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ARBORICULTURAL IMPACT ASSESSMENT
TREE PROTECTION SPECIFICATION

Stadium Australia Redevelopment
Sydney Olympic Park

Prepared for: INFRASTRUCTURE NSW

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Revision A

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1.0 INTRODUCTION

1.1 Background

1.1.1 This Arboricultural Impact Assessment Report and Tree Protection Specification (Report) was prepared for a State Significant Development (SSD) Development Application (DA) for the refurbishment of Stadium Australia, which is submitted to the Minister for Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979*. Infrastructure NSW is the proponent of the SSD DA.

1.1.2 Stadium Australia opened in 1999 for the 2000 Sydney Olympic and Paralympic Games and, at the time, was the largest Olympic Stadium ever built and the second largest stadium in Australia. In March 2018, the NSW Premier announced plans to refurbish Stadium Australia to address deficiencies with the existing infrastructure and ensure that the stadium retains its status as a premier venue within a network of stadia and events infrastructure in NSW.

1.1.3 The NSW Stadia Strategy 2012 provides a vision for the future of stadia within NSW, prioritising investment to achieve the optimal mix of venues to meet community needs and to ensure a vibrant sports and event environment in NSW. A key action of the strategy includes developing Tier 1 stadia and their precincts covering transport, integrated ticketing, spectator experience, facilities for players, media, corporate and restaurant and entertainment provision.

1.1.4 The purpose of this Report is to undertake a Visual Tree Assessment[1] (VTA), determine the impact of the proposed works on the trees, and where appropriate, recommend the use of tree sensitive construction methods and tree protection measures to minimise adverse impacts.

1.1.5 In preparing this Report, the author is aware of and considered the following documents:

- *State Environmental Planning Policy Vegetation in Non-Rural Areas (2017)*
- *Parramatta Local Environmental Plan (2011)*
- *Part 5.4 (Preservation of Trees and Vegetation) of Parramatta Council's Development Control Plan (2011)*
- *SOPA Masterplan 2030 Significant Tree Register*
- *SOPA Guidelines for the Protection of Trees on Development Sites (2004)*
- *Australian Standard 4373 Pruning of Amenity Trees (2007)*
- *Australian Standard 2303 Tree Stock for Landscape Use (2015)*
- *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016)*

Refer to Methodology **(Appendix 1)**

1.1.6 This Report is based on an assessment of the following supplied documentation/plans only:

- Construction Boundary – prepared by Cox dated 20.08.19

[1] Mattheck & Breloer (2003)

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1.2 The Proposal

1.2.1 The following is proposed as part of the SSD DA for the refurbishment of Stadium Australia:

- Reconfiguring the field of play to a permanent rectangular configuration
- Redeveloping the lower and middle seating bowl to locate seating closer to the field and increase the pitch (steepness) of the seating bowl, which has the effect of reducing the capacity to approximately 70,000 seats (plus up to 20,000 persons on the field during concerts)
- Providing 100% drip-line roof coverage to all permanent seats by replacing the northern and southern sections of the roof and extending the existing eastern and western sections of the roof
- Providing a new northern and southern public stadium entrance, including a new stadium facade and double-height concourse
- Renewing the food and beverage concessions, bathrooms, team facilities including new gender neutral changerooms, members and corporate facilities, press and broadcast facilities, and back of house areas
- Providing new signage, high-definition video replay screens, LED lighting, and other functional improvements
- Retaining the public domain areas surrounding the stadium that deliver a range of publicly accessible event and operational areas, with minor works for tree removal

1.2.2 Part of the existing stadium forecourt will be used as a construction compound during the construction phase and reinstated following the completion of works and prior to commencement of stadium operations. Class A Hoarding will be installed around the perimeter of the site and construction access will be provided at three access points.

Refer to Plans **(Appendix 2)**

2.0 RESULTS

2.1 The Site

2.1.1 The site is located at 15 Edwin Flack Avenue within the Sydney Olympic Park. It is bound by Edwin Flack Avenue to the west, Dawn Fraser Avenue to the south, Olympic Boulevard to the east and Qudos Bank Arena to the north. The site is located within the City of Parramatta Local Government Area. The site is legally described as Lot 4000 in DP 1004512 and part of Lot 4001 in DP 1004512.

2.1.2 In a broader context, the site forms part of Sydney Olympic Park which is a sporting and economic centre in metropolitan Sydney that covers 680 hectares. Sydney Olympic Park comprises a range of sports and entertainment venues, parklands, and commercial, retail and residential developments.

2.1.3 The stadium structure occupies most of the site with the stadium curtilage comprising of various pavement surfaces. Pavements are generally level and are interspersed with numerous circular tree pits, scattered lighting poles and street furniture.

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2.2 The Trees

2.2.1 One hundred and ninety (190) trees were assessed using the Visual Tree Assessment[2] (VTA) criteria and notes, and comprise of a mix of locally indigenous and Australian-native species including *Corymbia maculata* (Spotted Gum), *Corymbia citriodora* (Lemon Scented Gum), *Eucalyptus microcorys* (Tallowwood), *Eucalyptus paniculata* (Grey Ironbark), *Eucalyptus sideroxylon* (Mugga Ironbark), *Eucalyptus crebra* (Narrow Leaved Iron Bark) and *Syncarpia glomulifera* (Turpentine). Seven (7) species are represented.

2.2.2 An additional sixteen (16) trees have also been addressed in this Report which are street trees located within the Edwin Flack road reserve. A full VTA of these trees was not undertaken with species and trunk diameter measurement recorded for the purposes of determining Tree Protection Zone (TPZ) calculations only.

2.2.3 The trees within the site were planted in 1999 as part of the Homebush Bay Public Art Program. At 20 years old, the trees are in the early stages of maturity. However, many of the trees show signs of physiological stress, primarily in the form of reduced crown densities. This is most likely due to their challenging growing environment. It is not known if the individual tree pits are linked below ground with trenches of structural soils or soil vaults although the general condition of the trees would indicate this is unlikely. Furthermore, extensive pavement areas impede gaseous exchange, rainfall infiltration and nutrient recycling within the soil profile which in turn can have a major impact on tree health and vigour. Most trees showed signs of repeated pruning, presumably to remove deadwood. The development of high volumes of deadwood is also an indicator of physiological stress.

2.2.4 The trees are listed *Sydney Olympic Park Masterplan 2030 – Significant Tree Register* (2008).[3] It should be noted that on an individual basis it is unlikely that any of the trees would meet a standardised criteria for significance (based on general principles outlines in the Burra Charter and criteria from the Register of the National Estate) due to their young age and relatively small size. However, it is assumed that the inclusion of the trees on the *Significant Tree Register* is based on their association with the development of the site and wider Olympic Park area as part of the 2000 Sydney Olympic and Paralympic Games.

2.2.5 A search of the *BioNet Atlas of NSW Wildlife Database* was undertaken in May 2018. No individual threatened tree species listed within this database for the area were identified during the current field investigations of the site.[4] The ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this report.

2.2.6 As required by Clause 2.3.2 of *Australian Standard 4970 Protection of Trees on Development Sites (2009)*, each of the trees assessed has been allocated a Retention Value. The Retention Value is based on the Useful Life Expectancy and Landscape Significance with consideration to tree health, structural condition and site suitability. The Retention Values do not consider any proposed development works and are not a schedule for tree retention or removal. The trees have been allocated one of the following Retention Values:

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

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

2 Mattheck & Breloer (2003)
3 SOPA (2008)
4 NSW Office of Environment and Heritage (2011)

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3.0 ARBORICULTURAL IMPACT ASSESSMENT

3.1 Tree Removal

3.1.1 The proposed redevelopment works will require the establishment of construction access at three (3) points around the site perimeter. Construction access off from Dawn Frazer Avenue and through the existing basement entry will not require the removal of any trees. The access from Edwin Flack Avenue will require the removal of Trees 199-201 and Tree 203.

3.1.2 Trees 199-201 were identified as *Eucalyptus microcorys* (Tallowwood) and are early-mature street trees located within the Edwin Flack Avenue road reserve. These trees are relatively small and healthy, advanced-size specimens could replace the loss of amenity from tree removal within a short timeframe.

3.1.3 Tree 203 was identified as *Corymbia maculata* (Spotted Gum) and is in fair health and poor structural condition. The tree has a reduced crown density and its central leader appears to have died back and has been removed. There are also multiple, irregular-shaped wounds on the upper trunk which show limited wound-wood development at the margins. Tree 203 has been allocated a Retention Value of *Priority for Removal* and is recommended for removal irrespective of the proposed development works.

3.1.4 The trees should be replaced with advanced-size specimens at the completion of the refurbishment works. New trees should be supplied in accordance with *Australian Standard 2303: Tree Stock for Landscape Use (2015).*

3.2 Tree Protection

3.2.1 The trees to be retained should be protected from both direct and indirect development impacts. Where possible, hoardings/site fencing should be placed as to exclude as many trees as possible from within the site compound area as those trees outside of the fenced area will not require any specific protection measures.

3.2.2 Trees which cannot be excluded from the fenced site compound should have trunk protection installed. Ground protection within TPZ areas will not be required as the existing pavement surface which is to be retained provides adequate protection against soil compaction and root damage.

3.2.3 The crowns of the trees should be considered when setting out the hoardings/site fencing and the clearance from and the position of the hoardings/site fencing should be adjusted as required to prevent any potential conflict between branches and high-sided vehicles/construction machinery.

3.3 Works within TPZ Areas

3.3.1 Demolition Works

Demolition of existing structures within TPZ areas should be supervised by the Project Arborist. Machinery should be excluded from the TPZ unless operating from the existing pavements or areas of ground protection.

3.3.2 Machinery should work in conjunction with a spotter to guide the machinery operator and ensure that machinery does not contact the tree's roots, trunk, branches and crown.

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3.3.3 Underground Services

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

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

4.0 SUMMARY & CONCLUSIONS

4.1.1 Two-hundred and six (206) trees were addressed within this Report comprise of a mix of locally indigenous and Australian-native species. The trees were planted in 1999 as part of the Homebush Bay Public Art Program and are in the early stages of maturity. However, many of the trees show signs of physiological stress most likely due to their challenging growing environment. The trees are listed *Sydney Olympic Park Masterplan 2030 – Significant Tree Register* (2008).[5] On an individual basis it is unlikely that any of the trees would meet a standardised criteria for significance due to their young age and relatively small size.

4.1.2 The SSD DA is for the refurbishment of Stadium Australia to address deficiencies in the existing infrastructure and improve facilities to be in line with contemporary Australian venue standards.

4.1.3 Part of the existing stadium forecourt will be used as a construction compound during the construction phase and reinstated following the completion of works. The establishment of construction access at three (3) points around the site perimeter is required. Construction access off from Dawn Frazer Avenue and through the existing basement entry will not require the removal of any trees. The access from Edwin Flack Avenue will require the removal of Trees 199-201 and Tree 203. Tree 203 has been allocated a Retention Value of *Priority for Removal* and is recommended for removal irrespective of the proposed development works.

4.1.4 Except for the four (4) trees which will require removal for Edwin Flack Avenue construction access, all other trees on site are proposed for retention. The trees to be retained should be protected from both direct and indirect development impacts as outlined within Sections 3.2 and 3.3.

4.1.5 Replacement trees should be supplied as advanced size specimens (200L min) and grown in accordance with *Australian Standard 2303: Tree Stock for Landscape Use (2015).*

[5] SOPA (2008)

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5.0 LIMITATIONS & DISCLAIMER

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

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

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

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

6.0 BIBLIOGRAPHY & REFERENCES

Barrell (1995), 'Pre-development Tree Assessments', in *Trees & Building Sites, Proceedings of an International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings*, International Society of Arboriculture, Illinois, USA, pp. 132-142.

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7.0 APPENDICES

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Appendix 1: Methodology

1.1 **Site Inspection**: This report was determined as a result of several comprehensive site inspection during August 2019. The comments and recommendations in this report are based on findings from these site inspections.

1.2 **Visual Tree Assessment (VTA)**: The subject tree(s) was assessed using the Visual Tree Assessment criteria and notes as described in *The Body Language of Trees – A Handbook for Failure Analysis.*[6] The inspection was limited to a visual examination of the subject tree(s) from ground level only. No internal diagnostic testing was undertaken as part of this assessment.

1.3 **Tree Dimensions**: The dimensions of the subject tree(s) are approximate only.

1.4 **Tree Locations:** The location of the subject tree(s) was determined from the supplied plans.

1.5 **Trees & Development**: Tree Protection Zones, Tree Protection Measures and Sensitive Construction Methods for the subject tree were based on methods outlined in *Australian Standard 4970-2009 Protection of Trees on Development Sites*.

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

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

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

1.6 **Tree Health**: The health of the subject tree(s) was determined by assessing:

I. Foliage size and colour
II. Pest and disease infestation
III. Extension growth
IV. Crown density
V. Deadwood size and volume
VI. Presence of epicormic growth

1.7 **Tree Structural Condition**: The structural condition of the subject tree(s) was assessed by:

I. Assessment of branching structure
(i.e co-dominant/bark inclusions, crossing branches, branch taper, terminal loading, previous branch failures)
II. Visible evidence of structural defects or instability
(i.e root plate movement, wounds, decay, cavities, fungal brackets, adaptive growth)
III. Evidence of previous pruning or physical damage
(root severance/damage, lopping, flush-cutting, lions tailing, mechanical damage)

1.8 **Useful Life Expectancy (ULE)**: The ULE is an estimate of the longevity of the subject tree(s) in its growing environment. The ULE is modified where necessary to take in consideration tree(s) health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):

I. 40 years +
II. 15-40 years
III. 5-15 years
IV. Less than 5 years

[6] Mattheck & Breloer (2003)

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

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

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

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

<table>
<tr><th>ULE</th><th></th><th colspan="3">Landscape Significance</th></tr>
<tr><td></td><td>Very High</td><td>High</td><td>Moderate</td><td>Low</td></tr>
<tr><td>40 years +</td><td rowspan="3">Priority for Retention</td><td colspan="2">Priority for Retention</td><td rowspan="3">Consider for Removal</td></tr>
<tr><td>15-40 years</td><td>Priority for Retention</td><td>Consider for Retention</td></tr>
<tr><td>5-15 years</td><td colspan="2">Consider for Retention</td></tr>
<tr><td>Less than 5 years</td><td>Consider for Removal</td><td colspan="3">Priority for Removal</td></tr>
</table>

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

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Appendix 2: Plans

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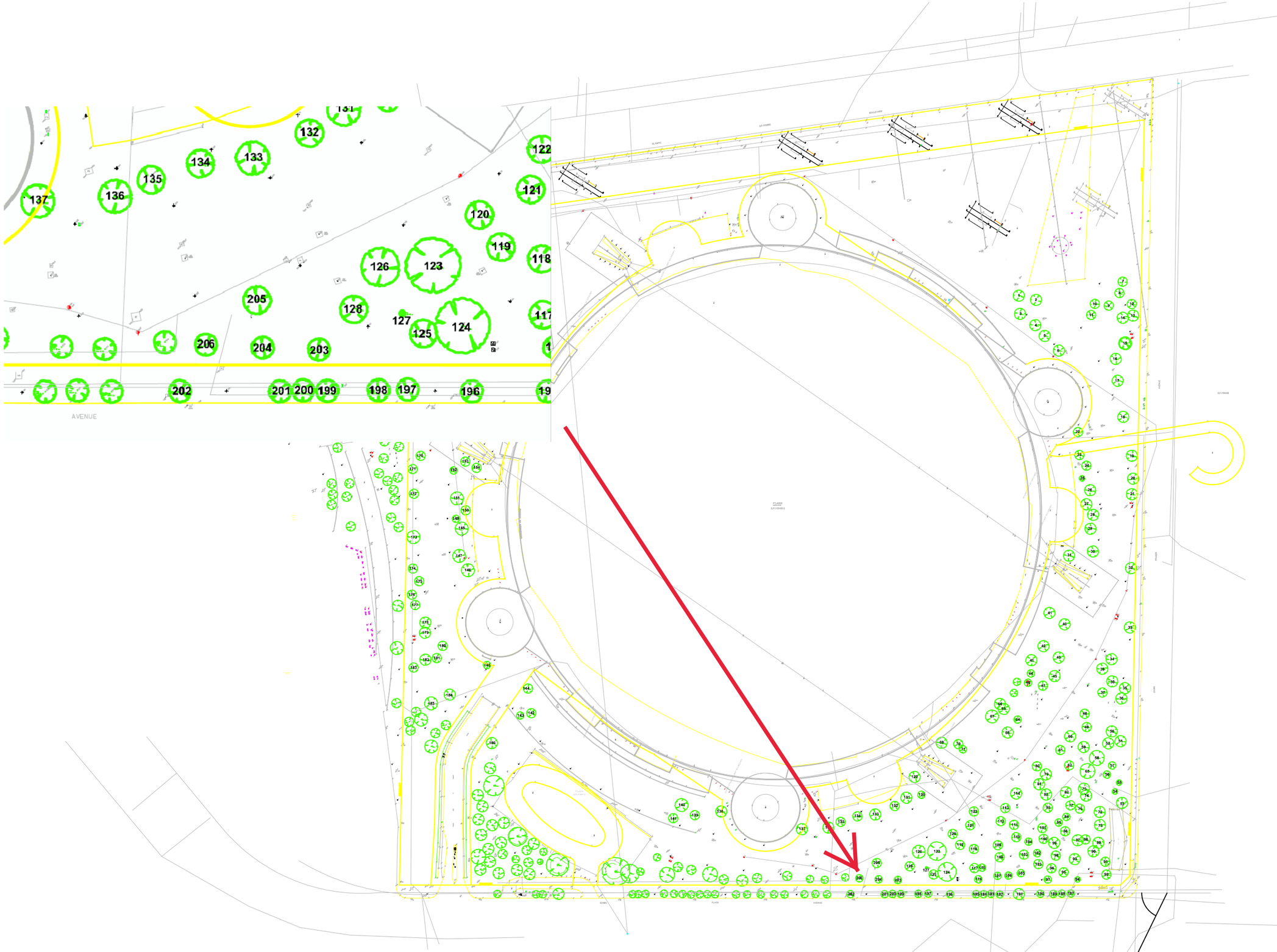

Stadium Australia
Tree Location Plan
Client: Infrastructure NSW
date: 14th August 2019
scale: 1:250 (A3)

0 1 2 3 4 5 6 7 8 9 10

SCALE 1:250

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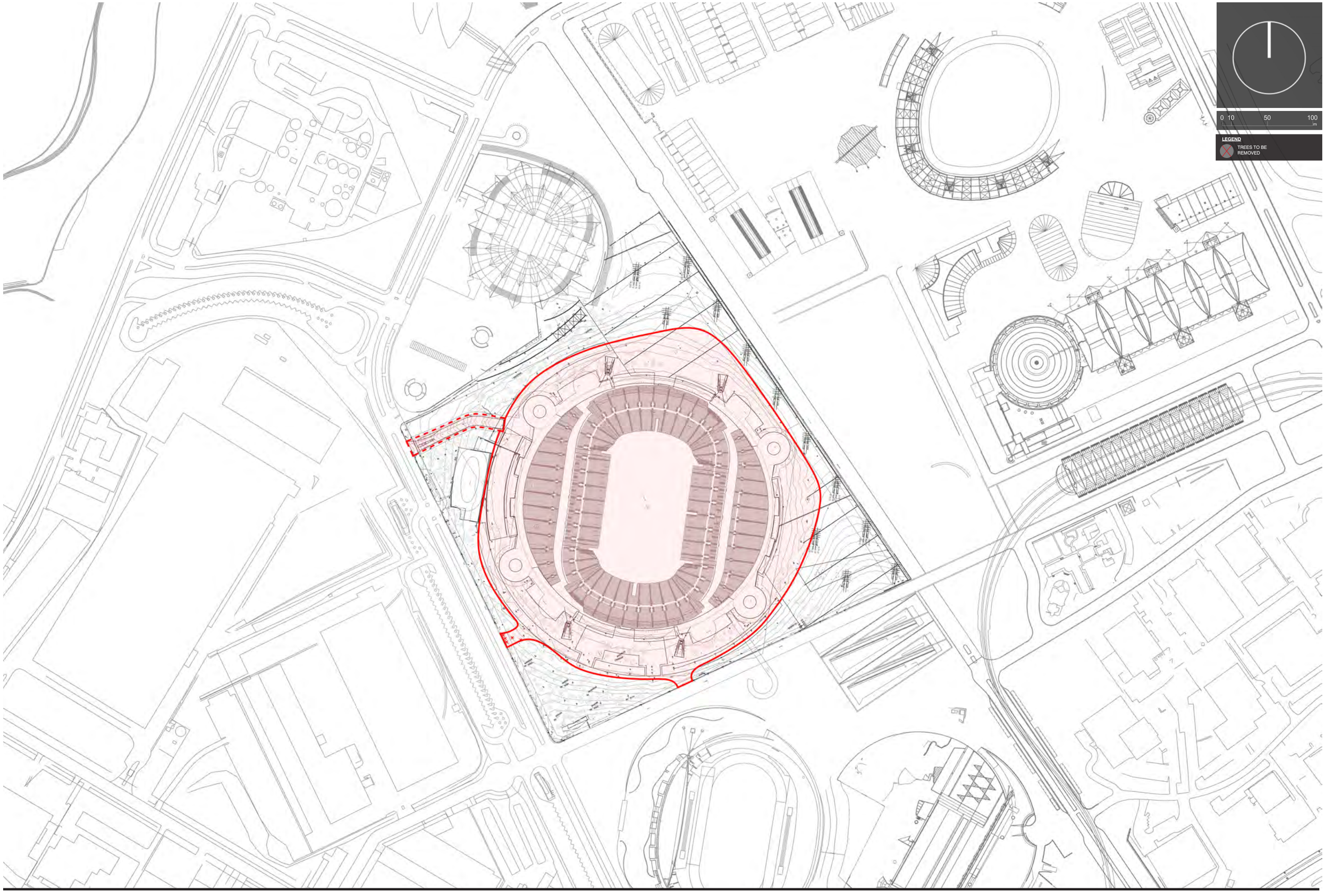
1:125 @ A1

STADIUM AUSTRALIA REDEVELOPMENT

CONSTRUCTION BOUNDARY | 20.08.2019



STADIUM AUSTRALIA REDEVELOPMENT

CONSTRUCTION BOUNDARY | 20.08.2019

Appendix 3: Tree Assessment Schedule

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
1	*Corymbia maculata* (Spotted Gum)	350	12	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2
2	*Corymbia citriodora* (Lemon Scented Gum)	275	14	4	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0
3	*Corymbia maculata* (Spotted Gum)	325	14	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.9	2.1
4	*Corymbia citriodora* (Lemon Scented Gum)	375	15	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3
5	*Corymbia maculata* (Spotted Gum)	300	14	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
6	*Corymbia citriodora* (Lemon Scented Gum)	400	14	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
7	*Corymbia maculata* (Spotted Gum)	250	8	2	Good	Good	Crown density 75-95%.	Mature	15-40	Low	Consider for Removal	3	1.9
8	*Corymbia maculata* (Spotted Gum)	225	7	3	Fair	Good	Trunk wound with kino exudate. Crown density 50-75%.	Mature	15-40	Low	Consider for Removal	2.7	1.8

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
9	*Eucalyptus sideroxylon* (Mugga Ironbark)	175	6	2	Good	Good		Mature	15-40	Low	Consider for Removal	2.1	1.7
10	*Corymbia maculata* (Spotted Gum)	250	13	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3	1.9
11	*Corymbia citriodora* (Lemon Scented Gum)	275	13	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
12	*Corymbia maculata* (Spotted Gum)	300	12	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
13	*Corymbia maculata* (Spotted Gum)	275	9	3	Good	Good	Partially suppressed.	Mature	15-40	Low	Consider for Removal	3.3	2.0
14	*Corymbia citriodora* (Lemon Scented Gum)	350	16	6	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2
15	*Corymbia maculata* (Spotted Gum)	400	13	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.8	2.3
16	*Corymbia citriodora* (Lemon Scented Gum)	350	10	4	Fair	Good	Chlorotic foliage Crown density 75-95%.	Mature	5-15	Moderate	Consider for Retention	4.2	2.2
17	*Corymbia citriodora* (Lemon Scented Gum)	400	16	7	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
18	*Corymbia maculata* (Spotted Gum)	425	15	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4
19	*Corymbia citriodora* (Lemon Scented Gum)	400	15	6	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
20	*Corymbia citriodora* (Lemon Scented Gum)	400	16	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
21	*Corymbia maculata* (Spotted Gum)	325	14	4	Good	Good	Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
22	*Corymbia maculata* (Spotted Gum)	350	16	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2
23	*Corymbia maculata* (Spotted Gum)	450	16	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.4	2.5
24	*Corymbia citriodora* (Lemon Scented Gum)	300	14	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
25	*Eucalyptus sideroxylon* (Mugga Ironbark)	175	7	3	Good	Good		Semi-mature	15-40	Low	Consider for Removal	2.1	1.7
26	*Corymbia citriodora* (Lemon Scented Gum)	375	16	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.5	2.3

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
27	*Corymbia citriodora* (Lemon Scented Gum)	450	16	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.4	2.5
28	*Eucalyptus sideroxylon* (Mugga Ironbark)	225	8	3	Good	Good	Partially suppressed.	Mature	15-40	Low	Consider for Removal	2.7	1.8
29	*Eucalyptus microcorys* (Tallowwood)	475	15	6	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.7	2.5
30	*Eucalyptus microcorys* (Tallowwood)	300	9	4	Fair	Good	Crown density 50-75%. Medium (25-75mmø) epicormic growth in low volumes.	Mature	5-15	Low	Consider for Removal	3.6	2.1
31	*Corymbia citriodora* (Lemon Scented Gum)	300	13	5	Good	Good	Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
32	*Eucalyptus microcorys* (Tallowwood)	425	8	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.1	2.4
33	*Corymbia citriodora* (Lemon Scented Gum)	425	17	6	Good	Fair	Crown density 75-95%. Wound(s), early signs of decay.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4
34	*Corymbia maculata* (Spotted Gum)	300	9	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
35	*Corymbia maculata* (Spotted Gum)	300	13	4	Good	Good	Partially suppressed.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
36	*Corymbia citriodora* (Lemon Scented Gum)	450	18	7	Good	Good	Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	5.4	2.5
37	*Syncarpia glomulifera* (Turpentine)	200	8	3	Good	Good		Mature	15-40	Low	Consider for Removal	2.4	1.8
38	*Eucalyptus microcorys* (Tallowwood)	375	15	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3
39	*Eucalyptus paniculata* (Grey Ironbark)	400	14	6	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
40	*Eucalyptus microcorys* (Tallowwood)	275	8	3	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3.3	2.0
41	*Eucalyptus sideroxylon* (Mugga Ironbark)	200	9	3	Fair	Good	Small (<25mmø) epicormic growth in low volumes.	Mature	15-40	Low	Consider for Removal	2.4	1.8
42	*Eucalyptus sideroxylon* (Mugga Ironbark)	250	9	3	Fair	Good	Crown density 50-75%.	Mature	15-40	Low	Consider for Removal	3	1.9
43	*Corymbia maculata* (Spotted Gum)	300	10	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
44	*Eucalyptus microcorys* (Tallowwood)	300	10	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
45	*Corymbia maculata* (Spotted Gum)	200	13	3	Good	Fair	Wound(s), early signs of decay. Poor form.	Mature	5-15	Low	Consider for Removal	2.4	1.8
46	*Syncarpia glomulifera* (Turpentine)	200	6	3	Poor	Good	Chlorotic foliage	Mature	5-15	Low	Consider for Removal	2.4	1.8
47	*Corymbia citriodora* (Lemon Scented Gum)	200	9	4	Poor	Good	Crown density 0-25%.	Mature	5-15	Low	Consider for Removal	2.4	1.8
48	*Syncarpia glomulifera* (Turpentine)	275	9	4	Good	Good	Bark inclusion(s), minor.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
49	*Syncarpia glomulifera* (Turpentine)	275	9	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.3	2.0
50	*Corymbia maculata* (Spotted Gum)	275	11	3	Good	Good	Crown density 75-95%. Wound(s), no visible sign of decay.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
51	*Corymbia maculata* (Spotted Gum)	400	18	5	Good	Good	Wound(s), early signs of decay.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
52	*Corymbia maculata* (Spotted Gum)	300	16	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
53	*Corymbia maculata* (Spotted Gum)	350	17	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
54	*Corymbia maculata* (Spotted Gum)	175	9	2	Fair	Good	Crown density 75-95%.	Mature	5-15	Low	Consider for Removal	2.1	1.7
55	*Corymbia maculata* (Spotted Gum)	200	9	2	Good	Good		Mature	15-40	Low	Consider for Removal	2.4	1.8
56	*Corymbia maculata* (Spotted Gum)	200	10	2	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	2.4	1.8
57	*Corymbia maculata* (Spotted Gum)	300	11	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
58	*Eucalyptus microcorys* (Tallowwood)	400	10	5	Good	Good	Crown density 75-95%. Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
59	*Syncarpia glomulifera* (Turpentine)	225	7	3	Fair	Good	Crown density 50-75%. Bark inclusion(s), minor.	Mature	15-40	Low	Consider for Removal	2.7	1.8
60	*Syncarpia glomulifera* (Turpentine)	200	7	2	Good	Good	Previous branch failure(s).	Mature	15-40	Low	Consider for Removal	2.4	1.8
61	*Eucalyptus crebra* (Narrow Leaved Iron Bark)	300	11	4	Good	Good	Adaptive growth.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
62	*Eucalyptus microcorys* (Tallowwood)	350	14	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
63	*Eucalyptus microcorys* (Tallowwood)	400	15	6	Good	Good	Crown density 75-95%. Small (<25mmø) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
64	*Corymbia maculata* (Spotted Gum)	175	8	2	Good	Good		Mature	15-40	Low	Consider for Removal	2.1	1.7
65	*Corymbia citriodora* (Lemon Scented Gum)	225	9	4	Good	Good	Crown density 75-95%. Partially suppressed.	Mature	15-40	Low	Consider for Removal	2.7	1.8
66	*Corymbia citriodora* (Lemon Scented Gum)	275	14	4	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0
67	*Corymbia citriodora* (Lemon Scented Gum)	300	15	5	Good	Good	Crown density 75-95%. Previous branch failure(s).	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
68	*Corymbia citriodora* (Lemon Scented Gum)	350	18	6	Good	Good	Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2
69	*Corymbia citriodora* (Lemon Scented Gum)	400	16	5	Good	Good	Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
70	*Corymbia citriodora* (Lemon Scented Gum)	275	11	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
71	*Corymbia citriodora* (Lemon Scented Gum)	175	9	5	Fair	Fair	Crown density 75-95%. Partially suppressed. Wound(s), early signs of decay. Poor form.	Mature	5-15	Low	Consider for Removal	2.1	1.7

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
72	*Corymbia citriodora* (Lemon Scented Gum)	300	14	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1
73	*Syncarpia glomulifera* (Turpentine)	300	8	3	Good	Fair	Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
74	*Syncarpia glomulifera* (Turpentine)	250	7	2	Fair	Good	Crown density 50-75%.	Mature	15-40	Low	Consider for Removal	3	1.9
75	*Syncarpia glomulifera* (Turpentine)	225	8	2	Good	Fair	Crown density 75-95%. Co-dominant inclusions, minor.	Mature	15-40	Low	Consider for Removal	2.7	1.8
76	*Corymbia maculata* (Spotted Gum)	300	11	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
77	*Syncarpia glomulifera* (Turpentine)	200	7	2	Good	Fair	Co-dominant inclusions, minor.	Mature	15-40	Low	Consider for Removal	2.4	1.8
78	*Eucalyptus microcorys* (Tallowwood)	400	14	5	Good	Good	Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
79	*Corymbia maculata* (Spotted Gum)	375	15	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.5	2.3
80	*Corymbia citriodora* (Lemon Scented Gum)	350	17	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
81	*Corymbia citriodora* (Lemon Scented Gum)	300	17	6	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1
82	*Corymbia maculata* (Spotted Gum)	300	16	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
83	*Syncarpia glomulifera* (Turpentine)	275	7	3	Fair	Fair	Chlorotic foliage Bark inclusion(s), minor. Previous branch failure(s).	Mature	15-40	Low	Consider for Removal	3.3	2.0
84	*Corymbia maculata* (Spotted Gum)	250	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3	1.9
85	*Corymbia citriodora* (Lemon Scented Gum)	250	16	4	Poor	Good	Crown density 25-50%. Small (<25mmø) deadwood in low volumes.	Mature	5-15	Moderate	Consider for Retention	3	1.9
86	*Corymbia maculata* (Spotted Gum)	250	16	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3	1.9
87	*Eucalyptus microcorys* (Tallowwood)	400	16	5	Fair	Good	Crown density 50-75%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
88	*Eucalyptus microcorys* (Tallowwood)	300	7	3	Fair	Good	Crown density 50-75%. Partially suppressed. Poor form.	Mature	5-15	Low	Consider for Removal	3.6	2.1
89	*Corymbia maculata* (Spotted Gum)	300	14	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
90	*Corymbia maculata* (Spotted Gum)	250	17	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3	1.9
91	*Corymbia citriodora* (Lemon Scented Gum)	325	15	6	Fair	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
92	*Corymbia maculata* (Spotted Gum)	350	16	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2
93	*Eucalyptus microcorys* (Tallowwood)	400	13	5	Fair	Good	Crown density 25-50%. Small (<25mmø) epicormic growth in low volumes.	Mature	5-15	Moderate	Consider for Retention	4.8	2.3
94	*Corymbia maculata* (Spotted Gum)	175	12	3	Fair	Good	Crown density 75-95%. Poor form.	Mature	5-15	Low	Consider for Removal	2.1	1.7
95	*Corymbia maculata* (Spotted Gum)	250	13	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3	1.9
96	*Corymbia maculata* (Spotted Gum)	300	15	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
97	*Corymbia maculata* (Spotted Gum)	300	15	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
98	*Corymbia maculata* (Spotted Gum)	250	16	3	Fair	Good	Crown density 50-75%.	Mature	15-40	Moderate	Consider for Retention	3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
99	*Corymbia maculata* (Spotted Gum)	275	15	4	Fair	Good	Crown density 50-75%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
100	*Corymbia maculata* (Spotted Gum)	300	16	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
101	*Corymbia maculata* (Spotted Gum)	275	14	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
102	*Corymbia maculata* (Spotted Gum)	200	9	3	Fair	Good	Crown density 50-75%. Poor form.	Mature	5-15	Low	Consider for Removal	2.4	1.8
103	*Corymbia maculata* (Spotted Gum)	275	15	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
104	*Syncarpia glomulifera* (Turpentine)	200	6	2	Fair	Fair	Chlorotic foliage. Crown density 75-95%. Co-dominant inclusions, minor.	Mature	5-15	Low	Consider for Removal	2.4	1.8
105	*Eucalyptus microcorys* (Tallowwood)	275	7	3	Fair	Fair	Crown density 50-75%. Termites.	Mature	5-15	Low	Consider for Removal	3.3	2.0
106	*Corymbia maculata* (Spotted Gum)	250	12	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3	1.9
107	*Corymbia maculata* (Spotted Gum)	250	12	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
108	*Corymbia maculata* (Spotted Gum)	275	16	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
109	*Eucalyptus microcorys* (Tallowwood)	300	9	5	Fair	Fair	Crown density 50-75%. Termites.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1
110	*Corymbia maculata* (Spotted Gum)	300	14	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
111	*Corymbia maculata* (Spotted Gum)	300	15	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
112	*Corymbia maculata* (Spotted Gum)	300	14	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
113	*Syncarpia glomulifera* (Turpentine)	250	7	2	Fair	Good	Chlorotic foliage. Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3	1.9
114	*Corymbia maculata* (Spotted Gum)	325	15	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
115	*Corymbia maculata* (Spotted Gum)	200	10	3	Good	Good	Crown density 75-95%.	Mature	15-40	Low	Consider for Removal	2.4	1.8
116	*Corymbia maculata* (Spotted Gum)	175	9	3	Good	Good	Crown density 75-95%.	Mature	15-40	Low	Consider for Removal	2.1	1.7

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
117	*Corymbia maculata* (Spotted Gum)	275	12	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
118	*Corymbia maculata* (Spotted Gum)	275	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
119	*Syncarpia glomulifera* (Turpentine)	225	6	3	Fair	Fair	Crown density 50-75%. Bark inclusion(s), minor.	Mature	5-15	Low	Consider for Removal	2.7	1.8
120	*Syncarpia glomulifera* (Turpentine)	250	6	3	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3	1.9
121	*Corymbia maculata* (Spotted Gum)	325	16	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
122	*Corymbia citriodora* (Lemon Scented Gum)	300	16	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1
123	*Corymbia maculata* (Spotted Gum)	350	14	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2
124	*Corymbia citriodora* (Lemon Scented Gum)	275	13	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0
125	*Corymbia maculata* (Spotted Gum)	300	17	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
126	*Eucalyptus microcorys* (Tallowwood)	300	8	4	Fair	Fair	Crown density 25-50%. Termites.	Mature	5-15	Low	Consider for Removal	3.6	2.1
127	*Corymbia maculata* (Spotted Gum)	125	6	2	Poor	Good	Crown density 0-25%. Poor form.	Semi-mature	<5	Low	Priority for Removal	2	1.5
128	*Corymbia maculata* (Spotted Gum)	250	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3	1.9
129	*Corymbia citriodora* (Lemon Scented Gum)	275	13	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.3	2.0
130	*Corymbia maculata* (Spotted Gum)	200	7	2	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	2.4	1.8
131	*Corymbia maculata* (Spotted Gum)	300	16	3	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.6	2.1
132	*Corymbia maculata* (Spotted Gum)	275	13	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.3	2.0
133	*Corymbia citriodora* (Lemon Scented Gum)	375	16	5	Fair	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3
134	*Corymbia citriodora* (Lemon Scented Gum)	250	14	3	Fair	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
135	*Corymbia citriodora* (Lemon Scented Gum)	275	15	4	Fair	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
136	*Corymbia citriodora* (Lemon Scented Gum)	325	12	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
137	*Corymbia maculata* (Spotted Gum)	425	19	5	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.1	2.4
138	*Corymbia maculata* (Spotted Gum)	325	17	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	3.9	2.1
139	*Syncarpia glomulifera* (Turpentine)	225	7	3	Fair	Fair	Crown density 50-75%. Bark inclusion(s), minor.	Mature	15-40	Low	Consider for Removal	2.7	1.8
140	*Eucalyptus microcorys* (Tallowwood)	300	11	4	Poor	Fair	Crown density 25-50%. Small (<25mmø) epicormic growth in moderate volumes.	Mature	5-15	Low	Consider for Removal	3.6	2.1
141	*Corymbia maculata* (Spotted Gum)	300	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
142	*Eucalyptus microcorys* (Tallowwood)	375	14	6	Fair	Good	Crown density 25-50%.	Mature	5-15	Moderate	Consider for Retention	4.5	2.3
143	*Syncarpia glomulifera* (Turpentine)	225	6	2	Fair	Good	Chlorotic foliage. Crown density 50-75%. Small (<25mmø) deadwood in low volumes.	Mature	5-15	Low	Consider for Removal	2.7	1.8

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
144	*Eucalyptus microcorys* (Tallowwood)	250	9	4	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3	1.9
145	*Corymbia maculata* (Spotted Gum)	475	19	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	5.7	2.5
146	*Eucalyptus microcorys* (Tallowwood)	500	16	6	Good	Good	Crown density 75-95%. Small (<25mmø) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	6	2.6
147	*Eucalyptus microcorys* (Tallowwood)	400	12	5	Good	Good	Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
148	*Eucalyptus microcorys* (Tallowwood)	425	16	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4
149	*Eucalyptus microcorys* (Tallowwood)	100	5	1	Good	Good		Semi-mature	15-40	Low	Consider for Removal	2	1.5
150	*Corymbia citriodora* (Lemon Scented Gum)	325	15	6	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
151	*Corymbia citriodora* (Lemon Scented Gum)	375	15	6	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3
152	*Syncarpia glomulifera* (Turpentine)	250	5	2	Fair	Fair	Crown density 50-75%. Small (<25mmø) deadwood in low volumes. Co-dominant inclusions, minor.	Mature	5-15	Low	Consider for Removal	3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
153	*Corymbia maculata* (Spotted Gum)	275	8	3	Good	Good	Crown density 75-95%.	Mature	15-40	Low	Consider for Removal	3.3	2.0
154	*Corymbia citriodora* (Lemon Scented Gum)	300	14	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
155	*Eucalyptus microcorys* (Tallowwood)	350	8	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	4.2	2.2
156	*Eucalyptus microcorys* (Tallowwood)	300	9	5	Fair	Good	Crown density 50-75%.	Mature	5-15	Moderate	Consider for Retention	3.6	2.1
157	*Corymbia maculata* (Spotted Gum)	275	13	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
158	*Corymbia citriodora* (Lemon Scented Gum)	250	13	4	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3	1.9
159	*Corymbia maculata* (Spotted Gum)	300	14	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
160	*Corymbia maculata* (Spotted Gum)	300	15	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
161	*Corymbia maculata* (Spotted Gum)	250	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Low	Consider for Removal	3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
162	*Eucalyptus microcorys* (Tallowwood)	275	8	4	Fair	Good	Crown density 50-75%. Small (<25mmø) epicormic growth in moderate volumes.	Mature	5-15	Low	Consider for Removal	3.3	2.0
163	*Corymbia citriodora* (Lemon Scented Gum)	275	15	5	Poor	Good	Crown density 25-50%. Poor form.	Mature	5-15	Low	Consider for Removal	3.3	2.0
164	*Corymbia maculata* (Spotted Gum)	200	9	2	Good	Good		Mature	15-40	Low	Consider for Removal	2.4	1.8
165	*Corymbia maculata* (Spotted Gum)	275	14	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
166	*Corymbia maculata* (Spotted Gum)	275	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.3	2.0
167	*Corymbia citriodora* (Lemon Scented Gum)	350	16	4	Good	Good		Mature	15-40	Moderate	Consider for Retention	4.2	2.2
168	*Eucalyptus sideroxylon* (Mugga Ironbark)	200	6	4	Good	Good		Mature	15-40	Low	Consider for Removal	2.4	1.8
169	*Syncarpia glomulifera* (Turpentine)	175	5	2	Fair	Good	Localised crown death.	Mature	5-15	Low	Consider for Removal	2.1	1.7
170	*Corymbia citriodora* (Lemon Scented Gum)	375	16	5	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
171	*Syncarpia glomulifera* (Turpentine)	300	8	3	Good	Fair	Bark inclusion(s), minor.	Mature	15-40	Moderate	Consider for Retention	3.6	2.1
172	*Corymbia maculata* (Spotted Gum)	325	13	3	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
173	*Eucalyptus microcorys* (Tallowwood)	400	12	5	Fair	Good	Crown density 50-75%. Adaptive growth.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
174	*Syncarpia glomulifera* (Turpentine)	200	6	2	Fair	Fair	Localised crown death. Bark inclusion(s), minor.	Mature	15-40	Low	Consider for Removal	2.4	1.8
175	*Syncarpia glomulifera* (Turpentine)	200	6	2	Fair	Good	Chlorotic foliage. Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	2.4	1.8
176	*Syncarpia glomulifera* (Turpentine)	275	8	3	Fair	Good	Crown density 50-75%.	Mature	5-15	Low	Consider for Removal	3.3	2.0
177	*Syncarpia glomulifera* (Turpentine)	250	10	2	Good	Good		Mature	15-40	Moderate	Consider for Retention	3	1.9
178	*Eucalyptus microcorys* (Tallowwood)	450	16	6	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	5.4	2.5
179	*Eucalyptus microcorys* (Tallowwood)	400	15	5	Good	Good	Crown density 75-95%. Partially suppressed. Co-dominant inclusions, minor.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
180	*Corymbia maculata* (Spotted Gum)	375	17	4	Good	Good	Crown density 75-95%.	Mature	15-40	Moderate	Consider for Retention	4.5	2.3
181	*Syncarpia glomulifera* (Turpentine)	200	7	2	Poor	Good	Crown density 25-50%.	Mature	5-15	Low	Consider for Removal	2.4	1.8
182	*Syncarpia glomulifera* (Turpentine)	250	8	4	Good	Fair	Crown density 75-95%. Bark inclusion(s), minor.	Mature	15-40	Low	Consider for Removal	3	1.9
183	*Syncarpia glomulifera* (Turpentine)	300	7	3	Good	Fair	Crown density 75-95%. Bark inclusion(s), minor.	Mature	15-40	Low	Consider for Removal	3.6	2.1
184	*Eucalyptus microcorys* (Tallowwood)	325	13	6	Fair	Good	Crown density 50-75%.	Mature	15-40	Moderate	Consider for Retention	3.9	2.1
185	*Syncarpia glomulifera* (Turpentine)	375	8	3	Fair	Fair	Crown density 50-75%. Bark inclusion(s), minor.	Mature	5-15	Low	Consider for Removal	4.5	2.3
186	*Syncarpia glomulifera* (Turpentine)	400	7	4	Good	Fair	Bark inclusion(s), minor.	Mature	15-40	Moderate	Consider for Retention	4.8	2.3
187	*Eucalyptus microcorys* (Tallowwood)	250					Street tree.					3	1.9
188	*Eucalyptus microcorys* (Tallowwood)	250					Street tree.					3	1.9

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
189	*Eucalyptus microcorys* (Tallowwood)	225					Street tree.					2.7	1.8
190	*Eucalyptus microcorys* (Tallowwood)	250					Street tree.					3	1.9
191	*Eucalyptus microcorys* (Tallowwood)	300					Street tree.					3.6	2.1
192	*Eucalyptus microcorys* (Tallowwood)	250					Street tree.					3	1.9
193	*Eucalyptus microcorys* (Tallowwood)	200					Street tree.					2.4	1.8
194	*Eucalyptus microcorys* (Tallowwood)	200					Street tree.					2.4	1.8
195	*Eucalyptus microcorys* (Tallowwood)	200					Street tree.					2.4	1.8
196	*Eucalyptus microcorys* (Tallowwood)	250					Street tree.					3	1.9
197	*Eucalyptus microcorys* (Tallowwood)	175					Street tree.					2.1	1.7

Tree No.	Species	DBH comb. (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)
198	*Eucalyptus microcorys* (Tallowwood)	175					Street tree.					2.1	1.7
199	*Eucalyptus microcorys* (Tallowwood)	175					Street tree.					2.1	1.7
200	*Eucalyptus microcorys* (Tallowwood)	125					Street tree.					2	1.5
201	*Eucalyptus microcorys* (Tallowwood)	275					Street tree.					3.3	2.0
202	*Eucalyptus microcorys* (Tallowwood)	225					Street tree.					2.7	1.8
203	*Corymbia maculata* (Spotted Gum)	200	7	2	Fair	Poor	Crown density 75-95%. Pruned central leader. Wound(s), various stages of decay.	Mature	<5	Moderate	Priority for Removal	2.4	1.8
204	*Corymbia maculata* (Spotted Gum)	200	8	4	Good	Good	Crown density 25-50%.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2
205	*Corymbia citriodora* (Lemon Scented Gum)	350	11	7	Fair	Good	Crown density 25-50%.	Mature	5-15	Moderate	Consider for Retention	4.2	2.2
206	*Eucalyptus microcorys* (Tallowwood)	250	7	6	Good	Fair	Termites.	Mature	5-15	Moderate	Consider for Retention	3	1.9

Appendix 4: Plates

Plate 1: Showing location of the Edwin Flack construction access

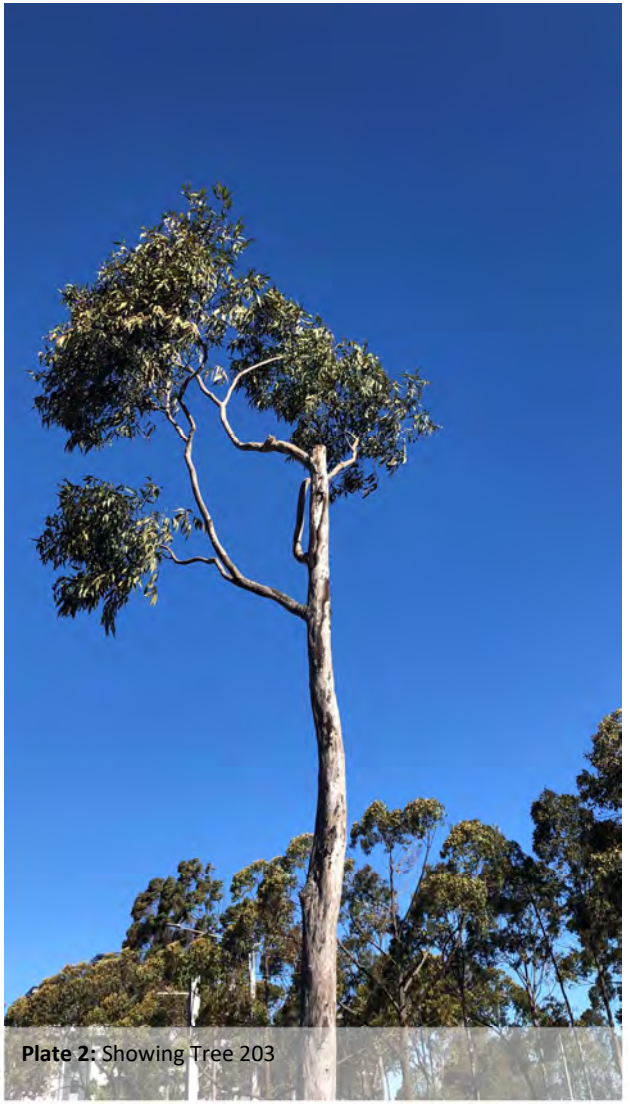


Plate 2: Showing Tree 203

Appendix 5: General Tree Protection Specification

1.0 Appointment of Project Arborist

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

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

1.1 Compliance

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

1.2 Tree Protection Zone

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

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

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

1.3 Scaffolding & Hoarding

Scaffolding and hoarding shall not be located within a TPZ where possible. Branches may be temporarily pushed or tied back. Scaffolding and hoarding shall be modified and constructed around branches (with appropriate branch protection installed as required) where branches cannot be pushed or tied back without damage. Refer to Typical Tree Protection Details (5) **(Appendix 2)**.

1.4 Trunk & Branch Protection

Trunk protection shall be installed for all trees located within the fenced site compound or where deemed necessary by the Project Arborist. Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (4) **(Appendix 2)**.

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

1.5 Ground Protection

Ground protection within TPZ areas will not be required as the existing pavement surface provides adequate protection against soil compaction and root damage. Pedestrian, vehicular and machinery access within a TPZ shall be restricted solely to areas of existing pavement or where ground protection has been installed.

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1.6 Works within the Tree Protection Zones

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

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

1.7 Structure & Pavement Demolition

Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing pavements or areas of ground protection (refer to Section 1.5). Machinery shall work in conjunction with a spotter to guide the machinery operator to ensure that machinery does not contact the tree's roots, trunk, branches and crown.

1.8 Underground Services

Underground service installation within the TPZ shall be supervised by the Project Arborist.

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using tree sensitive excavation methods (hand/hydrovac/airspade) with the services installed around/below roots (>25mmø, or as determined by the Project Arborist). Excavation using compact machinery (<3.5t) fitted with a flat bladed bucket is permissible where approved by the Project Arborist. Excavation using compact machinery should be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmø).

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

1.9 Excavations, Root Protection & Root Pruning

All excavation works (including root investigations) within TPZ areas shall supervised by the Project Arborist and utilise tree sensitive methods (hand/hydrovac/airspade). Excavation using compact machinery (<3.5t) fitted with a flat bladed bucket is permissible where approved by the Project Arborist. Excavation using compact machinery should be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmø).

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

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

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

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Appendix 6: Typical Tree Protection Details

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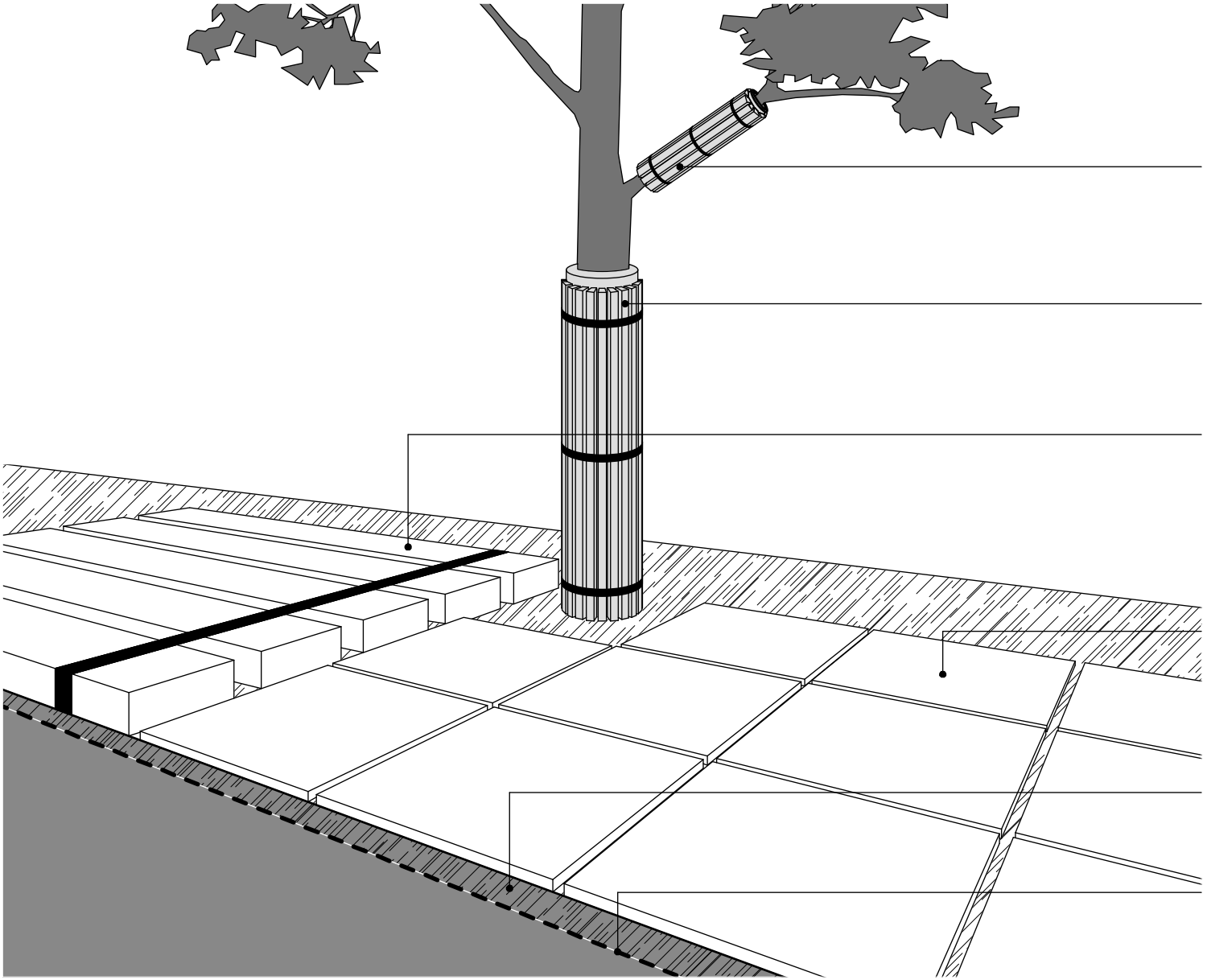

Branch Protection - use boards and padding to prevent damage to bark on branch. Boards are to be strapped, not screwed or nailed to the branch.

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

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

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

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

Geotextile fabric underneath mulch or aggregate layer.

04 Examples of Branch, Trunk and Ground Protection

Not to Scale

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

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

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

Scaffold planks

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

Soleplate over geotextile. No excavation for soleplate within TPZ.

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

Geotextile fabric

05 Indicative Scaffolding within a Tree Protection Zone (TPZ) Not to Scale