



## ARBORICULTURAL IMPACT ASSESSMENT REPORT

### Mosman High School REVISION L

04 June 2021

Prepared for  
Multiplex

#### Prepared by

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## Executive Summary

This Arboricultural Development Impact Assessment Report has been commissioned by Multiplex to report on trees within the site of Mosman High School. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention within the context of proposed development works. The scope of this report includes all trees on site at Mosman High School. This site is proposed for redevelopment including the demolition of existing buildings and construction of new school buildings.

This project is an Infrastructure NSW project that is subject to SSDA approval, however for reference purposes we note that all of the subject trees are preserved by Mosman Council Business Centres Development Control Plan 2018 with the exception of Trees 23, 31, 45, 47, 49 and 54 which are exempt.

This Report identifies 13 Trees with High Retention Value, 56 Trees with Medium Retention Value and 7 Trees with Low Retention Value as defined by Tree Retention Value Priority Matrix as developed by the Institute of Australian Consulting Arborists (IACA).

Tree 39 has been previously approved for removal within the Review of Environmental Factors (REF) Issue D dated 11/08/2020.

The Tree Protection Zones (TPZ) of Trees 10, 11, and 19 will be encroached by the proposed development by slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Roots Zone (SRZ) of these trees are not impacted by the proposed development. Based on consideration of the revised design based on the proposed building line and façade being located behind the existing building line, the restriction to root growth provided by the existing building foundations and structures and these species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, these trees will remain viable to be retained under the proposed development. There are two isolated sections of the proposed building that extend beyond the existing building line within the TPZ of Trees 13 and 16. Root mapping will be required for these areas using nondestructive excavation. All proposed excavation within the TPZ of these trees is to be carried out under the supervision and direction of the Site Arborist.

The Tree Protection Zones (TPZ) of Trees 45, 46, 47, 51, 52, 53, 54 and 56 are totally encroached by the proposed construction for Building G. These trees will not be viable to be retained due to the proposed development and will be required to be removed.

The Tree Protection Zone (TPZ) of Tree 22 is encroached by the proposed construction and pedestrian entry by a major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed suspension of the core of the building and entryway within the TPZ of this tree, this tree will remain viable to be retained under the proposed development. All proposed excavation within the TPZ of these trees is to be carried out by non-destructive methods and under the supervision and direction of the Site Arborist.

The proposed construction vehicular access is within the TPZ and to the west of Tree 22. Ground Protection will be required to be installed to the extent of the TPZ to the

west of Tree 22. Ground Protection is to be installed in accordance with 9.8 of this report and *AS4970-2009*. Trunk and branch protection is to be installed in accordance with 9.7 of this report. Demolition of the area within the TPZ of tree 22 is to be staged in order to leave the existing concrete and hardstand for as long as possible.

The Tree Protection Zone (TPZ) of Trees 12, 17 and 55 is encroached by the proposed construction of new buildings by a major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. In addition, the proximity of the canopies of these trees to proposed building and accordingly the required canopy reduction pruning required in order to clear these trees from the required scaffolding will remove the majority of the canopy. These trees will not be viable for retention.

The proposed building structure will encroach within the canopy of Trees 9, 10, 11, 13, 14, 15, 16, and 22 however the extent of this impact is less than 10% and the branching structure of these trees will permit canopy reduction pruning in accordance with *AS4373-2007 Pruning of Amenity Trees* that would reduce the canopy without impacting the balance or form of the canopy. Scaffold design is required to minimise the impact on the canopy of these trees and a pruning specification is to be provided by the Site Arborist. The B Class hoarding proposed for the vicinity of Trees 18 and 19 is to accommodate and protect the canopy of these trees.

The Tree Protection Zone (TPZ) of Tree 25 is encroached by the electrical substation location. The required excavation will encroach within the Structural Root Zone of this tree. This tree will not be viable to be retained.

The Tree Protection Zone (TPZ) of Tree 27 is encroached by the booster pump location. The required excavation will encroach within the Structural Root Zone of this tree. This tree will not be viable to be retained.

The Tree Protection Zones (TPZ) of Trees 39, 40, 41, 42, 43 and 44 are totally encroached by the proposed level changes and landscape amendments. Trees 39, 42 and 43 are currently located within small isolated raised planters which are proposed for demolition. These trees will not be viable to be retained due to the proposed development and will be required to be removed.

Of the 20 trees identified within this report that will be required to be removed due to the impact of the proposed development, 15 are identified as having Medium Retention Value and 5 are identified with Low Retention Value.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

Tree no.	Species	Common Name	Recommendations	Comments
1.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
2.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
3.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0

4.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
5.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
6.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
7.	<i>Harpephyllum caffrum</i>	Kaffir Plum	Retain	Retain and protect in accordance with 9.0
8.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
9.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
10.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
11.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
12.	<i>Lophostemon confertus</i>	Brush Box	Remove	Not viable to be retained due to impact of proposed development.
13.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
14.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
15.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
16.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
17.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Remove	Not viable to be retained due to impact of proposed development.
18.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
19.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
20.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
21.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
22.	<i>Ficus microcarpa</i>	Banyan Fig	Retain	Retain and protect in accordance with 9.0, Trunk, branch and ground protection required.
23.	<i>Celtis sinensis</i>	Chinese Hackberry	Retain	Retain and protect in accordance with 9.0
24.	<i>Eucalyptus robusta</i>	Swamp Mahogany	Retain	Retain and protect in accordance with 9.0

25.	<i>Cinnamomum camphora</i>	Camphor Laurel	Remove	Not viable to be retained due to impact of proposed development.
26.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
27.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Remove	Not viable to be retained due to impact of proposed development.
28.	<i>Melia azedarach</i>	White Cedar	Retain	Retain and protect in accordance with 9.0
29.	<i>Eucalyptus punctata</i>	Grey Gum	Retain	Retain and protect in accordance with 9.0
30.	<i>Araucaria columnaris</i>	Cook Pine	Retain	Retain and protect in accordance with 9.0
31.	<i>Celtis sinensis</i>	Chinese Hackberry	Retain	Retain and protect in accordance with 9.0
32.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
33.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
34.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
35.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
36.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
37.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
38.	<i>Ficus rubiginosa</i>	Port Jackson Fig	Retain	Retain and protect in accordance with 9.0
39.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
40.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
41.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
42.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
43.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
44.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.

45.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
46.	<i>Phoenix canariensis</i>	Canary Island Palm	Remove	Not viable to be retained due to impact of proposed development.
47.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
48.	<i>Cupaniopsis anacardioides</i>	Tuckaroo	Retain	Retain and protect in accordance with 9.0
49.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
50.	<i>Phoenix canariensis</i>	Canary Island Palm	Remove	Not viable to be retained due to impact of proposed development.
51.	<i>Ulmus parvifolia</i>	Chinese Elm	Remove	Not viable to be retained due to impact of proposed development.
52.	<i>Lophostemon confertus</i>	Brush Box	Remove	Not viable to be retained due to impact of proposed development.
53.	<i>Waterhousia floribunda</i>	Weeping Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
54.	<i>Celtis sinensis</i>	Chinese Elm	Remove	Not viable to be retained due to impact of proposed development.
55.	<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Remove	Not viable to be retained due to impact of proposed development.
56.	<i>Corymbia gummifera</i>	Red Bloodwood	Remove	Not viable to be retained due to impact of proposed development.
57.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
58.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
59.	<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Retain	Retain and protect in accordance with 9.0
60.	<i>Phoenix canariensis</i>	Canary Island Palm	Retain	Retain and protect in accordance with 9.0
61.	<i>Eucalyptus pilularis</i>	Grey Gum	Retain	Retain and protect in accordance with 9.0
62.	<i>Acmena smithii</i>	Lilly Pilly	Retain	Retain and protect in accordance with 9.0
63.	<i>Jacaranda mimosifolia</i>	Jacaranda	Retain	Retain and protect in accordance with 9.0

64.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Retain	Retain and protect in accordance with 9.0
65.	<i>Melaleuca linarifolia</i>	Snow in Summer	Retain	Retain and protect in accordance with 9.0
66.	<i>Melaleuca linarifolia</i>	Snow in Summer	Retain	Retain and protect in accordance with 9.0
67.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Retain	Retain and protect in accordance with 9.0
68.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
69.	<i>Brachychiton acerifolia</i>	Illawarra Flame Tree	Retain	Retain and protect in accordance with 9.0
70.	<i>Ficus microcarpa</i>	Banyan Fig	Retain	Retain and protect in accordance with 9.0
71.	<i>Platanus x hybrida</i>	Plane Tree	Retain	Retain and protect in accordance with 9.0
72.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
73.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
74.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
75.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
76.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0



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## **1.0 Scope of Works**

This Arboricultural Development Impact Assessment Report has been commissioned by Multiplex to report on trees within the site of Mosman High School. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention within the context of proposed development works. The scope of this report includes all trees on site at Mosman High School.

On the 26<sup>th</sup> of May 2020 and 2<sup>nd</sup> December 2020, Glenn Bird of Birds Tree Consultancy attended site and inspected the subject trees from the ground. There was no aerial inspection carried out. A Visual Tree Assessment was undertaken in accordance with Visual Tree Assessment (VTA) guidelines (Mattheck and Breloer, 1994). Tree heights were measured using a Nikon Forestry 550 Heightmeter.

## **2.0 Site Analysis**

### **2.1 Site**

The subject site is Mosman High School. The subject trees are located within or adjacent to the boundaries of this site. This site is proposed for redevelopment including the demolition of existing buildings and construction of new school buildings.

### **2.2 Topography**

The site slopes from the highest point on the eastern Military Road boundary to the lowest point on the northern corner of Belmont Road and Gladstone Avenue.

### **2.2 Documentation**

This Revision G is based on assessing the impact of the proposed development design as defined by Multiplex Woods Bagot Ground Floor Plan provided February 2021 and Architectus Review of Environmental Factors for Mosman High School Issue D dated 11/08/2020.

### **2.3 Identification**

Trees are as identified in the attached inspection forms in Appendix D and shown in Tree location Plan A01 in Appendix E.

### **2.4 Soils**

Soil material and horizons were not tested for this report.

### 3.0 Existing Trees

The following trees were inspected from the ground and the following items identified. Please refer also to the attached inspection data in Appendix D.

- 3.1. Tree 1. *Ulmus parvifolia***  
This mature tree is approximately 7m tall with a canopy spread of 5m. It has a single trunk with a diameter at breast height (DBH) of 170mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.2. Tree 2. *Ulmus parvifolia***  
This semi-mature tree is approximately 4m tall with a canopy spread of 1m. It has a single trunk with a DBH of 40mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.3. Tree 3. *Ulmus parvifolia***  
This mature tree is approximately 6m tall with a canopy spread of 4m. It has a single trunk with a DBH of 135mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.4. Tree 4. *Ulmus parvifolia***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has a single trunk with a DBH of 175mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.5. Tree 5. *Ulmus parvifolia***  
This mature tree is approximately 10m tall with a canopy spread of 8m. It has a single trunk with a DBH of 200mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.6. Tree 6. *Ulmus parvifolia***  
This semi-mature tree is approximately 4m tall with a canopy spread of 2m. It has a single trunk with a DBH of 50mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.7. Tree 7. *Harpephyllum caffrum***  
This semi-mature tree is approximately 4m tall with a canopy spread of 2m. It has a single trunk with a DBH of 75mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.8. Tree 8. *Lophostemon confertus***  
This mature tree is approximately 10m tall with a canopy spread of 10m. It has a single trunk with a DBH of 490mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.9. Tree 9. *Lophostemon confertus***  
This mature tree is approximately 8.5m tall with a canopy spread of 10m. It has a single trunk with a DBH of 580mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.10. Tree 10. *Lophostemon confertus***  
This mature tree is approximately 10m tall with a canopy spread of 11m. It has multiple co-dominant trunks from 1.3m above the base with an aggregate DBH of 570mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.11. Tree 11. *Lophostemon confertus***  
This mature tree is approximately 11m tall with a canopy spread of 11m. It has multiple co-dominant trunks from 1.4m above the base with an aggregate DBH of 740mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.12. Tree 12. *Lophostemon confertus***  
This mature tree is approximately 11m tall with a canopy spread of 9m. It has twin co-dominant trunks from 1m above the base with an aggregate DBH of 560mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.13. Tree 13. *Melaleuca quinquenervia***  
This mature tree is approximately 14m tall with a canopy spread of 12m. It has a single trunk with a DBH of 810mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.14. Tree 14. *Melaleuca quinquenervia***  
This mature tree is approximately 14m tall with a canopy spread of 12m. It has a single trunk with a DBH of 780mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.15. Tree 15. *Melaleuca quinquenervia***  
This mature tree is approximately 14m tall with a canopy spread of 13m. It has a single trunk with a DBH of 690mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.16. Tree 16. *Melaleuca quinquenervia***  
This mature tree is approximately 16m tall with a canopy spread of 14m. It has a single trunk with a DBH of 630mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.17. Tree 17. *Melaleuca quinquenervia***  
This mature tree is approximately 16m tall with a canopy spread of 13m. It has a single trunk with a DBH of 930mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.18. Tree 18. *Lophostemon confertus***  
This mature tree is approximately 10m tall with a canopy spread of 10m. It has a single trunk with a DBH of 660mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.19. Tree 19. *Lophostemon confertus***  
This mature tree is approximately 9m tall with a canopy spread of 12m. It has a single trunk with a DBH of 670mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.20. Tree 20. *Lophostemon confertus***  
This mature tree is approximately 8m tall with a canopy spread of 12m. It has a single trunk with a DBH of 490mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.21. Tree 21. *Lophostemon confertus***  
This mature tree is approximately 6m tall with a canopy spread of 8m. It has a single trunk with a DBH of 520mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.22. Tree 22. *Ficus microcarpa***  
This mature tree is approximately 19m tall with a canopy spread of 19m. It has a single trunk with a DBH of 1060mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.23. Tree 23. *Celtis sinensis***  
This semi-mature tree is approximately 9m tall with a canopy spread of 4m. It has twin co-dominant trunks from 1m above the base with an aggregate DBH of 145mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.24. Tree 24. *Eucalyptus robusta***  
This mature tree is approximately 12m tall with a canopy spread of 9m. It has twin co-dominant trunks from 1m above the base with an aggregate DBH of 545mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.25. Tree 25. *Cinnamomum camphora***  
This mature tree is approximately 11m tall with a canopy spread of 10m. It has twin co-dominant trunks from the base with an aggregate DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.26. Tree 26. *Lophostemon confertus***  
This mature tree is approximately 11m tall with a canopy spread of 7m. It has twin co-dominant trunks from 1.5m above the base with a DBH of 720mm. This tree is in good health and chlorotic condition with minimal deadwood and epicormic growth.
- 3.27. Tree 27. *Lagerstroemia indica***  
This mature tree is approximately 10m tall with a canopy spread of 9m. It has twin co-dominant trunks from the base with an aggregate DBH of 230mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.28. Tree 28. *Melia azedarach***  
This mature tree is approximately 9m tall with a canopy spread of 11m. It has a single trunk with a DBH of 360mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.29. Tree 29. *Eucalyptus punctata***  
This mature tree is approximately 10m tall with a canopy spread of 12m. It has a single trunk with a DBH of 370mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.30. Tree 30. *Araucaria columnaris***  
This mature tree is approximately 16m tall with a canopy spread of 7m. It has a single trunk with a DBH of 470mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.31. Tree 31. *Celtis sinensis***  
This mature tree is approximately 14m tall with a canopy spread of 11m. It has a single trunk with a DBH of 300mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.32. Tree 32. *Lophostemon confertus***  
This mature tree is approximately 12m tall with a canopy spread of 8m. It has a single trunk with a DBH of 275mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.33. Tree 33. *Lophostemon confertus***  
This mature tree is approximately 12m tall with a canopy spread of 9m. It has a single trunk with a DBH of 335mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.34. Tree 34. *Lophostemon confertus***  
This mature tree is approximately 13m tall with a canopy spread of 10m. It has a single trunk with a DBH of 695mm. The canopy is unbalanced to the south due to proximity of building. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.35. Tree 35. *Lophostemon confertus***  
This mature tree is approximately 16m tall with a canopy spread of 9m. It has a single trunk with a DBH of 590mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.36. Tree 36. *Lophostemon confertus***  
This mature tree is approximately 16m tall with a canopy spread of 9m. It has a single trunk with a DBH of 680mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.37. Tree 37. *Lophostemon confertus***  
This mature tree is approximately 16m tall with a canopy spread of 9m. It has a single trunk with a DBH of 650mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.38. Tree 38. *Ficus rubiginosa***  
This mature tree is approximately 13m tall with a canopy spread of 16m. It has a single trunk with a DBH of 1015mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.39. Tree 39. *Acmena smithii***  
This mature tree is approximately 4.5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 100mm. This tree is in good health and condition with minimal deadwood and epicormic growth. Tree 39 has been previously approved for removal within the Review of Environmental Factors (REF) Issue D dated 11/08/2020.
- 3.40. Tree 40. *Acmena smithii***  
This mature tree is approximately 5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 100mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.41. Tree 41. *Syzygium paniculatum***  
This mature tree is approximately 4.5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 120mm. This tree is in fair health and condition with a thinning canopy, moderate deadwood, minimal epicormic growth and moderate apical dieback.
- 3.42. Tree 42. *Syzygium paniculatum***  
This mature tree is approximately 5.5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 240mm. This tree is in good health and condition with moderate deadwood, minimal epicormic growth and moderate apical dieback.
- 3.43. Tree 43. *Syzygium paniculatum***  
This mature tree is approximately 5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 230mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.44. Tree 44. *Acmena smithii***  
This semi-mature tree is approximately 2.5m tall with a canopy spread of 2m. It has a single trunk with a DBH of 60mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.45. Tree 45. *Celtis sinensis***  
This mature tree is approximately 10m tall with a canopy spread of 8m. It has a single trunk with a DBH of 320mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.46. Tree 46. *Phoenix canariensis***  
This mature tree is approximately 5m tall with a canopy spread of 5m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.47. Tree 47. *Celtis sinensis***  
This semi-mature tree is approximately 7m tall with a canopy spread of 5m. It has a single trunk with a DBH of 120mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.48. Tree 48. *Cupaniopsis anacardioides***  
This mature tree is approximately 8m tall with a canopy spread of 8m. It has a single trunk with a DBH of 225mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.49. Tree 49. *Celtis sinensis***  
This mature tree is approximately 5m tall with a canopy spread of 6m. It has twin co-dominant trunks from the base with an aggregate DBH of 150mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.50. Tree 50. *Phoenix canariensis***  
This mature tree is approximately 4m tall with a canopy spread of 4m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.51. Tree 51. *Ulmus parvifolia***  
This mature tree is approximately 6m tall with a canopy spread of 7m. It has twin co-dominant trunks from 1m above the base with an aggregate DBH of 240mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.52. Tree 52. *Lophostemon confertus***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has twin co-dominant trunks from 1.5m above the base with a DBH of 490mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.53. Tree 53. *Waterhousia floribunda***  
This mature tree is approximately 4m tall with a canopy spread of 3m. It has a single trunk with a DBH of 150mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.54. Tree 54. *Celtis sinensis***  
This mature tree is approximately 7m tall with a canopy spread of 6m. It has a single trunk with a DBH of 225mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.55. Tree 55. *Eucalyptus scoparia***  
This mature tree is approximately 17m tall with a canopy spread of 16m. It has a single trunk with a DBH of 770mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



- 3.56. Tree 56. *Corymbia gummifera***  
This mature tree is approximately 13m tall with a canopy spread of 12m. It has a single trunk with a DBH of 455mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.57. Tree 57. *Pittosporum undulatum***  
This mature tree is approximately 8m tall with a canopy spread of 6m. It has a single trunk with a DBH of 140mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.58. Tree 58. *Pittosporum undulatum***  
This mature tree is approximately 6m tall with a canopy spread of 7m. It has a single trunk with a DBH of 150mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.59. Tree 59. *Eucalyptus scoparia***  
This mature tree is approximately 18m tall with a canopy spread of 11m. It has a single trunk with a DBH of 420mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.60. Tree 60. *Phoenix canariensis***  
This mature tree is approximately 12m tall with a canopy spread of 10m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.61. Tree 61. *Eucalyptus pilularis***  
This mature tree is approximately 16m tall with a canopy spread of 12m. It has a single trunk with a DBH of 600mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.62. Tree 62. *Acmena smithii***  
This mature tree is approximately 12m tall with a canopy spread of 10m. It has a single trunk with a DBH of 450mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.63. Tree 63. *Jacaranda mimosifolia***  
This mature tree is approximately 14m tall with a canopy spread of 15m. It has twin co-dominant trunks from the base with an aggregate DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.64. Tree 64. *Lagerstroemia indica***  
This mature tree is approximately 7m tall with a canopy spread of 5m. It has multiple (3) co-dominant trunks from the base with an aggregate DBH of 260mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.65. Tree 65. *Melaleuca linarifolia***  
This mature tree is approximately 8m tall with a canopy spread of 7m. It has a single trunk with a DBH of 520mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.66. Tree 66. *Melaleuca linarifolia***  
This mature tree is approximately 6m tall with a canopy spread of 4m. It has a single trunk with a DBH of 250mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.67. Tree 67. *Lagerstroemia indica***  
This mature tree is approximately 7m tall with a canopy spread of 6m. It has multiple co-dominant trunks from the base with an aggregate DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.68. Tree 68. *Cinnamomum camphora***  
This mature tree is approximately 12m tall with a canopy spread of 16m. It has a single trunk with a DBH of 720mm. This tree is in fair health and condition with a thinning canopy, moderate deadwood and minimal epicormic growth.
- 3.69. Tree 69. *Brachychiton acerifolia***  
This mature tree is approximately 5m tall with a canopy spread of 7m. It has a single trunk with a DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.70. Tree 70. *Ficus microcarpa***  
This mature tree is approximately 19m tall with a canopy spread of 18m. It has multiple co-dominant trunks from 2m above the base with a DBH of 1030mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.71. Tree 71. *Platanus x hybrida***  
This mature tree is approximately 19m tall with a canopy spread of 15m. It has a single trunk with a DBH of 780mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.72. Tree 72. *Cinnamomum camphora***  
This mature tree is approximately 11m tall with a canopy spread of 15m. It has a single trunk with a DBH of 740mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.73. Tree 73. *Cinnamomum camphora***  
This mature tree is approximately 12m tall with a canopy spread of 10m. It has a single trunk with a DBH of 630mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.74. Tree 74. *Cinnamomum camphora***  
This mature tree is approximately 14m tall with a canopy spread of 10m. It has a single trunk with a DBH of 550mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.75. Tree 75. *Ulmus parvifolia***  
This mature tree is approximately 4m tall with a canopy spread of 3m. It has a single trunk with a DBH of 100mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.76. Tree 76. *Ulmus parvifolia***  
This mature tree is approximately 5m tall with a canopy spread of 4m. It has a single trunk with a DBH of 100mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

## 4.0 Landscape Significance of Trees

### 4.1 Landscape Significance

The significance of a tree within the landscape is a factor of the health and condition of the tree, vitality, the form of the tree, environmental, cultural, amenity and heritage value.

### 4.2 Methodology of Determining Landscape Significance

For the purpose of this report, the Significance of a Tree, Assessment Rating System (STARS) as developed by the Institute of Australian Consulting Arborists (IACA) has been implemented. Please refer to Appendix A for greater detail of this assessment system. This system defines Landscape Significance for individual trees as High, Medium or Low Significance.

### 4.3 Landscape Significance of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Significance of a Tree, Assessment Rating System, the Landscape Significance of the Subject Trees was determined as shown in Table 1.

Tree no.	Species	Landscape Significance
1.	<i>Ulmus parvifolia</i>	Medium
2.	<i>Ulmus parvifolia</i>	Medium
3.	<i>Ulmus parvifolia</i>	Medium
4.	<i>Ulmus parvifolia</i>	Medium
5.	<i>Ulmus parvifolia</i>	Medium
6.	<i>Ulmus parvifolia</i>	Medium
7.	<i>Harpephyllum caffrum</i>	Medium
8.	<i>Lophostemon confertus</i>	Medium
9.	<i>Lophostemon confertus</i>	Medium
10.	<i>Lophostemon confertus</i>	Medium

11.	<i>Lophostemon confertus</i>	Medium
12.	<i>Lophostemon confertus</i>	Medium
13.	<i>Melaleuca quinquenervia</i>	Medium
14.	<i>Melaleuca quinquenervia</i>	Medium
15.	<i>Melaleuca quinquenervia</i>	Medium
16.	<i>Melaleuca quinquenervia</i>	Medium
17.	<i>Melaleuca quinquenervia</i>	Medium
18.	<i>Lophostemon confertus</i>	Medium
19.	<i>Lophostemon confertus</i>	Medium
20.	<i>Lophostemon confertus</i>	Medium
21.	<i>Lophostemon confertus</i>	Medium
22.	<i>Ficus microcarpa</i>	High
23.	<i>Celtis sinensis</i>	Low
24.	<i>Eucalyptus robusta</i>	Medium
25.	<i>Cinnamomum camphora</i>	Low
26.	<i>Pittosporum undulatum</i>	Medium
27.	<i>Lagerstroemia indica</i>	Medium
28.	<i>Melia azedarach</i>	Medium
29.	<i>Eucalyptus punctata</i>	High
30.	<i>Araucaria columnaris</i>	High
31.	<i>Celtis sinensis</i>	Low
32.	<i>Lophostemon confertus</i>	Medium
33.	<i>Lophostemon confertus</i>	Medium
34.	<i>Lophostemon confertus</i>	Medium
35.	<i>Lophostemon confertus</i>	Medium
36.	<i>Lophostemon confertus</i>	Medium
37.	<i>Lophostemon confertus</i>	Medium
38.	<i>Ficus rubiginosa</i>	High
39.	<i>Acmena smithii</i>	Low
40.	<i>Acmena smithii</i>	Low
41.	<i>Syzygium paniculatum</i>	Medium
42.	<i>Syzygium paniculatum</i>	Medium
43.	<i>Syzygium paniculatum</i>	Medium
44.	<i>Acmena smithii</i>	Low
45.	<i>Celtis sinensis</i>	Low
46.	<i>Phoenix canariensis</i>	Medium
47.	<i>Celtis sinensis</i>	Low
48.	<i>Cupaniopsis anacardioides</i>	Medium
49.	<i>Celtis sinensis</i>	Low
50.	<i>Phoenix canariensis</i>	Medium
51.	<i>Ulmus parvifolia</i>	Medium
52.	<i>Lophostemon confertus</i>	Medium
53.	<i>Waterhousia floribunda</i>	Medium
54.	<i>Celtis sinensis</i>	Low

55.	<i>Eucalyptus scoparia</i>	Medium
56.	<i>Corymbia gummifera</i>	Medium
57.	<i>Pittosporum undulatum</i>	Medium
58.	<i>Pittosporum undulatum</i>	Medium
59.	<i>Eucalyptus scoparia</i>	Medium
60.	<i>Phoenix canariensis</i>	Medium
61.	<i>Eucalyptus pilularis</i>	Medium
62.	<i>Acmena smithii</i>	Medium
63.	<i>Jacaranda mimosifolia</i>	Medium
64.	<i>Lagerstroemia indica</i>	Medium
65.	<i>Melaleuca linarifolia</i>	Medium
66.	<i>Melaleuca linarifolia</i>	Medium
67.	<i>Lagerstroemia indica</i>	Medium
68.	<i>Cinnamomum camphora</i>	Medium
69.	<i>Brachychiton acerifolia</i>	Medium
70.	<i>Ficus microcarpa</i>	High
71.	<i>Platanus x hybrida</i>	Medium
72.	<i>Cinnamomum camphora</i>	Medium
73.	<i>Cinnamomum camphora</i>	Medium
74.	<i>Cinnamomum camphora</i>	Medium
75.	<i>Ulmus parvifolia</i>	Medium
76.	<i>Ulmus parvifolia</i>	Medium

**Table 1 - Landscape Significance**

## **5.0 Subject Tree Retention Value**

### **5.1 Tree Retention Value Methodology**

For the purpose of this report, the Tree Retention Values have been assessed by incorporating Landscape Significance Values as determined in 4.0 with the Useful Life Expectancy of the subject trees and assessing the retention values based on the Tree Retention Value Priority Matrix as developed by the Institute of Australian Consulting Arborists (IACA). Please refer to Appendix B for greater detail of this Tree Retention Value Priority Matrix. This matrix defines Landscape Significance for individual trees as High, Medium or Low Retention Value as well as Priority for Removal.

### **5.2 Retention Value of Subject Trees**

Based on our assessment of the subject trees and implementation of the IACA Tree Retention Value Priority Matrix, the Retention Values of the Subject Trees were determined as shown in Table 2.

<b>Tree no.</b>	<b>Species</b>	<b>Retention Value</b>
1.	<i>Ulmus parvifolia</i>	High

2.	<i>Ulmus parvifolia</i>	High
3.	<i>Ulmus parvifolia</i>	High
4.	<i>Ulmus parvifolia</i>	High
5.	<i>Ulmus parvifolia</i>	High
6.	<i>Ulmus parvifolia</i>	High
7.	<i>Harpephyllum caffrum</i>	Medium
8.	<i>Lophostemon confertus</i>	Medium
9.	<i>Lophostemon confertus</i>	Medium
10.	<i>Lophostemon confertus</i>	Medium
11.	<i>Lophostemon confertus</i>	Medium
12.	<i>Lophostemon confertus</i>	Medium
13.	<i>Melaleuca quinquenervia</i>	Medium
14.	<i>Melaleuca quinquenervia</i>	Medium
15.	<i>Melaleuca quinquenervia</i>	Medium
16.	<i>Melaleuca quinquenervia</i>	Medium
17.	<i>Melaleuca quinquenervia</i>	Medium
18.	<i>Lophostemon confertus</i>	Medium
19.	<i>Lophostemon confertus</i>	Medium
20.	<i>Lophostemon confertus</i>	Medium
21.	<i>Lophostemon confertus</i>	Medium
22.	<i>Ficus microcarpa</i>	High
23.	<i>Celtis sinensis</i>	Low
24.	<i>Eucalyptus robusta</i>	Medium
25.	<i>Cinnamomum camphora</i>	Low
26.	<i>Pittosporum undulatum</i>	Medium
27.	<i>Lagerstroemia indica</i>	Medium
28.	<i>Melia azedarach</i>	Medium
29.	<i>Eucalyptus punctata</i>	High
30.	<i>Araucaria columnaris</i>	High
31.	<i>Celtis sinensis</i>	Low
32.	<i>Lophostemon confertus</i>	Medium
33.	<i>Lophostemon confertus</i>	Medium
34.	<i>Lophostemon confertus</i>	Medium
35.	<i>Lophostemon confertus</i>	Medium
36.	<i>Lophostemon confertus</i>	Medium
37.	<i>Lophostemon confertus</i>	Medium
38.	<i>Ficus rubiginosa</i>	High
39.	<i>Acmena smithii</i>	Medium
40.	<i>Acmena smithii</i>	Medium
41.	<i>Syzygium paniculatum</i>	Medium
42.	<i>Syzygium paniculatum</i>	Medium
43.	<i>Syzygium paniculatum</i>	Medium
44.	<i>Acmena smithii</i>	Medium
45.	<i>Celtis sinensis</i>	Low

46.	<i>Phoenix canariensis</i>	Medium
47.	<i>Celtis sinensis</i>	Low
48.	<i>Cupaniopsis anacardioides</i>	Medium
49.	<i>Celtis sinensis</i>	Low
50.	<i>Phoenix canariensis</i>	Medium
51.	<i>Ulmus parvifolia</i>	Medium
52.	<i>Lophostemon confertus</i>	Medium
53.	<i>Waterhousia floribunda</i>	Medium
54.	<i>Celtis sinensis</i>	Low
55.	<i>Eucalyptus scoparia</i>	Medium
56.	<i>Corymbia gummifera</i>	Medium
57.	<i>Pittosporum undulatum</i>	Medium
58.	<i>Pittosporum undulatum</i>	Medium
59.	<i>Eucalyptus scoparia</i>	Medium
60.	<i>Phoenix canariensis</i>	Medium
61.	<i>Eucalyptus pilularis</i>	Medium
62.	<i>Acmena smithii</i>	Medium
63.	<i>Jacaranda mimosifolia</i>	Medium
64.	<i>Lagerstroemia indica</i>	Medium
65.	<i>Melaleuca linarifolia</i>	Medium
66.	<i>Melaleuca linarifolia</i>	Medium
67.	<i>Lagerstroemia indica</i>	Medium
68.	<i>Cinnamomum camphora</i>	Medium
69.	<i>Brachychiton acerifolia</i>	Medium
70.	<i>Ficus microcarpa</i>	High
71.	<i>Platanus x hybrida</i>	Medium
72.	<i>Cinnamomum camphora</i>	Medium
73.	<i>Cinnamomum camphora</i>	Medium
74.	<i>Cinnamomum camphora</i>	Medium
75.	<i>Ulmus parvifolia</i>	High
76.	<i>Ulmus parvifolia</i>	High

**Table 2 – Tree Retention Value**



## 6.0 Useful Life Expectancy

### 6.1 Useful Life Expectancy

The Safe Useful Life Expectancy (SULE) of the subject trees has been defined based on Barrell's Safe Useful Life Expectancy Matrix (Appendix C)

Tree no.	Species	Life Expectancy (years)	SULE	Category
1.	<i>Ulmus parvifolia</i>	15-40y	Medium	2A
2.	<i>Ulmus parvifolia</i>	40y+	Long	1A
3.	<i>Ulmus parvifolia</i>	15-40y	Medium	2A
4.	<i>Ulmus parvifolia</i>	15-40y	Medium	2A
5.	<i>Ulmus parvifolia</i>	15-40y	Medium	2A
6.	<i>Ulmus parvifolia</i>	40y+	Long	1A
7.	<i>Harpephyllum caffrum</i>	40y+	Medium	2B
8.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
9.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
10.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
11.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
12.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
13.	<i>Melaleuca quinquenervia</i>	15-40y	Medium	2A
14.	<i>Melaleuca quinquenervia</i>	15-40y	Medium	2A
15.	<i>Melaleuca quinquenervia</i>	15-40y	Medium	2A
16.	<i>Melaleuca quinquenervia</i>	15-40y	Medium	2A
17.	<i>Melaleuca quinquenervia</i>	15-40y	Medium	2A
18.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
19.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
20.	<i>Lophostemon confertus</i>	15-40y	Medium	2A

21.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
22.	<i>Ficus microcarpa</i>	15-40y	Medium	2A
23.	<i>Celtis sinensis</i>	40y+	Medium	2C
24.	<i>Eucalyptus robusta</i>	15-40y	Medium	2A
25.	<i>Cinnamomum camphora</i>	15-40y	Short	3C
26.	<i>Pittosporum undulatum</i>	15-40y	Medium	2A
27.	<i>Lagerstroemia indica</i>	15-40y	Medium	2A
28.	<i>Melia azedarach</i>	15-40y	Medium	2A
29.	<i>Eucalyptus punctata</i>	15-40y	Medium	2A
30.	<i>Araucaria columnaris</i>	15-40y	Medium	2A
31.	<i>Celtis sinensis</i>	15-40y	Medium	2A
32.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
33.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
34.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
35.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
36.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
37.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
38.	<i>Ficus rubiginosa</i>	15-40y	Medium	2A
39.	<i>Acmena smithii</i>	40y+	Long	1A
40.	<i>Acmena smithii</i>	40y+	Long	1A
41.	<i>Syzygium paniculatum</i>	40y+	Long	1A
42.	<i>Syzygium paniculatum</i>	40y+	Long	1A
43.	<i>Syzygium paniculatum</i>	40y+	Long	1A
44.	<i>Acmena smithii</i>	40y+	Long	1A
45.	<i>Celtis sinensis</i>	15-40y	Medium	2A
46.	<i>Phoenix canariensis</i>	15-40y	Medium	2A
47.	<i>Celtis sinensis</i>	15-40y	Medium	2A
48.	<i>Cupaniopsis anacardioides</i>	15-40y	Medium	2A
49.	<i>Celtis sinensis</i>	15-40y	Medium	2A
50.	<i>Phoenix canariensis</i>	15-40y	Medium	2A
51.	<i>Ulmus parvifolia</i>	15-40y	Medium	2A

52.	<i>Lophostemon confertus</i>	15-40y	Medium	2A
53.	<i>Waterhousia floribunda</i>	15-40y	Medium	2A
54.	<i>Celtis sinensis</i>	15-40y	Medium	2A
55.	<i>Eucalyptus scoparia</i>	15-40y	Medium	2A
56.	<i>Corymbia gummifera</i>	15-40y	Medium	2A
57.	<i>Pittosporum undulatum</i>	15-40y	Medium	2A
58.	<i>Pittosporum undulatum</i>	15-40y	Medium	2A
59.	<i>Eucalyptus scoparia</i>	15-40y	Medium	2A
60.	<i>Phoenix canariensis</i>	15-40y	Medium	2A
61.	<i>Eucalyptus pilularis</i>	15-40y	Medium	2A
62.	<i>Acmena smithii</i>	15-40y	Medium	2A
63.	<i>Jacaranda mimosifolia</i>	15-40y	Medium	2A
64.	<i>Lagerstroemia indica</i>	15-40y	Medium	2A
65.	<i>Melaleuca linarifolia</i>	15-40y	Medium	2A
66.	<i>Melaleuca linarifolia</i>	15-40y	Medium	2A
67.	<i>Lagerstroemia indica</i>	15-40y	Medium	2A
68.	<i>Cinnamomum camphora</i>	15-40y	Medium	2A
69.	<i>Brachychiton acerifolia</i>	15-40y	Medium	2A
70.	<i>Ficus microcarpa</i>	15-40y	Medium	2A
71.	<i>Platanus x hybrida</i>	15-40y	Medium	2A
72.	<i>Cinnamomum camphora</i>	15-40y	Medium	2A
73.	<i>Cinnamomum camphora</i>	15-40y	Medium	2A
74.	<i>Cinnamomum camphora</i>	15-40y	Medium	2A
75.	<i>Ulmus parvifolia</i>	40y+	Long	1A
76.	<i>Ulmus parvifolia</i>	40y+	Long	1A

## 7.0 Impact of Development

### 7.1 Tree Protection Zone

Tree Protection Zones (TPZs) have been defined for the subject trees in order to define the encroachment of the proposed development in accordance with AS4970-2009. The TPZs required have been taken as a circular area with a radius 12 x the diameter at breast height of the tree. This requirement is in line with Australian Standard AS 4970-2009 Protection of Trees on Development Sites. This standard defines a maximum of 10% encroachment to be minimal encroachment. Any encroachment over 10% requires the site arborist to give consideration as to the viability of the tree due to the proposed development.

### 7.2 Structural Root Zone

Structural Root Zone (SRZs) are defined by AS4970-2009 as the area of root development required for the structural stability of the tree. The SRZ is required to be assessed when an encroachment greater than 10% is considered.

Tree no.	Species	TPZ Radius (m)	Encroachment (%)	SRZ Radius (m)
1.	<i>Ulmus parvifolia</i>	2.04	0	
2.	<i>Ulmus parvifolia</i>	2	0	
3.	<i>Ulmus parvifolia</i>	2	0	
4.	<i>Ulmus parvifolia</i>	2.1	0	
5.	<i>Ulmus parvifolia</i>	2.4	0	
6.	<i>Ulmus parvifolia</i>	2	0	
7.	<i>Harpephyllum caffrum</i>	2	0	
8.	<i>Lophostemon confertus</i>	5.88	0	
9.	<i>Lophostemon confertus</i>	6.96	6.5	2.76
10.	<i>Lophostemon confertus</i>	6.84	16	2.78
11.	<i>Lophostemon confertus</i>	8.88	18	3.00
12.	<i>Lophostemon confertus</i>	6.72	20	2.81
13.	<i>Melaleuca quinquenervia</i>	9.72	12	3.15
14.	<i>Melaleuca quinquenervia</i>	9.36	8	3.11
15.	<i>Melaleuca quinquenervia</i>	8.28	9	3.04
16.	<i>Melaleuca quinquenervia</i>	7.56	8	2.88

17.	<i>Melaleuca quinquenervia</i>	11.16	30	3.30
18.	<i>Lophostemon confertus</i>	7.92	6	2.83
19.	<i>Lophostemon confertus</i>	8.04	11	2.93
20.	<i>Lophostemon confertus</i>	5.88	0	
21.	<i>Lophostemon confertus</i>	6.24	0	
22.	<i>Ficus microcarpa</i>	12.72	17	3.57
23.	<i>Celtis sinensis</i>	2	0	
24.	<i>Eucalyptus robusta</i>	6.54	0	
25.	<i>Cinnamomum camphora</i>	6.12	20	
26.	<i>Pittosporum undulatum</i>	8.64	0	
27.	<i>Lagerstroemia indica</i>	2.76	20	
28.	<i>Melia azedarach</i>	4.32	0	
29.	<i>Eucalyptus punctata</i>	4.44	0	
30.	<i>Araucaria columnaris</i>	5.64	0	2.59
31.	<i>Celtis sinensis</i>	3.6	0	
32.	<i>Lophostemon confertus</i>	3.3	0	
33.	<i>Lophostemon confertus</i>	4.02	0	
34.	<i>Lophostemon confertus</i>	8.34	0	
35.	<i>Lophostemon confertus</i>	7.08	0	
36.	<i>Lophostemon confertus</i>	8.16	0	
37.	<i>Lophostemon confertus</i>	7.8	0	
38.	<i>Ficus rubiginosa</i>	12.18	0	
39.	<i>Acmena smithii</i>	2	100	
40.	<i>Acmena smithii</i>	2	100	
41.	<i>Syzygium paniculatum</i>	2	100	
42.	<i>Syzygium paniculatum</i>	2.88	100	
43.	<i>Syzygium paniculatum</i>	2.76	100	
44.	<i>Acmena smithii</i>	2	100	
45.	<i>Celtis sinensis</i>	3.84	100	

46.	<i>Phoenix canariensis</i>	3	100	
47.	<i>Celtis sinensis</i>	2	100	
48.	<i>Cupaniopsis anacardioides</i>	2.7	0	
49.	<i>Celtis sinensis</i>	2	100	
50.	<i>Phoenix canariensis</i>	2.5	100	
51.	<i>Ulmus parvifolia</i>	2.88	100	
52.	<i>Lophostemon confertus</i>	5.88	100	
53.	<i>Waterhousia floribunda</i>	2	100	
54.	<i>Celtis sinensis</i>	2.7	100	
55.	<i>Eucalyptus scoparia</i>	9.24	35	
56.	<i>Corymbia gummifera</i>	5.46	100	
57.	<i>Pittosporum undulatum</i>	2	0	
58.	<i>Pittosporum undulatum</i>	2	0	
59.	<i>Eucalyptus scoparia</i>	5.04	0	
60.	<i>Phoenix canariensis</i>	5.5	0	
61.	<i>Eucalyptus pilularis</i>	7.2	0	
62.	<i>Acmena smithii</i>	5.4	0	
63.	<i>Jacaranda mimosifolia</i>	6.12	0	
64.	<i>Lagerstroemia indica</i>	3.12	0	
65.	<i>Melaleuca linarifolia</i>	6.24	0	
66.	<i>Melaleuca linarifolia</i>	3	0	
67.	<i>Lagerstroemia indica</i>	4.2	0	
68.	<i>Cinnamomum camphora</i>	8.64	0	
69.	<i>Brachychiton acerifolia</i>	4.2	0	
70.	<i>Ficus microcarpa</i>	12.36	0	
71.	<i>Ficus microcarpa</i>	12.36	0	
72.	<i>Cinnamomum camphora</i>	8.88	0	
73.	<i>Cinnamomum camphora</i>	7.56	0	
74.	<i>Cinnamomum camphora</i>	6.6	0	
75.	<i>Ulmus parvifolia</i>	2	0	
76.	<i>Ulmus parvifolia</i>	2	0	

## 7.3 Development Impact

### 7.3.1 Tree 1. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.2 Tree 2. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.3 Tree 3. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.4 Tree 4. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.5 Tree 5. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.6 Tree 6. *Ulmus parvifolia*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.7 Tree 7. *Harpephyllum caffrum*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

### 7.3.8 Tree 8. *Lophostemon confertus*

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.



- 7.3.9 Tree 9. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 9% which is less than the minor encroachment as defined by AS 4970-2009, this tree will be viable to be retained under the proposed development.
- 7.3.10 Tree 10. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 16% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed building line and façade being located behind the existing building line, the restriction to root growth provided by the existing building foundations and this species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, this tree will remain viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.11 Tree 11. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 18% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed building line and façade being located behind the existing building line, the restriction to root growth provided by the existing building foundations and this species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, this tree will remain viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.12 Tree 12. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 20% which is greater than the minor encroachment as defined by AS 4970-2009. In addition, this tree is closer to the existing and proposed building and accordingly the required canopy reduction pruning required in order to clear this tree from the required scaffolding will remove the majority of the canopy. This tree will not be viable for retention.

- 7.3.13 Tree 13. *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 12% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed building line and façade being located behind the existing building line, the restriction to root growth provided by the existing building foundations and this species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, this tree will remain viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.14 Tree 14. *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 8% which is less than the minor encroachment as defined by AS 4970-2009, this tree will be viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.15 Tree 15. *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 9% which is less than the minor encroachment as defined by AS 4970-2009, this tree will be viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.16 Tree 16. *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 8% which is less than the minor encroachment as defined by AS 4970-2009, this tree will be viable to be retained under the proposed development. Based on the consideration of the proposed building façade being no closer than the existing building, the canopy will not be impacted by the proposed building works.
- 7.3.17 Tree 17. *Melaleuca quinquenervia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 30% which is significantly greater than the minor encroachment as defined by AS 4970-2009. In addition, the proposed building façade is closer to this

tree than the existing building facade and accordingly the required canopy reduction pruning required in order to clear this tree from the required scaffolding will remove the majority of the canopy. This tree will not be viable for retention.

**7.3.18 Tree 18. *Lophostemon confertus***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 6% which is less than the minor encroachment as defined by AS 4970-2009, this tree will be viable to be retained under the proposed development.

**7.3.19 Tree 19. *Lophostemon confertus***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 11% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the restriction to root growth provided by the existing low brick wall on the boundary and this species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, this tree will remain viable to be retained under the proposed development.

**7.3.20 Tree 20. *Lophostemon confertus***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

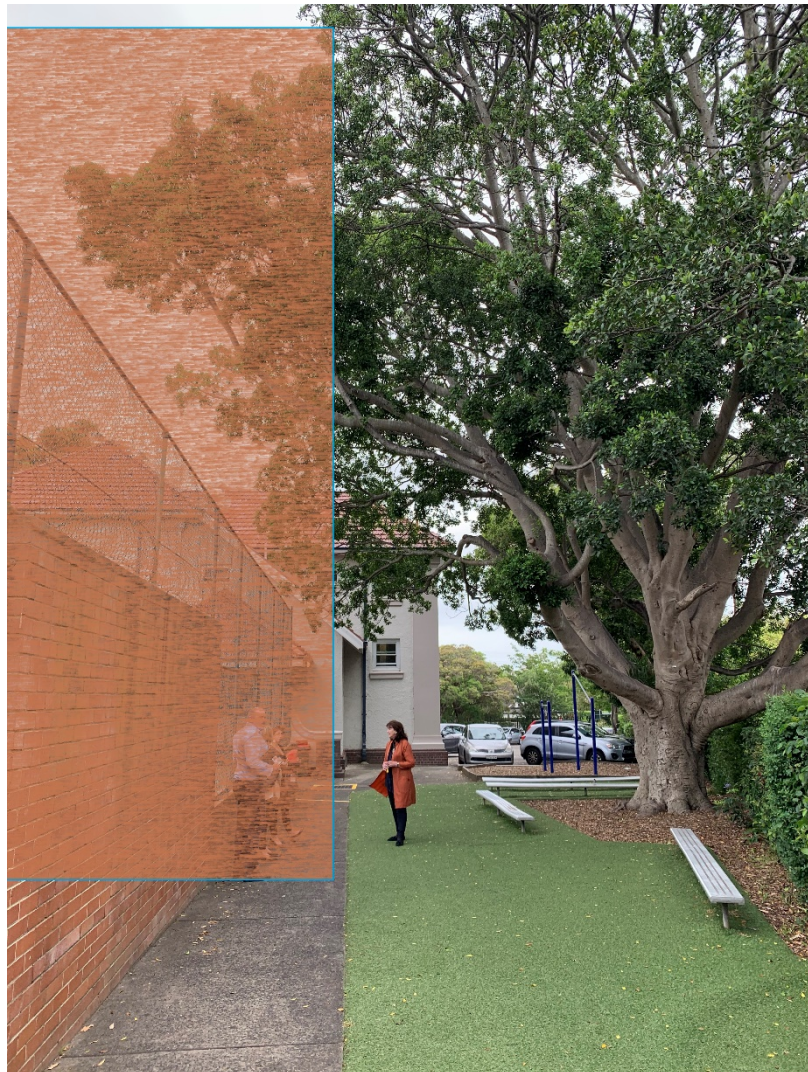
**7.3.21 Tree 21. *Lophostemon confertus***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.22 Tree 22. *Ficus microcarpa***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 17% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed suspension of the core of the building and entryway within the TPZ of this tree, this tree will remain viable to be retained under the proposed development. The proposed construction will encroach within the canopy of this tree, however the extent of this impact is less than 10% and the branching structure of the tree will permit canopy reduction pruning in accordance with AS4373-2007 Pruning of Amenity Trees that would reduce the

canopy without impacting the balance or form of the canopy. Scaffold design is required to minimise the impact on the canopy of this tree and a pruning specification is to be provided by the Site Arborist.



**Figure 1 - Canopy Encroachment Tree 22**

**7.3.23 Tree 23. *Celtis sinensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.24 Tree 24. *Eucalyptus robusta***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be encroached by the proposed development by 10% which is less than the minor encroachment as defined by AS 4970-2009. This tree will be viable to be retained under the proposed development.

**7.3.25 Tree 25. *Cinnamomum camphora***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be



encroached by the proposed development by 20% which is significantly greater than the minor encroachment as defined by AS 4970-2009. In addition, the proposed substation construction will encroach within the Structural Root Zone (SRZ) of this tree, impacting the stability of this tree. This tree will not be viable for retention.

**7.3.26 Tree 26. *Pittosporum undulatum***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.27 Tree 27. *Lagerstroemia indica***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be encroached by the proposed development by 20% which is significantly greater than the minor encroachment as defined by AS 4970-2009. In addition, the proposed substation construction will encroach within the Structural Root Zone (SRZ) of this tree, impacting the stability of this tree. This tree will not be viable for retention.

**7.3.28 Tree 28. *Melia azedarach***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development based on instruction that the supply pipes will enter perpendicular to the booster and not encroach the TPZ of this tree. This tree will be viable to be retained under the proposed development.

**7.3.29 Tree 29. *Eucalyptus punctata***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be encroached by the proposed development by 5% which is less than the minor encroachment as defined by AS 4970-2009. This tree will be viable to be retained under the proposed development.

**7.3.30 Tree 30. *Araucaria columnaris***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be encroached by the proposed development by 15% which is slightly greater than the minor encroachment as defined by AS 4970-2009. Based on consideration of this species tolerance to root disturbance in accordance with clause 3.3.4 of AS 4970-2009, this tree will be viable to be retained under the proposed development. The SRZ of this tree is not encroached by the proposed development.

- 7.3.31 Tree 31. *Celtis sinensis***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.32 Tree 32. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.33 Tree 33. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.34 Tree 34. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.35 Tree 35. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.36 Tree 36. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.37 Tree 37. *Lophostemon confertus***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.38 Tree 38. *Ficus rubiginosa***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will be encroached by the proposed development by 30% which is significantly greater than the minor encroachment as defined by AS 4970-2009. This tree will not be viable to be retained under the proposed development. The SRZ of this tree is encroached by required excavation which will impact on the stability of this tree.

- 7.3.39 Tree 39. *Acmena smithii***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree is located within an isolated raised planter which is proposed for demolition. The TPZ will be totally encroached by the proposed raised platform and associated level changes. This tree will not be viable to be retained under the proposed development. Tree 39 has been previously approved for removal within the Review of Environmental Factors (REF) Issue D dated 11/08/2020.
- 7.3.40 Tree 40. *Acmena smithii***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. The TPZ will be totally encroached by the proposed raised platform and associated level changes. This tree will not be viable to be retained under the proposed development.
- 7.3.41 Tree 41. *Syzygium paniculatum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. The TPZ will be totally encroached by the proposed raised platform and associated level changes. This tree will not be viable to be retained under the proposed development.
- 7.3.42 Tree 42. *Syzygium paniculatum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree is located within an isolated raised planter which is proposed for demolition. The TPZ will be totally encroached by the proposed raised platform and associated level changes. This tree will not be viable to be retained under the proposed development.
- 7.3.43 Tree 43. *Syzygium paniculatum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree is located within an isolated raised planter which is proposed for demolition. The TPZ will be totally encroached by the proposed raised platform and associated level changes. This tree will not be viable to be retained under the proposed development.
- 7.3.44 Tree 44. *Acmena smithii***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. The TPZ will be totally



encroached by the proposed ramp structure. This tree will not be viable to be retained under the proposed development.

**7.3.45 Tree 45. *Celtis sinensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.46 Tree 46. *Phoenix canariensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.47 Tree 47. *Celtis sinensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.48 Tree 48. *Cupaniopsis anacardioides***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.49 Tree 49. *Celtis sinensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.50 Tree 50. *Phoenix canariensis***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.51 Tree 51. *Ulmus parvifolia***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

**7.3.52 Tree 52. *Lophostemon confertus***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.

- 7.3.53 Tree 53. *Waterhousia floribunda***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 7.3.54 Tree 54. *Celtis sinensis***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 7.3.55 Tree 55. *Eucalyptus scoparia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 35% which greater than the minor encroachment as defined by AS 4970-2009. In addition, the lean of this tree places the canopy closer to the proposed building and accordingly the required canopy reduction pruning required in order to clear this tree from the required scaffolding will remove the majority of the canopy. This tree will not be viable for retention.
- 7.3.56 Tree 56. *Corymbia gummifera***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be totally encroached by the proposed development. This tree will not be viable to be retained under the proposed development.
- 7.3.57 Tree 57. *Pittosporum undulatum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.58 Tree 58. *Pittosporum undulatum***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.59 Tree 59. *Eucalyptus scoparia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

- 7.3.60 Tree 60. *Phoenix canariensis***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.61 Tree 61. *Eucalyptus pilularis***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.62 Tree 62. *Acmena smithii***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.63 Tree 63. *Jacaranda mimosifolia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.64 Tree 64. *Lagerstroemia indica***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.65 Tree 65. *Melaleuca linarifolia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.66 Tree 66. *Melaleuca linarifolia***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.67 Tree 67. *Lagerstroemia indica***  
The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.
- 7.3.68 Tree 68. *Cinnamomum camphora***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.69 Tree 69. *Brachychiton acerifolia***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.70 Tree 70. *Ficus microcarpa***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.71 Tree 71. *Platanus x hybrida***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.72 Tree 72. *Cinnamomum camphora***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.73 Tree 73. *Cinnamomum camphora***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.74 Tree 74. *Cinnamomum camphora***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.75 Tree 75. *Ulmus parvifolia***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

**7.3.76 Tree 76. *Ulmus parvifolia***

The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 *Protection of Trees on Development Sites* will not be further encroached by the proposed development. This tree will be viable to be retained under the proposed development.

## **8.0 Recommendations**

This project is a School Infrastructure NSW project that is subject to SSDA approval, however for reference purposes we note that all of the subject trees are preserved by Mosman Council Business Centres Development Control Plan 2018 with the exception of Trees 23, 31, 45, 47, 49 and 54 which are exempt.

Tree 39 has been previously approved for removal within the Review of Environmental Factors (REF) Issue D dated 11/08/2020.

The Tree Protection Zones (TPZ) of Trees 10, 11, and 19 will be encroached by the proposed development by slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Roots Zone (SRZ) of these trees are not impacted by the proposed development. Based on consideration of the revised design based on the proposed building line and façade being located behind the existing building line, the restriction to root growth provided by the existing building foundations and structures and these species tolerance to root disturbance, in accordance with clause 3.3.4 of AS 4970-2009, these trees will remain viable to be retained under the proposed development. There are two isolated sections of the proposed building that extend beyond the existing building line within the TPZ of Trees 13 and 16. Root mapping will be required for these areas using nondestructive excavation. All proposed excavation within the TPZ of these trees is to be carried out under the supervision and direction of the Site Arborist.





**Figure 2 Proximity of Existing Canopies relative to existing building**

The Tree Protection Zones (TPZ) of Trees 45, 46, 47, 51, 52, 53, 54 and 56 are totally encroached by the proposed construction for Building G. These trees will not be viable to be retained due to the proposed development and will be required to be removed.

The Tree Protection Zone (TPZ) of Tree 22 is encroached by the proposed construction and pedestrian entry by a major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed suspension of the core of the building and entryway within the TPZ of this tree, this tree will remain viable to be retained under the proposed development. All proposed excavation within the TPZ of these trees is to be carried out by non-destructive methods and under the supervision and direction of the Site Arborist.

The proposed construction vehicular access is within the TPZ and to the west of Tree 22. Ground Protection will be required to be installed to the extent of the TPZ to the west of Tree 22. Ground Protection is to be installed in accordance with 9.8 of this report and *AS4970-2009*. Trunk and branch protection is to be installed in accordance with 9.7 of this report. Demolition of the area within the TPZ of tree 22 is to be staged in order to leave the existing concrete and hardstand for as long as possible.

The Tree Protection Zone (TPZ) of Trees 12, 17 and 55 is encroached by the proposed construction of new buildings by a major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. In addition, the proximity of the canopies of these trees to proposed building and accordingly the required canopy reduction pruning required in order to clear these trees from the required scaffolding will remove the majority of the canopy. These trees will not be viable for retention.

The proposed building structure will encroach within the canopy of Trees 9, 10, 11, 13, 14, 15, 16, and 22 however the extent of this impact is less than 10% and the branching structure of these trees will permit canopy reduction pruning in accordance with *AS4373-2007 Pruning of Amenity Trees* that would reduce the canopy without impacting the balance or form of the canopy. Scaffold design is required to minimise the impact on the canopy of these trees and a pruning specification is to be provided by the Site Arborist. The B Class hoarding proposed for the vicinity of Trees 18 and 19 is to accommodate and protect the canopy of these trees.

The Tree Protection Zone (TPZ) of Tree 25 is encroached by the electrical substation location. The required excavation will encroach within the Structural Root Zone of this tree. This tree will not be viable to be retained.

The Tree Protection Zone (TPZ) of Tree 27 is encroached by the booster pump location. The required excavation will encroach within the Structural Root Zone of this tree. This tree will not be viable to be retained.

The Tree Protection Zones (TPZ) of Trees 39, 40, 41, 42, 43 and 44 are totally encroached by the proposed level changes and landscape amendments. Trees 39, 42 and 43 are currently located within small isolated raised planters which are proposed for demolition. These trees will not be viable to be retained due to the proposed development and will be required to be removed.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

Tree no.	Species	Common Name	Recommendations	Comments
1.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
2.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
3.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
4.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
5.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
6.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
7.	<i>Harpephyllum caffrum</i>	Kaffir Plum	Retain	Retain and protect in accordance with 9.0

8.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
9.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
10.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
11.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
12.	<i>Lophostemon confertus</i>	Brush Box	Remove	Not viable to be retained due to impact of proposed development.
13.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
14.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
15.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
16.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Retain	Retain and protect in accordance with 9.0
17.	<i>Melaleuca quinquenervia</i>	Broad Leafed Paperbark	Remove	Not viable to be retained due to impact of proposed development.
18.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
19.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
20.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
21.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
22.	<i>Ficus microcarpa</i>	Banyan Fig	Retain	Retain and protect in accordance with 9.0, Trunk, branch and ground protection required.
23.	<i>Celtis sinensis</i>	Chinese Hackberry	Retain	Retain and protect in accordance with 9.0
24.	<i>Eucalyptus robusta</i>	Swamp Mahogany	Retain	Retain and protect in accordance with 9.0
25.	<i>Cinnamomum camphora</i>	Camphor Laurel	Remove	Not viable to be retained due to impact of proposed development.
26.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
27.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Remove	Not viable to be retained due to impact of proposed development.
28.	<i>Melia azedarach</i>	White Cedar	Retain	Retain and protect in accordance with 9.0



29.	<i>Eucalyptus punctata</i>	Grey Gum	Retain	Retain and protect in accordance with 9.0
30.	<i>Araucaria columnaris</i>	Cook Pine	Retain	Retain and protect in accordance with 9.0
31.	<i>Celtis sinensis</i>	Chinese Hackberry	Retain	Retain and protect in accordance with 9.0
32.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
33.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
34.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
35.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
36.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
37.	<i>Lophostemon confertus</i>	Brush Box	Retain	Retain and protect in accordance with 9.0
38.	<i>Ficus rubiginosa</i>	Port Jackson Fig	Retain	Retain and protect in accordance with 9.0
39.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development. Approved for removal within REF.
40.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
41.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
42.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
43.	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
44.	<i>Acmena smithii</i>	Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
45.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
46.	<i>Phoenix canariensis</i>	Canary Island Palm	Remove	Not viable to be retained due to impact of proposed development.
47.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
48.	<i>Cupaniopsis anacardioides</i>	Tuckaroo	Retain	Retain and protect in accordance with 9.0

49.	<i>Celtis sinensis</i>	Chinese Hackberry	Remove	Not viable to be retained due to impact of proposed development.
50.	<i>Phoenix canariensis</i>	Canary Island Palm	Remove	Not viable to be retained due to impact of proposed development.
51.	<i>Ulmus parvifolia</i>	Chinese Elm	Remove	Not viable to be retained due to impact of proposed development.
52.	<i>Lophostemon confertus</i>	Brush Box	Remove	Not viable to be retained due to impact of proposed development.
53.	<i>Waterhousia floribunda</i>	Weeping Lilly Pilly	Remove	Not viable to be retained due to impact of proposed development.
54.	<i>Celtis sinensis</i>	Chinese Elm	Remove	Not viable to be retained due to impact of proposed development.
55.	<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Remove	Not viable to be retained due to impact of proposed development.
56.	<i>Corymbia gummifera</i>	Red Bloodwood	Remove	Not viable to be retained due to impact of proposed development.
57.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
58.	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Retain	Retain and protect in accordance with 9.0
59.	<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Retain	Retain and protect in accordance with 9.0
60.	<i>Phoenix canariensis</i>	Canary Island Palm	Retain	Retain and protect in accordance with 9.0
61.	<i>Eucalyptus pilularis</i>	Grey Gum	Retain	Retain and protect in accordance with 9.0
62.	<i>Acmena smithii</i>	Lilly Pilly	Retain	Retain and protect in accordance with 9.0
63.	<i>Jacaranda mimosifolia</i>	Jacaranda	Retain	Retain and protect in accordance with 9.0
64.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Retain	Retain and protect in accordance with 9.0
65.	<i>Melaleuca linarifolia</i>	Snow in Summer	Retain	Retain and protect in accordance with 9.0
66.	<i>Melaleuca linarifolia</i>	Snow in Summer	Retain	Retain and protect in accordance with 9.0
67.	<i>Lagerstroemia indica</i>	Crepe Myrtle	Retain	Retain and protect in accordance with 9.0
68.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0

69.	<i>Brachychiton acerifolia</i>	Illawarra Flame Tree	Retain	Retain and protect in accordance with 9.0
70.	<i>Ficus microcarpa</i>	Banyan Fig	Retain	Retain and protect in accordance with 9.0
71.	<i>Platanus x hybrida</i>	Plane Tree	Retain	Retain and protect in accordance with 9.0
72.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
73.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
74.	<i>Cinnamomum camphora</i>	Camphor Laurel	Retain	Retain and protect in accordance with 9.0
75.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0
76.	<i>Ulmus parvifolia</i>	Chinese Elm	Retain	Retain and protect in accordance with 9.0

## 9.0 Pre-Construction Tree Protection Measures

### 9.1 General

All tree protection works shall be carried out before excavation, grading and site works commence. Tree protection works shall be inspected and approved by a Consulting Arborist meeting AQF Level 5 prior to construction works commencing.

Storage of materials, mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refueling, site office and sheds, and the lighting of fires, stockpiling of soil, rubble or any debris shall not be carried out within the TPZ of existing trees. No backfilling shall occur within the TPZ of existing trees. Trees shall not be removed or lopped unless specific instruction is given in writing by the Superintendent.

### 9.2 Identification

All trees to be protected shall be clearly identified and all TPZs surveyed.

### 9.3 Site Arborist

Prior to all site works commencing, a Site Arborist is to be appointed with the responsibility of implementing all Tree Protection Measures in this report as well as compliance with AS4970-2009 Protection of Trees on Development Sites. The Site Arborist is to hold qualifications equivalent of AQF Level 5.

### 9.4 Protective Fence

Fencing is to be erected around existing trees to be retained. In addition to this protective fencing within the site, Protective Fencing is to be installed to the full extent of the TPZs within the site. This fencing is to be erected prior to any materials being brought on site or before any site, civil works or construction works commence. The fence shall enclose a sufficient area so as to prevent damage to the TPZ as defined on Appendix E Tree Protection Plan and as defined in 5.1 above. Fence to comprise 1800mm high chain wire mesh fixed to 50mm diameter Galvanised steel posts. Panels should be securely fixed top and bottom to avoid separation. No storage of building

materials, tools, paint, fuel or contaminants and the like shall occur within the fenced area.

## **9.5 Mulching**

Install mulch to the extent of all tree protection fencing. Use a leaf mulch conforming to AS 4454 which is free of deleterious and extraneous matter such as soil, weeds, sticks and stones and consisting of a minimum of 90% recycled content compliant with AS 4454 (1999) and AS 4419 (1998). All trees marked as to be removed on the proposed development are to be chipped and reused for this purpose. Place mulch evenly and to a depth of 100mm.

## **9.6 Signage**

Prior to works commencing, tree protection signage is to be attached to each tree protection zone, 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.

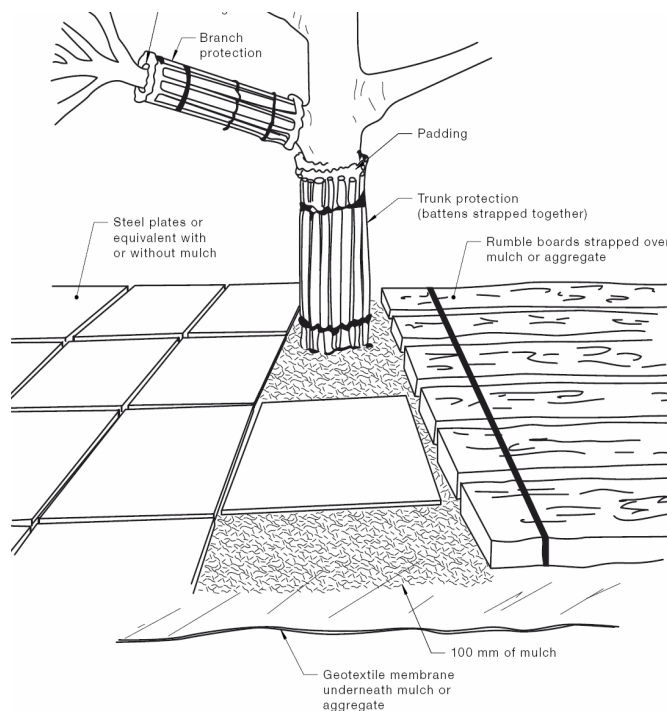
- This fence has been installed to prevent damage to the trees and their growing environment both above and below ground and access is restricted.
- No Access within Tree Protection Zone
- The name, address, and telephone number of the developer.

The name and telephone number of the Site Arborist.

## **9.7 Trunk and Branch Protection**

Tree Protection Fencing is not viable to be installed to the full extent of the TPZ on the western side of as the fencing will impede construction traffic. Accordingly, Trunk and branch protection is required to be installed to this tree to the extent that they extend over the proposed construction access. The trunk and branches in the lower crown will be protected by wrapping 2 layers of hessian or carpet underfelt around the trunk and branches, then metal strapping secures 38x50 x2000 mm timber battens together around the trunk or branch (do not nail or screw to the trunk or branches). The number of battens to be used is as required to encircle the trunk and the battens are to extend to the base of the tree (AS4970 2009 Protection of trees on development sites, Figure 2 Examples of Trunk, Branch and ground protection).

All branches within 500mm of scaffold or hoardings are to receive branch protection in accordance with this report and SA4970-2009. All trunk and branch protection is to be to the direction and approval of the Site Arborist.



**Figure 3 - Trunk Protection**

## 9.8 Ground Protection

Ground Protection is required to the western side of the Tree Protection Zone of Tree 22 specifically and generally in any location where pedestrian or vehicular traffic is required within the TPZ of the trees to remain. Demolition of the area within the TPZ of tree 22 is to be staged in order to leave the existing concrete and hardstand for as long as possible.

Ground protection is to be in accordance with *AS4970-2009* and is to consist of a minimum of 200mm of mulch as specified in 9.5 Mulch covered by timber sleepers or other approved structural boards, securely strapped together.

All ground protection is to be approved by the Site Arborist.

## 10.0 Site Management Issues

### 10.1 Soil Compaction

Plant and pedestrian traffic during the construction period will cause significant soil compaction. This will be exacerbated by increased water expected on these soils as result of adjacent construction and weather. Compaction of the soil within the TPZ will reduce the voids between soil peds or particles therefore will reduce the gaseous exchange capacity of the root system which will slow critical metabolic processes such as respiration which produces Adenosine Triphosphate (ATP) which provides energy for the photosynthesis, which in turn provides photosynthates such as glucose. These photosynthates provide the carbohydrates required for tree extension growth, girth expansion, reproduction and pest and disease resistance. No pedestrian or plant access is permissible to the TPZ.

## **10.2 Site Access**

Sufficient access is required to enable efficient construction. It is essential to delineate access zones or corridors which will provide suitable access without damaging the existing trees to be retained or causing compaction to the root zone.

## **10.3 Excavation within Tree Protection Area**

No excavation is to be carried out within the TPZs of retained trees without the permission and supervision of the site arborist (AQF5)

## **10.4 Possible Contamination / Storage of Materials**

The construction site will require the use of many chemicals and materials that are possible contaminants which if not managed will pose a risk to the existing trees. These possible contaminants include fuels, herbicides, solvents and the like. A site-specific Environmental Management Plan shall be provided, and this specific risk identified and addressed.

# **11.0 Tree Protection Measures During Construction**

## **11.1 Maintenance of Pre-Construction Tree Protection Measures**

The Pre-Construction Tree Protection Measures identified in 5.0 above are to be maintained in good and serviceable condition throughout the construction period.

## **11.2 Possible Contaminants**

Do not store or otherwise place bulk materials and harmful materials under or near trees. Do not place spoil from excavations within the TPZs. Prevent wind-blown materials such as cement from harming trees. All possible contaminants are to be stored in a designated and appropriate area with secure chemical spill measures such as a bund in place.

## **11.3 Physical Damage**

Prevent damage to tree. Do not attach stays, guys and the like to trees. No personnel, plant, machinery or materials are to be allowed within the tree protection fencing.

## **11.4 Compaction**

No filling or compaction shall occur over tree roots zones within tree protection fenced areas. Where construction occurs close to or the TPZ of trees to be retained it shall be necessary to install protection to avoid compaction of the ground surface. This protection is to be planks supported clear of the ground fixed to scaffolding.

## **11.5 Trenching**

No Trenching should be necessary within the TPZs or within tree protection fencing. No further trenching is to be carried out without the approval of the Superintendent. Should any further trenching be required within the TPZs identified, this work is to be carried out by hand and under the supervision of a qualified Arborist.

## **11.6 Irrigation/Watering**

Contractor is to ensure that soil moisture levels are adequately maintained. Apply water at an appropriate rate suitable for the species during periods of little or no rainfall.

## **11.7 Site Sheds / Amenities/ Storage**

Site sheds, site amenities, ablutions and site storage shall be in the area clear of all TPZ. Chemicals and potential contaminants are to be stored appropriately and this storage area is to be enclosed by a chemical spill bund to prevent the potential run off of contaminants in the event of a spillage or accident.

## **12.0 Environmental / Heritage/ Legislative Considerations**

None of the subject trees are identified as threatened species or elements of endangered ecological communities within the Biodiversity Conservation Act 2016.

## **13.0 References**

Mattheck, C. Breloer, K. 1993, The Body Language of Trees: A Handbook for Failure Analysis, 12th Impression 2010 The Stationery Office.  
Barrell, J. 1996, Proceeding of the International Conference on Trees and Building Sites  
AS4970-2009 Protection of Trees on Development Sites: Standards Australia

## **14.0 Disclaimer**

This Appraisal has been prepared for the exclusive use of the Client and Birds Tree Consultancy.

Birds Tree Consultancy accepts no responsibility for its use by other persons. The Client acknowledges that this Appraisal, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained Birds Tree Consultancy and referred to in the Appraisal. The Client should rely on the Appraisal, and on its contents, only to that extent.

Every effort has been made in this report to include, assess and address all defects, structural weaknesses, instabilities and the like of the subject trees. All inspections were made from ground level using only visual means and no intrusive or destructive means of inspection were used. For many structural defects such as decay and inclusions, internal inspection is required by means of Resistograph or similar. No such investigation has been made in this case. Trees are living organisms and are subject to failure through a variety of causes not able to be identified by means of this inspection and report.



### IACA Significance of a Tree, Assessment Rating System (STARS) © (IACA 2010) ©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

#### **Tree Significance - Assessment Criteria**



##### **1. High Significance in landscape**

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

##### **2. Medium Significance in landscape**

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

##### **3. Low Significance in landscape**

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

##### **Environmental Pest / Noxious Weed Species**



- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.


**Hazardous/Irreversible Decline**

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

**The tree is to have a minimum of three (3) criteria in a category to be classified in that group.**

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

## Appendix B Tree Retention Values

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					
<b>Legend for Matrix Assessment</b> 						
		<b>Priority for Retention (High)</b> - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.				
		<b>Consider for Retention (Medium)</b> - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.				
		<b>Consider for Removal (Low)</b> - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.				
		<b>Priority for Removal</b> - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.				

### REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, [www.icomos.org/australia](http://www.icomos.org/australia)

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, [www.footprintgreen.com.au](http://www.footprintgreen.com.au)

## Appendix C – Useful Life Expectancy

### SULE CATEGORIES AND SUB-CATEGORIES

	1	2	3	4	5
	Long SULE:	Medium SULE:	Short SULE:	Remove:	Small, Young or regularly clipped:
	Trees that appeared to be retainable at the time of assessment for more than 40 years with and acceptable level of risk	Trees that appeared to be retainable at the time of assessment for 15 to 40 years with and acceptable level of risk	Trees that appeared to be retainable at the time of assessment for 5 to 15 years with and acceptable level of risk	Trees that should be removed within the next 5 years	Trees that can be reliably transplanted or replaced
A	Structurally sound trees located in positions that can accommodate future growth	Trees that may only live for between 15 and 40 more years	Trees that may only live for between 5 and 15 more years	Dead, dying, suppressed or declining trees through disease or inhospitable conditions	Small trees less than 5 metres in height
B	Trees that could be made suitable for retention in the long term by remedial Care	Trees that may live for more than 40 years, but would need to be removed for safety or nuisance reasons	Trees that may live for more than 15 years, but would need to be removed for safety or nuisance reasons	Dangerous trees through instability or recent loss of adjacent trees	Young trees less than 15 years old but over 5 metres in height
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention	Trees that may live for more than 40 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	Trees that may live for more than 15 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form	Trees that have been regularly pruned to artificially control growth
D		Trees that could be made suitable for retention in the medium term by remedial Care	Trees that require substantial remedial care and are only suitable for retention in the short term	Damaged trees that are clearly not safe to retain	
E				Trees that may live for more than 5 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	
F				Trees that may cause damage to existing structures within 5 years	
G				Trees that will become dangerous after removal of other trees for reasons given in 1A-1F	

Ref: Barrell, Jeremy (1996)

Pre-development Tree Assessment

Proceedings of the International Conference on Trees and Building Sites (Chicago)

## Appendix D - Tree Inspection Data

Birds Tree Consultancy

Consulting Arborist • Project Management • Horticultural Consultancy • Landscape Management

Inspection Data  
Mosman High School

26-May-20

Tree no.	Species	Common Name	Height (m)	Spread(m)	DBH (mm)	TPZ Radius (m)	DAB (mm)	SRZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Stability	Branching Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest infestation	Disease	Life expectancy	Env. & Landscape significance	Retention Value	Notes/Comments	Retention Viability (based on Report Revision D)
1	Ulmus parvifolia	Chinese Elm	7	5	170	2.04			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain
2	Ulmus parvifolia	Chinese Elm	4	1	40	2			Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Medium	High		Retain
3	Ulmus parvifolia	Chinese Elm	6	4	135	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain
4	Ulmus parvifolia	Chinese Elm	8	6	175	2.1			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain
5	Ulmus parvifolia	Chinese Elm	10	8	200	2.4			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain
6	Ulmus parvifolia	Chinese Elm	4	2	50	2			Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Medium	High		Retain
7	Harpephyllum caffrum	Kaffir Plum	4	2	75	2			Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Medium	Medium		Retain
8	Lophostemon confertus	Brush Box	10	10	490	5.88			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
9	Lophostemon confertus	Brush Box	8.5	10	580	6.96	650	2.76	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
10	Lophostemon confertus	Brush Box	10	11	570	6.84	660	2.78	Mature	Multiple @ 1300	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
11	Lophostemon confertus	Brush Box	11	11	740	8.88	790	3.00	Mature	Multiple @ 1400	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
12	Lophostemon confertus	Brush Box	11	9	560	6.72	680	2.81	Mature	Twin @ 1m	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
13	Melaleuca quinquenervia	Broad Leafed Paperbark	14	12	810	9.72	890	3.15	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
14	Melaleuca quinquenervia	Broad Leafed Paperbark	14	12	780	9.36	860	3.11	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
15	Melaleuca quinquenervia	Broad Leafed Paperbark	14	13	690	8.28	820	3.04	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
16	Melaleuca quinquenervia	Broad Leafed Paperbark	16	14	630	7.56	720	2.88	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
17	Melaleuca quinquenervia	Broad Leafed Paperbark	16	13	930	11.16	1000	3.31	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
18	Lophostemon confertus	Brush Box	10	10	660	7.92	690	2.83	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
19	Lophostemon confertus	Brush Box	9	12	670	8.04	750	2.93	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
20	Lophostemon confertus	Brush Box	8	12	490	5.88			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	Line clearance	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
21	Lophostemon confertus	Brush Box	6	8	520	6.24			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
22	Ficus microcarpa	Banyan Fig	19	19	1060	12.72	1200	3.57	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High		Remove
23	Celtis sinensis	Chinese Hackberry	9	4	145	2			Semi-mature	Twin @ 1m	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Low	Low		Retain
24	Eucalyptus robusta	Swamp Mahogany	12	9	545	6.54	650	2.76	Mature	Twin @ 1m	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
25	Cinnamomum camphora	Camphor Laurel	11	10	510	6.12	600	2.67	Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low		Retain
26	Pittosporum undulatum	Sweet Pittosporum	11	7	720	8.64			Mature	Twin @ 1500	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Chlorotic	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
27	Lagerstroemia indica	Crepe Myrtle	10	9	230	2.76	350	2.13	Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
28	Melia azedarach	White Cedar	9	11	360	4.32			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
29	Eucalyptus punctata	Grey Gum	10	12	370	4.44			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High		Retain
30	Araucaria columnaris	Cook Pine	16	7	470	5.64	560	2.59	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High		Retain
31	Celtis sinensis	Chinese Hackberry	14	11	300	3.6			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low		Retain
32	Lophostemon confertus	Brush Box	12	8	275	3.3			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
33	Lophostemon confertus	Brush Box	12	9	335	4.02			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
34	Lophostemon confertus	Brush Box	13	10	695	8.34			Mature	Single	NIL	Normal	Normal	S	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
35	Lophostemon confertus	Brush Box	16	9	590	7.08			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain

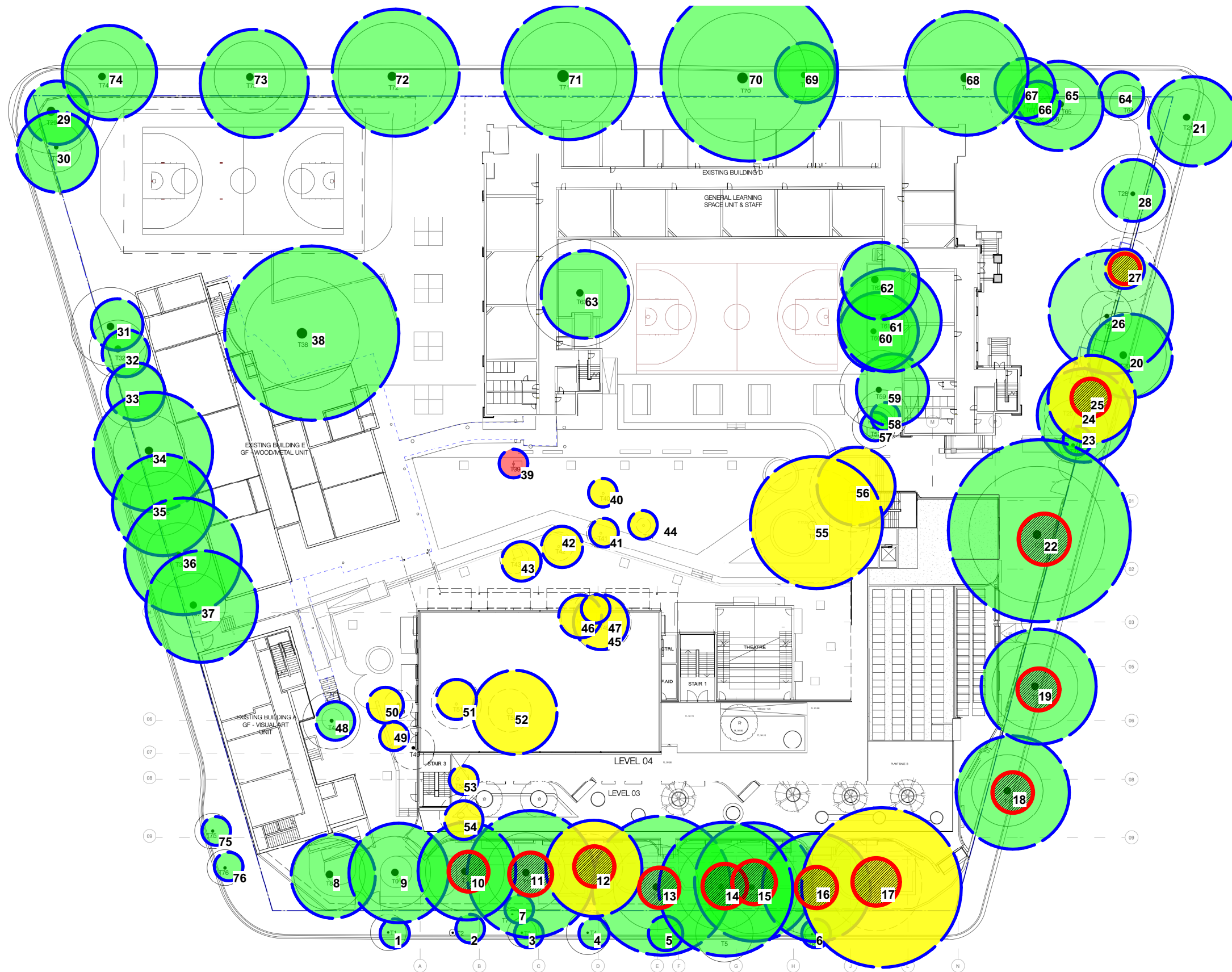


Tree no.	Species	Common Name	Height (m)	Spread(m)	DBH (mm)	TPZ Radius (m)	DAB (mm)	SRZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Stability	Branching Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest Infestation	Disease	Life expectancy	Env. & Landscape significance	Retention Value	Notes/Comments	Retention Viability (based on Report Revision D)
36	Lophostemon confertus	Brush Box	16	9	680	8.16			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
37	Lophostemon confertus	Brush Box	16	9	650	7.8			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
38	Ficus rubiginosa	Port Jackson Fig	13	16	1015	12.18	1200	3.57	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High		Retain
39	Acmena smithii	Lilly Pilly	4.5	4	100	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Low	Medium		Remove
40	Acmena smithii	Lilly Pilly	5	4	100	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Medium		Remove
41	Syzygium paniculatum	Magenta Lilly Pilly	4.5	4	120	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Fair	Thinning	Normal	15%	<5%	No evidence	No evidence	15-40y	Medium	Medium	Moderate apical dieback	Remove
42	Syzygium paniculatum	Magenta Lilly Pilly	5.5	4	240	2.88			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	15%	<5%	No evidence	No evidence	40y+	Medium	Medium	Moderate apical dieback	Remove
43	Syzygium paniculatum	Magenta Lilly Pilly	5	4	230	2.76			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Medium	Medium		Remove
44	Acmena smithii	Lilly Pilly	2.5	2	60	2			Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Low	Medium		Remove
45	Celtis sinensis	Chinese Hackberry	10	8	320	3.84			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Low	Low		Remove
46	Phoenix canariensis	Canary Island Palm	5	5		3			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
47	Celtis sinensis	Chinese Hackberry	7	5	120	2			Semi-mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Low	Low		Remove
48	Cupaniopsis anacardioides	Tuckaroo	8	8	225	2.7			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
49	Celtis sinensis	Chinese Hackberry	5	6	150	2			Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low		Retain
50	Phoenix canariensis	Canary Island Palm	4	4		2.5			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	40y+	Medium	Medium		Retain
51	Ulmus parvifolia	Chinese Elm	6	7	240	2.88			Mature	Twin @ 1m	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
52	Lophostemon confertus	Brush Box	8	6	490	5.88			Mature	Twin @ 1500	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
53	Waterhousea floribunda	Weeping Lilly Pilly	4	3	150	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
54	Celtis sinensis	Chinese Elm	7	6	225	2.7			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low		Remove
55	Eucalyptus scoparia	Wallangarra Whit	17	16	770	9.24			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
56	Corymbia gummifera	Red Bloodwood	13	12	455	5.46			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Remove
57	Pittosporum undulatum	Sweet Pittosporum	8	6	140	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
58	Pittosporum undulatum	Sweet Pittosporum	6	7	150	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
59	Eucalyptus scoparia	Wallangarra White Gum	18	11	420	5.04			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
60	Phoenix canariensis	Canary Island Palm	12	10		5.5			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
61	Eucalyptus pilularis	Grey Gum	16	12	600	7.2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
62	Acmena smithii	Lilly Pilly	12	10	450	5.4			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
63	Jacaranda mimosifolia	Jacaranda	14	15	510	6.12			Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
64	Lagerstroemia indica	Crepe Myrtle	7	5	260	3.12			Mature	Multiple (3) @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
65	Melaleuca linarifolia	Snow in Summer	8	7	520	6.24			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
66	Melaleuca linarifolia	Snow in Summer	6	4	250	3			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
67	Lagerstroemia indica	Crepe Myrtle	7	6	350	4.2			Mature	Multiple @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
68	Cinnamomum camphora	Camphor Laurel	12	16	720	8.64			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	Line clearance	Nil	Nil	Fair	Thinning	Normal	20%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
69	Brachychiton acerifolia	Illawarra Flame Tree	5	7	350	4.2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
70	Ficus microcarpa	Banyan Fig	19	18	1030	12.36			Mature	Multiple @ 2000	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High		Retain
71	Platanus x hybrida	Plane Tree	19	15	780	9.36			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence, Line clearance	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain

Tree no.	Species	Common Name	Height (m)	Spread(m )	DBH (mm)	TPZ Radius (m)	DAB (mm)	SRZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Stability	Branchin g Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest Infestation	Disease	Life expectancy	Env. & Landscape significance	Retention Value	Notes/Comments	Retention Viability (based on Report Revision D)
73	Cinnamomum camphora	Camphor Laurel	12	10	630	7.56			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
74	Cinnamomum camphora	Camphor Laurel	14	10	550	6.6			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	Medium		Retain
75	Ulmus parvifolia	Chinese Elm	4	3	100	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain
76	Ulmus parvifolia	Chinese Elm	5	4	100	2			Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Medium	High		Retain







### Legend

- Tree to be Retained and Protected
- Tree to be Removed under REF
- Tree Not Viable to be Retained due to Proposed Development
- Tree Protection Zone (TPZ) in accordance with AS4970-2009
- Structural Root Zone (SRZ) in accordance with AS4970-2009

**Birds Tree Consultancy**

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Project: Mosman High School

Client: Multiplex

DWG: A01 REV L

Plan: Tree Location Plan

Date: 30 Mar 2021 Scale : 1:600 @ A3