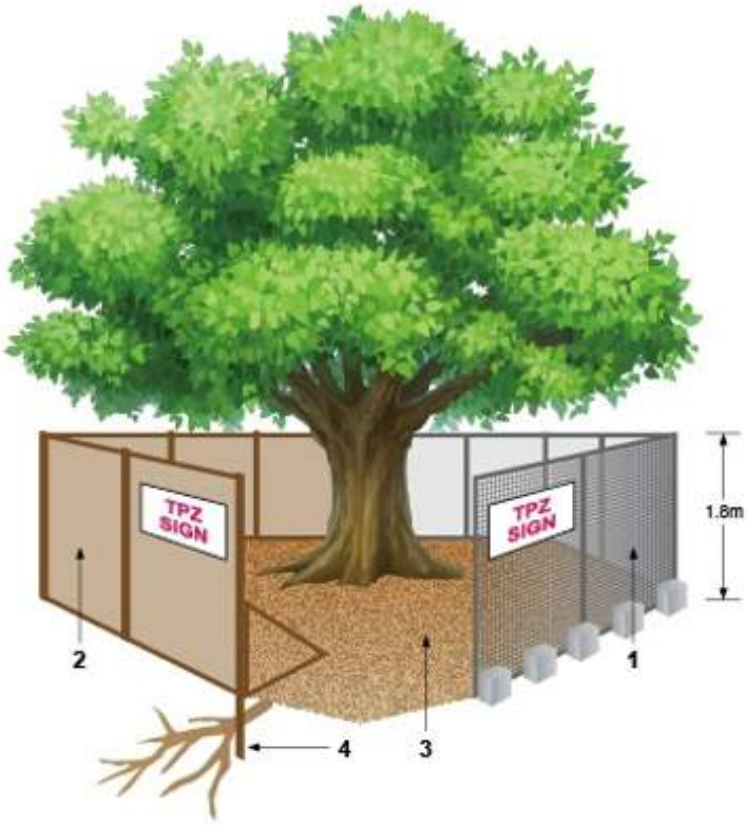

Figure 5: Recommended tree protection fencing measures. (Standards Australia, 2009)

7.4. Prohibited Activities within the TPZ

Activities generally excluded from the TPZ included but are not limited to:

a) Machine excavation including trenching;
b) Excavation for silt fencing;
c) cultivation;
d) storage;
e) preparation of chemicals, including preparation of cement products;
f) parking of vehicles and plant;
g) refuelling;
h) dumping of waste;
i) wash down and cleaning of equipment;
j) placement of fill;
k) lighting of fires;
l) soil level changes;
m) temporary or permanent installation of utilities and signs, and

n) physical damage to the tree.

7.5. Tree Protection Signs

Signs identifying the TPZ are to be installed on the tree protection fencing in 10m intervals. An example is shown below in Figure 6.

Figure 6: Example of tree protection signage. (Standards Australia, 2009)

8. Recommendations – Construction Stage

8.1. Site Establishment

The Project Arborist is to be provided a copy of the Construction Management Plan to check for compliance with the TPMP. The CMP should ensure that site sheds, haul roads, laydown areas and sediment control are located outside the TPZ of trees to be retained.

At completion of site establishment, the Project Arborist is to certify that tree protection measures comply with the TPMP.

8.2. Excavations Within Tree Protection Zones

The Project Arborist is to monitor the impacts of demolition, bulk earth works, installation of temporary infrastructure including building, sediment control and drainage works.

Where the extent of an encroachment is less than 10% of the TPZ, including any excavations for benching and shoring, excavation may be undertaken using conventional construction methods. 10% of the TPZ is equivalent to one-third of the TPZ radius on one side and shown in Figure 7.

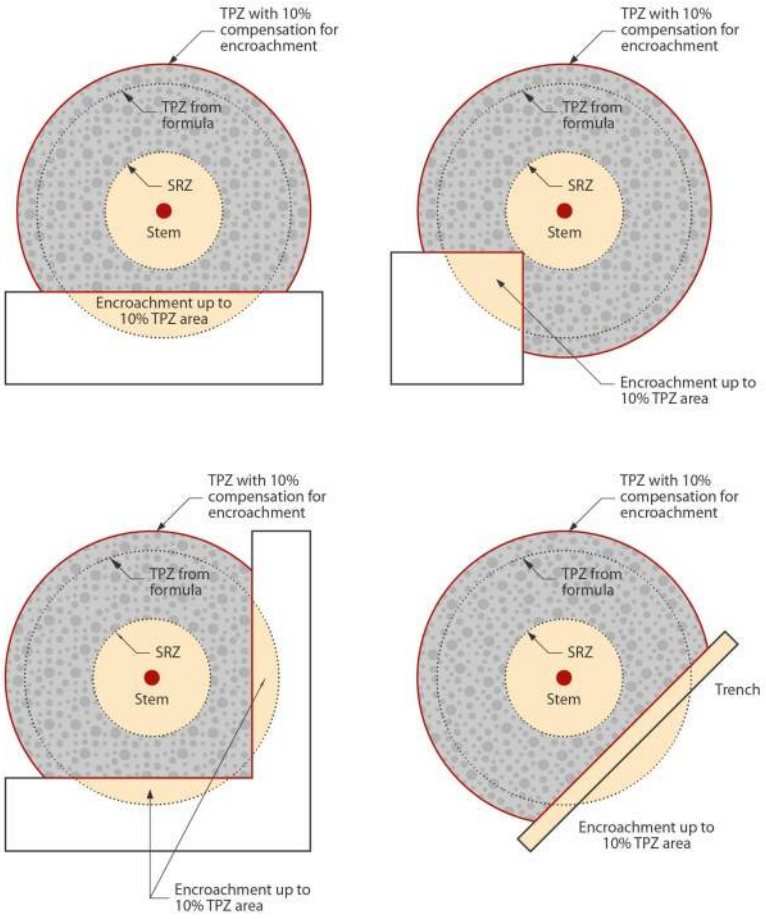

Figure 7: Example of permissible encroachment into the TPZ. (Standards Australia, 2009)

Where the encroachment is to be greater than 10% of the TPZ and prior to any mechanical excavations for building foundations, shoring, retaining wall or pavement subgrade within the TPZ of trees to be retained; exploratory excavation using non-destructive methodology shall be undertaken at the perimeter of the structure, excavation required for shoring, retaining wall or pavement subgrade within the TPZ.

Such techniques include:

- Excavation by hand
- Excavation using a high-pressure water jet and vacuum truck
- Excavation using an Air Spade with vacuum truck.

The non-destructive excavation shall be undertaken at the outer limits of the structure to the depth of the foundation or excavation, or to a maximum of 800mm below existing surface levels. All care must be taken to prevent the damage or severance of roots greater than 50mm diameter. Any roots encountered that are less than 50mm diameter may be cleanly severed with a sharp pruning implement at the interface of the excavation nearest the tree. The exposed root zone is to be kept moist by way of geotextile or hessian placed along the open interface of the excavation nearest the tree.

Where roots greater than 50mm diameter are encountered during exploratory excavation, advice from the Project Arborist shall be sought.

8.3. Trenching for Installation of Underground Services

All underground services should be routed outside the TPZ of trees to be retained. Where unavoidable, services may be installed via alternative methods which may include tree sensitive excavation or Horizontal Directional Drilling (HDD). Where HDD is used, entry and exit pits are to be located outside the TPZ of trees to be retained.

Where excavation or trenching is required to facilitate installation of underground services within the TPZs of any site trees arborist supervision is required. Works should be undertaken using techniques that are sensitive to tree roots to avoid unnecessary damage. Such techniques include:

- Excavation by hand
- Excavation using a high-pressure water jet and vacuum truck
- Excavation using an Air Spade with vacuum truck.

Machine excavation is prohibited within the TPZs of retained trees unless undertaken at the direct consent from the project arborist and/or the responsible authority.

Where a situation occurs that a significant root (root greater than >50 mm diameter) requires pruning or removal, the root is to be severed with a sharp saw implement by or under instruction of the Project Arborist.

8.4. Ground, Trunk and Branch Protection

If temporary access for machinery is required within the TPZ of trees to be retained ground protection measures will be required. The purpose of ground protection is to prevent root damage

and soil compaction. Measures may include a permeable membrane such as geotextile fabric beneath a 100mm thick layer of mulch or crushed rock below rumble boards, or steel plates or track mats as per Figure 8.

Tree trunk/s and/or major branches located within close proximity to works, must be wrapped with protective hessian or similar acceptable material to prevent tree injury. Major branches would typically be considered to be of a diameter greater than 100mm diameter.

Timber battens (50 mm x 100 mm x 2000mm or similar) must be placed around tree trunks with battens spaced at 100 mm intervals and fixed against the trunk using metal or durable plastic strapping with connections appropriately finished or covered to protect pedestrians from snagging injury. The hessian and timber battens must not be fixed to the tree. Tree trunk and major branch protection are to remain in place for the duration of works and must be removed at the completion of the project.

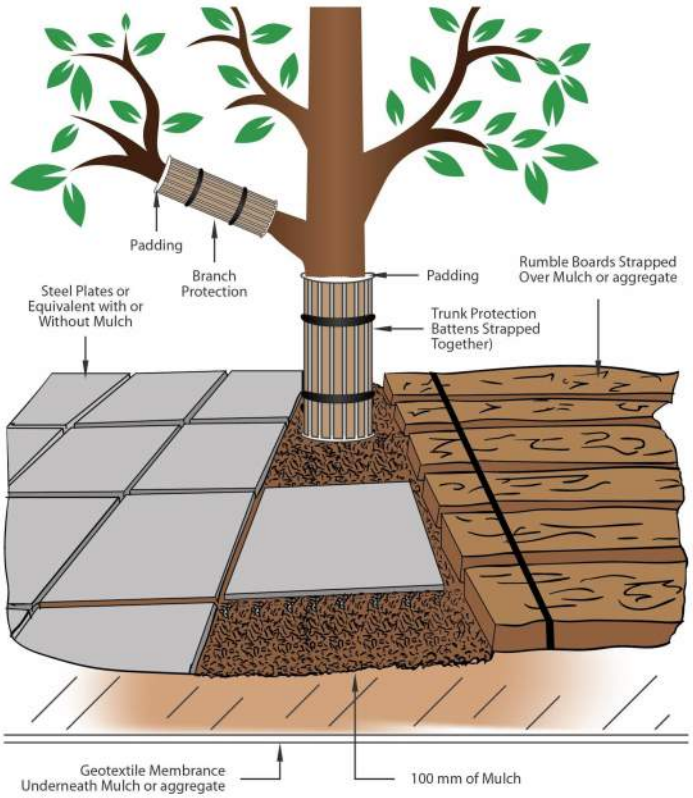

Figure 8: Details of trunk, branch and ground protection. (Standards Australia, 2009)

8.5. Pavements within Tree Protection Zones

Any pavements or footpaths within TPZ of trees to be retained should be installed at or above existing grade to minimise the need for excavation to avoid damage or severance of primary woody roots. The pavement sub-base shall be a coarse, gap-graded material with no fines in order to allow

some aeration and moisture infiltration to the root zone. The use of permeable pavements, bonded aggregate or cellular confinement systems should be investigated as alternative construction methods.

8.6. Scaffolding

Where scaffolding is required it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimized. This can be achieved by designing scaffolding to avoid branches or tying back branches. Where pruning is unavoidable it must be specified by the project arborist in accordance with AS 4373-2007 Pruning of Amenity Trees. NOTE: Pruning works will require approval by determining authority.

Ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Figure 9. Where access is required, a board walk or other surface material should be installed to minimize soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.

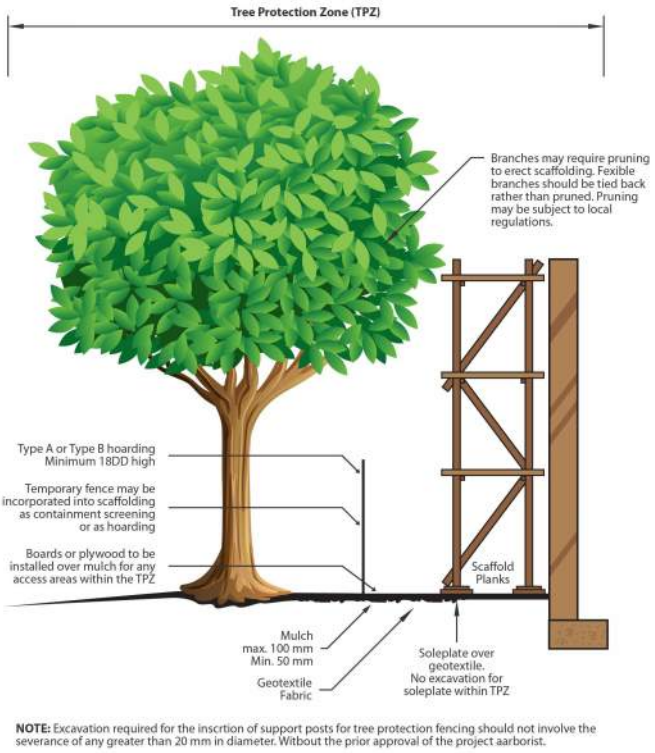

Figure 9: Details of scaffold installation. (Standards Australia, 2009)

8.7. Fill within Tree Protection Zones

Where unavoidable, fill placed within TPZ of trees to be retained shall be well-drained material equivalent or finer in texture than the existing site topsoil material and should comply with AS 4419:2003 (Soils for Landscaping and Garden Use).

The fill can be lightly consolidated but not to engineering standards. If fill is to be placed by machinery, this must be done from outside the TPZ of from existing hard stand areas. Alternatively, ground protection in accordance with Section 8.4 may be used to facilitate machine access.

8.8. Demolition of Existing Hard Stand Areas

Demolition of existing hard stand areas within the TPZ of trees to be retained may be undertaken using machinery but must under the supervision of the Project Arborist. Demolition of the ground surfaces must be undertaken from existing hard stand areas or ground protection and should commence at the outer extent of the existing surface material and move away from trees to be retained.

8.9. Offset Planting

Any tree approved to be removed from a site should be replaced with a tree of like habit and indigenous to the LGA where possible, planted as near as practicable to the location of the removed tree, grown to maturity and replaced if the planting fails to survive and thrive.

Trees should be sourced from a reputable nursery with stock grown to NATSPEC and Australian Standard AS 2303:2018 *Tree Stock for Landscape Use* criteria.

The trees should be planted and mulched with suitably composted, natural, hardwood mulch as per Figure 10.

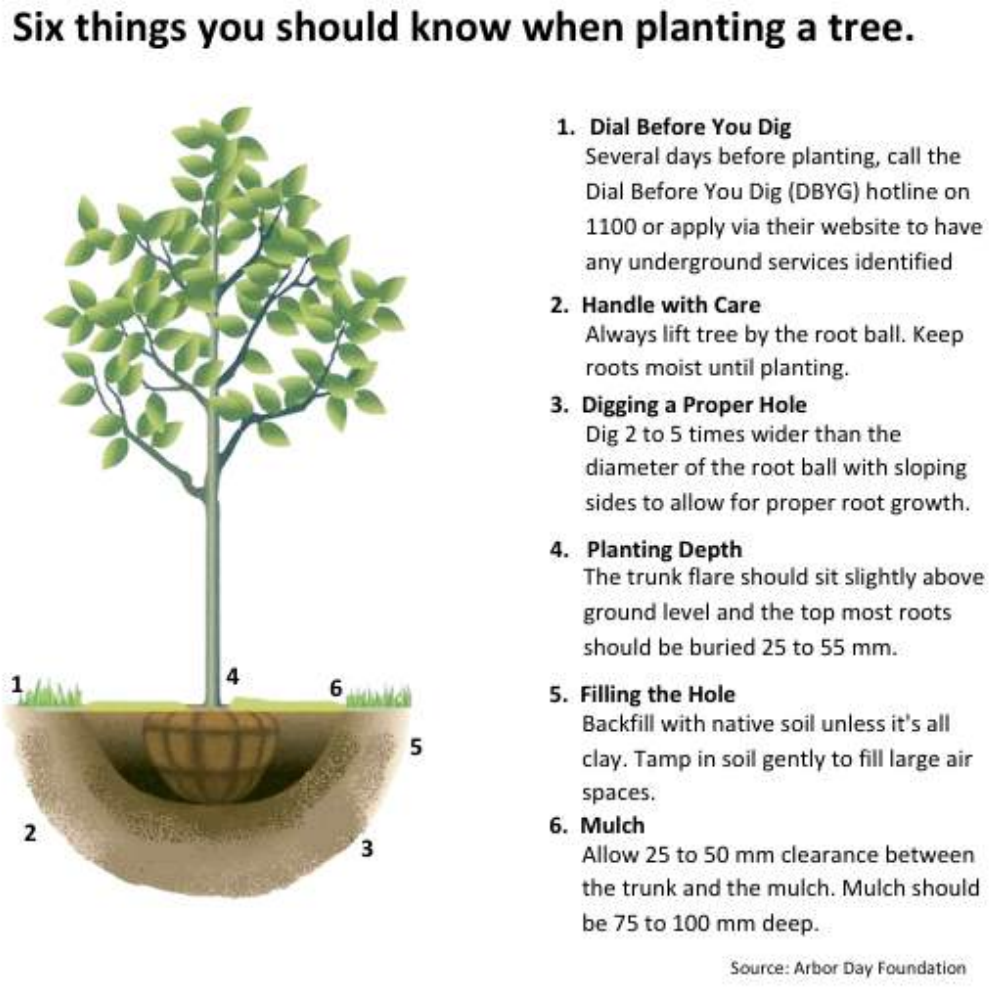

Figure 10: Recommended tree planting process. (Arbor Day Foundation, 2020)

8.10. Landscaping Works within Tree Protection Zones

The landscape plan is to be checked for compliance with the TPMP. Staged removal of tree protection methods may be required to facilitate landscaping works.

Any landscaping works within the TPZ of trees to be retained is to be under the direct supervision of the Project Arborist. These may include but are not limited to; retaining walls, irrigation and lighting systems, topdressing, planting and paving.

Any landscaping works requiring excavation for drainage or the like is to be undertaken using non-destructive methods previously described.

8.11. Tree Damage

Care is to be taken when operating cranes, piling rigs or similar near trees to avoid damage to tree canopies. Under no circumstances are branches to be torn off by construction equipment.

9. Recommendations – Post-construction

9.1. Defects Liability Period

Completion of outstanding building or landscaping works following the construction period must not injure trees.

9.2. Final Certification

The final inspection by the Project arborist should detail the health and condition of the trees and their growing environment and provide recommendations for any necessary remedial actions. These actions may include pruning in accordance with AS4373-2007 *Pruning of amenity trees* and/or soil remediation to repair the growing environment.

On project completion, the project arborist shall certify in writing to the Certifying Authority that the conditions of consent relating to tree protection, tree removal, pruning and planting of new trees have been complied with or, if the conditions have been contravened, detail the extent and nature of the departure from the conditions and their impacts on trees.

10. References

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11. Appendix A - IACA Significance of a Tree, Assessment Rating System (STARS) ©

Tree Landscape Significance - Assessment Criteria

1. High Significance in landscape	2. Medium Significance in landscape	3. Low 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.	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*.	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.

Estimated Life Expectancy

1. Long	2. Medium	3. Short	4. Remove
Trees that appear to be retainable with an acceptable level of risk for more than 40 years. Structurally sound trees located in positions that can accommodate future growth. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery. Trees of special significance for historical, commemorative, or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.	Trees that appear to be retainable with an acceptable level of risk for 15-40 years. Trees that may only live between 15 and 40 more years. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.	Trees that appear to be retainable with an acceptable level of risk for 5-15 years. Trees that may only live between 5 and 15 more years. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.	Trees with a high level of risk that would need removing within the next 5 years. Dead trees. Trees that should be removed within the next 5 years. Dying or suppressed or declining trees through disease or inhospitable conditions. Dangerous trees through instability or recent loss of adjacent trees. Dangerous trees through structural defects, including cavities, decay, included bark, wounds, or poor form. Damaged trees that considered unsafe to retain. Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. Trees that will become dangerous after removal of trees for other reasons.

Tree Retention Value – Priority Matrix

Estimated Life Expectancy	Landscape Significance Rating				
	1 (High)	2 (Medium)	3 (Low)	4 (Environmental Pest / Noxious Weed)	5 (Hazardous / Irreversible Decline)
Long (>40)	High - Priority for Retention	High - Priority for Retention	Medium - Consider for Retention	Low - Consider for Removal	Priority for Removal
Medium (15-40)	High - Priority for Retention	Medium - Consider for Retention	Medium - Consider for Retention / Low - Consider for Removal	Low - Consider for Removal	Priority for Removal
Short (5-15)	Low - Consider for Removal	Low - Consider for Removal	Low - Consider for Removal	Priority for Removal	Priority for Removal
Dead Or Hazardous (0-5)	Low - Consider for Removal	Priority for Removal	Priority for Removal	Priority for Removal	Priority for Removal

Legend for Matrix Assessment

High - Priority for Retention	These trees are considered important for retention and should be retained and protected. Design modification or re-location of buildings should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4979 *Protection of trees on development sites*. Tree sensitive construction must be implemented e.g. pier and beam, etc if works are to proceed within the Tree Protection Zone
Medium - Consider for Retention	These trees may be retained and protected. These are considered less critical; however their retention should remain a priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered an exhausted.
Low - Consider for Removal	These trees are not 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.

12. Appendix B - Tree Assessment Schedule

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Origin	Observations	Comments	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Encroachment % Total	Encroachment Type	Likely Impact	Recommendation
1	*Robinia pseudoacacia 'Frisia'*	Golden Robinia	1	38	46	4.6	65.3	2.4	10	8	Fair	Fair	Mature	Short (5-15)	Exotic		Located on adjoining property to east. DBH/DRB estimated.	3 (Low)	Low - Consider for Removal	Encroachment into TPZ/SRZ for landscaping	35%	Major	Provided landscaping is sensitive to roots, tree is viable for retention	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
2	*Robinia pseudoacacia*	False Acacia	4	11	18	2.0	12.6	1.6	7	3	Good	Good	Juvenile	Short (5-15)	Exotic		Group of 4 small trees located on adjoining property to east. DBH/DRB estimated.	3 (Low)	Low - Consider for Removal	Encroachment into TPZ/SRZ for landscaping	22%	Major	Provided landscaping is sensitive to roots, tree is viable for retention	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
3	*Nerium Oleander*	Oleander	1	60	60	7.2	162.9	2.7	6	6	Good	Good	Mature	Short (5-15)	Exotic			3 (Low)	Low - Consider for Removal	Tree within development footprint	72%	Major	Tree not viable for retention due to root loss	Remove and replace - Tree located within proposed development footprint or has major unmitigable encroachment into its TPZ
4	*Fraxinus griffithii*	Evergreen Ash	1	36.73	42	4.4	61.0	2.3	7	7	Good	Good	Mature	Short (5-15)	Exotic		Located on adjoining property to east. DBH/DRB estimated. Pruning will be required.	3 (Low)	Low - Consider for Removal	Encroachment into TPZ/SRZ for landscaping	32%	Major	Provided landscaping is sensitive to roots, tree is viable for retention	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
5	*Ficus microcarpa var hilli*	Hills Fig	1	218.71	188	15.0	706.9	4.3	25	28	Good	Good	Mature	Long (>40)	Native	Co-dominant stems	Two, separated stems at base likely part of the same tree.	1 (High)	High - Priority for Retention	56% TPZ encroachment for hardstand which is into the SRZ. Additional encroachment for stormwater pipe within hardstand area	56%	Major	Tree not viable for retention due to root loss	Remove and replace - Tree located within proposed development footprint or has major unmitigable encroachment into its TPZ
6	*Afrocarpus falcatus*	Outeniqua, Yellowwood	1	57	68	6.8	147.0	2.8	6	7	Fair	Fair	Mature	Short (5-15)	Exotic	Deadwood major (>10cm diameter), Previous failure(s)	Tree in disused area of site.	3 (Low)	Low - Consider for Removal	Combined 43% TPZ encroachment which is into the SRZ for hardstand and landscaping	43%	Major	Tree not viable for retention due to root loss	Remove and replace - Tree located within proposed development footprint or has major unmitigable encroachment into its TPZ
7	*Morus nigra*	Black Mulberry	1	27	34	3.2	33.0	2.1	8	8	Good	Good	Semi-mature	Short (5-15)	Exotic		In disused area of site.	3 (Low)	Low - Consider for Removal	No direct impact	0%	Nil	No significant impact expected provided tree protection measures are installed and maintained	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
8	*Ficus microcarpa var hilli*	Hills Fig	1	200	210	15.0	706.9	4.5	27	30	Good	Good	Mature	Long (>40)	Native		Located on adjoining property. DBH/DRB estimated. Large, significant tree. Existing concrete slab is likely to have deflected root growth.	1 (High)	High - Priority for Retention	23% TPZ encroachment which is into the SRZ for landscaping. 2% TPZ encroachment for hardstand	25%	Major	The existing, robust concrete edging is likely to have deflected root growth. No significant impact is expected provided tree protection measures are installed and maintained.	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).

13. Appendix C – Tree Protection Management Plan

Tree Protection Management Plan

TPZ Fencing is to be installed once existing bitumen surface is demolished.

Legend

Recommendations

- Remove and replace
- Retain tree with generic protection requirements
- Retain tree with specific protection requirements
- TPZ Fencing

- TPZ
- SRZ

0 10 20 30 40 50 m

CRS: GDA2020 MGA Zone 56

canopy consulting

Source: Nearmap, Open Street Map 09/03/2022

Tree Summary Report

January 17, 2022 |
Tree Count: 8

Filters Applied

Client Site Filter:
(Client Site=Hale Capital Partners - Raymond Ave Matraville NSW)

Golden Robinia Tree ID #1

40 McCauley Street

Tree Details

Latin Name:	Robinia pseudoacacia 'Frisia'
Common Name:	Golden Robinia
Tree Height (Estimated) [m]:	10
DBH [cm]:	38
Health:	Fair
Structure:	Fair
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	4.56
Structural Root Zone (SRZ) Radius [m]:	2.39
Observation Comments:	Located on adjoining property to east. DBH/DRB estimated.

Photos Street View Map View

False Acacia Tree ID #2

40 McCauley Street

Tree Details

Latin Name:	Robinia pseudoacacia
Common Name:	False Acacia
Tree Height (Estimated) [m]:	7
DBH [cm]:	11
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	2
Structural Root Zone (SRZ) Radius [m]:	1.61
Observation Comments:	Group of 4 small trees located on adjoining property to east. DBH/DRB estimated.

Photos Street View Map View

Oleander Tree ID #3

40 McCauley Street

Tree Details

Latin Name:	Nerium Oleander
Common Name:	Oleander
Tree Height (Estimated) [m]:	6
DBH [cm]:	60
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	7.2
Structural Root Zone (SRZ) Radius [m]:	2.67
Observation Comments:	

Photos Street View Map View

Evergreen Ash Tree ID #4

40 McCauley Street

Tree Details

Latin Name:	Fraxinus griffithii
Common Name:	Evergreen Ash
Tree Height (Estimated) [m]:	7
DBH [cm]:	36.73
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	4.41
Structural Root Zone (SRZ) Radius [m]:	2.3
Observation Comments:	Located on adjoining property to east. DBH/DRB estimated. Pruning will be required.

Photos Street View Map View

Hills Fig Tree ID #5

42 McCauley Street

Tree Details

Latin Name:	Ficus microcarpa var hilli
Common Name:	Hills Fig
Tree Height (Estimated) [m]:	25
DBH [cm]:	218.71
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Long (>40)
Observations:	Co-dominant stems
Tree Protection Zone (TPZ) Radius [m]:	15
Structural Root Zone (SRZ) Radius [m]:	4.31
Observation Comments:	Two, separated stems at base likely part of the same tree.

Photos Street View Map View

Outeniqua, Yellowwood Tree ID #6

44 McCauley Street

Tree Details

Latin Name:	Afrocarpus falcatus
Common Name:	Outeniqua, Yellowwood
Tree Height (Estimated) [m]:	6
DBH [cm]:	57
Health:	Fair
Structure:	Fair
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	Deadwood major (>10cm diameter), Previous failure(s)
Tree Protection Zone (TPZ) Radius [m]:	6.84
Structural Root Zone (SRZ) Radius [m]:	2.81
Observation Comments:	Tree in disused area of site.

Photos Street View Map View

Black Mulberry Tree ID #7

44 McCauley Street

Tree Details

Latin Name:	Morus nigra
Common Name:	Black Mulberry
Tree Height (Estimated) [m]:	8
DBH [cm]:	27
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Short (5-15)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	3.24
Structural Root Zone (SRZ) Radius [m]:	2.1
Observation Comments:	In disused area of site.

Photos Street View Map View

Hills Fig Tree ID #8

44A McCauley Street

Tree Details

Latin Name:	Ficus microcarpa var hilli
Common Name:	Hills Fig
Tree Height (Estimated) [m]:	27
DBH [cm]:	200
Health:	Good
Structure:	Good
Useful Life Expectancy (Yrs.):	Long (>40)
Observations:	
Tree Protection Zone (TPZ) Radius [m]:	15
Structural Root Zone (SRZ) Radius [m]:	4.52
Observation Comments:	Located on adjoining property. DBH/DRB estimated. Large, significant tree. Existing concrete slab is likely to have deflected root growth.

Photos Street View Map View