



Project No: WEST/CATH/20 Report No: WEST/CATH/AIA/C

ARBORICULTURAL IMPACT ASSESSMENT TREE PROTECTION SPECIFICATION

Westmead Catholic Education Campus
2 Darcy Road
Westmead

Prepared for: CATHOLIC EDUCATION DIOCESE OF PARRAMATTA

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Revision C

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 This Arboricultural Impact Assessment and Tree Protection Specification Report was prepared for WINIM, on behalf of the Catholic Education Diocese of Parramatta, in relation to the State Significant Development Application (SSDA) for the Westmead Catholic Community (WCC) at 2 Darcy Road, Westmead. The purpose of this Report is to undertake a Visual Tree Assessment¹ (VTA), determine the impact of the proposed works on the trees, and where appropriate, recommend the use of sensitive construction methods to minimise adverse impacts.
- 1.1.2 The WCC project seeks to meet the needs of the growing population within the region by providing upgraded school facilities for Mother Teresa and Sacred Heart Primary Schools, as well as a new Parish church. WCC is a collaboration between Catholic Education Diocese of Parramatta (CEDP), the Diocese of Parramatta (DoP), the Sisters of Mercy and the Marist Brothers Province of Australia.
- 1.1.3 As the proposal is for the purposes of alterations and additions to an existing school and has a capital investment value in excess of \$20 million, it is State Significant Development (SSD) for the purposes of the *Environmental Planning and Assessment Act 1979*. The Parish church is also SSD under Clause 8(2)(a) of *State Environmental Planning Policy (State and Regional Development) 2011* as it forms part of the proposal which comprises a single, integrated development with significant functional links between the education and church uses.
- 1.1.4 In preparing this Report, the authors have considered the objectives of the following:
- *State Environmental Planning Policy Vegetation in Non-Rural Areas (2017)*
 - *Parramatta Local Environmental Plan (2011)*
 - *Parramatta Council's Development Control Plan (2011) - Part 5.4 (Preservation of Trees and Vegetation)*
 - *Australian Standard 4970 Protection of Trees on Development Sites (2009)*
 - *Australian Standard 4373 Pruning of Amenity Trees (2007)*
 - *Australian Standard 2303 Tree Stock for Landscape Use (2015)*
 - *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016)*

Refer to Methodology (**Appendix 1**)

- 1.1.5 This impact assessment is based on an assessment of the following supplied documentation/plans only:
- Detail & Contour Survey– 16147- T15 (Rev A, dated 21.10.20) - prepared by Vince Morgan
 - Detail & Contour Survey– 16147- T16 (Rev A, dated 21.10.20) - prepared by Vince Morgan
 - Landscape Masterplan– LA-101 (Rev A, dated 20.02.20) - prepared by Ground Ink
 - General Arrangement Plan– LA-102 (Rev A, dated 20.02.20) - prepared by Ground Ink
 - Existing Tree Plan – LA-201 (Rev A, dated 20.02.20) - prepared by Ground Ink
 - Parish Landscape Plan – LA-301 (Rev A, dated 20.02.20) - prepared by Ground Ink
 - Primary School Plan – Ground Level – LA-401 (Rev A, dated 20.02.20) - prepared by Ground Ink
 - CELC Landscape Plan – LA-501 (Rev A, dated 20.02.20) - prepared by Ground Ink

Refer to Plans (**Appendix 2**)

¹ Mattheck & Breloer (2003)

1.2 The Proposal

1.2.1 The SSDA will seek approval for:

- A primary school with capacity for approximately 1,680 students to provide expanded facilities for the existing Mother Teresa Primary School and to replace the existing Sacred Heart Primary School at Ralph Street
- A new Parish church
- A Catholic early learning centre (fit-out within an existing building)
- New landscaping

2.0 RESULTS

2.1 The Site

- 2.1.1 The site is located at 2 Darcy Road, Westmead, approximately 2km to the north-west of the Parramatta CBD and approximately 300m to the west of Westmead Train Station. The site is located within the Parramatta Local Government Area (LGA).
- 2.1.2 The site has an area of approximately 12ha and a frontage of approximately 430m to Darcy Road. The site consists of two lots, which are legally described as Lot 1 in DP1095407, which is owned by the Trustees of the Roman Catholic Church of Parramatta, and Lot 1 in DP1211982, which is under the ownership of the Trustees of the Marist Brothers.
- 2.1.3 The site is bound by Darcy Road (to the north), the T1 North Shore and Western/T5 Cumberland train lines (to the south), the Western Sydney University Westmead Campus (to the east) and residential uses (to the west). To the north of the site, across Darcy Road is the Westmead Health and Education Precinct comprising the Westmead Hospital, Westmead Private Hospital and the Western Sydney University Medical Research Institutes.
- 2.1.4 The site currently contains three (3) separate schools being the Catherine McAuley Westmead (girls' high school) which predominantly occupies the northern part of the site, and the Parramatta Marist High School (boys' school) which occupies the eastern part of the site. The Mother Teresa Primary School occupies part of the Catherine McAuley School building in the centre of the site. The southern portion of the site contains open sports fields associated with the Parramatta Marist High School.
- 2.1.5 The existing Brothers' residence is located in the north-eastern corner of the site, and an at grade car park occupies the western part of the site, to the north of the sports fields. Collectively, the three (3) schools currently accommodate approximately 2,637 students and 190 staff.

2.2 The Trees

- 2.2.1 Two hundred (200) trees were assessed using the Visual Tree Assessment² (VTA) criteria and notes. The trees comprise of a mix of locally indigenous, Australian-native and exotic species. Fifty-six (56) species are represented with *Sapium sebiferum* (Chinese Tallow Tree) the dominant species on site.

² Mattheck & Breloer (2003)

2.2.2 As required by Clause 2.3.2 of *Australian Standard 4970 Protection of Trees on Development Sites (2009)*, each tree (and tree group) has been allocated a Retention Value. TreeIQ allocates one of four Retention Value categories based on a combination of Landscape Significance and Useful Life Expectancy (ULE). The assessment of Landscape Significance and ULE involves a degree of subjectivity and there will be a range of tree quality and value within each of the Retention Value categories. The Retention Values do not consider any proposed development works and are not a schedule for tree retention or removal. The trees (and tree groups) have been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for Removal

Refer to Tree Assessment Schedule (**Appendix 3**)

2.2.3 In general the trees within the site are of low to moderate quality. In this regard, of the two hundred (200) trees assessed:

- Two (2) trees (1%) were allocated a Retention Value of *Priority for Retention*
- Ninety-nine (99) trees (49%) were allocated a Retention Value of *Consider for Retention*
- Sixty-eight (68) trees (34%) were allocated a Retention Value of *Consider for Removal*, and
- Thirty-one (31) trees (16%) were allocated a Retention Value of *Priority for Removal*

2.2.4 As to be expected with any large population of mature trees, the VTA has identified some trees with a reduced health and/or structural defects of varying degrees of severity. Wounds were present on numerous trees which provide an entry point for wood decay pathogens and can potentially reduce tree health and structural condition.

2.2.5 Tree 50 *Celtis australis* (Hackberry) contains a potential structural defect on its trunk. If this tree is to be retained, internal diagnostic testing (i.e. Resistograph or Tomograph testing) should be undertaken to assess its internal structural condition. If the results indicate the tree can be retained within the acceptable limits of risk, ongoing testing may be required. Testing intervals ranging from 12-36 months would be considered typical however these must be determined on an individual tree basis.

2.2.6 Eight (8) trees listed in Table 1 are species which are outlined within Part C (Exempt Tree Works) of the *Parramatta Development Control Plan 2011 (Section 5.4 Preservation of Trees or Vegetation)*.³

2.2.7 Table 1: Exempt Species

Species	Tree Number
<i>Erythrina crista-galli</i> (Cocks Spur Coral Tree)	1
<i>Ligustrum lucidum</i> (Broad Leaf Privet)	180
<i>Syagrus romanzoffiana</i> (Cocos Palm)	28, 103, 105, 106, 107 & 181

2.2.8 Twenty-six (26) trees listed in Table 2 are also subject to a *General Biosecurity Duty* by the Department of Primary Industries. In particular, *Erythrina crista-galli* (Cocks Spur Coral Tree), *Ligustrum lucidum* (Broad Leaf Privet) and *Sapium sebiferum* (Chinese Tallow Tree) must not be sold in NSW.⁴

³ Parramatta City Council (2011)

2.2.9 Table 2: General Biosecurity Duty Species

Species	Tree Number
<i>Celtis australis</i> (Hackberry)	50
<i>Cinnamomum camphora</i> (Camphor Laurel)	86
<i>Cotoneaster</i> sp. (Cotoneaster)	35 & 71
<i>Erythrina crista-galli</i> (Cocks Spur Coral Tree)	1
<i>Ligustrum lucidum</i> (Broad Leaf Privet)	180
<i>Sapium sebiferum</i> (Chinese Tallow Tree)	76, 77, 78, 79, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 188, 189, 190, 191 & 192

2.2.10 Fourteen (14) trees listed in Table 3 are locally indigenous and representative tree species of the Cumberland Plain Woodland. Cumberland Plain Woodland is listed as a *Critically Endangered* ecological community under the NSW *Biodiversity Conservation Act (2016)* and the Commonwealth *Environment Protection and Biodiversity Conservation Act (1999)*. None of the trees are sufficiently large to be remnant specimens and aerial images of the site from 1943 show the site largely cleared and has since been replanted. The trees were most likely planted at a similar time to other comparable-sized, non-locally indigenous trees at the site.

2.2.11 Table 3: Cumberland Plain Woodland Species

Species	Tree Number
<i>Corymbia maculata</i> (Spotted Gum)	194, 195, 197, 198, 200, 201, 212, 214, 217 & 218
<i>Eucalyptus crebra</i> (Narrow Leaf Ironbark)	89 & 90
<i>Eucalyptus punctata</i> (Grey Gum)	100 & 176

2.2.12 Tree 104 *Eucalyptus nicholii* (Narrow Leaf Peppermint) is located adjacent to the southern site boundary. This species is an Australian-native which naturally occurs in the New England Tableland on the NSW-Queensland border. *Eucalyptus nicholii* (Narrow Leaf Peppermint) is listed as *Vulnerable* under the NSW *Biodiversity Conservation Act (2016)* and the Commonwealth *Environment Protection & Biodiversity Conservation Act (1999)*. However, this tree appears to be a planted specimen and is not a component of locally indigenous vegetation community.

3.0 ARBORICULTURAL IMPACT ASSESSMENT

3.1 Tree Removal

3.2.1 The supplied plans show that thirty-one (31) trees are to be removed as part of the proposed development. This includes twenty-one (21) trees with a Retention Value of *Consider for Retention*, nine (9) trees with a Retention Value of *Consider for Removal* and one (1) tree with a Retention Value of *Priority for Removal*. No trees with a Retention Value of *Priority for Retention* will need to be removed to accommodate the proposed works.

3.2.2 Table 4: Trees to be removed

Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
	162, 164, 165, 166, 167, 194, 198, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212 & 213	158, 159, 160, 161, 163, 193, 195, 197 & 199	196

⁴ Department of Primary Industries (2017)

3.2 Tree Retention

3.2.1 The supplied plans show that one hundred and thirty-nine (139) trees are to be retained as part of the proposed development. This includes two (2) trees with a Retention Value of *Priority for Retention*, seventy-eight (78) trees with a Retention Value of *Consider for Retention* and fifty-nine (59) trees with a Retention Value of *Consider for Removal*.

3.2.2 Table 4: Trees to be retained

Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
10 & 60	7, 11, 12, 13, 19, 23, 27, 31, 32, 36, 37, 38, 39, 46, 49, 50, 54, 55, 56, 57, 62, 63, 64, 66, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 89, 90, 93, 94, 96, 97, 100, 112, 113, 114, 115, 116, 119, 127, 128, 129, 138, 140, 146, 148, 149, 168, 173, 174, 176, 177, 178, 179, 186, 187, 188, 189, 190, 191, 192, 214, 215, 216 & 217	2, 3, 6, 8, 9, 14, 15, 16, 17, 18, 20, 21, 24, 26, 29, 30, 33, 34, 35, 40, 41, 42, 43, 45, 48, 53, 59, 65, 68, 69, 98, 99, 101, 111, 117, 118, 120, 121, 122, 123, 124, 125, 126, 130, 131, 132, 133, 134, 135, 136, 137, 150, 169, 170, 171, 172, 175, 182 & 218	

3.2.3 The supplied plans show that a new ramp is proposed within the Tree Protection Zone (TPZ) of Tree 21. As the extent of work is less than 10% of the TPZ, it represents a *Minor Encroachment* as defined by *Australian Standard 4970-2009 Protection of Trees on Development Sites (AS-4970)*. A *Minor Encroachment* is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. The encroachments should be compensated for by extending the TPZ to the north-east.

3.3 Other Works within TPZ Areas

3.3.1 Demolition Works

Demolition works within TPZ areas should be supervised by the Project Arborist and utilise tree sensitive methods, ensuring demolition machinery/equipment does not contact the trees. Structures within an SRZ can contribute to tree stability by providing ballast to the rootplate or acting as a stop to the overturning of the rootplate. If possible, existing underground structures and sub-base layers should be left in situ and reused.

3.3.2 Underground Services

Underground services should be located outside of the TPZ areas. Where this is not possible, services should be installed using tree sensitive excavation (hand/hydrovac etc) methods with the services located around/below roots (>25mmø) as directed by the Project Arborist. Excavation using compact machinery (<2T) fitted with a flat bladed bucket is permissible where approved by the Project Arborist. Excavation using compact machinery should be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmø).

3.3.3 Alternatively, boring methods may be used for underground service installation where the obvert level (highest interior level of pipe) is greater than 1200mm below existing grade. Excavations for starting and receiving pits for boring equipment should be located outside of the TPZ areas or located to avoid roots (>25mmø) as directed by the Project Arborist.

3.3.4 Landscaping

The installation of plants/turf within the TPZ areas should be undertaken using hand tools and roots (>25mmØ) should be protected. No mechanical cultivation/ripping of soils should be undertaken within the TPZ areas. Excavation and installation of imported soil mixes should be excluded from the TPZ areas other than the installation of soil conditioners to a maximum depth of 50mm above the existing soil profile.

3.4 Replacement Planting

3.4.1 Replacement tree planting should be undertaken to help off-set the loss of canopy cover and amenity resultant from the tree removal. Replacement planting should be supplied in accordance with *Australian Standard 2303 (2015) Tree Stock for Landscape Use*.

3.4.2 A high component of locally indigenous species and other species which are resilient to predicted long-term changes in rainfall patterns and elevated temperatures should be selected for new trees. However, the propensity for *Eucalyptus* species to develop deadwood even when in good health should be considered when locating the trees. New tree plantings near footpaths, carparking areas and other areas of high use should be selected to provide shade with low maintenance requirements.

4.0 SUMMARY & CONCLUSIONS

4.1.1 Two hundred (200) trees were assessed in preparation of this Report. The trees comprise of a mix of locally indigenous, Australian-native and exotic species, and in general, are of low to moderate quality and value.

4.1.2 The SSDA will seek approval for a primary school, Parish church, early learning centre and landscaping.

4.1.3 The supplied plans show that thirty-one (31) trees (Trees 158-167 & 193-213) are to be removed as part of the proposed development.

4.1.4 The supplied plans show that one hundred and thirty-nine (139) trees are to be retained as part of the proposed development. Works are proposed within the TPZ of Tree 21 and represent a *Minor Encroachment* as defined by AS-4970. A *Minor Encroachment* is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ.

4.1.5 The trees to be retained should be protected as outlined within the Tree Protection Specification (**Appendix 5**). TPZ fencing should be setback from each tree by the minimum radial distance indicated in the TPZ column of the Tree Assessment Schedule (**Appendix 3**). It is assumed that trees in the eastern half of the site where no works are proposed will be excluded from the construction by site fencing. TPZ fencing should be provided where site fencing does not fully exclude TPZ areas.

4.1.6 Replacement tree planting should be undertaken to help off-set the loss of canopy cover and amenity resultant from the tree removal. Replacement planting should be supplied in accordance with *Australian Standard 2303 (2015) Tree Stock for Landscape Use*.

4.1.7 An additional thirty (30) trees (Trees 1, 4, 5, 22, 28, 44, 47, 51, 52, 58, 61, 70, 71, 92, 95, 103-107, 110, 139, 141-145, 147, 180 & 181) not impacted by the proposed works or subject of this SSDA are recommended for removal. These trees have a ULE of less than 5 years and have been allocated a Retention Value of *Priority for Removal*. Consent is not required for the removal of Trees 1, 28, 103, 105-107, 180 and 181 as they are species which are outlined within Part C (Exempt Tree Works) of the *Parramatta DCP 2011 (Section 5.4 Preservation of Trees or Vegetation)*.⁵

⁵ Parramatta City Council (2011)

5.0 LIMITATIONS & DISCLAIMER

TreeiQ takes care to obtain information from reliable sources. However, TreeiQ can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Report are visual aids only and are not necessarily to scale. This Report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc issues.

This Report has been prepared for exclusive use by the client. This Report shall not be viewed by others or for any other reason outside its intended target or without the prior written consent of TreeiQ. Unauthorised alteration or separate use of any section of the Report invalidates the Report.

Many factors may contribute to tree failure and cannot always be predicted. TreeiQ takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators. There is no warranty or guarantee, expressed or implied that problems or deficiencies regarding the trees or site may not arise in the future. Information contained in this report covers only the trees assessed and reflects the condition of the trees at the time of inspection. Additional information regarding the methodology used in the preparation of this Report is attached as Appendix 1. A comprehensive tree risk assessment and management plan for the trees is beyond the scope of this Report.

Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this Report are subject to approval from the relevant Consent Authority.

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6.0 BIBLIOGRAPHY & REFERENCES

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Standards Australia (2009), *Protection of Trees on Development Sites AS-4970*

Appendix 1: Methodology

- 1.1 Site Inspection:** This report was determined as a result of a comprehensive site inspection during January 2020.
- 1.2 Visual Tree Assessment (VTA):** The subject tree(s) was assessed using the Visual Tree Assessment criteria and notes as described in *The Body Language of Trees – A Handbook for Failure Analysis*.⁶ The inspection was limited to a visual examination of the subject tree(s) from ground level only. No internal diagnostic or tissue testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.
- 1.3 Tree Dimensions:** The dimensions of the subject tree(s) are approximate only.
- 1.4 Tree Locations:** The location of the subject tree(s) was determined from the supplied plans. Trees not shown on the supplied plans have been plotted in their **approximate location only**.
- 1.5 Trees & Development:** Tree Protection Zones, Tree Protection Measures and Sensitive Construction Methods for the subject tree were based on methods outlined in *Australian Standard 4970-2009 Protection of Trees on Development Sites*.

The *Tree Protection Zone* (TPZ) is described in AS-4970 as a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

The *Structural Root Zone* (SRZ) is described in AS-4970 as the area around the base of a tree required for the tree's stability in the ground. Severance of structural roots within the SRZ is not recommended as it may lead to the destabilisation and/or demise of the tree.

In some cases it may be possible to encroach into or make variations to the theoretical TPZ. A *Minor Encroachment* is less than 10% of the area of the TPZ and is outside the SRZ. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. A *Major Encroachment* is greater than 10% of the TPZ or inside the SRZ. In this situation the Project Arborist must demonstrate that the tree would remain viable. This may require root investigation by non-destructive methods or the use of sensitive construction methods.

- 1.6 Tree Health:** The health of the subject tree(s) was rated as *Good, Fair or Poor* based on an assessment of the following factors:
- I. Foliage size and colour
 - II. Pest and disease infestation
 - III. Extension growth
 - IV. Crown density
 - V. Deadwood size and volume
 - VI. Presence of epicormic growth
- 1.7 Tree Structural Condition:** The structural condition of the subject tree(s) was rated as *Good, Fair or Poor* based on an assessment of the following factors:
- I. Assessment of branching structure
(i.e. co-dominant/bark inclusions, crossing branches, branch taper, terminal loading, previous branch failures)
 - II. Visible evidence of structural defects or instability
(i.e. root plate movement, wounds, decay, cavities, fungal brackets, adaptive growth)
 - III. Evidence of previous pruning or physical damage
(root severance/damage, lopping, flush-cutting, lions tailing, mechanical damage)
- 1.8 Useful Life Expectancy (ULE):** The ULE is an estimate of the longevity of the subject tree(s) in its growing environment. The ULE is modified where necessary to take in consideration tree(s) health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):
- I. 40 years +
 - II. 15-40 years
 - III. 5-15 years
 - IV. Less than 5 years

⁶ Mattheck & Breloer (2003)

- 1.9 Landscape Significance:** Landscape Significance was determined by assessing the combination of the cultural, environmental and aesthetic values of the subject tree(s). Whilst these values are subjective, a rating of high, moderate, low or insignificant has been allocated to the tree(s). This provides a relative value of the tree's Landscape Significance which may aid in determining its Retention Value. If the tree(s) can be categorized into more than one value, the higher value has been allocated.

Landscape Significance	Description
Very High	The subject tree is listed as a Heritage Item under the <i>Local Environmental Plan</i> with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register or meets the criteria for significance assessment of trees and/or landscapes by a suitably qualified professional. The criteria are based on general principles outlined in the Burra Charter and on criteria from the Register of the National Estate.
High	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of cultural or historical importance or is widely known.
	The subject tree is a prominent specimen which forms part of the curtilage of a heritage item with a known or documented association with that item.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species for the site defined under the provisions of the NSW <i>Biodiversity Conservation Act (2016)</i> or the Commonwealth <i>Environmental Protection and Biodiversity Conservation Act (1999)</i> .
	The subject tree is known to contain nesting hollows to a species scheduled as a Threatened or Vulnerable Species for the site as defined under the provisions of the NSW <i>Biodiversity Conservation Act (2016)</i> or the Commonwealth <i>Environmental Protection and Biodiversity Conservation Act (1999)</i> .
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the locality.
Moderate	The subject tree makes a positive contribution to the visual character or amenity of the area.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree is a good representative of the species in terms of aesthetic value.
Low	The subject tree is a known environmental weed species or is exempt under the provisions of the local Council's Tree Management Controls
	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.

- 1.10 Retention Value:** Retention Value was based on the subject tree's Useful Life Expectancy and Landscape Significance. The Retention Value was modified where necessary to take in consideration the subject tree's health, structural condition and site suitability. The subject tree(s) has been allocated one of the following Retention Values:

- I. Priority for Retention
- II. Consider for Retention
- III. Consider for Removal
- IV. Priority for Removal

ULE		Landscape Significance			
	Very High	High	Moderate	Low	Insignificant
40 years +	Priority for Retention	Priority for Retention		Consider for Removal	Priority for Removal
15-40 years		Priority for Retention	Consider for Retention		
5-15 years		Consider for Retention			
Less than 5 years	Consider for Removal	Priority for Removal			

The above table has been modified from the Footprint Green Tree Significance and Retention Value Matrix.

Appendix 2: Plans

Refer Tree Location Plan 2

SHEET TWO

SHEET THREE

SHEET FOUR

SHEET FIVE

Lot 1
DP1095407

Lot 1
DP1211982

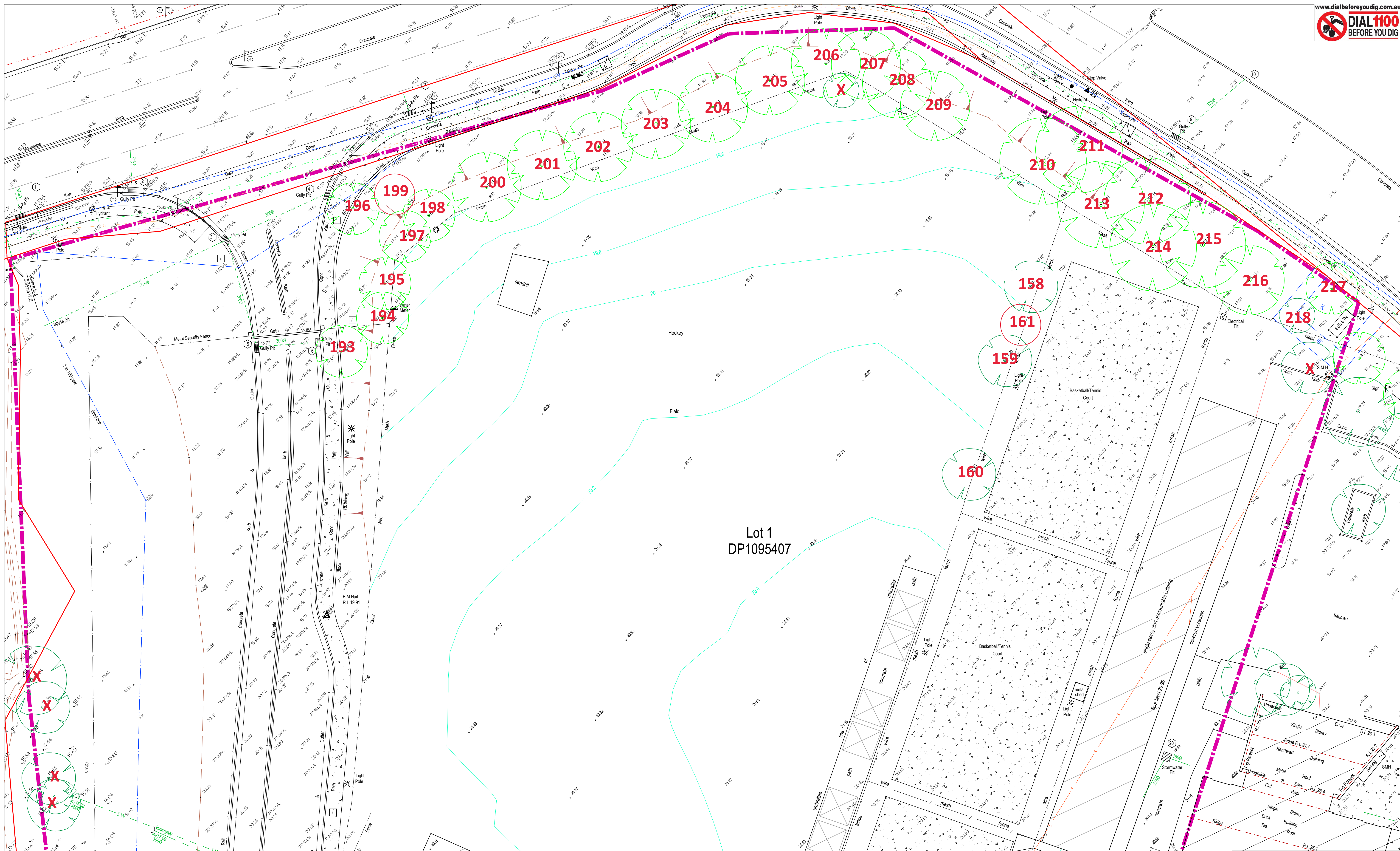
SHEET SEVEN

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DENOTES EXTENT OF UPDATED SURVEY 21/10/19

NOTES:
* SPREAD OF TREES IS APPROXIMATE ONLY
* LOCATION OF FENCES ARE APPROXIMATE ONLY
* ONLY VISIBLE SERVICES HAVE BEEN LOCATED ACCURATELY
* NO UNDERGROUND SERVICES SEARCH HAS BEEN CARRIED OUT
* BOUNDARY DIMENSIONS AND AREA ARE BY TITLE ONLY
* t/k DENOTES TOP OF KERB
* t/w DENOTES TOP OF WALL

<div><div>vince morgan</div><div>SURVEYORS</div></div>			Vince Morgan (Surveyors) Pty Ltd 77 UNION ROAD PENRITH PO BOX 4156 PENRITH PLAZA 2750 Ph 47215293 email mail@vmsurvey.com.au www.vincemorgansurveyors.com.au		DATUM: A.H.D. ORIGIN: SSM10881 RL 44.15 SOURCE: SCIMS DRAWN: M.Perkins	DATE: 21.10.19 SCALE: 1:800@A1 CONTOUR INTERVAL: 0.2m CHECKED:	CLIENT: WINIM DEVELOPMENT	LOT(S): 1 / D.P.1211982 & 1 / D.P.1095407 STREET ADDRESS: DARCY ROAD LOCATION: WESTMEAD LOCAL GOVT: PARRAMATTA	DRAWING TITLE: DETAIL & CONTOUR SURVEY	PLAN No. 16147-T15 ISSUE: SHEET: 1 OF: 7
No.	AMENDMENT	DATE			ABN 52 065 060 808					



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- | | |
|------------------------|---------------------|
| ✱ LIGHT POLE | ○ SEWER MANHOLE |
| ☐ TELECOM PIT | ⊙ SEWER JUNCTION |
| ☐ UNIDENTIFIED SERVICE | ☐ SURFACE INLET PIT |
| ▲ STOP VALVE | ☐ GULLY PIT |
| ⚡ FIRE HYDRANT | ☐ SIGN |
| ⚙ TAP | ● BOLLARDS |

--- DENOTES EXTENT OF UPDATED SURVEY 21/10/19

(A) EASEMENT FOR PADMOUNT SUBSTATION 6.7 WIDE
(B) RESTRICTION ON THE USE OF LAND
8 H- DENOTES TREE IS 8m HIGH

NOTES:
* SPREAD OF TREES IS APPROXIMATE ONLY
* LOCATION OF FENCES ARE APPROXIMATE ONLY
* ONLY VISIBLE SERVICES HAVE BEEN LOCATED ACCURATELY
* NO UNDERGROUND SERVICES SEARCH HAS BEEN CARRIED OUT
* BOUNDARY DIMENSIONS AND AREA ARE BY TITLE ONLY
* t/a DENOTES TOP OF KERB
* t/w DENOTES TOP OF WALL

No.	AMENDMENT	DATE

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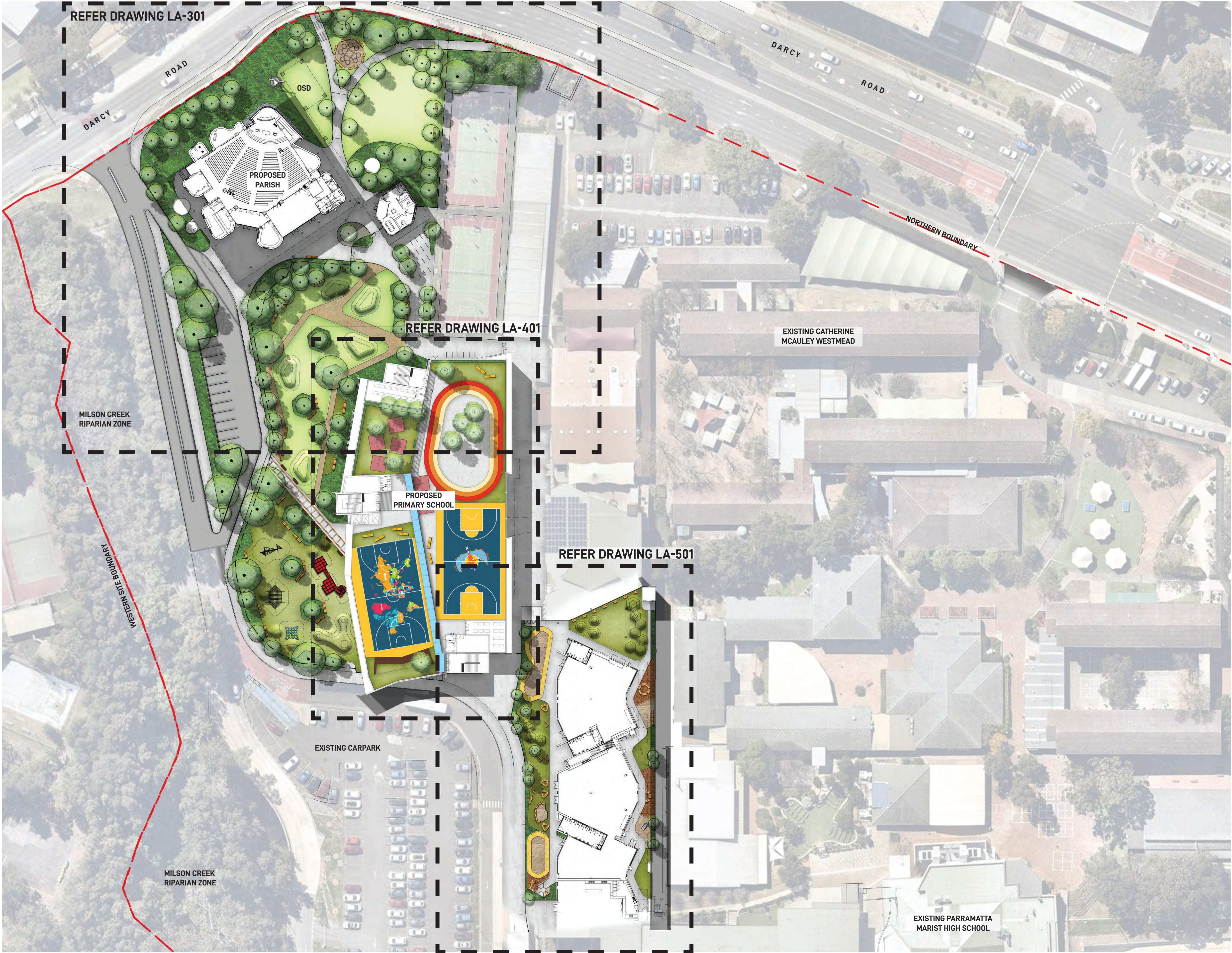
DATUM: A.H.D.	DATE: 24.01.20
ORIGIN: SSM10881 RL 44.13	SCALE: 1:200@A1
SOURCE: SCIMS	CONTOUR INTERVAL: 0.2m
DRAWN: M.Perkins	CHECKED:

CLIENT:
**WINIM
DEVELOPMENT**

LOT(S): 1 / D.P.1211982 & 1 / D.P.1095407
STREET ADDRESS: DARCY ROAD
LOCATION: WESTMEAD
LOCAL GOVT: PARRAMATTA

DRAWING TITLE:
**DETAIL &
CONTOUR
SURVEY**

PLAN No.
16147-T16
ISSUE:
SHEET: 1
OF: 1



FOR DEVELOPMENT APPLICATION

LANDSCAPE ARCHITECT

GROUND iNK

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WWW.GROUNDINK.COM.AU ABN 55 163 025 456 ACN 163 025 456
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NEUTRAL BAY, NSW 2089
PH. (02) 8021 7667
https://winim.com.au/

ENGINEER

NORTHROP

LEVEL 11, 345 GEORGE STREET
SYDNEY, NSW 2000
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https://northrop.com.au/

NOTE

VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK. REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DRAWINGS. ALL WORK IS TO CONFORM TO RELEVANT AUSTRALIAN STANDARDS AND OTHER CODES AS APPLICABLE. LOCATION OF UNDERGROUND SERVICES TO BE PROVEN ON SITE AND PROTECTED IF NECESSARY PRIOR TO CONSTRUCTION. DIAL BEFORE YOU DIG. PLANT SPECIES AND QUANTITIES SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CHANGE BASED ON FUTURE PROJECT REQUIREMENTS.

ISSUE	DATE	DESCRIPTION	DRAWN	CHECKED
A	20-Feb-20	FOR DEVELOPMENT APPLICATION	MC	RL

DRAWING TITLE

GENERAL ARRANGEMENT PLAN

DATE	JOB NUMBER	DRAWN	CHECKED	DRAWING NUMBER
20-Feb-20	20190722	MC	RL	LA-102
PROJECT				
WESTMEAD CATHOLIC COMMUNITY				
WESTMEAD, NSW 2145				
SCALE				
1:500 / A1				
0	5	10	15	20M
NORTH				REV
A				A



LEGEND

T214

EXISTING TREE TO BE RETAINED

T160

EXISTING TREE TO BE REMOVED

EXISTING TREE SCHEDULE			
ID	DESCRIPTION	EXISTING HEIGHT	PROPOSED ACTION
158	MELALEUCA BRACTEATA (BLACK TEA TREE)	9m	REMOVE
159	MELALEUCA BRACTEATA (BLACK TEA TREE)	9m	REMOVE
160	MELALEUCA BRACTEATA (BLACK TEA TREE)	9m	REMOVE
161	CALLISTEMON VIMINALIS (WEEPING BOTTLEBRUSH)	4m	REMOVE
162	QUERCUS PALUSTRIS (PIN OAK)	9m	REMOVE
163	QUERCUS PALUSTRIS (PIN OAK)	2m	REMOVE
164	QUERCUS PALUSTRIS (PIN OAK)	9m	REMOVE
165	QUERCUS PALUSTRIS (PIN OAK)	11m	REMOVE
166	QUERCUS PALUSTRIS (PIN OAK)	11m	REMOVE
167	QUERCUS PALUSTRIS (PIN OAK)	9m	REMOVE
193	CASUARINA GLAUCA (SWAMP SHE OAK)	10m	REMOVE
194	CORYMBIA MACULATA (SPOTTED GUM)	15m	REMOVE
195	CORYMBIA MACULATA (SPOTTED GUM)	9m	REMOVE
196	CASUARINA CUNNINGHAMIANA (RIVER SHE OAK)	10m	REMOVE
197	CORYMBIA MACULATA (SPOTTED GUM)	8m	REMOVE
198	CORYMBIA MACULATA (SPOTTED GUM)	15m	REMOVE
199	JACARANDA MIMOSIFOLIA (JACARANDA)	6m	REMOVE
200	CORYMBIA MACULATA (SPOTTED GUM)	15m	REMOVE
201	CORYMBIA MACULATA (SPOTTED GUM)	15m	REMOVE
202	EUCALYPTUS MICROCORYS (TALLOWWOOD)	15m	REMOVE
203	EUCALYPTUS MICROCORYS (TALLOWWOOD)	15m	REMOVE
204	EUCALYPTUS MICROCORYS (TALLOWWOOD)	13m	REMOVE
205	EUCALYPTUS MICROCORYS (TALLOWWOOD)	12m	REMOVE
206	EUCALYPTUS MICROCORYS (TALLOWWOOD)	13m	REMOVE
207	EUCALYPTUS MICROCORYS (TALLOWWOOD)	17m	REMOVE
208	EUCALYPTUS MICROCORYS (TALLOWWOOD)	17m	REMOVE
209	EUCALYPTUS MICROCORYS (TALLOWWOOD)	15m	REMOVE
210	EUCALYPTUS SIDEROXYLON (RED IRONBARK)	17m	REMOVE
211	EUCALYPTUS MICROCORYS (TALLOWWOOD)	10m	REMOVE
212	CORYMBIA MACULATA (SPOTTED GUM)	19m	REMOVE
213	EUCALYPTUS MICROCORYS (TALLOWWOOD)	18m	REMOVE
214	CORYMBIA MACULATA (SPOTTED GUM)	18m	RETAIN
215	EUCALYPTUS MICROCORYS (TALLOWWOOD)	16m	RETAIN
216	EUCALYPTUS MICROCORYS (TALLOWWOOD)	15m	RETAIN
* EXISTING TREE HEIGHTS AND SPECIES SOURCED FROM TREE IQ ARBORIST REPORT DATED JAN 2020			

FOR DEVELOPMENT APPLICATION

LANDSCAPE ARCHITECT

GROUND iNK

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WWW.GROUNDINK.COM.AU ABN 55 163 025 456 ACN 163 025 456
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ENGINEER

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ISSUE	DATE	DESCRIPTION	DRAWN	CHECKED
A	20-Feb-20	FOR DEVELOPMENT APPLICATION	MC	RL

DRAWING TITLE

EXISTING TREE PLAN

DATE	JOB NUMBER	DRAWN	CHECKED	DRAWING NUMBER
20-Feb-20	20190722	MC	RL	LA-201
PROJECT				
WESTMEAD CATHOLIC COMMUNITY				
WESTMEAD, NSW 2145				
SCALE				
1:500 / A1				
0	4	8	12	16
0	4	8	12	16
0	4	8	12	16

NORTH

REV

A

Appendix 3: Tree Assessment Schedule

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
1	<i>Erythrina crista-galli</i> (Cocks Spur Coral Tree)	300	5	3	Fair	No access to base. No rating.	Localised crown death. Crown density 50-75%. Partially suppressed. Limited crown clearance. Structures within SRZ.	Mature	<5	Low	Priority for Removal	3.6	2.1	Tree not considered worthy of retention.
2	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	237	10	4	Good	No access to base. No rating.	Crown conflict with adjacent structures. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.8	1.9	Retain. No works within TPZ.
3	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	106	6	3	Good	No access to base. No rating.	Group of 3 trees. Crown density 75-95%. Limited crown clearance. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
4	<i>Archontophoenix cunninghamiana</i> (Bangalow Palm)	225	7	2	Fair	No access to base. No rating.	Crown density 50-75%.	Semi-mature	<5	Low	Priority for Removal	3.0	n/a	Tree not considered worthy of retention.
5	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	246	10	4	Good	Poor	Partially failed co-dominant inclusion, major. Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	<5	Low	Priority for Removal	3.0	1.9	Tree not considered worthy of retention.
6	<i>Jacaranda mimosifolia</i> (Jacaranda)	87	5	2	Good	Fair	Crossing branches. Co-dominant inclusions, minor.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
7	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	200	9	5	Good	Good	Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
8	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	50	6	2	Good	No access to base. No rating.	Limited crown clearance. Structures within SRZ.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
9	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	75	5	2	Good	No access to base. No rating.	Crown density 75-95%. Structures within SRZ. Phototrophic lean, slight.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
10	<i>Quercus palustris</i> (Pin Oak)	600	14	8	Fair	Good	Localised crown death. Artificial turf installed within TPZ. Pruned over driveway Crown density 75-95%. Small (<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes. Wound(s), no visible sign of decay. Limited crown clearance. Structures within SRZ.	Mature	15-40	High	Priority for Retention	7.2	2.8	Retain. No works within TPZ.
11	<i>Quercus palustris</i> (Pin Oak)	575	11	8	Fair	Fair	Localised crown death. Lopped. Crown over building. Crown density 75-95%. Small (<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes. Wound(s), early signs of decay.	Mature	5-15	High	Consider for Retention	6.9	2.7	Retain. No works within TPZ.
12	<i>Quercus palustris</i> (Pin Oak)	500	12	8	Fair	Fair	Crown over building. Crown density 75-95%. Small (<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes. Bark inclusion(s), major. Limited crown clearance. Structures within SRZ.	Mature	5-15	High	Consider for Retention	6.0	2.6	Retain. No works within TPZ.
13	<i>Quercus palustris</i> (Pin Oak)	475	12	8	Fair	No access to base. No rating.	Crown density 75-95%. Wound(s), no visible sign of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	5.7	2.5	Retain. No works within TPZ.
14	<i>Brachychiton rupestris</i> (Bottle Tree)	1000	9	7	Good	Good	Crown density 75-95%. Mechanical damage to exposed surface roots. Wound(s), no visible sign of decay. Structures within SRZ.	Mature	15-40	Low	Consider for Removal	12.0	3.4	Retain. No works within TPZ.
15	<i>Lophostemon confertus</i> (Brush Box)	175	6	3	Fair	Good	Crown density 75-95%. Partially suppressed. Wound(s), early signs of decay.	Young	5-15	Low	Consider for Removal	2.1	1.7	Retain. No works within TPZ.
16	<i>Lophostemon confertus</i> 'Variegata' (Variegated Brush Box)	200	7	5	Fair	Good	Crown density 75-95%.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
17	<i>Liquidamber styraciflua</i> (Liquidambar)	75	5	2	Good	Good	Limited crown clearance. Structures within SRZ.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
18	<i>Lophostemon confertus</i> (Brush Box)	300	7	3	Fair	Fair	Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Wound(s), early signs of decay. Trunk cavity(s), minor.	Semi-mature	5-15	Low	Consider for Removal	3.6	2.1	Retain. No works within TPZ.
19	<i>Fraxinus</i> sp. (Ash)	250	10	5	Good	Good	Medium (25-75mmø) epicormic growth in low volumes. Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	3.0	1.9	Retain. No works within TPZ.
20	<i>Camellia sasanqua</i> (Camellia)	219	7	4	Good	Good	Bark inclusion(s), minor. Limited crown clearance. Structures within SRZ. Phototrophic lean, slight.	Mature	5-15	Low	Consider for Removal	2.6	1.8	Retain. No works within TPZ.
21	<i>Lophostemon confertus</i> (Brush Box)	325	8	4	Fair	Good	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Wound(s), early signs of decay. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	3.9	2.1	Retain. No works within TPZ.
22	<i>Lophostemon confertus</i> (Brush Box)	283	8	4	Poor	Fair	Crown density 25-50%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Co-dominant inclusions, major. Structures within SRZ.	Semi-mature	<5	Low	Priority for Removal	3.4	2.0	Tree not considered worthy of retention.
23	<i>Brachychiton rupestris</i> (Bottle Tree)	1000	9	6	Good	Good	Wound(s), early signs of decay.	Mature	15-40	Moderate	Consider for Retention	12.0	3.4	Retain. No works within TPZ.
24	<i>Jacaranda mimosifolia</i> (Jacaranda)	200	9	4	Fair	Good	Crown density 50-75%. Trunk cavity(s), minor.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.
26	<i>Lophostemon confertus</i> (Brush Box)	175	7	4	Fair	Fair	Crown density 50-75%. Small (<25mmø) deadwood in high volumes. Trunk cavity(s), minor. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.1	1.7	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
27	<i>Phoenix canariensis</i> (Canary Island Date Palm)	600	8	4	Good	Good	Crown conflict with adjacent structures. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	5.0	n/a	Retain. No works within TPZ.
28	<i>Syagrus romanzoffianum</i> (Cocos Palm)	325	12	3	Poor	Good	Crown density 25-50%. Wound(s) with signs of Possible <i>Thielaviopsis</i> fungal infection.	Mature	<5	Low	Priority for Removal	4.0	n/a	Tree not considered worthy of retention.
29	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	90	5	3	Good	No access to base. No rating.		Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
30	<i>Liquidamber styraciflua</i> (Liquidambar)	200	8	4	Good	Good	Wound(s), early signs of decay.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.
31	<i>Flindersia australis</i> (Crow's Ash)	425	14	7	Fair	Good	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Structures within SRZ. Chlorotic foliage.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	Retain. No works within TPZ.
32	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	437	11	7	Good	Fair	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Co-dominant inclusions, major.	Mature	15-40	Moderate	Consider for Retention	5.2	2.4	Retain. No works within TPZ.
33	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	200	6	3	Good	Fair	Group of 3 trees. Crossing branches. Small (<25mmø) epicormic growth in moderate volumes. Co-dominant inclusions, minor. Limited crown clearance. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.
34	<i>Bauhinia variegata</i> (Butterfly Tree)	245	5	6	Fair	Fair	Crown density 75-95%. Trunk cavity(s), minor. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.9	1.9	Retain. No works within TPZ.
35	<i>Cotoneaster</i> sp. (Cotoneaster)	117	4	2	Fair	Fair	Crossing branches. Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) epicormic growth in high volumes. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
36	<i>Lophostemon confertus</i> (Brush Box)	200	11	5	Good	Good		Semi-mature	15-40	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
37	<i>Lophostemon confertus</i> (Brush Box)	200	11	5	Good	Good	Adaptive growth.	Semi-mature	15-40	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
38	<i>Lophostemon confertus</i> (Brush Box)	200	11	5	Good	Good	Adaptive growth.	Semi-mature	15-40	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
39	<i>Lophostemon confertus</i> (Brush Box)	200	11	5	Good	Good	Crown over building.	Semi-mature	15-40	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
40	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	71	6	3	Good	Fair	Limited crown clearance. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
41	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	200	6	3	Good	Fair	Multi-stemmed. Limited crown clearance. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.
42	<i>Ulmus glabra</i> 'Lutensence' (Golden Elm)	103	5	3	Fair	Fair	Crown density 50-75%. Partially suppressed. Co-dominant inclusions, major. Wound(s), early signs of decay.	Mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
43	<i>Ulmus glabra</i> 'Lutensence' (Golden Elm)	103	5	3	Fair	Fair		Mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
44	<i>Ulmus glabra</i> 'Lutensence' (Golden Elm)	103	5	3	Poor	Fair	Localised crown death. Crown density 0-25%.	Mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
45	<i>Ulmus glabra</i> (Elm)	75	4	2	Good	Good	Group of 9 trees. Structures within SRZ.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
46	<i>Platanus xacerifolia</i> (London Plane)	425	14	9	Good	Good	Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	Retain. No works within TPZ.
47	<i>Platanus xacerifolia</i> (London Plane)	300	11	5	Poor	No access to base. No rating.	Defoliation, possibly from fungal pathogen. Crown density 0-25%. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Structures within SRZ.	Mature	<5	Moderate	Priority for Removal	3.6	2.1	Tree not considered worthy of retention.
48	<i>Fraxinus</i> sp. (Ash)	275	5	3	Fair	Good	Crown density 50-75%. Wound(s), early signs of decay.	Semi-mature	5-15	Low	Consider for Removal	3.3	2.0	Retain. No works within TPZ.
49	<i>Fraxinus</i> sp. (Ash)	600	13	7	Good	Good	Wound(s), no visible sign of decay. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	7.2	2.8	Retain. No works within TPZ.
50	<i>Celtis australis</i> (Hackberry)	575	11	6	Good	Poor	Co-dominant inclusions, major. Trunk cavity(s), major. Structures within SRZ. Potential structural defect in main stem. Undertake Internal Dianostic Testing if tree is retained.	Mature	5-15	Moderate	Consider for Retention	6.9	2.7	Retain. No works within TPZ.
51	<i>Platanus xacerifolia</i> (London Plane)	375	11	5	Poor	No access to base. No rating.	Defoliation, possibly from fungal pathogen. Crown density 0-25%. Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Structures within SRZ.	Mature	<5	Moderate	Priority for Removal	4.5	2.3	Tree not considered worthy of retention.
52	<i>Ulmus glabra</i> 'Lutensence' (Golden Elm)	475	11	7	Good	Poor	Crown density 75-95%. Co-dominant inclusions, major. Wound(s), early signs of decay. Trunk cavity(s), major. Limited crown clearance. Structures within SRZ.	Mature	<5	Moderate	Priority for Removal	5.7	2.5	Tree not considered worthy of retention.
53	<i>Syzygium australe</i> (Lillypilly)	275	6	2	Good	Fair	Partially suppressed. Lopped. Co-dominant inclusions, major. Limited crown clearance. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	3.3	2.0	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
54	<i>Syzygium australe</i> (Lillypilly)	247	11	3	Good	Fair	Crown over building. Partially suppressed. Bark inclusion(s), minor. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.0	1.9	Retain. No works within TPZ.
55	<i>Syzygium australe</i> (Lillypilly)	247	11	3	Good	Fair	Crown over building. Partially suppressed. Bark inclusion(s), minor. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.0	1.9	Retain. No works within TPZ.
56	<i>Ulmus glabra</i> 'Lutensence' (Golden Elm)	374	10	7	Good	Fair	Co-dominant inclusions, major. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
57	<i>Eucalyptus robusta</i> (Swamp Mahogany)	300	10	5	Fair	Good	Crown density 75-95%. Medium (25-75mmØ) deadwood in low volumes. Limited crown clearance. Structures within SRZ.	Semi-mature	15-40	Moderate	Consider for Retention	3.6	2.1	Retain. No works within TPZ.
58	<i>Melaleuca bracteata</i> (Black Tea Tree)	389	8	4	Fair	Poor	Crown density 75-95%. Small (<25mmØ) epicormic growth in moderate volumes. Co-dominant inclusions, major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ.	Mature	<5	Low	Priority for Removal	4.7	2.3	Tree not considered worthy of retention.
59	<i>Ceratopetalum gummiferum</i> (NSW Christmas Bush)	103	6	4	Good	Good	Crown density 75-95%. Trunk cavity(s), major.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
60	<i>Casuarina cunninghamiana</i> (River She Oak)	800	14	8	Good	Good	Crown over building. Wound(s), no visible sign of decay.	Mature	15-40	High	Priority for Retention	9.6	3.1	Retain. No works within TPZ.
61	<i>Melaleuca bracteata</i> (Black Tea Tree)	300	8	4	Fair	Poor	Crown density 75-95%. Small (<25mmØ) epicormic growth in moderate volumes. Co-dominant inclusions, major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ.	Mature	<5	Low	Priority for Removal	4.7	2.3	Tree not considered worthy of retention.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
62	<i>Casuarina cunninghamiana</i> (River She Oak)	900	11	6	Good	Fair	Medium (25-75mmø) deadwood in low volumes. Co-dominant inclusions, major.	Mature	15-40	Moderate	Consider for Retention	10.8	3.3	Retain. No works within TPZ.
63	<i>Casuarina cunninghamiana</i> (River She Oak)	500	10	6	Good	Good	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed.	Mature	15-40	Moderate	Consider for Retention	6.0	2.6	Retain. No works within TPZ.
64	<i>Casuarina cunninghamiana</i> (River She Oak)	300	12	5	Good	Good	Phototrophic lean, slight.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1	Retain. No works within TPZ.
65	<i>Casuarina cunninghamiana</i> (River She Oak)	150	8	2	Good	Good	Partially suppressed.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.6	Retain. No works within TPZ.
66	<i>Casuarina cunninghamiana</i> (River She Oak)	400	14	7	Good	Good	Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3	Retain. No works within TPZ.
68	<i>Lophostemon confertus</i> (Brush Box)	224	9	4	Fair	Fair	Crown density 75-95%. Partially suppressed. Co-dominant inclusions, minor. Wound(s), no visible sign of decay.	Semi-mature	5-15	Low	Consider for Removal	2.7	1.8	Retain. No works within TPZ.
69	<i>Lophostemon confertus</i> (Brush Box)	90	7	3	Good	Fair	Wound(s), early signs of decay. Trunk cavity(s), major.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
70	<i>Lophostemon confertus</i> (Brush Box)	283	6	3	Good	Fair	Crossing branches. Heavily suppressed. Co-dominant inclusions, major.	Semi-mature	<5	Low	Priority for Removal	3.4	2.0	Tree not considered worthy of retention.
71	<i>Cotoneaster</i> sp. (Cotoneaster)	90	7	3	Good	Fair	Group of 2 trees. Limited crown clearance. Structures within SRZ.	Mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
72	<i>Platanus xacerifolia</i> (London Plane)	375	11	6	Good	Fair	Trunk cavity(s), major. Structures within SRZ. Borer.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
73	<i>Platanus xacerifolia</i> (London Plane)	375	11	6	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
74	<i>Platanus xacerifolia</i> (London Plane)	375	11	6	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
75	<i>Platanus xacerifolia</i> (London Plane)	495	12	7	Good	Fair	Crown over building. Wound(s), early signs of decay. Trunk cavity(s), major.	Mature	15-40	Moderate	Consider for Retention	5.9	2.6	Retain. No works within TPZ.
76	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	275	9	4	Good	Good	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Wound(s), no visible sign of decay. Structures within SRZ.	Semi-mature	5-15	Moderate	Consider for Retention	3.3	2.0	Retain. No works within TPZ.
77	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	275	7	4	Good	Good	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0	Retain. No works within TPZ.
78	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	325	11	5	Good	Good	Crown over building. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.9	2.1	Retain. No works within TPZ.
79	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	325	10	5	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.9	2.1	Retain. No works within TPZ.
80	<i>Pyrus calleryana</i> 'Chanticleer' (Callery Pear)	361	12	6	Good	Fair	Co-dominant inclusions, major. Bark inclusion(s), major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ. Acute branch attachment angles.	Mature	5-15	Moderate	Consider for Retention	4.3	2.2	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
81	<i>Pyrus calleryana</i> 'Chanticleer' (Callery Pear)	361	12	6	Good	Fair	Co-dominant inclusions, major. Bark inclusion(s), major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ. Acute branch attachment angles.	Mature	5-15	Moderate	Consider for Retention	4.3	2.2	Retain. No works within TPZ.
82	<i>Pyrus calleryana</i> 'Chanticleer' (Callery Pear)	200	8	3	Fair	Fair	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	2.4	1.8	Retain. No works within TPZ.
83	<i>Casuarina glauca</i> (Swamp She Oak)	600	14	6	Good	Good	Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	7.2	2.8	Retain. No works within TPZ.
84	<i>Pinus radiata</i> (Monterey Pine)	375	14	6	Good	Good	Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
85	<i>Pinus radiata</i> (Monterey Pine)	375	14	6	Fair	Good	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
86	<i>Cinnamomum camphora</i> (Camphor Laurel)	1225	13	7	Fair	Good	Localised crown death. Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø), medium (25-75mmø) & large (>75mmø) epicormic growth in moderate volumes. Structures within SRZ.	Late Mature	5-15	Moderate	Consider for Retention	14.7	3.8	Retain. No works within TPZ.
89	<i>Eucalyptus crebra</i> (Narrow Leaf Ironbark)	325	11	5	Good	Good	Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1	Retain. No works within TPZ.
90	<i>Eucalyptus crebra</i> (Narrow Leaf Ironbark)	283	12	5	Good	Fair	Crown density 75-95%. Co-dominant inclusions, major. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.4	2.0	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
92	<i>Gordonia axillaris</i> (Gordonia)	175	4	3	Poor	No access to base. No rating.	Localised crown death. Crown density 25-50%. Limited crown clearance. Structures within SRZ.	Late Mature	<5	Low	Priority for Removal	2.1	1.7	Tree not considered worthy of retention.
93	<i>Prunus</i> sp. (Cherry)	300	11	4	Good	No access to base. No rating.	Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1	Retain. No works within TPZ.
94	<i>Albizia julibrissin</i> (Silk Tree)	250	6	6	Good	No access to base. No rating.	Wound(s), early signs of decay. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	3.0	1.9	Retain. No works within TPZ.
95	<i>Ulmus procera</i> (Green English Elm)	300	11	4	Poor	Fair	Crown density 0-25%. Medium (25-75mmØ) & large (>75mmØ) deadwood in moderate volumes. Mechanical damage to exposed surface roots. Limited crown clearance. Structures within SRZ.	Late Mature	<5	Moderate	Priority for Removal	3.6	2.1	Tree not considered worthy of retention.
96	<i>Platanus xacerifolia</i> (London Plane)	600	15	9	Good	Good	Crown over building. Crown density 75-95%. Mechanical damage to exposed surface roots. Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	7.2	2.8	Retain. No works within TPZ.
97	<i>Ficus microcarpa</i> 'Hilli' (Hills Weeping Fig)	300	9	4	Fair	Good	Group of 5 trees. Co-dominant inclusions, minor. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1	Retain. No works within TPZ.
98	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	250	9	4	Good	Fair	Small (<25mmØ) epicormic growth in low volumes. Co-dominant inclusions, minor. Trunk cavity(s), minor.	Mature	5-15	Low	Consider for Removal	3.0	1.9	Retain. No works within TPZ.
99	<i>Spathodea campanulata</i> (African Tulip Tree)	275	9	4	Fair	No access to base. No rating.	Localised crown death. Crown density 50-75%. Small (<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Mature	5-15	Low	Consider for Removal	3.3	2.0	Retain. No works within TPZ.
100	<i>Eucalyptus punctata</i> (Grey Gum)	225	7	4	Good	Good	Wound(s), no visible sign of decay.	Semi-mature	15-40	Moderate	Consider for Retention	2.7	1.8	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
101	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	75	4	2	Fair	Fair	Group of 4 trees. Co-dominant inclusions, major. Limited crown clearance. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
103	<i>Syagrus romanzoffianum</i> (Cocos Palm)	300	7	4	Fair	No access to base. No rating.		Mature	<5	Low	Priority for Removal	5.0	n/a	Tree not considered worthy of retention.
104	<i>Eucalyptus nicholii</i> (Narrow Leaf Peppermint)	475	11	5	Poor	Fair	Crown density 25-50%. Wound(s) with fungal brackets. Structures within SRZ.	Late Mature	<5	Moderate	Priority for Removal	5.7	2.5	Tree not considered worthy of retention.
105	<i>Syagrus romanzoffianum</i> (Cocos Palm)	300	7	4	Fair	No access to base. No rating.		Mature	<5	Low	Priority for Removal	5.0	n/a	Tree not considered worthy of retention.
106	<i>Syagrus romanzoffianum</i> (Cocos Palm)	300	7	4	Fair	No access to base. No rating.		Mature	<5	Low	Priority for Removal	5.0	n/a	Tree not considered worthy of retention.
107	<i>Syagrus romanzoffianum</i> (Cocos Palm)	300	7	4	Fair	No access to base. No rating.		Mature	<5	Low	Priority for Removal	5.0	n/a	Tree not considered worthy of retention.
110	<i>Livistonia australis</i> (Cabbage Tree Palm)	300	7	2	Poor	Fair	Crown density 0-25%.	Senescent	<5	Low	Priority for Removal	3.0	n/a	Tree not considered worthy of retention.
111	<i>Casuarina cunninghamiana</i> (River She Oak)	375	11	5	Good	Poor	Crown density 75-95%. Co-dominant inclusions, major. Trunk cavity(s), major. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	4.5	2.3	Retain. No works within TPZ.
112	<i>Casuarina cunninghamiana</i> (River She Oak)	400	12	5	Good	Fair	Co-dominant inclusions, major. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.8	2.3	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
113	<i>Casuarina cunninghamiana</i> (River She Oak)	575	12	5	Good	Poor	Co-dominant inclusions, major. Structures within SRZ. Adaptive growth.	Mature	5-15	Moderate	Consider for Retention	6.9	2.7	Retain. No works within TPZ.
114	<i>Casuarina cunninghamiana</i> (River She Oak)	400	12	5	Good	Good	Wound(s), no visible sign of decay. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.8	2.3	Retain. No works within TPZ.
115	<i>Eucalyptus microcorys</i> (Tallowwood)	525	18	9	Good	Good	Crown density 75-95%. Previously crown lifted. Co-dominant inclusions, minor. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	6.3	2.6	Retain. No works within TPZ.
116	<i>Eucalyptus microcorys</i> (Tallowwood)	525	18	9	Good	Good	Crown density 75-95%. Previously crown lifted. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	6.3	2.6	Retain. No works within TPZ.
117	<i>Pinus</i> sp. (Pine Tree)	100	7	2	Good	Good	Structures in SRZ. Lone Pine?	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
118	<i>Glochidion ferdinandi</i> (Cheese Tree)	225	7	3	Fair	Fair	Crown density 50-75%. Co-dominant inclusions, minor. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.7	1.8	Retain. No works within TPZ.
119	<i>Eucalyptus microcorys</i> (Tallowwood)	250	14	5	Good	Good	Structures within SRZ.	Semi-mature	15-40	Moderate	Consider for Retention	3.0	1.9	Retain. No works within TPZ.
120	<i>Jacaranda mimosifolia</i> (Jacaranda)	90	5	3	Fair	Good	Crown density 50-75%.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
121	<i>Lagerstroemia indica</i> (Crepe Myrtle)	75	7	4	Good	Good	Wound(s), no visible sign of decay. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
122	<i>Cupaniopsis anacardiodes</i> (Tuckeroo)	75	6	3	Good	Good	Structures within SRZ. Chlorotic foliage.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
123	<i>Cupaniopsis anacardiodes</i> (Tuckeroo)	75	5	3	Good	Good	Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
124	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	6	3	Good	Good	Recent excavations in SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
125	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	7	3	Good	Good	Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
126	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	7	3	Good	Good	Co-dominant inclusions, minor. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
127	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	266	11	6	Good	Good	Crown over building. Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	3.2	2.0	Retain. No works within TPZ.
128	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	230	10	6	Good	Good	Crown over building. Limited crown clearance. Structures within SRZ. Partially suppressed.	Mature	15-40	Moderate	Consider for Retention	2.8	1.9	Retain. No works within TPZ.
129	<i>Ulmus parvifolia</i> (Chinese Weeping Elm)	225	11	6	Good	Good	Crown over building. Limited crown clearance. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	2.7	1.8	Retain. No works within TPZ.
130	<i>Stenocarpus sinuatus</i> (Firewheel Tree)	71	6	2	Good	No access to base. No rating.	Structures within SRZ.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
131	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	6	3	Good	Good	Structures in SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
132	<i>Cupaniopsis anacardioides</i> (Tuckeroo)	75	6	3	Good	Good	Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
133	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	7	3	Good	Good	Structures in SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
134	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	7	3	Good	Good	Structures in SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
135	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	125	7	3	Good	Good	Structures in SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
136	<i>Stenocarpus sinuatus</i> (Firewheel Tree)	50	4	2	Good	Good	Group of 7 trees.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
137	<i>Pyrus nivalis</i> (Snow Pear)	75	7	3	Good	Good	Group of 5 trees. Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
138	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	175	11	4	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	2.1	1.7	Retain. No works within TPZ.
139	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Good	Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
140	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	175	11	4	Good	Good	Localised crown death. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	2.1	1.7	Retain. No works within TPZ.
141	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Poor	Trunk cavity(s), major. Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
142	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Good	Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
143	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Good	Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
144	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Good	Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
145	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	7	2	Fair	Good	Wound(s), advanced stages of decay. Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
146	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	175	11	4	Good	Good	Trunk cavity(s), minor. Structures within SRZ	Mature	5-15	Moderate	Consider for Retention	2.1	1.7	Retain. No works within TPZ.
147	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	75	6	2	Fair	Good	Localised crown death. Crown density 25-50%. Small(<25mmØ) & medium (25-75mmØ) deadwood in moderate volumes.	Semi-mature	<5	Low	Priority for Removal	2.0	1.5	Tree not considered worthy of retention.
148	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	125	6	4	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	2.0	1.5	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
149	<i>Casuarina cunninghamiana</i> (River She Oak)	375	12	6	Good	Good	Previously crown lifted. Wound(s), no visible sign of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Retain. No works within TPZ.
150	<i>Casuarina cunninghamiana</i> (River She Oak)	275	6	5	Good	Fair	Lopped. Limited crown clearance. Structures within SRZ.	Mature	5-15	Low	Consider for Removal	3.3	2.0	Retain. No works within TPZ.
158	<i>Melaleuca bracteata</i> (Black Tea Tree)	300	9	4	Good	Good	Structures within SRZ.	Mature	5-15	Low	Consider for Removal	3.6	2.1	Remove. Landscape treatment.
159	<i>Melaleuca bracteata</i> (Black Tea Tree)	300	9	4	Good	Good	Structures within SRZ.	Mature	5-15	Low	Consider for Removal	3.6	2.1	Remove. Landscape treatment.
160	<i>Melaleuca bracteata</i> (Black Tea Tree)	225	9	4	Good	Good	Structures within SRZ.	Mature	5-15	Low	Consider for Removal	2.7	1.8	Remove. Landscape treatment.
161	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	103	4	2	Fair	Fair	Co-dominant inclusions, major. Wound(s), advanced stages of decay.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Remove. Landscape treatment.
162	<i>Quercus palustris</i> (Pin Oak)	100	9	4	Good	Good	Previously crown lifted. Structures within SRZ.	Semi-mature	15-40	Moderate	Consider for Retention	2.0	1.5	Remove. Pavement re-grading
163	<i>Quercus palustris</i> (Pin Oak)	50	2	1	Good	Good	Structures within SRZ.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Remove. Pavement re-grading
164	<i>Quercus palustris</i> (Pin Oak)	100	9	4	Good	Good	Previously crown lifted. Structures within SRZ.	Semi-mature	15-40	Moderate	Consider for Retention	2.0	1.5	Remove. Pavement re-grading

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments				Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
165	<i>Quercus palustris</i> (Pin Oak)	200	11	4	Good	Good	Previously within SRZ.	crown	lifted.	Structures	Semi-mature	15-40	Moderate	Consider for Retention	2.4	1.8	Remove. Pavement re-grading
166	<i>Quercus palustris</i> (Pin Oak)	175	11	4	Good	Good	Previously within SRZ.	crown	lifted.	Structures	Semi-mature	15-40	Moderate	Consider for Retention	2.1	1.7	Remove. Pavement re-grading
167	<i>Quercus palustris</i> (Pin Oak)	100	9	4	Good	Good	Previously within SRZ.	crown	lifted.	Structures	Semi-mature	15-40	Moderate	Consider for Retention	2.0	1.5	Remove. Pavement re-grading
168	<i>Quercus palustris</i> (Pin Oak)	100	9	4	Good	Good	Previously within SRZ.	crown	lifted.	Structures	Semi-mature	15-40	Moderate	Consider for Retention	2.0	1.5	Retain. No works within TPZ.
169	<i>Magnolia grandiflora</i> (Bull Bay Magnolia)	75	5	2	Good	Good	Limited within SRZ.	crown	clearance.	Structures	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
170	<i>Magnolia grandiflora</i> (Bull Bay Magnolia)	75	5	2	Good	Good	Limited within SRZ.	crown	clearance.	Structures	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
171	<i>Magnolia grandiflora</i> (Bull Bay Magnolia)	75	5	2	Good	Good	Limited within SRZ.	crown	clearance.	Structures	Semi-mature	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
172	<i>Grevillea baileyana</i> (White Oak)	87	5	2	Good	Good					Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
173	<i>Corymbia citriodora</i> (Lemon Scented Gum)	309	15	7	Fair	Fair	Crown density 75-95%. Co-dominant inclusions, major. Structures within SRZ.				Semi-mature	5-15	Moderate	Consider for Retention	3.7	2.1	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
174	<i>Corymbia citriodora</i> (Lemon Scented Gum)	425	14	8	Fair	Good	Seam of depressed cambium. Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	Retain. No works within TPZ.
175	<i>Corymbia citriodora</i> (Lemon Scented Gum)	75	8	3	Good	Good	Group of more than 10 young trees. Partially suppressed.	Young	5-15	Low	Consider for Removal	2.0	1.5	Retain. No works within TPZ.
176	<i>Eucalyptus punctata</i> (Grey Gum)	500	15	8	Good	No access to base. No rating.	Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Structures within SRZ.	Mature	15-40	Moderate	Consider for Retention	6.0	2.6	Retain. No works within TPZ.
177	<i>Corymbia citriodora</i> (Lemon Scented Gum)	309	14	7	Fair	Fair	Crown density 75-95%. Co-dominant inclusions, major. Structures within SRZ.	Semi-mature	5-15	Moderate	Consider for Retention	3.7	2.1	Retain. No works within TPZ.
178	<i>Corymbia citriodora</i> (Lemon Scented Gum)	309	14	7	Fair	Good	Crown density 75-95%. Co-dominant inclusions, major. Structures within SRZ.	Semi-mature	5-15	Moderate	Consider for Retention	3.7	2.1	Retain. No works within TPZ.
179	<i>Eucalyptus microcorys</i> (Tallowwood)	550	17	6	Poor	Good	Crown density 25-50%. Small (<25mmø) & large (>75mmø) deadwood in moderate volumes. Structures within SRZ. Storm damage.	Mature	5-15	Moderate	Consider for Retention	6.6	2.7	Retain. No works within TPZ.
180	<i>Ligustrum lucidum</i> (Broad Leaf Privet)	350	7	3	Fair	Fair	Group of 2 trees. Crown density 50-75%.	Mature	<5	Low	Priority for Removal	4.2	2.2	Tree not considered worthy of retention.
181	<i>Syagrus romanzoffianum</i> (Cocos Palm)	300	8	4	Fair	No access to base. No rating.		Mature	<5	Low	Priority for Removal	5.0	n/a	Tree not considered worthy of retention.
182	<i>Lophostemon confertus</i> (Brush Box)	200	8	5	Fair	No access to base. No rating.	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
186	<i>Pyrus calleryana</i> 'Chanticleer' (Callery Pear)	361	12	6	Good	Fair	Co-dominant inclusions, major. Bark inclusion(s), major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ. Acute branch attachment angles.	Mature	5-15	Moderate	Consider for Retention	4.3	2.2	Retain. No works within TPZ.
187	<i>Pyrus calleryana</i> 'Chanticleer' (Callery Pear)	361	12	6	Good	Fair	Co-dominant inclusions, major. Bark inclusion(s), major. Wound(s), early signs of decay. Trunk cavity(s), minor. Limited crown clearance. Structures within SRZ. Acute branch attachment angles.	Mature	5-15	Moderate	Consider for Retention	4.3	2.2	Retain. No works within TPZ.
188	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	325	10	5	Good	Good	Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.9	2.1	Retain. No works within TPZ.
189	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	325	11	5	Good	Good	Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.9	2.1	Retain. No works within TPZ.
190	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	275	7	4	Good	Good	Small (<25mmØ) & medium (25-75mmØ) deadwood in low volumes. Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0	Retain. No works within TPZ.
191	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	275	7	4	Good	Good	Small (<25mmØ) & medium (25-75mmØ) deadwood in low volumes. Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0	Retain. No works within TPZ.
192	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	275	7	4	Good	Good	Small (<25mmØ) & medium (25-75mmØ) deadwood in low volumes. Wound(s), early signs of decay. Limited crown clearance. Structures within SRZ.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0	Retain. No works within TPZ.
193	<i>Casuarina glauca</i> (Swamp She Oak)	225	10	3	Fair	Good	Crown density 25-50%.	Mature	5-15	Low	Consider for Removal	2.7	1.8	Remove. Embankment re-grading
194	<i>Corymbia maculata</i> (Spotted Gum)	425	15	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	Remove. Embankment re-grading

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
195	<i>Corymbia maculata</i> (Spotted Gum)	200	9	3	Poor	Fair	Crown density 0-25%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes.	Semi-mature	5-15	Low	Consider for Removal	2.4	1.8	Remove. Embankment re-grading
196	<i>Casuarina cunninghamiana</i> (River She Oak)	275	10	3	Good	Good	Self-sown. Base of trunk displacing retaining wall. Co-dominant inclusions, minor.	Mature	<5	Low	Priority for Removal	3.3	2.0	Remove. Embankment re-grading
197	<i>Corymbia maculata</i> (Spotted Gum)	150	8	2	Poor	Good	Crown consists mainly of epicormic growth. Partially suppressed.	Semi-mature	5-15	Low	Consider for Removal	2.0	1.6	Remove. Embankment re-grading
198	<i>Corymbia maculata</i> (Spotted Gum)	350	15	5	Good	Good	Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3	Remove. Embankment re-grading
199	<i>Jacaranda mimosifolia</i> (Jacaranda)	150	6	4	Good	Good	Partially suppressed. Phototrophic lean, moderate.	Mature	5-15	Low	Consider for Removal	2.5	1.8	Remove. Embankment re-grading
200	<i>Corymbia maculata</i> (Spotted Gum)	500	15	5	Good	Good	Small (<25mmø) deadwood in low volumes. Adaptive growth.	Mature	15-40	Moderate	Consider for Retention	6.0	2.6	Remove. Embankment re-grading
201	<i>Corymbia maculata</i> (Spotted Gum)	350	15	4	Good	Good	Adaptive growth.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2	Remove. Embankment re-grading
202	<i>Eucalyptus microcorys</i> (Tallowwood)	400	15	5	Good	Good	Small (<25mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3	Remove. Embankment re-grading
203	<i>Eucalyptus microcorys</i> (Tallowwood)	425	15	5	Good	Good	Small (<25mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	Remove. Embankment re-grading

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
204	<i>Eucalyptus microcorys</i> (Tallowwood)	375	13	5	Good	Good	Crown density 75-95%. Small (<25mmØ) deadwood in low volumes. Small (<25mmØ) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3	Remove. Embankment re-grading
205	<i>Eucalyptus microcorys</i> (Tallowwood)	400	12	5	Good	Good	Crown density 75-95%. Small (<25mmØ) deadwood in low volumes. Small (<25mmØ) epicormic growth in low volumes. Previous branch failure(s).	Mature	15-40	Moderate	Consider for Retention	4.8	2.3	Remove. Footpath and stairs footprint.
206	<i>Eucalyptus microcorys</i> (Tallowwood)	300	13	4	Good	Good	Crown density 75-95%. Small (<25mmØ) deadwood in low volumes. Small (<25mmØ) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1	Remove. Major Encroachment. Ramp and re-grading.
207	<i>Eucalyptus microcorys</i> (Tallowwood)	325	17	5	Fair	Good	Crown density 50-75%. Small (<25mmØ) deadwood in moderate volumes. Small (<25mmØ) epicormic growth in moderate volumes.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1	Remove. Ramp footprint.
208	<i>Eucalyptus microcorys</i> (Tallowwood)	375	17	6	Fair	Fair	Crown density 50-75%. Small (<25mmØ) deadwood in moderate volumes. Small (<25mmØ) epicormic growth in low volumes. Co-dominant inclusions, minor.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3	Remove. Major Encroachment. Ramp and re-grading.
209	<i>Eucalyptus microcorys</i> (Tallowwood)	400	15	6	Good	Fair	Small (<25mmØ) deadwood in low volumes. Small (<25mmØ) epicormic growth in low volumes. Bark inclusion(s), major.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3	Remove. Landscape treatment.
210	<i>Eucalyptus sideroxylon</i> (Red Ironbark)	575	17	8	Fair	Good	Crown density 75-95%. Small (<25mmØ) & medium (25-75mmØ) deadwood in low volumes. Small (<25mmØ) & medium (25-75mmØ) epicormic growth in low volumes. Wound(s), various stages of decay. Previous branch failure(s). Adaptive growth.	Mature	15-40	Moderate	Consider for Retention	6.9	2.7	Remove. Landscape treatment.
211	<i>Eucalyptus microcorys</i> (Tallowwood)	350	10	4	Good	Fair	Small (<25mmØ) deadwood in low volumes. Small (<25mmØ) epicormic growth in low volumes. Partially suppressed. Bark inclusion(s), major.	Mature	15-40	Moderate	Consider for Retention	4.7	2.3	Remove. Landscape treatment.
212	<i>Corymbia maculata</i> (Spotted Gum)	400	19	9	Good	Fair	Partially failed branch. Termites.	Mature	15-40	Moderate	Consider for Retention	6.6	2.7	Remove. Landscape treatment.

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Condition Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
213	<i>Eucalyptus microcorys</i> (Tallowwood)	450	18	5	Good	Good	Small (<25mmø) deadwood in low volumes. Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	5.4	2.5	Remove. Landscape treatment.
214	<i>Corymbia maculata</i> (Spotted Gum)	450	18	7	Good	Fair	Small (<25mmø) & large (>75mmø) deadwood in low volumes. Termites.	Mature	15-40	Moderate	Consider for Retention	5.4	2.5	Retain. No works within TPZ.
215	<i>Eucalyptus microcorys</i> (Tallowwood)	450	16	6	Good	Good	Small (<25mmø) & large (>75mmø) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	5.4	2.5	Retain. Minor encroachment, ramp.
216	<i>Eucalyptus microcorys</i> (Tallowwood)	475	15	6	Good	Good	Small (<25mmø) & large (>75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	5.7	2.5	Retain. No works within TPZ.
217	<i>Corymbia maculata</i> (Spotted Gum)	200	16	3	Good	Good	Limited clearance from retaining wall.	Mature	15-40	Moderate	Consider for Retention	3.4	2.0	Retain. No works within TPZ.
218	<i>Corymbia maculata</i> (Spotted Gum)	200	12	3	Good	Good	Limited clearance from retaining wall.	Mature	15-40	Low	Consider for Removal	2.4	1.8	Retain. No works within TPZ.

Appendix 4: Plates



Appendix 5: Tree Protection Specification

1.0 Appointment of Project Arborist

A Project Arborist shall be engaged prior the commencement of work on-site and monitor compliance with the protection measures. The Project Arborist shall inspect the tree protection measures and Compliance Certification shall be prepared by the Project Arborist for review by the Principal Certifying Authority prior to the release of the Compliance Certificate.

The Project Arborist shall have a minimum qualification equivalent (using the Australian Qualifications Framework) of NSW TAFE Certificate Level 5 or above in Arboriculture.

The site-specific requirement for mulching, irrigation, the location of tree protection fencing and temporary access, and other specific tree protection measures shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.

1.1 Compliance

Contractors and site workers shall receive a copy of these specifications a minimum of 3 working days prior to commencing work on-site. Contractors and site workers undertaking works within the Tree Protection Zone shall sign the site log confirming they have read and understand these specifications, prior to undertaking works on-site.

1.2 Tree Protection Zone

The tree to be retained shall be protected prior and during construction from activities that may result in an adverse effect on their health or structural condition. The area within the Tree Protection Zone (TPZ) shall exclude the following activities, unless otherwise stated:

- Modification of existing soil levels, excavations and trenching
- Mechanical removal of vegetation
- Movement of natural rock
- Storage of materials, plant or equipment or erection of site sheds
- Affixing of signage or hoarding to the trees
- Preparation of building materials, refueling or disposal of waste materials and chemicals
- Lighting fires
- Movement of pedestrian or vehicular traffic
- Temporary or permanent location of services, or the works required for their installation
- Any other activities that may cause damage to the tree

NOTE: If access, encroachment or incursion into the TPZ is deemed essential, prior authorisation is required by the Project Arborist.

1.3 Tree Protection Fencing

TPZ fencing shall be installed at the perimeter of the TPZ. 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 and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist.

As a minimum, the Tree Protection Fence shall consist of 1.8m high wire mesh panels supported by concrete feet. Panels shall be fastened together and supported to prevent sideways movement. The tree shall not be damaged during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (3) (**Appendix 6**).

1.4 Signage

Signs identifying the TPZ should be placed around the edge of the TPZ and be visible from within the development site. The lettering on the sign should comply with *Australian Standard - 1319 (1994) Safety signs for the occupational environment*. The signage shall be installed prior to the commencement of works on-site and shall be maintained in good condition for the duration of the development period.

1.5 Site Management

Materials, waste storage, and temporary services shall not be located within the TPZ.

1.6 Trunk Protection

Trunk protection shall be installed as deemed necessary by the Project Arborist. Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) 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 (3) (**Appendix 6**).

Branch protection shall be installed as deemed necessary by the Project Arborist.

1.7 Ground Protection

Pedestrian, vehicular and machinery access within a TPZ shall be restricted to areas of existing pavement or from areas of temporary ground protection such as ground mats or steel road plates. Refer to Typical Tree Protection Details (3) (**Appendix 6**).

1.8 Scaffolding

Where possible, scaffolding shall not be located within the TPZ. Scaffolding shall not be in contact with the tree. As necessary, this shall be achieved by erecting scaffolding around branches. Branches shall be tied back and protected as deemed necessary by the Project Arborist. Refer to Typical Tree Protection Details (5) (**Appendix 6**).

1.9 Works within the Tree Protection Zones

In some cases works within the TPZ may be authorized by the determining authority. **These works shall be supervised by the Project Arborist.** When undertaking works within the TPZ, care should be taken to avoid damage to the tree's root system, trunks and lower branches.

If roots (>25mmØ) are encountered during the demolition, excavation and construction works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Adjustment of final levels and design shall remain flexible to enable the retention of roots (>25mmØ) where deemed necessary by the Project Arborist.

1.10 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 (refer to Section 1.7). Machinery shall work in conjunction with a spotter to guide the machinery operator and ensure that the ground surface/tree roots beneath the structure/pavement are not disturbed/damaged by demolition works. Machinery should not contact any part of a tree. Wherever possible, footings or elements below grade shall be retained to minimise disturbance to roots.

Small structures to be demolished within a TPZ shall be carefully broken up in small sections using a hand-operated pneumatic/electric breaker and waste material removed by hand/hand tools. Large structures to be demolished within the TPZ shall be undertaken within the footprint of the existing structure ('top down, pull back') and away from the trees.

When removing slab/pavement sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un-demolished sections of slab at all times. Existing sub-base materials within a TPZ shall remain in-situ and (and reused) where possible. If the existing sub-base is to be removed, these works shall be undertaken by hand/hand tools ensuring that tree roots are retained and protected.

If roots (>25mmØ) are encountered during the demolition works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute geotextile fabric. The geotextile fabric shall be kept in a damp condition at all times. Where the Project Arborist determines that the tree is using underground elements (i.e footings, pipes, rocks etc.) for support, these elements shall be left in-situ.

1.11 Underground Services

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using tree sensitive excavation methods (hand/hydrovac/airspade) with the services installed around/below roots (>25mmØ) or as required by the Project Arborist. Excavation using compact machinery (<2t) fitted with a flat bladed bucket is permissible where approved by the Project Arborist. Excavation using compact machinery should be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmØ).

Alternatively, boring methods may be used for underground service installation where the obvert level (highest interior level of pipe) is greater than 1200mm below existing grade. Excavations for starting and receiving pits for boring equipment shall be located outside of the TPZ areas or located to avoid roots (>25mmØ) as deemed necessary by the Project Arborist.

Drilling/piling machinery shall be excluded from the TPZ unless operating from an area where ground protection has been installed (refer to Section 1.7) or from the existing slabs or pavements. Drilling/piling machinery shall be of a suitable size to not damage the trees' roots, trunk, branches and crown. No clearance pruning is permitted to allow for machinery access. Machinery shall work in conjunction with an observer to ensure that adequate clearance from trees is maintained at all times

1.12 Plant/Turf Installation

Plant installation within TPZ areas shall be undertaken using hand tools and roots (>25mmØ) shall be protected. No mechanical cultivation/ripping of soils shall be undertaken within TPZ areas.

Landscape planting shall be completed in the final stage of the development works and tree protection fencing and trunk protection shall remain in place until these works are due to commence.

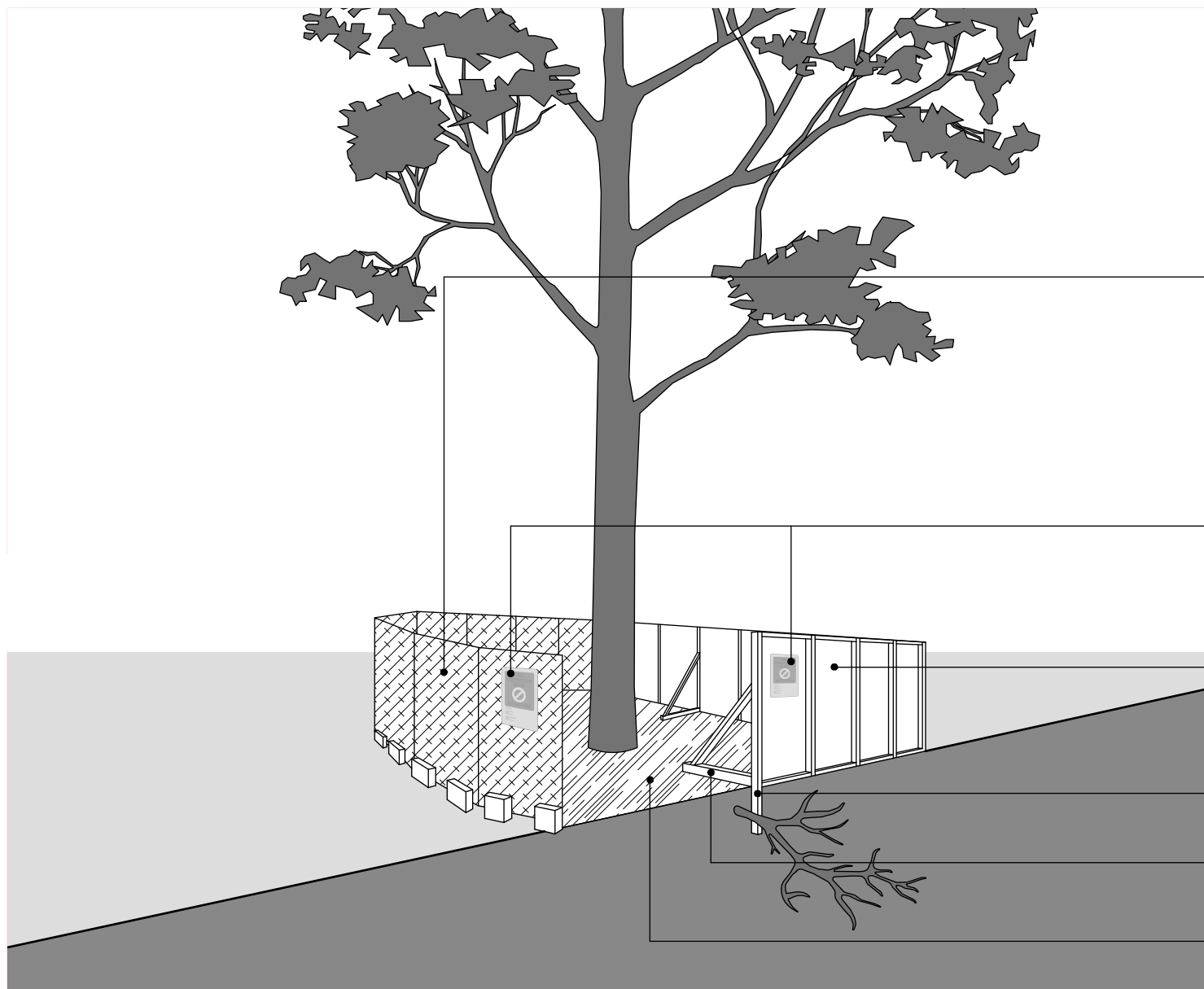
1.13 Excavations, Root Protection & Root Pruning

All excavation works (including root investigations) within TPZ areas shall supervised by the Project Arborist and utilise tree sensitive methods. These methods include hand, airspade or hydrovac excavation. Where approved by the Project Arborist, excavation using compact machinery fitted with a flat bladed bucket is permissible. Unless specified otherwise, excavation using compact machinery (<2t) shall be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmØ).

Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute mat, followed by a layer of plastic membrane. Coverings shall be weighted to secure them in place. The mat shall be kept in a damp condition at all times.

No over-excavation, battering or benching shall be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning shall be undertaken along the excavation line prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots from excavation equipment.

Roots (>25mmØ) shall be pruned by the Project Arborist only. Roots (<25mmØ) may be pruned by the Principal Contractor. Root pruning shall be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears. Damaged roots shall be pruned behind the damaged tissues with the final cut made to an undamaged part of the root.



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.

