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# Arboricultural Impact Assessment Report

## Site location:
2115 Castlereagh Road Penrith NSW

**Prepared for:** Aon Ari Property

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Urban Arbor Pty Ltd
**Date Prepared:** 1 April 2021
**Ref:** 210401-2115 Castlereagh-AIA
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## 1. INTRODUCTION

1.1 Urban Arbor have been instructed by Aon Ari Property to provide an Arboricultural Impact Assessment Report for trees located within the site and adjoining sites in relation to a proposed development.

1.2 Below is a list of all documents and information provided to assist in preparing this report;

A) Plan of Details and Levels, LTS, Reference Number: 51229 001DT, Sheet 1 – 11, Rev: B, 4 March 2021.

B) Landscape Plans, Black Beetle, Including Drawings: LA.CD.01, LA.CD.02, LA.CD.03, LA.CD.04, LA.CD.05, LA.CD.06, LA.CD.07, LA.CD.08, LA.CD.09 and LA.CD.10 Rev: 03, 30 March 2021.

C) Proposed Architectural Plans, SJB Architects, Job No 6348, 8 February 2021, Including Drawings:

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| DA-3031 | HEIGHT OF BUILDINGS | 2 |

1.3 The site and tree inspections were carried out on 9 February 2021. Access was available to the subject site and adjoining public areas only. All tree data contained in this report was collected during this site inspection.

## 2. SCOPE OF THE REPORT

2.1 This report has been undertaken to meet the following objectives.

2.1.1 Conduct a ground level visual assessment of all significant trees located within 10 metres of development works. For the purpose of this report, a significant tree is a tree with a height greater than 3 metres and a trunk diameter exceeding 100 millimetres at 1.4 metres above ground height.

2.1.2 Determine the trees estimated contribution years and remaining useful life expectancy and award the trees a retention value.

2.1.3 Provide an assessment of the potential impact the proposed development is likely to cause to the condition of the subject trees in accordance with AS4970 Protection of trees on development sites (2009).

2.1.4 Specify tree protection measures in accordance with AS4970-2009 for any tree to be retained during the development.

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## 3. LIMITATIONS

3.1 The observations and recommendations are based on the site inspections identified in section 1 only. The findings of this report are based on the observations and site conditions at the time of inspection.

3.2 All of the observations were carried out from ground level. The accuracy of the assessment of the subject trees structural condition and health is limited to the visibility of the tree at the time of inspection.

3.3 The tree inspection was visual from ground level only. No soil or tissue testing was carried out as part of the tree inspection. None of the surrounding surfaces adjacent to trees were lifted or removed during the tree inspections.

3.4 Root decay can sometimes be present with no visual indication above ground. It is also impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation. Any form of tree failure due to these activities is beyond the scope of this assessment.

3.5 While an assessment of the subject trees estimated useful life expectancy is included in this report, no specific tree risk assessment has been undertaken for any of trees at the site.

3.6 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

3.7 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with an *spp*.

3.8 Urban Arbor neither guarantees, nor is it responsible for, the accuracy of information provided by others that is contained within this report.

3.9 All diagrams, plans and photographs included in this report are visual aids only, and are not to scale unless otherwise indicated.

3.10 Alteration of this report invalidates the entire report.

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## 4. METHODOLOGY

4.1 The following information was collected during the assessment of the subject tree(s).

- 4.1.1 Tree common name
- 4.1.2 Tree botanical name
- 4.1.3 Tree age class
- 4.1.4 DBH (Trunk/Stem diameter at breast height/1.4m) - millimetres.
- 4.1.5 DAB (Trunk diameter directly above the root buttress) – millimetres.
- 4.1.6 Estimated height - metres
- 4.1.7 Estimated crown spread (radius of crown) - metres
- 4.1.8 Health
- 4.1.9 Structural condition
- 4.1.10 Amenity value
- 4.1.11 Estimated remaining contribution years (SULE)[1]
- 4.1.12 Retention value (Tree AZ)[2]
- 4.1.13 Notes/comments

4.2 An assessment of the trees condition was made using the visual tree assessment (VTA) model (Mattheck & Breloer, 1994).[3]

4.3 Trunk diameter was measured using a DBH tape or in some cases estimated. The trunk diameter of all trees in adjoining sites has been estimated. Tree height and tree canopy spread was measured with a clinometer or in some cases estimated. All other measurements were estimations unless otherwise stated. The other tool used during the assessment was a digital camera.

4.4 All information was imported into (GIS) PT-mapper pro software. This software was used to measure/calculate all encroachment estimates included in this report.

4.5 All DBH measurements, tree protection zones, and structural root zones were calculated in accordance with methods set out in AS4970 Protection of trees on development sites (2009) in a Microsoft Excel spreadsheet .[4]

4.6 Details of how the observations in this report have been assessed are listed in the appendices.

[1] Barrell, J. (2001), *'SULE: Its use and status in the new millennium' in Management of Mature Trees proceedings of the 4th NAAA Workshop*, Sydney, 2001. Barrell.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

[4] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009).

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## 5. SITE LOCATION AND BRIEF DESCRIPTION

5.1 The site is located in the suburb of Penrith, NSW, which is located in the Penrith Local Government Area (LGA). Therefore, all trees at the site are subject to protection under the Penrith Local Environmental Plan (LEP) 2010[5] and Development Control Plan (DCP) 2014.[6] The site is not located inside a heritage conservation area and does not form part of a heritage item/listed as environmental heritage in the LEP heritage maps.[7]

5.2 Proposed works include a multi staged re-development of the site. Components of the proposed works include earth works, new buildings, car parking areas, roads, hard surfacing and additional structures.

## 6. GENERAL INFORMATION IN RELATION TO PROTECTING TREES ON DEVELOPMENT SITES

6.1 **Tree protection zone (TPZ):** The TPZ is the principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified in AS4970-2009 to be the area where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The TPZ also incorporates the SRZ (see below for more information about the SRZ). The TPZ is calculated by multiplying the DBH by twelve, with the exception of palms, other monocots, cycads and tree ferns, the TPZ of which have been calculated at one metre outside the crown projection. Additional information about the TPZ is included in Appendix 3.

6.2 **Structural Root Zone (SRZ):** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. The SRZ is calculated using the following formula; (DAB x 50) $^{0.42}$ x 0.64. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally, work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ. See the appendices for more information about the SRZ.

[5] *Penrith Local Environmental Plan 2010*, https://www.legislation.nsw.gov.au/view/html/inforce/current/epi-2010-0540, accessed 10 February 2021.

[6] *Penrith Development Control Plan 2014,* https://www.penrithcity.nsw.gov.au/building-development/planning-zoning/planning-controls/development-control-plans, accessed 10 February 2021.

[7] *Penrith LEP Heritage map - Sheet HER_005,* https://www.legislation.nsw.gov.au/view/pdf/map/3b9586b0-68cc-4ced-b709-d3211db2b2c2, accessed 10 February 2021.

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6.3 **Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

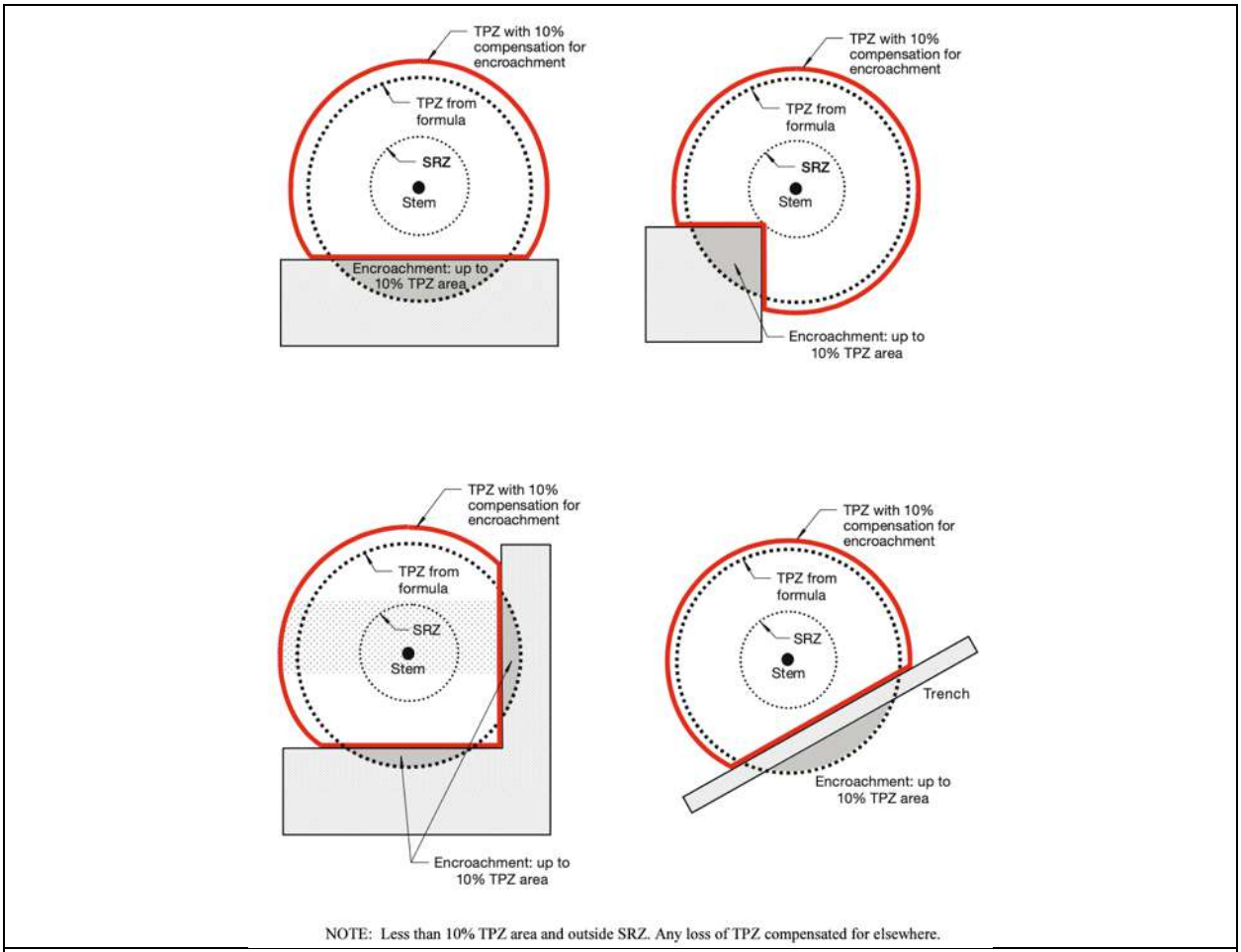


Image 1: Example minor TPZ encroachment from AS4970-2009.

6.4 **Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted. Root investigations may be required to identify roots that will be impacted during major TPZ encroachment (see Appendix 3 for more information in relation to root investigations).

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## 7. OBSERVATIONS

7.1 **Tree information:** Details of each individual tree assessed, including the observations taken during the site inspection, can be found in the tree inspection schedule in Appendix 2, where the indicative tree protection zone (TPZ) and Structural Root Zone (SRZ) has been calculated for each of the subject trees. The TPZ and SRZ should be measured in radius from the centre of the trunk. Each of the subject trees have been awarded a retention value based on the observations using the Tree AZ method. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The Tree AZ categories sheet (Barrell Tree Consultancy) has been included in Appendix 3 to assist with understanding the retention values. The retention value that has been allocated to the subject trees in this report is not definitive and should only be used as a guideline.

7.2 **Site plan:** In Appendix 1 three site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the existing and proposed site plans. The following site plans are included;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan West
- Appendix 1C: Proposed Site Plan East

## 8. ASSESSMENT OF CONSTRUCTION IMPACTS

8.1 Table 1: In the table below, the impact of the proposed development has been assessed for all trees included in the report. The assessed TPZ encroachments include proposed structures and hard landscaping only. Proposed soil level changes have not been identified in the information provided and have therefore not been assessed. All soft landscaping should be completed in accordance with section 11.10.

| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 1 | *Syzygium paniculatum* | A1 | 4.1 | 52.8 | 2.2 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 2 | *Grevillea robusta* | A1 | 5.8 | 105.7 | 2.5 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 3 | *Cupressus arizonica var. glabra* | A1 | 7.4 | 172.0 | 2.7 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 4 | *Unknown species* | ZZ 4 | 6.0 | 113.1 | 2.5 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. The tree is dead. | Remove |
| 5 | *Schinus molle* | A1 | 9.1 | 260.2 | 3.0 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 6 | *Cupressus arizonica var. glabra* | Z10 | 2.0 | 12.6 | 1.7 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 7 | *Callistemon salignus* | A1 | 5.8 | 105.7 | 2.7 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 8 | *Liquidambar styraciflua* | A1 | 4.1 | 52.8 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 9 | *Ligustrum lucidum* | Z3 | 7.2 | 162.9 | 2.7 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. Exempt species. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 10 | *Liquidambar styraciflua* | Z9 | 3.2 | 32.2 | 2.1 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 11 | *Fraxinus spp* | A1 | 3.7 | 43.0 | 1.9 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 12 | *Quercus palustris* | A2 | 8.9 | 248.8 | 3.1 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 13 | *Cedrus deodara* | A1 | 7.0 | 153.9 | 2.8 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 14 | *Quercus palustris* | A1 | 10.3 | 333.3 | 3.2 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 15 | *Corymbia maculata* | Z10 | 4.3 | 58.1 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 16 | *Corymbia maculata* | Z1 | 2.0 | 12.6 | 1.5 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 17 | *Corymbia maculata* | Z10 | 3.1 | 30.2 | 2.0 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 18 | *Corymbia maculata* | Z9 | 2.0 | 12.6 | 1.6 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 19 | *Corymbia maculata* | Z9 | 2.0 | 12.6 | 1.6 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 20 | *Corymbia maculata* | Z10 | 3.0 | 28.3 | 1.9 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 21 | *Eucalyptus tereticornis* | Z10 | 2.2 | 15.2 | 1.7 | Major | The proposed hard surfacing will encroach into the TPZ by 39% ($6m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. | Remove |
| 22 | *Eucalyptus tereticornis* | Z10 | 3.8 | 45.4 | 2.2 | Footprint | The trunk of the tree is located within the footprint of the proposed signage. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 23 | *Jacaranda mimosifolia* | A1 | 4.5 | 63.6 | 2.3 | Major | The proposed hard surfacing will encroach into the TPZ by 12% (7.4$m^2$) but not into the SRZ. This is just 2% over the threshold for minor TPZ encroachment. The tree was displaying good health during the site inspection, indicating the tree has the capacity to tolerate some root disturbance. Therefore, the tree can be retained in a viable condition. | Retain and protect |
| 24 | *Liquidambar styraciflua* | A1 | 4.1 | 52.8 | 2.2 | None | No proposed TPZ encroachment. | Retain and protect |
| 25 | *Liquidambar styraciflua* | ZZ 4 | 4.9 | 75.4 | 2.4 | None | No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its current condition only. | Remove |
| 26 | *Murraya paniculata* | Z1 | 3.6 | 40.7 | 2.0 | Major | Proposed brick edging and decomposed granite surfacing will encroach into the TPZ and SRZ. The proposed works will not significantly impact the tree provided they are installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 27 | *Jacaranda mimosifolia* | A1 | 7.3 | 167.4 | 2.8 | None | No proposed TPZ encroachment. | Retain and protect |
| 28 | *Prunus spp* | A1 | 2.7 | 22.9 | 2.3 | None | No proposed TPZ encroachment. | Retain and protect |
| 29 | *Unknown species* | ZZ 4 | 4.8 | 72.4 | 2.3 | None | The brick edging will encroach into the TPZ and SRZ. The tree is dead and is recommended for removal due to its current condition. | Remove |
| 30 | *Cupressus sempervirens* | A1 | 6.0 | 113.1 | 2.5 | None | No proposed TPZ encroachment. | Retain and protect |
| 31 | *Corymbia citriodora* | A2 | 9.2 | 265.9 | 3.2 | Major | Proposed brick edging will encroach into the TPZ but not into SRZ. The proposed works will not significantly impact the tree provided they are installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 32 | *Cedrus deodara* | A1 | 5.9 | 109.4 | 2.6 | Major | Proposed brick edging will encroach into the TPZ and into SRZ. The proposed works will not significantly impact the tree provided they are installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 33 | *Fraxinus griffithii* | Z1 | 2.0 | 12.6 | 1.5 | None | The tree has not been identified on the received plans. No proposed TPZ encroachment. | Retain and protect |
| 34 | *Cupressus sempervirens* | A1 | 4.0 | 50.3 | 2.1 | Major | The tree has been identified for removal on the received plans. The proposed hard surfacing will encroach into the TPZ by 13% (6.7$m^2$) but not into the SRZ. Brick edging will also encroach into the TPZ. It may be possible to retain the tree through tree sensitive design and construction. The tree is recommended for removal for re-landscaping purposes. | Remove |
| 35 | *Cupressus sempervirens* | A1 | 5.9 | 109.4 | 2.5 | Major | The tree has been identified for removal on the received plans. The proposed hard surfacing will encroach into the TPZ by 136% (17.6$m^2$) but not into the SRZ. Brick edging will also encroach into the TPZ and SRZ. The tree is recommended for removal due to impacts from the proposed development. | Remove |
| 36 | *Cinnamomum camphora* | A1 | 4.9 | 75.4 | 2.3 | Major | The proposed hard surfacing to the South will be located closer to the tree than the existing hard surfacing and will encroach into the TPZ by 3% (2$m^2$) but not into the SRZ. The proposed hard surfacing will not significantly impact the tree. Proposed brick edging will encroach into the TPZ but not into SRZ. The proposed brick edging will not significantly impact the tree provided it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 37 | *Ulmus procera* | A1 | 9.6 | 289.5 | 3.1 | Major | The proposed car park hard surfacing to the East will be located closer to the tree than the existing hard surfacing and will encroach into the TPZ by 19% (54.8$m^2$) but not into the SRZ. Brick edging to the West of the tree will also encroach into the TPZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition of the tree. The car park will be multi-level and significant canopy pruning will be required. The tree is recommended for removal due to development impacts. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 38 | *Cedrus atlantica* | A1 | 4.3 | 58.1 | 2.3 | Major | The proposed car park hard surfacing to the East will be located closer to the tree than the existing hard surfacing and will encroach into the TPZ by 39% (22.5$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. | Remove |
| 39 | *Lagerstroemia indica* | Z1 | 4.0 | 50.3 | 2.1 | None | No proposed TPZ encroachment. | Retain and protect |
| 40 | *Corymbia citriodora* | A1 | 4.0 | 50.3 | 2.2 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 41 | *Cedrus deodara* | A1 | 7.4 | 172.0 | 2.8 | Major | The proposed car park hard surfacing to the East will be located closer to the tree than the existing hard surfacing and will encroach into the TPZ by 23% (39.6$m^2$) but not into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition of the tree. The car park will be multi-level and significant canopy pruning will be required. The tree is recommended for removal due to development impacts. | Remove |
| 42 | *Lagerstroemia indica* | Z1 | 2.0 | 12.6 | 1.8 | None | No proposed TPZ encroachment. | Retain and protect |
| 43 | *Cedrus deodara* | A1 | 9.5 | 283.5 | 3.1 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 44 | *Acacia parramattensis* | Z1 | 4.2 | 55.4 | 2.1 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 45 | *Acacia spp* | Z4 | 2.5 | 19.6 | 2.1 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 46 | *Acacia spp* | Z1 | 2.0 | 12.6 | 1.5 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 47 | *Acacia spp* | Z1 | 2.0 | 12.6 | 1.5 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 48 | *Grevillea robusta* | A1 | 9.2 | 265.9 | 3.1 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 49 | *Grevillea robusta* | A1 | 7.8 | 191.1 | 2.8 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 50 | *Celtis sinensis* | Z3 | 2.0 | 12.6 | 1.7 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed car park. Exempt species. | Remove |
| 51 | *Unknown species* | Z10 | 3.6 | 40.7 | 2.0 | Major | The tree has not been identified on the received plans. The proposed hard surfacing will encroach into the TPZ by 14% (5.6$m^2$) but not into the SRZ. The tree is displaying poor overall form and should not be a constraint to the development. | Remove |
| 52 | *Unknown species* | Z10 | 3.0 | 28.3 | 1.8 | Minor | The tree has been identified for removal on the received plans. The tree has not been identified on the received plans. The proposed hard surfacing will encroach into the TPZ by 9% (2.5$m^2$) but into the SRZ. This is considered to be a minor TPZ encroachment. The tree is displaying poor overall form and should not be a constraint to the development. | Remove |
| 53 | *Cupressus sempervirens* | Z10 | 3.0 | 28.3 | 1.8 | Minor | The tree has been identified for removal on the received plans. The tree has not been identified on the received plans. The proposed hard surfacing will encroach into the TPZ by 7% (2$m^2$) but into the SRZ. This is considered to be a minor TPZ encroachment. The tree is displaying poor overall form and should not be a constraint to the development. | Remove |
| 54 | *Cupressus sempervirens* | Z10 | 4.8 | 72.4 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed brick edging. | Remove |
| 55 | *Eucalyptus spp* | Z9 | 2.0 | 12.6 | 2.4 | Footprint | The trunk of the tree is located within the footprint of the proposed car park access stairs. | Remove |
| 56 | *Lophostemon confertus* | A1 | 2.6 | 21.2 | 1.9 | Footprint | The trunk of the tree is located within the footprint of the proposed car park access stairs. | Remove |
| 57 | *Eucalyptus camaldulensis* | AA | 8.4 | 221.7 | 2.9 | Footprint | The trunk of the tree is located within the footprint of the proposed car park access stairs. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 58 | *Podocarpus elatus* | A1 | 4.2 | 55.4 | 2.4 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 59 | *Unknown species* | ZZ 4 | 5.6 | 98.5 | 2.8 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. The tree is dead. | Remove |
| 60 | *Podocarpus elatus* | A2 | 3.7 | 43.0 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed car park. | Remove |
| 61 | *Cupressus sempervirens* | Z10 | 2.4 | 18.1 | 1.7 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 62 | *Cupressus sempervirens* | Z1 | 2.0 | 12.6 | 1.5 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 63 | *Grevillea robusta* | Z1 | 2.0 | 12.6 | 1.5 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 64 | *Cupressus sempervirens* | A1 | 3.0 | 28.3 | 1.9 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 65 | *Pinus patula* | A2 | 7.8 | 191.1 | 2.8 | Major | The proposed hard surfacing, brick edging and decomposed granite will encroach into the TPZ by 63% (121.3$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. | Remove |
| 66 | *Cupressus sempervirens* | A2 | 6.0 | 113.1 | 2.5 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 67 | *Cupressus sempervirens* | Z10 | 3.6 | 40.7 | 2.0 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 68 | *Cupressus sempervirens* | A2 | 5.4 | 91.6 | 2.4 | Major | The proposed hard surfacing and brick edging will encroach into the TPZ by 47% (43.2$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 69 | *Ligustrum lucidum* | Z3 | 2.1 | 13.9 | 1.6 | Major | The proposed hard surfacing and brick edging will encroach into the TPZ by 18% (2.5$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. The tree is recommended for removal due to development impacts. The tree is a noxious weed. | Remove |
| 70 | *Lophostemon confertus* | Z1 | 3.8 | 45.4 | 2.4 | Minor | The proposed brick edging will encroach into the TPZ by 3% (1.2$m^2$) but not into the SRZ. This is considered to be a minor TPZ encroachment. The tree will not be significantly impacted by the proposed works. | Retain and protect |
| 71 | *Acer negundo* | ZZ 4 | 4.2 | 55.4 | 2.2 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. | Remove |
| 72 | *Quercus palustris* | A1 | 12.8 | 514.7 | 3.5 | Major | The client has requested to retain the tree. The proposed hard surfacing to the East and South of the tree will encroach into the TPZ by 47% (239.7$m^2$) but not into the SRZ. Smaller hard surface pathways to the West and North will also encroach into the TPZ but not the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition of the tree. It must be demonstrated the proposed works will not significantly impact the tree. To reduce the impact to the tree and to retain the tree in a viable condition, the proposed hard surfacing must be installed using tree sensitive construction techniques. See section 9.2 for tree sensitive construction specifications. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 73 | *Cedrus deodara* | A1 | 8.4 | 221.7 | 2.9 | Major | The client has requested to retain the tree. The proposed hard surfacing to the West of the tree will encroach into the TPZ by 8% (16.8$m^2$) but not into the SRZ. Brick edging and a smaller hard surface pathway to the Northeast will also encroach into the TPZ by 34% (75.7$m^2$) and into the SRZ. The total TPZ encroachment will be 42%. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. It must be demonstrated the proposed works will not significantly impact the tree. To reduce the impact to the tree and to retain the tree in a viable condition, the proposed hard surfacing must be installed using tree sensitive construction techniques. See section 9.2 for tree sensitive construction specifications. | Retain and protect* |
| 74 | *Lophostemon confertus* | A1 | 3.0 | 28.3 | 2.0 | Major | The client has requested to retain the tree. The proposed hard surfacing to the North of the tree will encroach into the TPZ by 31% (8.9$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. It must be demonstrated the proposed works will not significantly impact the tree. To reduce the impact to the tree and to retain the tree in a viable condition, the proposed hard surfacing must be installed using tree sensitive construction techniques. See section 9.2 for tree sensitive construction specifications. | Retain and protect* |
| 75 | *Corymbia citriodora* | A2 | 8.8 | 243.3 | 3.1 | Major | The client has requested to retain the tree. The proposed hard surfacing to the North of the tree will encroach into the TPZ by 26% (62.2$m^2$) but not into the SRZ. Brick edging and a smaller hard surface pathways to the South will also encroach into the TPZ by 19% (45.4$m^2$) and into the SRZ. The total TPZ encroachment will be 45%. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition and stability of the tree. It must be demonstrated the proposed works will not significantly impact the tree. To reduce the impact to the tree and to retain the tree in a viable condition, the proposed hard surfacing must be installed using tree sensitive construction techniques. See section 9.2 for tree sensitive construction specifications. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 76 | *Eucalyptus microcorys* | A2 | 7.9 | 196.1 | 2.9 | Major | The client has requested to retain the tree. The proposed hard will cover 96% (8.9$m^2$) of the TPZ and will encroach into the SRZ. The existing surfacing adjacent to the tree is similar to the proposed surfacing. Providing the proposed hard surfacing is installed in accordance with section 9.2, the growing environment of the tree will not be significantly altered. See section 9.2 for tree sensitive construction specifications. | Retain and protect* |
| 77 | *Ailanthus altissima* | Z3 | 2.4 | 18.1 | 1.8 | Footprint | The trunk of the tree is located within the footprint of the proposed hard surfacing. Exempt species | Remove |
| 78 | *Celtis sinensis* | Z3 | 3.0 | 28.3 | 1.8 | Major | The tree has not been identified on the received plans and is located in the adjoining property to the North. The proposed hard surfacing will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. The tree is an exempt species and the tree could be removed subject to the approval of the owner of the tree. | Retain and protect* |
| 79 | *Eucalyptus robusta* | A1 | 4.6 | 66.5 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |
| 80 | *Eucalyptus robusta* | Z4 | 4.1 | 52.8 | 2.4 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |
| 81 | *Corymbia eximia* | A1 | 3.1 | 30.2 | 2.0 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |
| 82 | *Eucalyptus elata* | Z4 | 8.2 | 211.2 | 3.4 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |
| 83 | *Eucalyptus robusta* | A1 | 7.4 | 172.0 | 3.0 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |
| 84 | *Eucalyptus elata* | Z9 | 7.8 | 191.1 | 2.9 | Footprint | The trunk of the tree is located within the footprint of the proposed CW 1 building. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 85 | *Eucalyptus globulus* | AA | 11.4 | 408.3 | 3.4 | Minor | The proposed brick edging and decomposed granite will encroach into the TPZ by 5% (22.1$m^2$) but not into the SRZ. This is considered to be a minor TPZ encroachment and the proposed works will not significantly impact the condition of the tree. | Retain and protect |
| 86 | *Schinus terebinthifolia* | Z10 | 7.8 | 191.1 | 2.8 | Major | The proposed hard surfacing and brick edging will encroach into the TPZ by 22% (41.8$m^2$) but not into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the condition of the tree. The tree is displaying poor overall form. The tree is recommended for removal due to development impacts and due to the current condition of the tree. | Remove |
| 87 | *Liriodendron tulipifera* | A2 | 3.6 | 40.7 | 2.1 | Minor | The proposed brick edging will encroach into the TPZ by 3% (1.4$m^2$) but not into the SRZ. This is considered to be a minor TPZ encroachment and the proposed works will not significantly impact the condition of the tree. | Retain and protect |
| 88 | *Schinus terebinthifolia* | Z10 | 11.9 | 444.9 | 3.3 | Major | The proposed carpark hard surfacing will encroach into the TPZ by 6% (26$m^2$) but not into the SRZ. The proposed brick edging will be located closer to the tree and will encroach into the TPZ but not into the SRZ. The proposed brick edging will not significantly impact the tree provided it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 89 | *Grevillea robusta* | Z9 | 4.0 | 50.3 | 2.3 | None | No proposed TPZ encroachment. | Retain and protect |
| 90 | *Liquidambar styraciflua* | Z10 | 6.5 | 132.7 | 2.7 | None | No proposed TPZ encroachment. | Retain and protect |
| 91 | *Eucalyptus elata* | Z9 | 10.8 | 366.4 | 3.3 | Major | The proposed decomposed granite and brick edging will encroach into the TPZ by 24% (88.5$m^2$) but not into the SRZ. The proposed brick edging and decomposed granite will not significantly impact the tree provided it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 92 | *Liquidambar styraciflua* | Z10 | 7.1 | 158.4 | 2.9 | None | No proposed TPZ encroachment. | Retain and protect |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 93 | *Grevillea robusta* | ZZ 4 | 11.2 | 394.1 | 3.5 | Major | The proposed carpark hard surfacing, decomposed granite and brick edging will encroach into the TPZ by 19% (76.3$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the tree condition and stability of the tree. The tree is in advanced stages of decline. The tree is recommended for removal due to development impacts and due to the current condition of the tree. | Remove |
| 94 | *Unknown species* | ZZ 4 | 2.0 | 12.6 | 2.1 | None | No proposed TPZ encroachment. The tree is dead and is recommended for removal due to its current condition. | Remove |
| 95 | *Fraxinus raywood* | A1 | 3.5 | 38.5 | 2.1 | Major | The proposed driveway hard surfacing will be located closer to the tree than the existing hard surfacing and will encroach into the TPZ by 21% (8.2$m^2$) and into the SRZ. This is considered to be a major TPZ encroachment and the proposed works could potentially impact the tree condition and stability of the tree. The tree is recommended for removal due to development impacts. | Remove |
| 96 | *Liquidambar styraciflua* | Z10 | 5.3 | 88.2 | 2.5 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 97 | *Callistemon viminalis* | Z1 | 2.4 | 18.1 | 2.3 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 98 | *Carya illinoinensis* | A1 | 7.4 | 172.0 | 2.8 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |
| 99 | *Grevillea robusta* | A1 | 5.8 | 105.7 | 2.6 | Major | Existing hard surfacing is to be removed and replaced within the TPZ and SRZ. The proposed hard surfacing will not significantly impact the tree providing it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 100 | *Callistemon viminalis* | Z1 | 3.0 | 28.3 | 1.8 | Major | Existing hard surfacing is to be removed and replaced within the TPZ and SRZ. The proposed hard surfacing will not significantly impact the tree providing it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 101 | *Callistemon viminalis* | Z1 | 2.3 | 16.6 | 1.8 | Major | Existing hard surfacing is to be removed and replaced within the TPZ and SRZ. The proposed hard surfacing will not significantly impact the tree providing it is installed using tree sensitive construction techniques, in accordance with section 9.2 of this report. | Retain and protect* |
| 102 | *Grevillea robusta* | A1 | 5.4 | 91.6 | 2.4 | Major | The tree has not been identified on the received plans and is located in the adjoining property to the South. The proposed hard surfacing will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 103 | *Celtis sinensis* | Z3 | 6.5 | 132.7 | 2.7 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. Exempt species. | Remove |
| 104 | *Eucalyptus microcorys* | AA | 14.4 | 651.4 | 3.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 105 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 106 | *Eucalyptus microcorys* | A1 | 5.4 | 91.6 | 2.5 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | |
| 107 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 108 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 109 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 110 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 111 | *Eucalyptus microcorys* | A1 | 3.6 | 40.7 | 2.1 | Minor | The tree is located in the adjoining property to the South. The proposed brick edging will encroach into the TPZ by 4% (1.5$m^2$) but not into the SRZ. This is considered to be a minor TPZ encroachment and the proposed works will not significantly impact the condition of the tree. | Retain and protect |
| 112 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 113 | *Eucalyptus microcorys* | AA | 9.6 | 289.5 | 3.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 114 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 115 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 116 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 117 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 118 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 119 | *Eucalyptus microcorys* | A1 | 4.2 | 55.4 | 2.3 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 120 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 121 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 122 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 123 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 124 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 125 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 126 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 127 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 128 | *Eucalyptus microcorys* | A1 | 4.2 | 55.4 | 2.3 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 129 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 130 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 131 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 132 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 133 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 134 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 135 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 136 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 137 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 138 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 139 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 140 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 141 | *Eucalyptus microcorys* | AA | 9.6 | 289.5 | 3.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 142 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 143 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 144 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 145 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 146 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 147 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 148 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 149 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 150 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 151 | *Eucalyptus microcorys* | A1 | 2.4 | 18.1 | 1.8 | None | The tree is located in the adjoining property to the South. No proposed TPZ encroachment. | Retain and protect |
| 152 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 153 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 154 | *Eucalyptus microcorys* | A1 | 3.6 | 40.7 | 2.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 155 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 156 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 157 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 158 | *Eucalyptus microcorys* | A1 | 4.8 | 72.4 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 159 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 160 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 161 | *Eucalyptus microcorys* | ZZ 4 | 2.0 | 12.6 | 1.8 | None | The tree is located in the adjoining property to the South. No proposed TPZ encroachment. The tree is dead and the tree will not be impacted by the proposed works. | Retain and protect |
| 162 | *Eucalyptus microcorys* | AA | 9.6 | 289.5 | 3.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 163 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 164 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 165 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 166 | *Eucalyptus microcorys* | AA | 8.4 | 221.7 | 3.0 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 167 | *Ailanthus altissima* | Z3 | 3.0 | 28.3 | 1.8 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report.<br>The tree is an exempt species and the tree could be removed subject to the approval of the owner of the tree. | Retain and protect* |
| 168 | *Ailanthus altissima* | Z3 | 2.0 | 12.6 | 1.8 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report.<br>The tree is an exempt species and the tree could be removed subject to the approval of the owner of the tree. | Retain and protect* |
| 169 | *Eucalyptus microcorys* | A1 | 4.8 | 72.4 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 170 | *Eucalyptus microcorys* | A1 | 4.8 | 72.4 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 171 | *Eucalyptus microcorys* | A1 | 4.8 | 72.4 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 172 | *Eucalyptus microcorys* | A1 | 4.8 | 72.4 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 173 | *Celtis sinensis* | Z3 | 2.0 | 12.6 | 1.7 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report.<br>The tree is an exempt species and the tree could be removed subject to the approval of the owner of the tree. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 174 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 175 | *Eucalyptus microcorys* | AA | 9.6 | 289.5 | 3.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 176 | *Eucalyptus microcorys* | AA | 9.0 | 254.5 | 3.0 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 177 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 178 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 179 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 180 | *Eucalyptus microcorys* | AA | 10.8 | 366.4 | 3.2 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 181 | *Eucalyptus microcorys* | A1 | 2.0 | 12.6 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 182 | *Eucalyptus microcorys* | A1 | 6.0 | 113.1 | 2.6 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 183 | *Celtis sinensis* | Z3 | 3.5 | 38.5 | 2.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will be located closer to the tree than the existing driveway and will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report.<br>The tree is an exempt species and the tree could be removed subject to the approval of the owner of the tree. | Retain and protect* |
| 184 | *Ailanthus altissima* | Z3 | 2.0 | 12.6 | 1.5 | None | No proposed TPZ encroachment. The tree is an exempt species. The tree is recommended for removal for re-landscaping purposes. | Remove |
| 185 | *Callistemon salignus* | Z9 | 3.6 | 40.7 | 2.1 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 186 | *Callistemon salignus* | A1 | 5.3 | 88.2 | 2.4 | Major | The tree is located in the adjoining property to the South. The proposed hard surface driveway will encroach into the TPZ and SRZ, indicating the condition and stability of the tree could potentially be impacted. To retain the tree in a viable condition, the proposed hard surfacing must be installed in accordance with section 9.2 of this report. | Retain and protect* |
| 187 | *Celtis sinensis* | Z3 | 2.8 | 24.6 | 1.8 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. Exempt species. | Remove |
| 188 | *Celtis sinensis* | Z3 | 2.3 | 16.6 | 1.8 | Footprint | The tree has not been identified on the received plans. The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. Exempt species. | Remove |
| 189 | *Eucalyptus paniculata* | AA | 7.2 | 162.9 | 2.8 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. | Remove |

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| Tree ID | Species | Retention value | TPZ radius (m) | TPZ area ($m^2$) | SRZ radius (m) | TPZ encroachment | Discussion/ Conclusion | Recommendation |
|---|---|---|---|---|---|---|---|---|
| 190 | *Eucalyptus spp* | ZZ 4 | 6.0 | 113.1 | 2.6 | Footprint | The trunk of the tree is located within the footprint of the proposed driveway hard surfacing. The tree is dead. | Remove |

**Notes:**

- Retain and protect* = Tree sensitive design and construction methods required to retain the tree in a viable condition. See section 9.2.

# 9. CONCLUSIONS

9.1 **Table 2:** Summary of the impact to trees by the development;

| Impact | Reason | Category A | | Category Z | | TOTAL |
|---|---|---|---|---|---|---|
| | | AA | A | Z | ZZ | |
| Trees recommended to be removed | Building construction, new surfacing and/or proximity, or trees in poor condition. | 57, 189 (Two trees) | 1, 2, 3, 5, 7, 8, 11, 12, 13, 14, 34, 35, 37, 38, 40, 41, 43, 48, 49, 56, 58, 60, 64, 65, 66, 68, 79, 81, 83, 95, 98 (Thirty-one trees) | 6, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 44, 45, 46, 47, 50, 51, 52, 53, 54, 55, 61, 62, 63, 67, 69, 77, 80, 82, 84, 86, 96, 97, 103, 184, 187, 188 (Thirty-seven trees) | 4, 25, 29, 59, 71, 93, 94, 190 (Eight trees) | **78 trees** |
| Trees recommended to be retained requiring tree sensitive construction/design methods | Removal of existing surfacing/structures and/or installation of new surfacing/structures may impact the viability of the trees | 104, 113, 141, 162, 166, 175, 176, 180 (Eight trees) | 31, 32, 36, 72, 73, 74, 75, 76, 99, 102, 105, 106, 107, 108, 109, 110, 112, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 142, 143, 144, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 159, 160, 163, 164, 165, 169, 170, 171, 172, 174, 177, 178, 179, 181, 182, 186 (Seventy-six trees) | 26, 78, 88, 91, 100, 101, 167, 168, 173, 183, 185 (Six trees) | None | **95 trees** |
| Trees recommended to be retained | Removal of existing surfacing/structures and/or installation of new surfacing/structures will not impact the viability of the trees | 85 (One tree) | 23, 24, 27, 28, 30, 87, 111, 151 (Eight trees) | 33, 39, 42, 70, 89, 90, 92 (Seven trees) | 161 (One tree) | **17 trees** |

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9.2 **Construction Design/Specification Requirements for Tree 26, 31, 32, 36, 72, 73, 74, 75, 76, 78, 88, 91, 99, 100, 101, 102, 104, 105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 159, 160, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 185 and 186:** The proposed construction will encroach into the TPZ and SRZ of these trees. To ensure the trees are not adversely impacted by the construction, it must be demonstrated the following design and construction specifications can be implemented within the TPZ of the trees. If the construction cannot be completed in accordance with these specifications, the trees may not be viable for retention.

9.2.1 **Tree Sensitive Hard Surfacing Construction:** To retain the trees in a viable condition, the hard surfacing must be constructed in a tree sensitive method. The hard surfacing should be constructed above existing grades in the TPZ of the trees.

If excavations are essential, they must not exceed 100mm below the existing grades. The excavations should be supervised by a project Arborist with a minimum AQF level 5 qualification. All excavations for the hard surfacing should be carried out manually to avoid impacting retained tree roots. All tree roots greater than 40mm in diameter should be retained, unless the project arborist has assessed and advised that the pruning/severing of the root will not impact the condition or stability of the tree. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device.

Where tree roots greater than 40mm are encountered that must be retained, the hard surfacing should be elevated over the individual tree root to allow for its retention. Examples of methods that can be used to bridge individual tree roots have been included below (Image A and B). Using pier and beam bridges as per image B is the recommended/preferred method, as it will allow for future growth of the tree roots, reducing future damage to the surfacing from the roots.

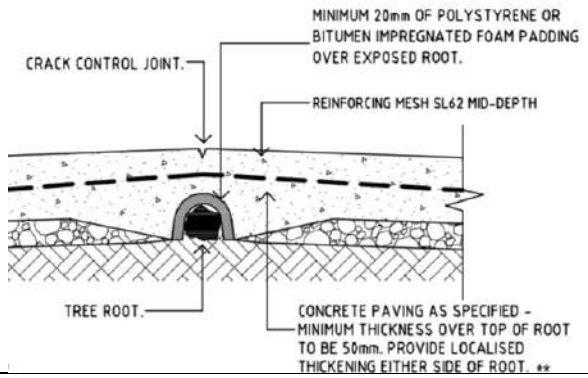


**Image A:** Example method for bridging concrete surfacing over tree roots provided in the Canterbury Bankstown Council standard drawings.[8]

[8] *Canterbury Bankstown Council standard drawing S-209 Existing street tree treatments*, https://www.cbcity.nsw.gov.au/development/planning-control-policies/council-standard-drawings, accessed 3 October 2019.

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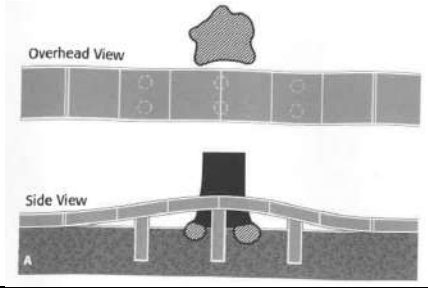


**Image B:** Example method from Reducing infrastructure damage by tree roots: A compendium of strategies.[9]

9.2.2 **Tree Sensitive Decomposed Granite Installation:** To retain the trees in a viable condition, the decomposed granite surfacing must be installed in a tree sensitive method. The surfacing should be constructed above existing grades in the TPZ of the trees. The diagram below (Image C) gives an example of a no-excavation method for constructing hard surfacing close to trees. The location of retaining pegs should be flexible, avoiding damage to structural roots.

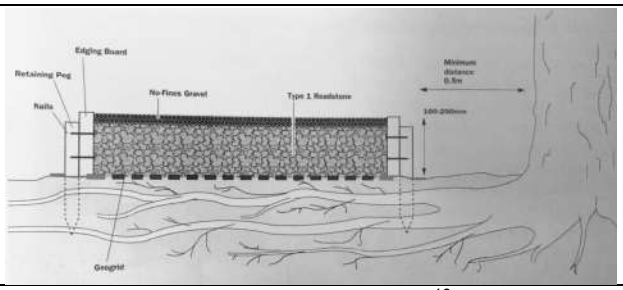


**Image C**: An image from 'Tree Roots in the Built Environment'[10], showing how to construct surfacing (similar to decomposed granite) above a trees root system without excavation. Type 1 Roadstones are an example of blue metal or crushed sandstone.

9.2.3 **Tree Sensitive Brick Edging:** To retain the trees in a viable condition, the brick edging must be installed in a tree sensitive method. The brick edging should be constructed above existing grades in the TPZ of the trees. If excavations are essential, they must not exceed 100mm below the existing grades. The excavations should be supervised by a project Arborist with a minimum AQF level 5 qualification. All excavations for the brick edging should be carried out manually to avoid impacting retained tree roots. All tree roots greater than 40mm in diameter should be retained, unless the project arborist has assessed and advised that the pruning/severing of the root will not impact the condition or stability of the tree. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device.

Where tree roots greater than 40mm are encountered that must be retained, the brick edging should be elevated over the individual tree root to allow for its retention.

[9] Costello, L. R., & Jones, K. S, *Reducing infrastructure damage by tree roots: A compendium of strategies*, Western Chapter of the International Society of Arboriculture, 31883 Success Valley Drive, Porterville, CA (2003), page 27.

[10] Roberts, J., Jackson, N., & Smith, M., *Tree Roots in the Built Environment*, The Stationary Office, London, England (2006). Page 305 & 306.

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9.3 **Underground Services:** No services plan has been assessed in this report, all services plans should be subject to review by a consulting Arborist. AS4970 Protection of trees on development sites (2009) recommends that all underground services located inside the TPZ of any tree to be retained should be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention.

If directional drilling is proposed, section 4.5.5 of AS4970-2009 says that 'The directional drilling bore should be at least 600 mm deep. The project Arborist should assess the likely impacts of boring and bore pits on retained trees'.[11]
If manual excavations are proposed, all excavations for the services should be carried out manually under the supervision of the project Arborist (minimum qualification AQF 5). Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. All roots greater than 40mm in diameter should be retained in the service trench. The service pipe should then be threaded below the retained roots where practical. Roots greater than 40mm within the alignment of the service pipe should only be severed/pruned under the approval of the project Arborist. All root pruning should be in accordance with AS4373 Pruning of amenity trees (2007). Open trenching in the SRZ of trees can be impractical without impacting significant roots, as often dense root growth is present in the SRZ. Open trenching should therefore be avoided in the SRZ. It is recommended that any section of pipe that is located in the SRZ of trees to be retained is installed via sub-surface boring/directional drilling methods only. The feasibility of sub-surface boring/directional drilling will need to be investigated by a sub-surface boring/directional drilling specialist. The project Arborist should provide advice and supervise excavations for bore pits, which must be carried out manually if located within the TPZ. The top of the pipe must be at least 600mm below the existing soil grade. The location of bore pits should be flexible in the TPZ to avoid significant roots, the project Arborist should assess and advise in writing the impact of any significant root severance to the condition of the tree.

[11] Council Of Standards Australia, *AS 4970 Protection of trees on development sites* (2009) page 18.

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9.4 **Bulk Earthworks - Soil Level Modifications (Cut and Fill):** No bulk earthworks or soil level modification plan has been provided. Cut and fill can significantly impact trees, as the per following;

9.4.1 **Cut:** A trees root system is generally located far shallower in the soil than is normally considered, and should be thought of as a 'root plate'. The majority of a trees root growth is usually found in the upper 600mm of the soil closest to the surface, but a percentage of the roots will extend deeper in the soil. An image has been included below that is taken from AS4970-2009, and provides an example of the structure of a trees root system. Any significant cut/lowering the soil level in the TPZ can impact the tree. The only way to identify the precise impact to a trees root system by cut in the TPZ is by carrying out detailed root investigation to identify the individual significant roots.

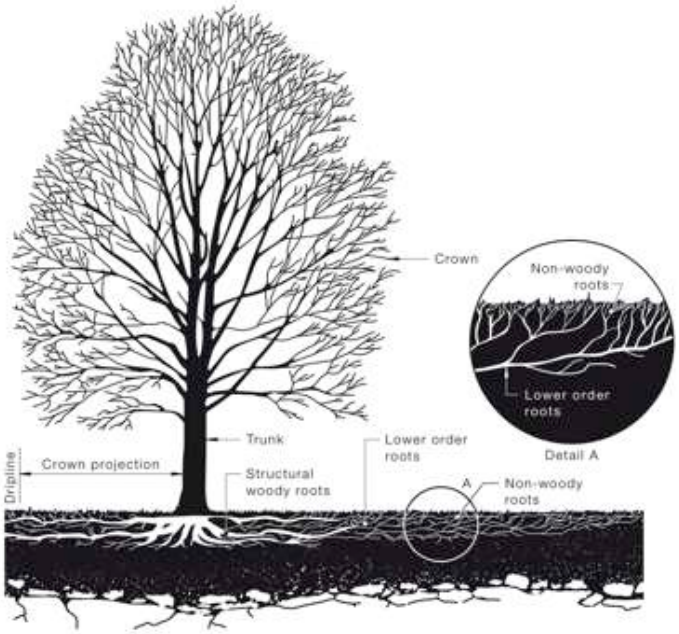


Image from AS4970-2009 showing the structure of a trees root system in normal (unobstructed) growing conditions.

9.4.2 **Fill:** Tree roots require air, water and nutrients to function properly. Increasing the soil level in the TPZ can impact the trees by reducing the availability of water, nutrients and air to the trees underlying root system and can cause the decline of a trees health and vigour. Placing fill directly against the trunk of a tree can potentially cause collar rot. Collar rot forms when soil against the trunk of the tree accelerates sapwood or heartwood decay.[12]

[12] Dunster, Julian A., Thomas Smiley, Nelda Matheny, and Sharon Lilly, *Tree Risk Assessment Manual*, Champaign, Illinois: International Society of Arboriculture (2013), page 108.

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## 10. RECOMMENDATIONS

10.1 This report assesses the impact of a proposed development at the subject site to all significant trees located within 10 metres of development works. One-hundred and ninety (190) trees have been identified and assessed.

10.2 In Appendix 1 three site plans have been prepared, where the tree information including canopy spread, TPZ and SRZ have been overlaid onto the existing and proposed site plans. The following site plans are included;

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan West
- Appendix 1C: Proposed Site Plan East

10.3 Seventy-eight (78) trees have been recommended for removal to accommodate the development works, including tree 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 29, 34, 35, 37, 38, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 71, 77, 79, 80, 81, 82, 83, 84, 86, 93, 94, 95, 96, 97, 98, 103, 184, 187, 188, 189 and 190. Thirty-three (33) of these trees are higher value category A retention value trees. The remaining forty-five (45) trees recommended for removal are lower value category Z retention value trees. Refer to section 9.1 Table 2 for a list of trees to be removed by retention value.

10.4 Ninety-five (95) trees have been recommended to be retained, subject to tree sensitive design and construction methods being implemented to reduce the impact to the trees, including tree 26, 31, 32, 36, 72, 73, 74, 75, 76, 78, 88, 91, 99, 100, 101, 102, 104, 105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 159, 160, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 185 and 186. To reduce the impact to the trees to an acceptable level, the proposed construction within the TPZ of the trees must be completed in accordance with section 9.2 of this report. If the construction cannot be completed in accordance with these specifications, the trees may not be viable for retention.

10.5 The remaining seventeen (17) trees can be retained in a viable condition, including tree 23, 24, 27, 28, 30, 33, 39, 42, 70, 85, 87, 89, 90, 92, 111, 151 and 161.

10.6 All trees to be retained must be protected in accordance with AS4970-2009, details of which are included in section 11.

10.7 Where possible underground services should be located outside the TPZ of trees to be retained. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques in accordance with AS4970-2009, see section 9.3 for more information.

10.8 This report does not provide approval for tree removal or pruning works. All recommendations in this report are subject to approval by the relevant authorities and/or tree owners. This report should be submitted as supporting evidence with the development application.

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## 11. TREE PROTECTION REQUIREMENTS

11.1 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site. This report and a copy of the site plans (Appendix 1) drawing must also be made available to any contractor prior to works commencing and during any on site operations. Appendix 1B includes the recommended location of tree protection overlaid onto the proposed site plan.

11.2 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

11.3 **Tree work:** All tree work should be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

11.4 **Initial site meeting/on-going regular inspections:** The project Arborist is to hold a pre-construction site meeting with principal contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to tree protection that may arise. In accordance with AS4970-2009, the project Arborist should carryout regular site inspections to ensure works are carried out in accordance with this document throughout the development process. Site inspections are recommended on a monthly frequency throughout the development.

11.5 **Site Specific Tree Protection Recommendations:** It is the responsibility of the principal contractor to install tree protection prior to works commencing at the site (prior to demolition works) and to ensure that the tree protection remains in adequate condition for the duration of the development. The tree protection must not be moved without prior agreement of the project Arborist. The project Arborist must inspect that the tree protection has been installed in accordance with this document and AS4970-2009 prior to works commencing. See section 11.6 for requirements of tree protection. See Appendix 1 for indicative fencing location.

| Tree ID | Tree Species | TPZ Radius (m) | SRZ Radius (m) | Recommendations |
|---|---|---|---|---|
| 1 | *Syzygium paniculatum* | 4.1 | 2.2 | Remove. |
| 2 | *Grevillea robusta* | 5.8 | 2.5 | Remove. |
| 3 | *Cupressus arizonica var. glabra* | 7.4 | 2.7 | Remove. |
| 4 | *Unknown species* | 6.0 | 2.5 | Remove. |
| 5 | *Schinus molle* | 9.1 | 3.0 | Remove. |

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| | | | | |
|---|---|---|---|---|
| 6 | *Cupressus arizonica var. glabra* | 2.0 | 1.7 | Remove. |
| 7 | *Callistemon salignus* | 5.8 | 2.7 | Remove. |
| 8 | *Liquidambar styraciflua* | 4.1 | 2.3 | Remove. |
| 9 | *Ligustrum lucidum* | 7.2 | 2.7 | Remove. |
| 10 | *Liquidambar styraciflua* | 3.2 | 2.1 | Remove. |
| 11 | *Fraxinus spp* | 3.7 | 1.9 | Remove. |
| 12 | *Quercus palustris* | 8.9 | 3.1 | Remove. |
| 13 | *Cedrus deodara* | 7.0 | 2.8 | Remove. |
| 14 | *Quercus palustris* | 10.3 | 3.2 | Remove. |
| 15 | *Corymbia maculata* | 4.3 | 2.3 | Remove. |
| 16 | *Corymbia maculata* | 2.0 | 1.5 | Remove. |
| 17 | *Corymbia maculata* | 3.1 | 2.0 | Remove. |
| 18 | *Corymbia maculata* | 2.0 | 1.6 | Remove. |
| 19 | *Corymbia maculata* | 2.0 | 1.6 | Remove. |
| 20 | *Corymbia maculata* | 3.0 | 1.9 | Remove. |
| 21 | *Eucalyptus tereticornis* | 2.2 | 1.7 | Remove. |
| 22 | *Eucalyptus tereticornis* | 3.8 | 2.2 | Remove. |
| 23 | *Jacaranda mimosifolia* | 4.5 | 2.3 | Retain and protect. Tree protection fencing is to create a combined TPZ exclusion zone for tree 23 and 24. The fencing is to encompass the TPZ perimeter of the trees, within the site only, and is to be set back from the proposed works by 1m. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 24 | *Liquidambar styraciflua* | 4.1 | 2.2 | Retain and protect. See tree protection recommendations for tree 23. |
| 25 | *Liquidambar styraciflua* | 4.9 | 2.4 | Remove. |
| 26 | *Murraya paniculata* | 3.6 | 2.0 | Retain and protect. Tree protection fencing is to create a combined TPZ exclusion zone for tree 26 and 27. The fencing is to encompass the TPZ perimeter of the trees, within the site only, and is to be set back from the proposed works by 1m. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 27 | *Jacaranda mimosifolia* | 7.3 | 2.8 | Retain and protect. See tree protection recommendations for tree 26. |

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| | | | | |
|---|---|---|---|---|
| 28 | *Prunus spp* | 2.7 | 2.3 | Retain and protect. Tree protection fencing is to create a combined TPZ exclusion zone for tree 28, 30, 31 and 32. The fencing is to encompass the TPZ perimeter of the trees, within the site only, and is to be set back from the proposed works by 1m. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 29 | *Unknown species* | 4.8 | 2.3 | Remove. |
| 30 | *Cupressus sempervirens* | 6.0 | 2.5 | Retain and protect. See tree protection recommendations for tree 28. |
| 31 | *Corymbia citriodora* | 9.2 | 3.2 | Retain and protect. See tree protection recommendations for tree 28. |
| 32 | *Cedrus deodara* | 5.9 | 2.6 | Retain and protect. See tree protection recommendations for tree 28. |
| 33 | *Fraxinus griffithii* | 2.0 | 1.5 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 34 | *Cupressus sempervirens* | 4.0 | 2.1 | Remove. |
| 35 | *Cupressus sempervirens* | 5.9 | 2.5 | Remove. |
| 36 | *Cinnamomum camphora* | 4.9 | 2.3 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing and brick edging by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 37 | *Ulmus procera* | 9.6 | 3.1 | Remove. |
| 38 | *Cedrus atlantica* | 4.3 | 2.3 | Remove. |
| 39 | *Lagerstroemia indica* | 4.0 | 2.1 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 40 | *Corymbia citriodora* | 4.0 | 2.2 | Remove. |
| 41 | *Cedrus deodara* | 7.4 | 2.8 | Remove. |
| 42 | *Lagerstroemia indica* | 2.0 | 1.8 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed carpark by 1.5m to allow for scaffold. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 43 | *Cedrus deodara* | 9.5 | 3.1 | Remove. |
| 44 | *Acacia parramattensis* | 4.2 | 2.1 | Remove. |
| 45 | *Acacia spp* | 2.5 | 2.1 | Remove. |
| 46 | *Acacia spp* | 2.0 | 1.5 | Remove. |
| 47 | *Acacia spp* | 2.0 | 1.5 | Remove. |
| 48 | *Grevillea robusta* | 9.2 | 3.1 | Remove. |
| 49 | *Grevillea robusta* | 7.8 | 2.8 | Remove. |
| 50 | *Celtis sinensis* | 2.0 | 1.7 | Remove. |
| 51 | *Unknown species* | 3.6 | 2.0 | Remove. |
| 52 | *Unknown species* | 3.0 | 1.8 | Remove. |
| 53 | *Cupressus sempervirens* | 3.0 | 1.8 | Remove. |

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| | | | | |
|---|---|---|---|---|
| 54 | *Cupressus sempervirens* | 4.8 | 2.3 | Remove. |
| 55 | *Eucalyptus spp* | 2.0 | 2.4 | Remove. |
| 56 | *Lophostemon confertus* | 2.6 | 1.9 | Remove. |
| 57 | *Eucalyptus camaldulensis* | 8.4 | 2.9 | Remove. |
| 58 | *Podocarpus elatus* | 4.2 | 2.4 | Remove. |
| 59 | *Unknown species* | 5.6 | 2.8 | Remove. |
| 60 | *Podocarpus elatus* | 3.7 | 2.3 | Remove. |
| 61 | *Cupressus sempervirens* | 2.4 | 1.7 | Remove. |
| 62 | *Cupressus sempervirens* | 2.0 | 1.5 | Remove. |
| 63 | *Grevillea robusta* | 2.0 | 1.5 | Remove. |
| 64 | *Cupressus sempervirens* | 3.0 | 1.9 | Remove. |
| 65 | *Pinus patula* | 7.8 | 2.8 | Remove. |
| 66 | *Cupressus sempervirens* | 6.0 | 2.5 | Remove. |
| 67 | *Cupressus sempervirens* | 3.6 | 2.0 | Remove. |
| 68 | *Cupressus sempervirens* | 5.4 | 2.4 | Remove. |
| 69 | *Ligustrum lucidum* | 2.1 | 1.6 | Remove. |
| 70 | *Lophostemon confertus* | 2.0 | 2.4 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed brick edging by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 71 | *Acer negundo* | 4.2 | 2.2 | Remove. |
| 72 | *Quercus palustris* | 12.8 | 3.5 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 73 | *Cedrus deodara* | 8.4 | 2.9 | Retain and protect. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 74 | *Lophostemon confertus* | 3.0 | 2.0 | Retain and protect. Tree protection fencing is to create a combined TPZ exclusion zone for tree 74 and 75. The fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 75 | *Corymbia citriodora* | 8.8 | 3.1 | Retain and protect. See tree protection recommendations for tree 74. |
| 76 | *Eucalyptus microcorys* | 7.9 | 2.9 | Retain and protect. Tree protection fencing is to run along the edge of the proposed hard surfacing. TPZ signage is required on the fencing. Mulch is required within the fenced area. |

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| 77 | *Ailanthus altissima* | 2.4 | 1.8 | Remove. |
| 78 | *Celtis sinensis* | 3.0 | 1.8 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 79 | *Eucalyptus robusta* | 4.6 | 2.3 | Remove. |
| 80 | *Eucalyptus robusta* | 4.1 | 2.4 | Remove. |
| 81 | *Corymbia eximia* | 3.1 | 2.0 | Remove. |
| 82 | *Eucalyptus elata* | 8.2 | 3.4 | Remove. |
| 83 | *Eucalyptus robusta* | 7.4 | 3.0 | Remove. |
| 84 | *Eucalyptus elata* | 7.8 | 2.9 | Remove. |
| 85 | *Eucalyptus globulus* | 11.4 | 3.4 | Retain and protect. Tree protection fencing is to create a combined TPZ exclusion zone for tree 85, 87, 88, 89, 90, 91 and 92. Tree protection fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed carpark by 1.5m to allow for scaffold, and set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 86 | *Schinus terebinthifolia* | 7.8 | 2.8 | Remove. |
| 87 | *Liriodendron tulipifera* | 3.6 | 2.1 | Retain and protect. See tree protection recommendations for tree 85. |
| 88 | *Schinus terebinthifolia* | 11.9 | 3.3 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. See tree protection recommendations for tree 85. |
| 89 | *Grevillea robusta* | 4.0 | 2.3 | Retain and protect. See tree protection recommendations for tree 85. |
| 90 | *Liquidambar styraciflua* | 6.5 | 2.7 | Retain and protect. See tree protection recommendations for tree 85. |
| 91 | *Eucalyptus elata* | 10.8 | 3.3 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. See tree protection recommendations for tree 85. |
| 92 | *Liquidambar styraciflua* | 7.1 | 2.9 | Retain and protect. See tree protection recommendations for tree 85. |
| 93 | *Grevillea robusta* | 11.2 | 3.5 | Remove |
| 94 | *Unknown species* | 2.0 | 2.1 | Remove |
| 95 | *Fraxinus raywood* | 3.5 | 2.1 | Remove |
| 96 | *Liquidambar styraciflua* | 5.3 | 2.5 | Remove |
| 97 | *Callistemon viminalis* | 2.4 | 2.3 | Remove |
| 98 | *Carya illinoinensis* | 7.4 | 2.8 | Remove |

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| 99 | *Grevillea robusta* | 5.8 | 2.6 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. Fencing is to create a combined exclusion zone for tree 99 and 100. The fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 100 | *Callistemon viminalis* | 3.0 | 1.8 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. See tree protection recommendations for tree 100. |
| 101 | *Callistemon viminalis* | 2.3 | 1.8 | Retain and protect* Tree sensitive construction is required to reduce the impact to the tree. The fencing is to encompass the TPZ perimeter where practical and is to be set back from the proposed hard surfacing by 500mm. TPZ signage is required on the fencing. Mulch is required within the fenced area. |
| 102 | *Grevillea robusta* | 5.4 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 103 | *Celtis sinensis* | 6.5 | 2.7 | Remove. |
| 104 | *Eucalyptus microcorys* | 14.4 | 3.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 105 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 106 | *Eucalyptus microcorys* | 5.4 | 2.5 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 107 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 108 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 109 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 110 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the |

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| | | | | tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 111 | *Eucalyptus microcorys* | 3.6 | 2.1 | Retain. The existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 112 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 113 | *Eucalyptus microcorys* | 9.6 | 3.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 114 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 115 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 116 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 117 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 118 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 119 | *Eucalyptus microcorys* | 4.2 | 2.3 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 120 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 121 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site |

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| | | | | boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 122 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 123 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 124 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 125 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 126 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 127 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 128 | *Eucalyptus microcorys* | 4.2 | 2.3 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 129 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 130 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 131 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |

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| 132 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 133 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 134 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 135 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 136 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 137 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 138 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 139 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 140 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 141 | *Eucalyptus microcorys* | 9.6 | 3.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |

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| 142 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 143 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 144 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 145 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 146 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 147 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 148 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 149 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 150 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 151 | *Eucalyptus microcorys* | 2.4 | 1.8 | Retain. The existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 152 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |

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| 153 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 154 | *Eucalyptus microcorys* | 3.6 | 2.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 155 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 156 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 157 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 158 | *Eucalyptus microcorys* | 4.8 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 159 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 160 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 161 | *Eucalyptus microcorys* | 2.0 | 1.8 | Retain. The existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 162 | *Eucalyptus microcorys* | 9.6 | 3.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 163 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |

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| 164 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 165 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 166 | *Eucalyptus microcorys* | 8.4 | 3.0 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 167 | *Ailanthus altissima* | 3.0 | 1.8 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 168 | *Ailanthus altissima* | 2.0 | 1.8 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 169 | *Eucalyptus microcorys* | 4.8 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 170 | *Eucalyptus microcorys* | 4.8 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 171 | *Eucalyptus microcorys* | 4.8 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 172 | *Eucalyptus microcorys* | 4.8 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 173 | *Celtis sinensis* | 2.0 | 1.7 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |

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| 174 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 175 | *Eucalyptus microcorys* | 9.6 | 3.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 176 | *Eucalyptus microcorys* | 9.0 | 3.0 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 177 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 178 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 179 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 180 | *Eucalyptus microcorys* | 10.8 | 3.2 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 181 | *Eucalyptus microcorys* | 2.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 182 | *Eucalyptus microcorys* | 6.0 | 2.6 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 183 | *Celtis sinensis* | 3.5 | 2.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 184 | *Ailanthus altissima* | 2.0 | 1.5 | Remove. |

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| | | | | |
|---|---|---|---|---|
| 185 | *Callistemon salignus* | 3.6 | 2.1 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 186 | *Callistemon salignus* | 5.3 | 2.4 | Retain and protect* Tree sensitive hard surfacing construction is required to reduce the impact to the tree. If the tree can be retained, the existing site boundary fence will be sufficient for trunk protection. TPZ signage is required on the fencing. |
| 187 | *Celtis sinensis* | 2.8 | 1.8 | Remove. |
| 188 | *Celtis sinensis* | | 1.8 | Remove. |
| 189 | *Eucalyptus paniculata* | | 2.8 | Remove. |
| 190 | *Eucalyptus spp* | | 2.6 | Remove. |

11.6 **Tree Protection Specifications:**

11.6.1 Trunk and Branch Protection: The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

11.6.2 Protective fencing: The protective fencing must be constructed of 1.8 metre ‘cyclone chainmesh fence’. The fencing should only be removed for the landscaping phase and this should be approved by the project Arborist. Where it is not feasible to install fencing at the specified location due to factors such restricting access to areas of the site or for constructing new structures, an alternative location and protection specification must be agreed with the project Arborist. Any modifications to the fencing locations must be approved by the project Arborist.

11.6.3 TPZ signage: Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

11.6.4 Mulch: Any areas of the TPZ located inside the subject site must be mulched to a depth of 75mm with good quality mulch. Mulch must not be built-up around the trunk the trees as it can cause collar rot.

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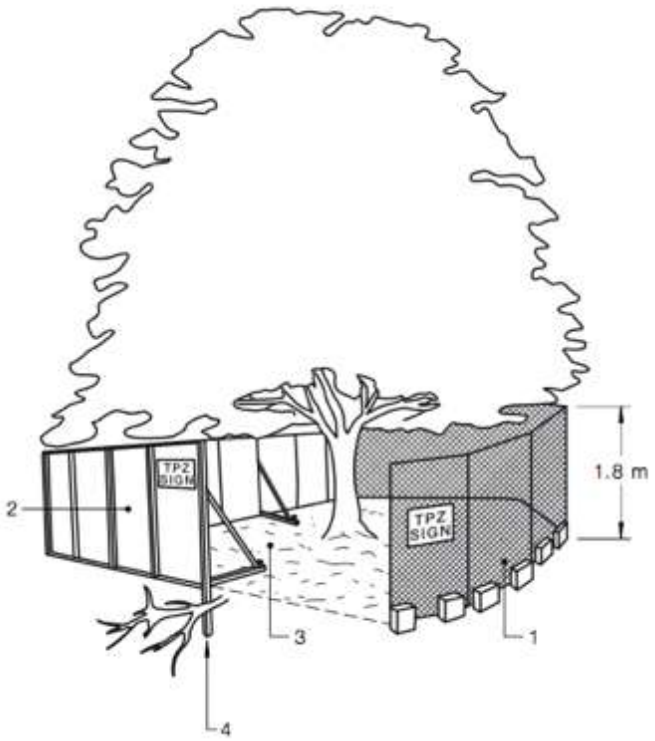
11.6.5 Ground Protection: Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric, with timber/plywood boards overlaid. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified and approved by the project Arborist as required.

11.6.6 Temporary irrigation: Temporary irrigation should distribute water evenly throughout the area of the TPZ. The irrigation should be used for at minimum two hours weekly throughout all stages of the development, and may be required a higher frequency, this should be advised by the project Arborist.




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

An image from AS4970-2009,[13] with example tree protection.

[13] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.

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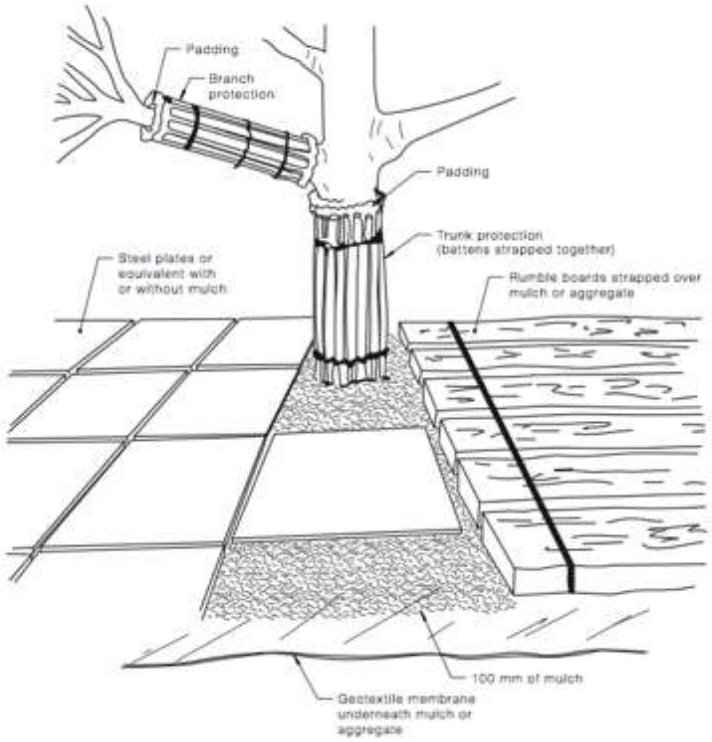


NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.

2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

An image from AS4970-2009,[14] with example tree protection.

11.7 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refueling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

[14] Council Of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

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11.8 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the 'top down, pull back' method.

11.9 **Excavations:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 30mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[15] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

11.10 **Landscaping:** All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with a consulting Arborist to minimise the impact to trees. General guidance is provided below to minimise the impact of new landscaping to trees to be retained.

- All excavations for landscaping works should be manual and in accordance with section 11.9.
- Replacement planting for all trees recommended for removal should be incorporated into the landscape plan. It is recommended that at minimum one tree for each tree proposed to be removed are planted to maintain/increase overall canopy cover at the site when mature. Any replacement tree must be selected in accordance with AS2303-2015 Tree stock for landscape use.
- The location of new plantings inside the TPZ of trees to be retained should be flexible to avoid unnecessary damage to tree roots greater than 40mm in diameter.

[15] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

- Level changes should be minimised. The existing ground levels within the landscape areas should not be lowered by more than 50mm or increased by more 100mm without assessment by a consulting Arborist.
- New retaining walls should be avoided. Where new retaining walls are proposed inside the TPZ of trees to be retained, they should be constructed from tree sensitive material, such as timber sleepers, that require minimal footings/excavations. If brick retaining walls are proposed inside the TPZ, considerer pier and beam type footings to bridge significant roots that are critical to the trees condition. Retaining walls must be located outside the SRZ and sleepers/beams located above existing soil grades.
- New footpaths and hard surfaces should be minimised, as they can limit the availability of water, nutrients and air to the trees root system. Where they are proposed, they should be constructed on or above existing soil grades to minimise root disturbance and consider using a permeable surface. Footpaths should be located outside the SRZ.
- Where fill/sub base is used inside the TPZ, fill material should be a coarse granular material that does not restrict the flow of water and air to the root system below. This type of material will also reduce the impact of soil compaction during construction.
- Any new fencing in the TPZ of trees should constructed carefully to avoid impacting significant roots. The location of fence posts should be flexible to allow for the retention of root greater than 40mm in diameter. The base of fence panels should be located above existing soil grades.

11.11 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

11.12 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

11.13 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

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## 12. CONSTRUCTION HOLD POINTS FOR TREE PROTECTION

12.1 **Hold Points:** Below is a sequence of hold points requiring project Arborist certification throughout the development process**.** It provides a list of hold points that must be checked and certified. All certification must be provided in written format upon completion of the development. The final certification must include details of any instructions for remediation undertaken during the development. The principal contractor should be responsible for implementing all tree protection requirements.

| Hold Point | Stage | Date Completed and Signature of Project Arborist Responsible |
|---|---|---|
| Project Arborist to hold pre construction site meeting with principal contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise. Project Arborist to mark all trees approved for removal under DA consent. | Prior to development work commencing | |
| Project Arborist to assess and certify that tree protection has been installed in accordance with AS4970-2009 prior to works commencing at site. | Prior to development work commencing. | |
| In accordance with AS4970-2009 the project arborist should carryout regular site inspections to ensure works are carried out in accordance with the recommendations. Site inspections are recommended on a monthly frequency. | On-going throughout the development | |
| The removal of existing structures inside the TPZ of any tree to be retained, such as the existing buildings and hard surfaces must be supervised by the project Arborist. | Demolition | |
| Project Arborist to supervise all manual excavations and root pruning inside the TPZ of any tree to be retained. Project Arborist to approve all pruning of roots greater than 30mm inside TPZ. All root pruning of roots greater than 30mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. | Construction | |
| Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009. | Construction | |
| Project Arborist to approve relocation of tree protection for landscaping. All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimise the impact to trees. | Construction/ Landscape | |
| After all demolition, construction and landscaping works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation. | Upon completion of development | |

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## 13. BIBLIOGRAPHY/REFERENCES


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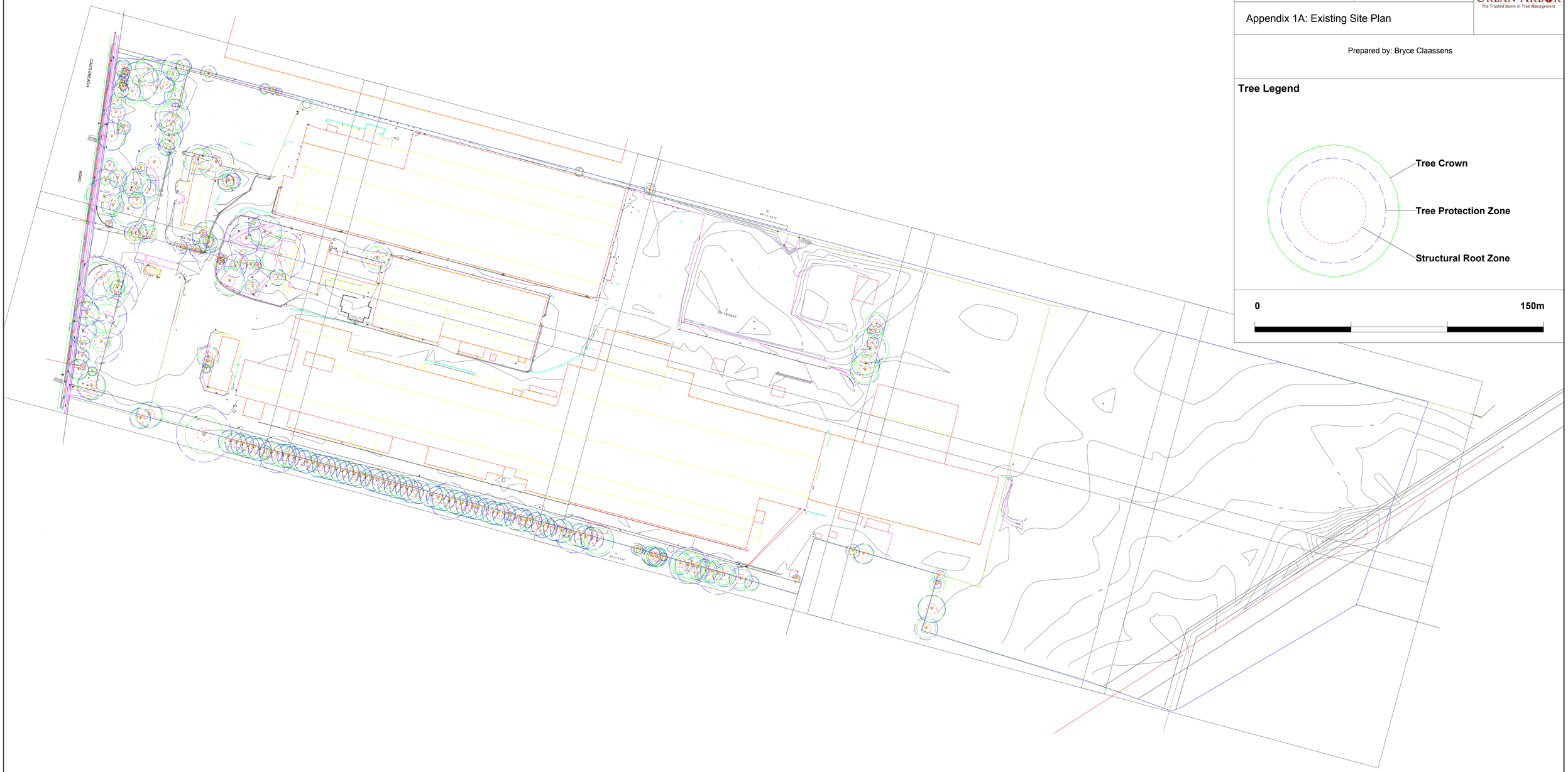
- *Penrith Local Environmental Plan 2010,* https://www.legislation.nsw.gov.au/#/view/EPI/2010/540.
- *Penrith Development Control Plan 2014,* https://www.penrithcity.nsw.gov.au/building-development/planning-zoning/planning-controls/development-control-plans.


## 14. LIST OF APPENDICES

The following are included in the appendices:

- Appendix 1A: Existing Site Plan
- Appendix 1B: Proposed Site Plan West
- Appendix 1C: Proposed Site Plan East
- Appendix 2: Tree Inspection Schedule
- Appendix 3: Further Information of Methodology


Bryce Claassens
Diploma of Arboriculture (AQF5)
Cert III Landscape Construction
Member Arboriculture Australia
Quantified Tree Risk Assessment (QTRA)
ISA Tree Risk Assessment Qualification (TRAQ)




# Urban Arbor Pty Ltd

PO Box 450, Turramurra, NSW, 2074
sales@urbanarbor.com.au, (02) 8004 2802

**Site Location: 2115 Castlereagh Road, Penrith, NSW**

| SCALE : | DATE : |
|---|---|
| 1 : 1000 @ A1 | 1/04/2021 |

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Appendix 1A: Existing Site Plan

Prepared by: Bryce Claassens

**Tree Legend**




**0** **150m**

REFER TO LACD04 - DETAIL LANDSCAPE PLAN - SHEET 01

REFER TO LACD07 - CARPARK LANDSCAPE PLAN

REFER TO LACD08 - CARPARK LANDSCAPE PLAN

REFER TO LACD05 - DETAIL LANDSCAPE PLAN - SHEET 02

REFER TO LACD06 - DETAIL LANDSCAPE PLAN - SHEET 03

REFER TO LALP03

CASTLEREAGH ROAD

PROPOSED KERB AND GUTTER / LINEMARKING - REFER TO ARCHITECTS / ENGINEERS DOCUMENTAT

DRAFT

# Urban Arbor Pty Ltd

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sales@urbanarbor.com.au, (02) 8004 2802

**Site Location: 2115 Castlereagh Road, Penrith, NSW**

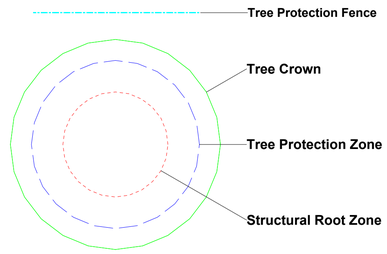
| SCALE : | | DATE : |
|---|---|---|
| 1 : 500 | @ A1 | 1/04/2021 |

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1B: Proposed Site Plan West

Prepared by: Bryce Claassens

**Tree Legend**




0 80m

# Urban Arbor Pty Ltd

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sales@urbanarbor.com.au, (02) 8004 2802


**Site Location: 2115 Castlereagh Road, Penrith, NSW**

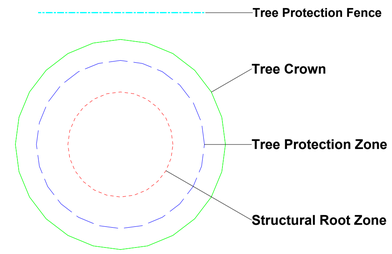
| SCALE : | DATE : |
|---|---|
| 1 : 500 @ A1 | 1/04/2021 |

URBAN ARBOR
The Trusted Name in Tree Management

Appendix 1C: Proposed Site Plan East

Prepared by: Bryce Claassens

**Tree Legend**




0 — 80m



PROPOSED BOUNDARY FENCE - REFER TO ARCHITECTS DOCUMENTATION

PROPOSED KERB AND GUTTER / LINEMARKING - REFER TO ARCHITECTS / ENGINEERS DOCUMENTATION

GARDEN PROFILE 04 - LANDSCAPE REGENERATION AREA - INCLUDING BANK STABILISING PLANTING. ALL WEED SPECIES TO BE REMOVED

REGENERATE AREA WITH NATIVE GROUNDCOVERS AND TREES FROM - **THE COOKS RIVER / CASTLEREAGH IRONBARK FOREST**

*TREES*
*Angophora floribunda*
*Eucalyptus ampifolia*
*Eucalyptus fibrosa*
*Eucalyptus moluccanna*
*Eucalyptus tereticornis*
*Melaleuca decora*

*GRASSESS AND GROUNDCOVERS*
*Dianella revoluta*
*Dichelachne micrantha*
*Glycine clandestina*
*Sonocarpus tetragynus*
*Hardenbergia violacea*
*Juncus usitatus*
*Lomandra longifolia*
*Lomandra multiflora*
*Microlaena stipoides var. stipoides*
*Pratia purpurascens*
*Themeda australis*
*Wahlenbergia gracilis*

BIO RETENTION BASIN - REFER TO CIVIL ENGINEER

OSD - STORMWATER MANAGEMENT SYSTEM REFER TO CIVIL ENGINEER

BIO RETENTION BASIN REFER TO CIVIL ENGINEER

LANDSCAPE WETLAND AREA - INCLUDING BANK STABILISING PLANTING. ALL WEED SPECIES TO BE REMOVED AND SOIL AMELIORATION / PREPARATION IN ACCORDANCE WITH GUIDELINES/ REQUIREMENT OUTLINED BY THE REPORT PREPARED BY CUMBERLAND ECOLOGY

PROPOSED KERB AND GUTTER / LINEMARKING - REFER TO ARCHITECTS / ENGINEERS DOCUMENTATION

PLANT MIX 01. NATIVE GRASSES
*Anigozanthos flavidus 'Red'*
*Dianella 'Goddess'*
*Dichelachne micrantha*
*Doryanthes excelsa*
*Imperata cylindrica*
*Isolepis nodosa*
*Lomandra confertifolia 'Little Con'*
*Lomandra fluviatilis 'Shara'*
*Lomandra longifolia 'Nyalla'*
*Lomandra 'Verday*

*Corymbia maculata*

*Flindersia australis*

*Tristaniopsis laurina*

*Elaeocarpus reticulatus*

REFER TO LALP02

PROPOSED KERB AND GUTTER / LINEMARKING - REFER TO ARCHITECTS / ENGINEERS DOCUMENTATION

PROPOSED BOUNDARY FENCE - REFER TO ARCHITECTS DOCUMENTATION

EN PLANTING ALONG BOUNDARY.
F MIX 03
*a smithii 'Sublime'*

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Magenta Lilly Pilly | *Syzygium paniculatum* | Mature | 11 | 4 | 340 | | | | | 340 | 360 | Good | Good | High | 1. Long | A1 | 4.1 | 2.2 | None. |
| 2 | Silky Oak | *Grevillea robusta* | Mature | 20 | 4 | 480 | | | | | 480 | 520 | Good | Good | High | 1. Long | A1 | 5.8 | 2.5 | None. |
| 3 | Smooth Bark Arizona Cypress | *Cupressus arizonica var. glabra* | Mature | 14 | 5 | 620 | | | | | 620 | 620 | Good | Good | Medium | 1. Long | A1 | 7.4 | 2.7 | DBH measured at base. |
| 4 | Dead Tree | *Unknown species* | Dead | 12 | 5 | 500 | | | | | 500 | 500 | Dead | Poor | Low | 4. Remove | ZZ4 | 6.0 | 2.5 | Dead tree. |
| 5 | Peppercorn Tree | *Schinus molle* | Mature | 13 | 7 | 760 | | | | | 760 | 800 | Good | Good | Medium | 1. Long | A1 | 9.1 | 3.0 | None. |
| 6 | Smooth Bark Arizona Cypress | *Cupressus arizonica var. glabra* | Mature | 12 | 4 | 80 | 100 | 100 | | | 162 | 210 | Good | Fair | Medium | 3. Short | Z10 | 2.0 | 1.7 | Asymmetric crown shape, crossing branches, poor overall form. |
| 7 | Willow Bottlebrush | *Callistemon salignus* | Mature | 17 | 4 | 310 | 330 | 160 | | | 480 | 640 | Good | Fair | High | 2. Medium | A1 | 5.8 | 2.7 | Co-dominant stems with tight union. |
| 8 | Sweetgum | *Liquidambar styraciflua* | Mature | 17 | 4 | 340 | | | | | 340 | 410 | Good | Good | Medium | 1. Long | A1 | 4.1 | 2.3 | None. |
| 9 | Broad Leaved Privet | *Ligustrum lucidum* | Mature | 9 | 4 | 600 | | | | | 600 | 600 | Good | Fair | Very Low | 2. Medium | Z3 | 7.2 | 2.7 | Noxious weed. DBH measured at base. |
| 10 | Sweetgum | *Liquidambar styraciflua* | Semi-mature | 9 | 3 | 270 | | | | | 270 | 320 | Good | Fair | Medium | 3. Short | Z9 | 3.2 | 2.1 | Previous failure of central leader. Wound on trunk at 2m. |
| 11 | Ash | *Fraxinus spp* | Semi-mature | 6 | 4 | 250 | 110 | 140 | | | 307 | 280 | Good | Fair | Medium | 2. Medium | A1 | 3.7 | 1.9 | Suppressed. |
| 12 | Pin Oak | *Quercus palustris* | Mature | 22 | 10 | 740 | | | | | 740 | 850 | Good | Fair | High | 2. Medium | A2 | 8.9 | 3.1 | Multiple branch failures. |
| 13 | Deodar Cedar | *Cedrus deodara* | Mature | 26 | 6 | 580 | | | | | 580 | 650 | Good | Good | High | 1. Long | A1 | 7.0 | 2.8 | Asymmetric crown shape. |
| 14 | Pin Oak | *Quercus palustris* | Mature | 26 | 10 | 860 | | | | | 860 | 950 | Good | Good | High | 1. Long | A1 | 10.3 | 3.2 | Deadwood in lower crown. |
| 15 | Spotted Gum | *Corymbia maculata* | Mature | 27 | 4 | 360 | | | | | 360 | 430 | Good | Fair | High | 3. Short | Z10 | 4.3 | 2.3 | Asymmetric crown shape due to power line clearance. |
| 16 | Spotted Gum | *Corymbia maculata* | Young | 7 | 1 | 120 | | | | | 120 | 150 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | Suppressed. |
| 17 | Spotted Gum | *Corymbia maculata* | Semi-mature | 26 | 2 | 260 | | | | | 260 | 310 | Good | Fair | Medium | 3. Short | Z10 | 3.1 | 2.0 | Asymmetric crown shape due to power line clearance. |
| 18 | Spotted Gum | *Corymbia maculata* | Semi-mature | 7 | 2 | 160 | | | | | 160 | 190 | Good | Fair | Low | 5. Small/Young | Z9 | 2.0 | 1.6 | Topped for power line clearance. |
| 19 | Spotted Gum | *Corymbia maculata* | Young | 12 | 1 | 150 | | | | | 150 | 180 | Fair | Fair | Low | 3. Short | Z9 | 2.0 | 1.6 | Topped for power line clearance. |
| 20 | Spotted Gum | *Corymbia maculata* | Mature | 24 | 2 | 250 | | | | | 250 | 280 | Good | Fair | Medium | 3. Short | Z10 | 3.0 | 1.9 | Asymmetric crown shape due to power line clearance. |
| 21 | Forest Red Gum | *Eucalyptus tereticornis* | Semi-mature | 24 | 2 | 180 | | | | | 180 | 210 | Good | Fair | Medium | 3. Short | Z10 | 2.2 | 1.7 | Asymmetric crown shape due to power line clearance. |
| 22 | Forest Red Gum | *Eucalyptus tereticornis* | Mature | 26 | 4 | 320 | | | | | 320 | 360 | Good | Fair | High | 3. Short | Z10 | 3.8 | 2.2 | Asymmetric crown shape due to power line clearance. |
| 23 | Blue Jacaranda | *Jacaranda mimosifolia* | Semi-mature | 9 | 6 | 90 | 240 | 270 | | | 372 | 400 | Good | Good | Medium | 1. Long | A1 | 4.5 | 2.3 | Asymmetric crown shape due to adjacent tree. |
| 24 | Sweetgum | *Liquidambar styraciflua* | Semi-mature | 11 | 3 | 340 | | | | | 340 | 380 | Good | Good | Medium | 1. Long | A1 | 4.1 | 2.2 | None. |
| 25 | Sweetgum | *Liquidambar styraciflua* | Dead | 6 | 0 | 410 | | | | | 410 | 460 | Dead | Poor | Low | 4. Remove | ZZ4 | 4.9 | 2.4 | Dead stag. |
| 26 | Orange Jessamine | *Murraya paniculata* | Semi-mature | 5 | 3 | 300 | | | | | 300 | 300 | Good | Fair | Low | 5. Small/Young | Z1 | 3.6 | 2.0 | The tree has not been identified on the received plans. DBH measured at base. |
| 27 | Blue Jacaranda | *Jacaranda mimosifolia* | Mature | 16 | 7 | 340 | 340 | 260 | 270 | | 610 | 650 | Good | Good | Medium | 1. Long | A1 | 7.3 | 2.8 | Pruned for power line clearance. |
| 28 | Cherry | *Prunus spp* | Semi-mature | 9 | 4 | 170 | 150 | | | | 227 | 400 | Good | Fair | Medium | 2. Medium | A1 | 2.7 | 2.3 | Co-dominant stems. Epicormic growth. |
| 29 | Dead Tree | *Unknown species* | Dead | 7 | 4 | 400 | | | | | 400 | 400 | Dead | Poor | Low | 4. Remove | ZZ4 | 4.8 | 2.3 | Dead tree. |
| 30 | Italian Cypress | *Cupressus sempervirens* | Mature | 16 | 2 | 500 | | | | | 500 | 500 | Good | Good | Medium | 2. Medium | A1 | 6.0 | 2.5 | None. |
| 31 | Lemon Scented Gum | *Corymbia citriodora* | Mature | 27 | 10 | 440 | 630 | | | | 768 | 950 | Good | Fair | High | 2. Medium | A2 | 9.2 | 3.2 | Asymmetric crown shape due to power line clearance. |
| 32 | Deodar Cedar | *Cedrus deodara* | Mature | 26 | 5 | 490 | | | | | 490 | 550 | Good | Good | Medium | 1. Long | A1 | 5.9 | 2.6 | None. |
| 33 | Evergreen Ash | *Fraxinus griffithii* | Young | 4 | 2 | 160 | | | | | 160 | 160 | Good | Good | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | The tree has not been identified on the received plans. |
| 34 | Italian Cypress | *Cupressus sempervirens* | Mature | 11 | 1 | 330 | | | | | 330 | 330 | Good | Fair | Medium | 2. Medium | A1 | 4.0 | 2.1 | DBH measured at base. |
| 35 | Italian Cypress | *Cupressus sempervirens* | Mature | 15 | 4 | 490 | | | | | 490 | 490 | Good | Fair | Medium | 2. Medium | A1 | 5.9 | 2.5 | None. |
| 36 | Camphor Laurel | *Cinnamomum camphora* | Mature | 10 | 4 | 410 | | | | | 410 | 440 | Good | Good | Medium | 1. Long | A1 | 4.9 | 2.3 | None. |
| 37 | English Elm | *Ulmus procera* | Mature | 22 | 8 | 800 | | | | | 800 | 850 | Good | Good | High | 1. Long | A1 | 9.6 | 3.1 | None. |
| 38 | Atlas Cedar | *Cedrus atlantica* | Mature | 19 | 4 | 360 | | | | | 360 | 430 | Good | Good | Medium | 1. Long | A1 | 4.3 | 2.3 | Asymmetric crown shape. |
| 39 | Crepe Myrtle | *Lagerstroemia indica* | Semi-mature | 7 | 3 | 330 | | | | | 330 | 350 | Good | Fair | Low | 5. Small/Young | Z1 | 4.0 | 2.1 | None. |
| 40 | Lemon Scented Gum | *Corymbia citriodora* | Mature | 23 | 5 | 330 | | | | | 330 | 360 | Good | Good | High | 1. Long | A1 | 4.0 | 2.2 | None. |
| 41 | Deodar Cedar | *Cedrus deodara* | Mature | 20 | 6 | 620 | | | | | 620 | 650 | Good | Good | High | 1. Long | A1 | 7.4 | 2.8 | None. |
| 42 | Crepe Myrtle | *Lagerstroemia indica* | Semi-mature | 5 | 2 | 250 | | | | | 250 | 250 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.8 | DBH measured at base. |
| 43 | Deodar Cedar | *Cedrus deodara* | Mature | 24 | 8 | 790 | | | | | 790 | 880 | Good | Good | High | 1. Long | A1 | 9.5 | 3.1 | None. |
| 44 | Parramatta Wattle | *Acacia parramattensis* | Mature | 5 | 2 | 350 | | | | | 350 | 350 | Good | Fair | Low | 5. Small/Young | Z1 | 4.2 | 2.1 | The tree has not been identified on the received plans. |

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | Wattle | *Acacia spp* | Mature | 7 | 3 | 180 | 110 | | | | 211 | 340 | Fair | Fair | Low | 3. Short | Z4 | 2.5 | 2.1 | Apical dieback. Tree is in decline. |
| 46 | Wattle | *Acacia spp* | Semi-mature | 6 | 2 | 90 | 60 | | | | 108 | 120 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | The tree has not been identified on the received plans. |
| 47 | Wattle | *Acacia spp* | Young | 5 | 1 | 90 | | | | | 90 | 120 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | The tree has not been identified on the received plans. |
| 48 | Silky Oak | *Grevillea robusta* | Mature | 22 | 8 | 770 | | | | | 770 | 850 | Good | Good | High | 1. Long | A1 | 9.2 | 3.1 | None. |
| 49 | Silky Oak | *Grevillea robusta* | Mature | 20 | 6 | 650 | | | | | 650 | 700 | Good | Good | High | 1. Long | A1 | 7.8 | 2.8 | None. |
| 50 | Chinese Hackberry | *Celtis sinensis* | Semi-mature | 7 | 4 | 120 | 100 | | | | 156 | 200 | Good | Fair | Low | 5. Small/Young | Z3 | 2.0 | 1.7 | The tree has not been identified on the received plans. Exempt species. |
| 51 | Unknown | *Unknown species* | Mature | 7 | 2 | 300 | | | | | 300 | 300 | Fair | Fair | Low | 3. Short | Z10 | 3.6 | 2.0 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 52 | Unknown | *Unknown species* | Mature | 6 | 1 | 250 | | | | | 250 | 250 | Fair | Fair | Low | 3. Short | Z10 | 3.0 | 1.8 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 53 | Italian Cypress | *Cupressus sempervirens* | Semi-mature | 5 | 1 | 250 | | | | | 250 | 250 | Fair | Fair | Low | 3. Short | Z10 | 3.0 | 1.8 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 54 | Italian Cypress | *Cupressus sempervirens* | Mature | 11 | 1 | 400 | | | | | 400 | 400 | Fair | Fair | Low | 3. Short | Z10 | 4.8 | 2.3 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 55 | Eucalypt | *Eucalyptus spp* | Mature | 14 | 4 | 410 | | | | | 410 | 460 | Good | Fair | High | 3. Short | Z9 | 2.0 | 2.4 | Dieback of central stem at 2m. |
| 56 | Queensland Brushbox | *Lophostemon confertus* | Semi-mature | 12 | 3 | 220 | | | | | 220 | 260 | Good | Good | Medium | 2. Medium | A1 | 2.6 | 1.9 | None. |
| 57 | River Red Gum | *Eucalyptus camaldulensis* | Mature | 27 | 8 | 700 | | | | | 700 | 760 | Good | Good | Very High | 1. Long | AA | 8.4 | 2.9 | None. |
| 58 | Brown Pine | *Podocarpus elatus* | Mature | 10 | 4 | 280 | 210 | | | | 350 | 450 | Good | Good | Medium | 1. Long | A1 | 4.2 | 2.4 | None. |
| 59 | Dead Tree | *Unknown species* | Dead | 15 | 3 | 470 | | | | | 470 | 700 | Dead | Poor | Medium | 4. Remove | ZZ4 | 5.6 | 2.8 | Dead tree. |
| 60 | Brown Pine | *Podocarpus elatus* | Mature | 14 | 4 | 260 | 170 | | | | 311 | 400 | Good | Fair | Medium | 2. Medium | A2 | 3.7 | 2.3 | Co-dominant stems with tight shaped union. |
| 61 | Italian Cypress | *Cupressus sempervirens* | Semi-mature | 10 | 1 | 200 | | | | | 200 | 200 | Good | Fair | Low | 3. Short | Z10 | 2.4 | 1.7 | Suppressed by vine cover. |
| 62 | Italian Cypress | *Cupressus sempervirens* | Young | 9 | 1 | 110 | | | | | 110 | 120 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | The tree has not been identified on the received plans. |
| 63 | Silky Oak | *Grevillea robusta* | Young | 9 | 1 | 130 | | | | | 130 | 150 | Good | Fair | Low | 5. Small/Young | Z1 | 2.0 | 1.5 | The tree has not been identified on the received plans. |
| 64 | Italian Cypress | *Cupressus sempervirens* | Semi-mature | 13 | 2 | 250 | | | | | 250 | 280 | Good | Good | Medium | 1. Long | A1 | 3.0 | 1.9 | The tree has not been identified on the received plans. |
| 65 | Mexican Pine | *Pinus patula* | Mature | 24 | 7 | 650 | | | | | 650 | 700 | Good | Fair | High | 2. Medium | A2 | 7.8 | 2.8 | The tree has not been identified on the received plans. Vine cover up trunk. |
| 66 | Italian Cypress | *Cupressus sempervirens* | Mature | 13 | 2 | 500 | | | | | 500 | 500 | Good | Fair | Medium | 2. Medium | A2 | 6.0 | 2.5 | Suppressed by vine cover. |
| 67 | Italian Cypress | *Cupressus sempervirens* | Semi-mature | 10 | 1 | 300 | | | | | 300 | 300 | Fair | Fair | Low | 3. Short | Z10 | 3.6 | 2.0 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 68 | Italian Cypress | *Cupressus sempervirens* | Mature | 15 | 2 | 450 | | | | | 450 | 450 | Good | Fair | Medium | 2. Medium | A2 | 5.4 | 2.4 | The tree has not been identified on the received plans. Suppressed by vine cover. |
| 69 | Broad Leaved Privet | *Ligustrum lucidum* | Semi-mature | 6 | 3 | 100 | 130 | 50 | | | 171 | 190 | Good | Fair | Very Low | 2. Medium | Z3 | 2.1 | 1.6 | The tree has not been identified on the received plans. Noxious weed. |
| 70 | Queensland Brushbox | *Lophostemon confertus* | Mature | 5 | 3 | 170 | 170 | 200 | | | 313 | 450 | Fair | Fair | Low | 5. Small/Young | Z1 | 2.0 | 2.4 | Cambium damage to trunk. |
| 71 | Ashleaf Maple | *Acer negundo* | Semi-mature | 9 | 4 | 350 | | | | | 350 | 360 | Poor | Fair | Low | 4. Remove | ZZ4 | 4.2 | 2.2 | Significant apical dieback. In advanced stages of decline. |
| 72 | Pin Oak | *Quercus palustris* | Mature | 27 | 10 | 1070 | | | | | 1070 | 1130 | Good | Fair | High | 1. Long | A1 | 12.8 | 3.5 | Co-dominant stems with included bark. Multiple natural braces compensating for bark inclusion. |
| 73 | Deodar Cedar | *Cedrus deodara* | Mature | 20 | 7 | 700 | | | | | 700 | 750 | Good | Good | High | 1. Long | A1 | 8.4 | 2.9 | None. |
| 74 | Queensland Brushbox | *Lophostemon confertus* | Semi-mature | 9 | 2 | 250 | | | | | 250 | 290 | Good | Fair | Medium | 2. Medium | A1 | 3.0 | 2.0 | Two visible branch failures. |
| 75 | Lemon Scented Gum | *Corymbia citriodora* | Mature | 24 | 8 | 730 | | | | | 730 | 850 | Good | Good | High | 1. Long | A2 | 8.8 | 3.1 | 10% deadwood throughout canopy. |
| 76 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 6 | 660 | | | | | 660 | 740 | Fair | Good | High | 2. Medium | A2 | 7.9 | 2.9 | Minor dieback with epicormic growth. Monitor health. |
| 77 | Tree of Heaven | *Ailanthus altissima* | Semi-mature | 8 | 2 | 200 | | | | | 200 | 230 | Good | Good | Low | 2. Medium | Z3 | 2.4 | 1.8 | Exempt species. |
| 78 | Chinese Hackberry | *Celtis sinensis* | Semi-mature | 6 | 2 | 250 | | | | | 250 | 250 | Good | Fair | Low | 5. Small/Young | Z3 | 3.0 | 1.8 | The tree has not been identified on the received plans. Located in adjoining property. Exempt species. |
| 79 | Swamp Mahogany | *Eucalyptus robusta* | Mature | 14 | 6 | 380 | | | | | 380 | 440 | Good | Good | High | 1. Long | A1 | 4.6 | 2.3 | Epicormic growth. |
| 80 | Swamp Mahogany | *Eucalyptus robusta* | Mature | 11 | 3 | 340 | | | | | 340 | 450 | Fair | Fair | High | 3. Short | Z4 | 4.1 | 2.4 | Apical dieback. Early stages of decline. |

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | Yellow Bloodwood | *Corymbia eximia* | Mature | 16 | 3 | 260 | | | | | 260 | 300 | Good | Good | Medium | 1. Long | A1 | 3.1 | 2.0 | None. |
| 82 | Willow Pepermint | *Eucalyptus elata* | Mature | 25 | 10 | 460 | 500 | | | | 679 | 1050 | Fair | Good | Very High | 3. Short | Z4 | 8.2 | 3.4 | Co-dominant stems at base. Dieback of North stem. In decline. |
| 83 | Swamp Mahogany | *Eucalyptus robusta* | Mature | 21 | 6 | 440 | 430 | | | | 615 | 810 | Good | Good | High | 1. Long | A1 | 7.4 | 3.0 | Epicormic growth. |
| 84 | Willow Pepermint | *Eucalyptus elata* | Mature | 12 | 7 | 650 | | | | | 650 | 750 | Fair | Fair | High | 3. Short | Z9 | 7.8 | 2.9 | Wound on trunk. Dieback in canopy - topped at 10m. |
| 85 | Tasmainian Blue Gum | *Eucalyptus globulus* | Mature | 28 | 9 | 950 | | | | | 950 | 1100 | Good | Good | Very High | 1. Long | AA | 11.4 | 3.4 | Epicormic growth at base. |
| 86 | Brazillian Pepper Tree | *Schinus terebinthifolia* | Mature | 7 | 5 | 650 | | | | | 650 | 650 | Good | Fair | Medium | 3. Short | Z10 | 7.8 | 2.8 | Poor overall form. |
| 87 | Tulip Tree | *Liriodendron tulipifera* | Mature | 16 | 4 | 250 | 170 | | | | 302 | 350 | Good | Fair | Medium | 2. Medium | A2 | 3.6 | 2.1 | Co-dominant stems with tight union. |
| 88 | Brazillian Pepper Tree | *Schinus terebinthifolia* | Mature | 5 | 5 | 990 | | | | | 990 | 990 | Good | Fair | Medium | 3. Short | Z10 | 11.9 | 3.3 | Poor overall form. DBH measured at base. |
| 89 | Silky Oak | *Grevillea robusta* | Mature | 10 | 4 | 220 | 250 | | | | 333 | 420 | Good | Good | Medium | 3. Short | Z9 | 4.0 | 2.3 | North stem topped. |
| 90 | Sweetgum | *Liquidambar styraciflua* | Mature | 15 | 6 | 540 | | | | | 540 | 600 | Good | Fair | Medium | 3. Short | Z10 | 6.5 | 2.7 | Asymmetric crown shape due to power line clearance. |
| 91 | Willow Pepermint | *Eucalyptus elata* | Mature | 15 | 7 | 900 | | | | | 900 | 1000 | Good | Fair | Very High | 3. Short | Z9 | 10.8 | 3.3 | Loss of central leader at 8m. |
| 92 | Sweetgum | *Liquidambar styraciflua* | Mature | 15 | 6 | 590 | | | | | 590 | 740 | Good | Fair | Medium | 3. Short | Z10 | 7.1 | 2.9 | Asymmetric crown shape due to power line clearance. Lopped. |
| 93 | Silky Oak | *Grevillea robusta* | Mature | 21 | 5 | 930 | | | | | 930 | 1150 | Poor | Fair | Medium | 3. Short | ZZ4 | 11.2 | 3.5 | Significant apical dieback, in advanced stages of decline. |
| 94 | Dead Tree | *Unknown species* | Dead | 6 | 2 | 350 | | | | | 350 | 350 | Dead | Poor | Very Low | 4. Remove | ZZ4 | 2.0 | 2.1 | Dead tree. |
| 95 | Ash 'Raywood' | *Fraxinus raywood* | Semi-mature | 9 | 4 | 290 | | | | | 290 | 330 | Good | Good | Medium | 1. Long | A1 | 3.5 | 2.1 | None. |
| 96 | Sweetgum | *Liquidambar styraciflua* | Mature | 17 | 5 | 440 | | | | | 440 | 500 | Good | Fair | Medium | 3. Short | Z10 | 5.3 | 2.5 | Asymmetric crown shape due to power line clearance. |
| 97 | Weeping Bottlebrush | *Callistemon viminalis* | Semi-mature | 7 | 2 | 120 | 90 | 80 | 100 | 50 | 203 | 400 | Good | Fair | Low | 5. Small/Young | Z1 | 2.4 | 2.3 | Co-dominant stems at base. |
| 98 | Pecan | *Carya illinoinensis* | Mature | 18 | 7 | 620 | | | | | 620 | 700 | Good | Good | High | 1. Long | A1 | 7.4 | 2.8 | None. |
| 99 | Silky Oak | *Grevillea robusta* | Mature | 12 | 5 | 480 | | | | | 480 | 550 | Good | Good | High | 1. Long | A1 | 5.8 | 2.6 | None. |
| 100 | Weeping Bottlebrush | *Callistemon viminalis* | Young | 5 | 2 | 250 | | | | | 250 | 250 | Good | Fair | Low | 5. Small/Young | Z1 | 3.0 | 1.8 | The tree has not been identified on the received plans. DBH measured at base. |
| 101 | Weeping Bottlebrush | *Callistemon viminalis* | Semi-mature | 6 | 2 | 180 | 60 | | | | 190 | 230 | Good | Fair | Low | 5. Small/Young | Z1 | 2.3 | 1.8 | Asymmetric crown shape. |
| 102 | Silky Oak | *Grevillea robusta* | Mature | 12 | 5 | 450 | | | | | 450 | 480 | Good | Good | Medium | 1. Long | A1 | 5.4 | 2.4 | The tree has not been identified on the received plans. Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 103 | Chinese Hackberry | *Celtis sinensis* | Mature | 10 | 7 | 230 | 230 | 250 | 300 | 180 | 539 | 600 | Good | Fair | Low | 2. Medium | Z3 | 6.5 | 2.7 | The tree has not been identified on the received plans. Exempt species. |
| 104 | Tallowood | *Eucalyptus microcorys* | Mature | 27 | 10 | 1200 | | | | | 1200 | 1200 | Good | Good | Very High | 1. Long | AA | 14.4 | 3.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 105 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 106 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 450 | | | | | 450 | 500 | Good | Good | High | 1. Long | A1 | 5.4 | 2.5 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 107 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 108 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 109 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 110 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 111 | Tallowood | *Eucalyptus microcorys* | Semi-mature | 10 | 3 | 300 | | | | | 300 | 350 | Good | Good | Medium | 1. Long | A1 | 3.6 | 2.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 112 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 113 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 800 | | | | | 800 | 850 | Good | Good | Very High | 1. Long | AA | 9.6 | 3.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 114 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 115 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 116 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 117 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 118 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 119 | Tallowood | *Eucalyptus microcorys* | Semi-mature | 11 | 3 | 350 | | | | | 350 | 400 | Good | Good | Medium | 1. Long | A1 | 4.2 | 2.3 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 120 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 121 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 122 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 123 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 124 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 125 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 126 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 127 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 128 | Tallowood | *Eucalyptus microcorys* | Semi-mature | 11 | 3 | 350 | | | | | 350 | 400 | Good | Good | Medium | 1. Long | A1 | 4.2 | 2.3 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 129 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 130 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 131 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 132 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 133 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 134 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 135 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 136 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 137 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 138 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 139 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 140 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 141 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 800 | | | | | 800 | 850 | Good | Good | Very High | 1. Long | AA | 9.6 | 3.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 142 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 143 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 144 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 145 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 146 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 147 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 148 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 149 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 150 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 151 | Tallowood | *Eucalyptus microcorys* | Semi-mature | 10 | 2 | 200 | | | | | 200 | 250 | Good | Good | Medium | 1. Long | A1 | 2.4 | 1.8 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 152 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 153 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 154 | Tallowood | *Eucalyptus microcorys* | Mature | 10 | 3 | 300 | | | | | 300 | 350 | Good | Good | Medium | 1. Long | A1 | 3.6 | 2.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 155 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 156 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 157 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 158 | Tallowood | *Eucalyptus microcorys* | Semi-mature | 12 | 4 | 400 | | | | | 400 | 450 | Good | Good | Medium | 1. Long | A1 | 4.8 | 2.4 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |

## Appendix 2 - Tree Inspection Schedule

| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 159 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 160 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 161 | Tallowood | *Eucalyptus microcorys* | Dead | 9 | 2 | 200 | | | | | 200 | 250 | Dead | Poor | Low | 4. Remove | ZZ4 | 2.0 | 1.8 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 162 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 800 | | | | | 800 | 850 | Good | Good | Very High | 1. Long | AA | 9.6 | 3.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 163 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 164 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 165 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 6 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 166 | Tallowood | *Eucalyptus microcorys* | Mature | 25 | 7 | 700 | | | | | 700 | 800 | Good | Good | Very High | 1. Long | AA | 8.4 | 3.0 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 167 | Tree of Heaven | *Ailanthus altissima* | Mature | 10 | 2 | 250 | | | | | 250 | 250 | Good | Fair | Low | 2. Medium | Z3 | 3.0 | 1.8 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. Exempt species. |
| 168 | Tree of Heaven | *Ailanthus altissima* | Mature | 10 | 2 | 250 | | | | | 250 | 250 | Good | Fair | Low | 2. Medium | Z3 | 2.0 | 1.8 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. Exempt species. |
| 169 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 5 | 400 | | | | | 400 | 450 | Good | Good | High | 1. Long | A1 | 4.8 | 2.4 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 170 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 5 | 400 | | | | | 400 | 450 | Good | Good | High | 1. Long | A1 | 4.8 | 2.4 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 171 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 5 | 400 | | | | | 400 | 450 | Good | Good | High | 1. Long | A1 | 4.8 | 2.4 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 172 | Tallowood | *Eucalyptus microcorys* | Mature | 24 | 5 | 400 | | | | | 400 | 450 | Good | Good | High | 1. Long | A1 | 4.8 | 2.4 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 173 | Chinese Hackberry | *Celtis sinensis* | Young | 6 | 2 | 150 | 100 | | | | 180 | 200 | Good | Fair | Low | 5. Small/Young | Z3 | 2.0 | 1.7 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. Exempt species. |
| 174 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 175 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 7 | 800 | | | | | 800 | 850 | Good | Good | Very High | 1. Long | AA | 9.6 | 3.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 176 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 7 | 750 | | | | | 750 | 800 | Good | Good | Very High | 1. Long | AA | 9.0 | 3.0 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 177 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 178 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 179 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 180 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 7 | 900 | | | | | 900 | 950 | Good | Good | Very High | 1. Long | AA | 10.8 | 3.2 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 181 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 2.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |

## Appendix 2 - Tree Inspection Schedule

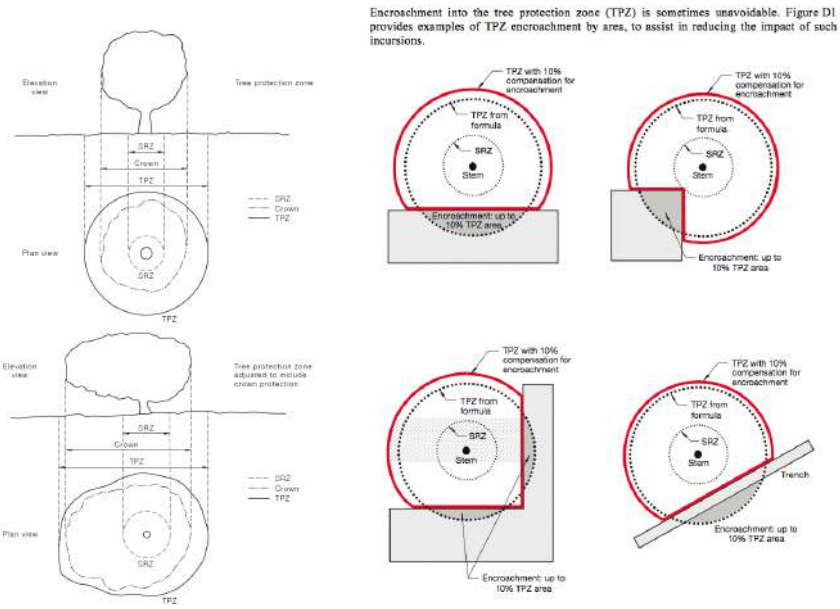
| Tree ID | Common Name | Botanical Name | Age Class | Height (m) | Canopy Spread Radius (m) | Stem 1 | Stem 2 | Stem 3 | Stem 4 | Stem 5 | DBH (mm) | DAB (mm) | Health | Structure | Amenity Value | SULE | Retention Value | TPZ Radius (m) | SRZ Radius (m) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 182 | Tallowood | *Eucalyptus microcorys* | Mature | 20 | 5 | 500 | | | | | 500 | 550 | Good | Good | High | 1. Long | A1 | 6.0 | 2.6 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. |
| 183 | Chinese Hackberry | *Celtis sinensis* | Mature | 8 | 4 | 110 | 150 | 230 | | | 296 | 350 | Good | Fair | Low | 5. Small/Young | Z3 | 3.5 | 2.1 | Located in adjoining property. DBH estimated. Could not place ID tag on tree. Exempt species. |
| 184 | Tree of Heaven | *Ailanthus altissima* | Semi-mature | 7 | 1 | 130 | | | | | 130 | 140 | Good | Fair | Low | 5. Small/Young | Z3 | 2.0 | 1.5 | No ID tag placed on tree. Exempt species. |
| 185 | Willow Bottlebrush | *Callistemon salignus* | Semi-mature | 6 | 2 | 300 | | | | | 300 | 350 | Fair | Fair | Medium | 3. Short | Z9 | 3.6 | 2.1 | The tree is located in adjoining property. Could not place ID tag on tree. Trunk failure at 2m. |
| 186 | Willow Bottlebrush | *Callistemon salignus* | Mature | 9 | 5 | 440 | | | | | 440 | 480 | Good | Good | High | 1. Long | A1 | 5.3 | 2.4 | The tree is located in the adjoining property. Could not place ID tag on tree. |
| 187 | Chinese Hackberry | *Celtis sinensis* | Mature | 8 | 4 | 230 | | | | | 230 | 250 | Good | Good | Low | 2. Medium | Z3 | 2.8 | 1.8 | The tree has not been identified on the received plans. The tree is located in the adjoining property. Could not place ID tag on tree. Exempt species. |
| 188 | Chinese Hackberry | *Celtis sinensis* | Semi-mature | 6 | 4 | 120 | 110 | 100 | | | 191 | 220 | Good | Fair | Low | 5. Small/Young | Z3 | 2.3 | 1.8 | The tree has not been identified on the received plans. Area inaccessible. Could not place ID tag on tree. Tree information has been estimated only. Exempt species. |
| 189 | Grey Ironbark | *Eucalyptus paniculata* | Mature | 24 | 7 | 600 | | | | | 600 | 650 | Good | Good | Very High | 1. Long | AA | 7.2 | 2.8 | Area inaccessible. Could not place ID tag on tree. Tree information has been estimated only. |
| 190 | Eucalypt | *Eucalyptus spp* | Dead | 12 | 5 | 500 | | | | | 500 | 550 | Dead | Poor | High | 4. Remove | ZZ4 | 6.0 | 2.6 | Area inaccessible. Could not place ID tag on tree. Tree information has been estimated only. Dead tree. |

**Explanatory Notes**

**Tree Species** - Where species is unknown it is indicated with an *'spp'.*
**Age Class** - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y).
**Diameter at Breast Height (DBH)** - Measured with a DBH tape or estimated at approximately 1.4m above ground level.
**Diameter Above root Buttresses (DAB):** Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.
**Height** - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.
**Spread** - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.
**Tree Protection Zone (TPZ)** - DBH x 12. Measured in radius from the centre of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 metre outside the crown projection.
**Structural Root Zone (SRZ)** - $(DAB \times 50)^{0.42} \times 0.64$. Measured in radius from the centre of the trunk. Rounded up to nearest 0.1m.
**Health** - Good/Fair/Poor/Dead
**Structure** - Good/Fair/Poor
**Safe Useful Life Expectancy (SULE)** - 1. Long (40+years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.
**Amenity Value** - Very High/High/Medium/Low/Very Low.
**Retention Value:** Tree AZ, see appendix 3 for categories.

## Appendix 3 - Further Information of Methodology

1. **Tree Protection Zone:** The tree protection zone (TPZ) is the principle means of protecting trees on development sites. The TPZ is 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 radius of the TPZ is calculated for each tree by multiplying its DBH x 12. The derived value is measured in radius from the centre of the stem/trunk at ground level. A TPZ should not be less than 2.0 metres nor greater than 15 metres (except where crown protection is required).
It is commonly observed that tree roots will extend significant further than the indicative TPZ, however the TPZ is an area identified AS4970-2009 to be extent where root loss or disturbance will generally not impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained proposed developments must provide an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The tree protection also incorporates the SRZ (see below for more information about the SRZ). I have calculated the TPZ of palms, other monocots, cycads and tree ferns at one metre outside the crown projection. See appendices for additional information about the TPZ including information about calculating the TPZ and examples of TPZ encroachment.
**Minor encroachment into TPZ:** Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.
**Major encroachment into TPZ:** Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted.




2. **Structural Root Zone:** This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always need to be maintained to preserve a viable tree as it will only have a minor effect on the trees vigour and health. There are several factors that determine the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally work within the SRZ should be avoided.
An indicative SRZ radius can be determined from the diameter of the trunk measured immediately above the root buttresses. Root investigation could provide more information about the extent of the SRZ. The following formula should be used to calculate the SRZ.
SRZ radius = $(D \times 50)^{0.42} \times 0.64$ (D = Diameter above root buttress).

3. **Tree Age Class:** If can be difficult to determine the age of a tree without carrying out invasive tests that may damage the tree, so we have categorised there likely age class which is defined below;
    - Young/Newly planted: Young or recently planted tree.
    - Semi Mature: Up to 20% of the usual life expectancy for the species.
    - Early mature/Mature: Between 20%-80% of the usual life expectancy for the species.
    - Over mature: Over 80% of the usual life expectancy for the species.
    - Dead: Tree is dead or almost dead.

4. **Health/Physiological Condition:** Below are examples conditions used when assigning a category for tree health.

| Category | Example condition | Summary |
|---|---|---|
| Good | • Crown has good foliage density for species.<br>• Tree shows no or minimal signs of pathogens that are unlikely to have an effect on the health of the tree.<br>• Tree is displaying good vigour and reactive growth development. | • The tree is in above average health and condition and no remedial works are required. |
| Fair | • The tree may be starting to dieback or have over 25% deadwood.<br>• Tree may have slightly reduced crown density or thinning.<br>• There may be some discolouration of foliage.<br>• Average reactive growth development.<br>• There may be early signs of pathogens which may further deteriorate the health of the tree.<br>• There may be epicormic growth indicating increased levels of stress within the tree. | • The tree is in below average health and condition and may require remedial works to improve the trees health. |
| Poor | • The may be in decline, have extensive dieback or have over 30% deadwood.<br>• The canopy may be sparse or the leaves may be unusually small for species.<br>• Pathogens or pests are having a significant detrimental effect on the tree health. | • The tree is displaying low levels of health and removal or remedial works may be required. |
| Dead | • The tree is dead or almost dead. | • The tree should generally be removed. |

5. **Structural Condition:** Below are examples conditions used when assigning a category for structural condition.

| Category | Example condition | Summary |
|---|---|---|
| Good | • Branch unions appear to be strong with no sign of defects.<br>• There are no significant cavities.<br>• The tree is unlikely to fail in usual conditions.<br>• The tree has a balanced crown shape and form. | • The tree is considered structurally good with well developed form. |
| Fair | • The tree may have minor structural defects within the structure of the crown that could potentially develop into more significant defects.<br>• The tree may a cavity that is currently unlikely to fail but may deteriorate in the future.<br>• The tree is an unbalanced shape or leans significantly.<br>• The tree may have minor damage to its roots.<br>• The root plate may have moved in the past but the tree has now compensated for this.<br>• Branches may be rubbing or crossing. | • The identified defects are unlikely cause major failure.<br>• Some branch failure may occur in usual conditions.<br>• Remedial works can be undertaken to alleviate potential defects. |
| Poor | • The tree has significant structural defects.<br>• Branch unions may be poor or weak.<br>• The tree may have a cavity or cavities with excessive levels of decay that could cause catastrophic failure.<br>• The tree may have root damage or is displaying signs of recent movement.<br>• The tree crown may have poor weight distribution which could cause failure. | • The identified defects are likely to cause either partial or whole failure of the tree. |

6. **Amenity Value:** To determine the amenity value of a tree we assess a number of different factors, which include but are not limited to the information below.
   - The visibility of the tree to adjacent sites.
   - The relationship between the tree and the site.
   - Whether the tree is protected by any statuary conditions.
   - The habitat value of the tree.
   - Whether the tree is considered a noxious weed species.

   The amenity value is rated using one of the following values.
   - Very High
   - High
   - Moderate
   - Low
   - Very Low

7. **Safe Useful Life Expectancy (SULE), (Barrel, 2001):** A trees safe useful life expectancy is determined by assessing a number of different factors including the health and vitality, estimated age in relation to expected life expectancy for the species, structural defects, and remedial works that could allow retention in the existing situation.

| Category | Description |
|---|---|
| 1. Long - Over 40 years | (a) Structurally sound trees located in positions that can accommodate future growth.<br>(b) Trees that could be made suitable for retention in the long term by remedial tree care.<br>(c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention. |
| 2. Medium - 15 to 40 years | (a) Trees that may only live between 15 and 40 more years.<br>(b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.<br>(c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.<br>(d) Trees that could be made suitable for retention in the medium term by remedial tree care. |
| 3. Short - 5 to 15 years | (a) Trees that may only live between 5 and 15 more years.<br>(b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.<br>(c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.<br>(d) Trees that require substantial remedial tree care and are only suitable for retention in the short term. |
| 4. Remove - Under 5 years | (a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.<br>(b) Dangerous trees because of instability or recent loss of adjacent trees.<br>(c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.<br>(d) Damaged trees that are clearly not safe to retain.<br>(e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.<br>(f) Trees that are damaging or may cause damage to existing structures within 5 years.<br>(g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f).<br>(h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review. |
| 5. Small/Young | (a) Small trees less than 5m in height.<br>(b) Young trees less than 15 years old but over 5m in height.<br>(c) Formal hedges and trees intended for regular pruning to artificially control growth. |

8. **Root investigations:** The root investigations should identify roots greater than 30mm in diameter that are located along the edge of the structures footprint or in the location of footings. Root investigations must be carried out using non-invasive methods (manual excavations). Any excavations for the root investigations must carried out manually to avoid damaging the roots during excavations. Manual excavation may include the use of a high-pressure air/air knife, or a combination of high-pressure water and a vacuum device. When hand excavating carefully work around roots retaining as many as possible. Take care to not fray, wound, or cause damage to any roots during excavations as this may cause decay or infection from pathogens. It is essential that exposed roots are kept moist and the excavation back filled as soon as possible. The root investigations should be carried out by a qualified Arborist minimum AQF3. Once roots are exposed, a visual assessment can be carried out by a consulting Arborist to evaluate the potential impact of the proposed root loss on the health and stability of the tree. A root map/report should be prepared identifying the findings of investigations, including photographs as supporting evidence in the report.

9. **Retention Value:** The system I have used to award the retention value is Tree AZ. Tree AZ is used to identify higher value trees worthy of being a constraint to development and lower value trees that should generally not be a constraint to the development. The table below provides a brief description of each category.

## TreeAZ Categories (Version 10.04-ANZ)

**CAUTION:** TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

### Category Z: Unimportant trees not worthy of being a material constraint

| | |
|---|---|
| **Local policy exemptions:** Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species | |
| **Z1** | Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc |
| **Z2** | Too close to a building, i.e. exempt from legal protection because of proximity, etc |
| **Z3** | Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc |
| **High risk of death or failure:** Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure | |
| **Z4** | Dead, dying, diseased or declining |
| **Z5** | Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc |
| **Z6** | Instability, i.e. poor anchorage, increased exposure, etc |
| **Excessive nuisance:** Trees that are likely to be removed within 10 years because of unacceptable impact on people | |
| **Z7** | Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc |
| **Z8** | Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc |
| **Good management:** Trees that are likely to be removed within 10 years through responsible management of the tree population | |
| **Z9** | Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc |
| **Z10** | Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc |
| **Z11** | Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc |
| **Z12** | Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc |

**NOTE:** Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

### Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

| | |
|---|---|
| **A1** | No significant defects and could be retained with minimal remedial care |
| **A2** | Minor defects that could be addressed by remedial care and/or work to adjacent trees |
| **A3** | Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years |
| **A4** | Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment) |

**NOTE:** Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

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# Glossary of Terms

**Abiotic** - Pertaining to non-living agents; e.g. environmental factors

**Adventitious shoots** - Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

**Anchorage** - The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

**Bark** - A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

**Branch:**
• **Primary**. A first order branch arising from a stem
• **Lateral**. A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
• **Sub-lateral**. A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

**Branch collar** - A visible swelling formed at the base of a branch whose diameter growth has been disproportionately slow compared to that of the parent stem; a term sometimes applied also to the pattern of growth of the cells of the parent stem around the branch base

**Brown-rot** - A type of wood decay in which cellulose is degraded, while lignin is only modified

**Buckling** - An irreversible deformation of a structure subjected to a bending load

**Buttress zone** - The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of the junctions

**Cambium** - Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

**Canker** - A persistent lesion formed by the death of bark and cambium due to colonisation by fungi or bacteria

**Compartmentalisation** - The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

**Compressive loading** - Mechanical loading which exerts a positive pressure; the opposite to tensile loading

**Condition** - An indication of the physiological condition of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

**Crown/Canopy** - The main foliage bearing section of the tree

**Crown lifting** - The removal of limbs and small branches to a specified height above ground level

**Crown thinning** - The removal of a proportion of secondary branch growth throughout the crown to produce an even density of foliage around a well-balanced branch structure

**Crown reduction/shaping** - A specified reduction in crown size whilst preserving, as far as possible, the natural tree shape

**DAB (Diameter Above Buttress)** - Trunk diameter measured above the root buttress

**Defect** - In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

**Dieback** - The death of parts of a woody plant, starting at shoot-tips or root-tips

**Disease** - A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

**Dominance** - In trees, the tendency for a leading shoot to grow faster or more vigorously than the lateral shoots; also the tendency of a tree to maintain a taller crown than its neighbours

**Dormant bud** - An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

**Dysfunction** - In woody tissues, the loss of physiological function, especially water conduction, in sapwood

**DBH (Diameter at Breast Height)** - Stem diameter measured at a height of 1.4 metres or the nearest measurable point. Where measurement at a height of 1.4 metres is not possible, another height may be specified

**Deadwood** - Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

**Epicormic shoot** - A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

**Flush-cut** - A pruning cut which removes part of the branch bark ridge and or branch-collar

**Girdling root** - A root which circles and constricts the stem or roots possibly causing death of phloem and/or cambial tissue

**Habit** - The overall growth characteristics, shape of the tree and branch structure

**Hazard beam** - An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London

**Heartwood/false-heartwood** - The dead central wood that has become dysfunctional as part of the aging processes and being distinct from the sapwood

**Heave** - A term mainly applicable to a shrinkable clay soil which expands due to re-wetting after the felling of a tree which was previously extracting moisture from the deeper layers; also the lifting of pavements and other structures by root diameter expansion; also the lifting of one side of a wind-rocked root-plate

**Included bark (ingrown bark)** - Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact

**Lever arm** - A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch

**Lignin** - The hard, cement-like constituent of wood cells; deposition of lignin within the matrix of cellulose microfibrils in the cell wall is termed Lignification

**Lions tailing** - A term applied to a branch of a tree that has few if any side-branches except at its end, and is thus liable to snap due to end- loading

**Loading** - A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

**Mycelium** - The body of a fungus, consisting of branched filaments (hyphae)

**Occlusion** - The process whereby a wound is progressively closed by the formation of new wood and bark around it

**Pathogen** - A micro-organism which causes disease in another organism

**Photosynthesis** - The process whereby plants use light energy to split hydrogen from water molecules, and combine it with carbon dioxide to form the molecular building blocks for synthesizing carbohydrates and other biochemical products

**Probability** - A statistical measure of the likelihood that a particular event might occur

**Pruning** - The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

**Radial** - In the plane or direction of the radius of a circular object such as a tree stem

**Reactive Growth/Reaction Wood** - Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

**Ring-barking** - The removal of a ring of bark and phloem around the circumference of a stem or branch, normally resulting in an inability to transport photosynthetic assimilates below the area of damage. Almost inevitably results in the eventual death of the affected stem or branch above the damage

**Root-collar** - The transitional area between the stem/s and roots

**Sapwood** - Living xylem tissues

**Soft-rot** - A kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

**Stem/s** - Principle above-ground structural component(s) of a tree that supports its branches

**Stress** - In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature

**SRZ (Structural Root Zone)** - The area around the base of the tree required for the trees stability in the ground

**Subsidence** - In relation to soil or structures resting in or on soil, a sinking due to shrinkage when certain types of clay soil dry out, sometimes due to extraction of moisture by tree roots

**Taper** - In stems and branches, the degree of change in girth along a given length

**Targets** - In tree risk assessment (with slight misuse of normal meaning) persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it

**Topping** - In arboriculture, the removal of the crown of a tree, or of a major proportion of it

**Transpiration** - The evaporation of moisture from the surface of a plant, especially via the stomata of leaves; it exerts a suction which draws water up from the roots and through the intervening xylem cells

**TPZ (Tree Protection Zone)** - A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development

**Understory** - This layer consists of younger individuals of the dominant trees, together with smaller trees and shrubs which are adapted to grow under lower light conditions

**Veteran tree** - Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem

**Vigour** - The expression of carbohydrate expenditure to growth (in trees)

**White-rot** - A range of kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded

**Wind exposure** - The degree to which a tree or other object is exposed to wind, both in terms of duration and velocity

**Wind pressure** - The force exerted by a wind on a particular object

**Windthrow** - The blowing over of a tree at its roots

Incorporating extracts from Lonsdale, D. 1999. Principles of Tree Hazard Assessment. Her Majesty's Stationary Office, London