Moore Trees
Arboricultural Services

ABN 26009753751

Arborist development assessment report

Australian Institute of Police Management (AIPM)
Collins Beach Road, Manly, NSW, 2095

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Summary

This report has been conducted to assess the health and condition of ninety (90) trees located within the grounds of the Australian Institute of Police Management (AIPM) at North Head, Manly, New South Wales 2095. This report has been commissioned by Brewster Hjorth Architects as required for redevelopment and upgrade of site buildings including landscaping at the site.

This report contains the following tree related information.

- All trees were assessed for Safe Useful Life Expectancy (SULE).
- Genus and species of each tree.
- Impact of the proposed development on each tree.
- Impact of retaining tree on the proposed development.
- The Tree Protection Zone (TPZ) for each tree to be retained.

This Arborist report refers to ninety (90) trees and twenty nine (29) of these trees are proposed to be removed for the purposes of the development. Although twenty nine (29) trees are proposed to be removed most of these are very young, are in poor health or have been planted in poorly selected locations. Some are exotic species.

A number of the trees that are proposed to be retained will require tree protection. A Tree Protection Plan, included in this report, shows the trees proposed to be retained; one copy is for construction purposes. This tree protection plan is attached in Appendix 1. Tree protection fencing is recommended to display appropriate signage. A sample tree protection sign has also been included in Appendix 6.

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1 INTRODUCTION

1.1 This report has been conducted to assess the health and condition of ninety (90) trees located within the grounds of the Australian Institute of Police Management (AIPM) at North Head, Manly. This report has been commissioned by Brewster Hjorth Architects as required for a redevelopment and upgrade of the site buildings including landscaping at the site.

The purpose of this report is to collect the appropriate tree related data on the subject trees and to provide advice and recommendations to the design and possible construction alternatives to aid any adverse impacts on the subject trees' health.

The subject trees were assessed for their health and condition. Also included in this report are tree protection measures that will help retain and ensure that the long term health of the trees is not adversely affected by the proposed development in the future.

1.2 **Scope of works:** A detailed list of data was collected for each tree within the site boundaries. Included in the report, but not limited to, is the following information for each tree:

- A site plan locating all trees that have been allocated a unique number
- All trees were assessed for Safe Useful Life Expectancy (SULE), health and amenity value.
- Genus and species of each tree.
- Impact of the proposed development on each tree.
- The Tree Protection Zone (TPZ) for each tree to be retained.
- Any branch or root pruning that may be required for trees.

Also noted for the purposes of this report were:

- Health and Vigour; using foliage colour and size, extension growth, presence of deadwood, dieback and epicormic growth throughout the tree.
- Structural condition using visible evidence of bulges, cracks, leans and previous pruning.
- The suitability of the tree taking into consideration the proposed development.
- Age rating; Over-mature (>80% life expectancy), Mature (20-80% life expectancy), Young, Sapling (<20% life expectancy).

1.3 Location: The redevelopment site is Australian Institute of Police Management (AIPM) located at Collins Beach Road, North Head, Manly, known as Lot 2766 in Deposited Plan 752038. The AIPM redevelopment site from herein will be referred to as "the Site".

Diagram 1: Location of the Site

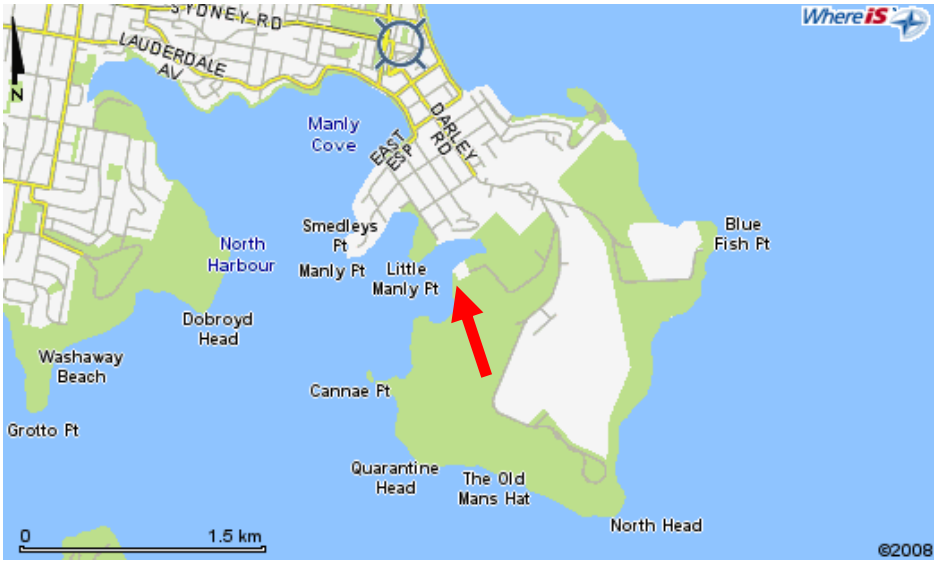


Diagram 1: Location of subject site (Red arrow) (whereis.com.au, 2008)

Diagram 2: Location of the site boundaries

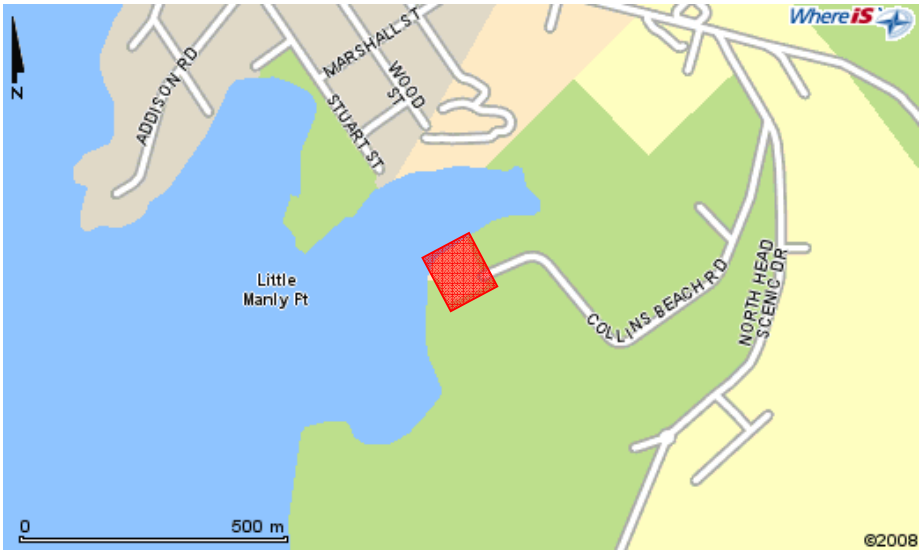


Diagram 2: Area covered by the report (Red) (whereis.com.au, 2008)

2 METHODOLOGY

2.1 To record the health and condition of the trees, a Visual Tree Assessment (VTA) was undertaken on the subject trees on 3 September 2008. This method of tree evaluation is adapted from Matheny and Clark, 1994 and is recognised by The International Society of Arboriculture. Individual tree assessments are listed in Appendix 2 of this report. All inspections were undertaken from the ground. No diagnostic devices were used on these trees.

2.2 This report is only concerned with trees on the site. It takes no account of any sapling, shrub or grasses and other groundcovers under 1.5 metres in height.

2.3 Height and distances: The heights and distances within this report have been measured with a Bosch DLE 50 laser measure. The tree locations, heights and spreads were plotted by Mudge Property Services dated 30 April 2007, drawing number 7700/09/06.

2.4 Canopy: For the purposes of accuracy of this report, canopy spreads were measured and applied to the Tree Protection Plan (Appendix 1). The spread of canopy was measured from the trunk to the four (4) compass points (North, South, East, and West). The canopy spreads can be seen in the Tree Protection Plan.

2.5 Tree Protection Zones (TPZ): Tree Protection Zones have been designed for each tree. The TPZs are based on the British Standard for *Trees in relation to construction*, BS5837 (2005). A detailed methodology on the TPZ design can be found in Appendix 4. The Tree Protection Zones are shown in the Tree Protection Plan (Appendix 1) along with the trees proposed to be retained.

2.6 SULE: The subject trees were assessed for a Safe Useful Life Expectancy (SULE). A detailed explanation of SULE can be found in Appendix 3.

2.7 Impact Assessment: An impact assessment was conducted on the trees to be retained. This was conducted by assessing site survey undertaken by Mudge Property Services dated 30 April 2007 drawing number 7700/09/06 and revised Master Plan Option B1 by Brewster Hjorth Architects dated 1 September 2008 for the following:

- Reduced Level (R.L.) at base of tree (if applicable).
- Incursions into the Tree Protection Zone (TPZ).
- Assessment of the likely impact of the works.

2.8 Documents and information provided: For this Arborist report I was given a site survey undertaken by Mudge Property Services dated 30 April 2007 drawing number 7700/09/06 and revised Master Plan Option B1 by Brewster Hjorth Architects dated 1 September 2008. Plan A-05 (First Floor Plan), A-04 (Site Ground Floor Plan), A-06 (Roof Plan) all dated November 2008, numbered 20816-10.DD03-06.

The plans showed the proposed buildings and existing trees on the site.

3 RELEVANT BACKGROUND INFORMATION

3.1 The subject property is known as Australian Institute of Police Management (AIPM) located at Collins Beach Road, North Head, Manly. The site is located on the western side of North Head, Manly, New South Wales. Access to the site is via Collins Beach Road.

The Commonwealth has occupied the site since the early 1900's. From 1957 the Australian Police College has occupied and operated on the site. In 1995 the College was renamed the Australian Institute of Police Management (AIPM).

The buildings on site consist of small cottages to larger accommodation and office buildings. The site has mostly native tree species however there are several exotic species located within the site.

3.2 **Geology:** The AIPM site is situated on Hawkesbury sandstone overlaying Narabeen sandstone. Scattered over the site are exposed sandstone outcrops. The two sandstone units are overlain by elevated undulating dunes and swales consisting of conglomerate, sandstone and shale (Sydney 1:250 000 Geological Map)

3.3 **The Site Trees:** Prior to clearing and disturbance the site would have been described as open woodland, rain forest and heath land on the upper area of North Head. Tree species would have consisted of Stringy bark *(Eucalyptus capitellata)*, Red bloodwood *(Eucalyptus gummifera)*, Yellow bloodwood *(Eucalyptus eximia)*, Scribbly gum *(Eucalyptus haemastoma)* and tea trees. The more sheltered slopes would have been Sydney peppermint *(Eucalyptus piperita)* and smooth barked apple *(Angophora costata)*, (Chapman & Murphy, 1989).

The site was inspected on 3 September 2008. Each tree has been given a unique number for this site and can be viewed on the Tree Protection Plan (Appendix 1). All site trees have been tagged to correspond with the tree data and tree protection plan.

Tree 1 is a young Cheese Tree *(Glochidion ferdinandii)* located near the eastern boundary in an area of lawn. This tree is endemic to the North Head area. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is likely to be removed for the purposes of the development.

Tree 2 is a young Cheese Tree *(Glochidion ferdinandii)* located near the eastern boundary in an area of lawn. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is likely to be removed for the purposes of the development.

Tree 3 is a mature Sydney Red Gum *(Angophora costata)* located near the eastern boundary in an area of lawn. This tree is endemic to the North Head area. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 4 is a mature Water gum *(Tristaniopsis laurina*) located near the eastern boundary in an area of lawn. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 5 is a mature Broad-leafed Paperbark *(Melaleuca quinquenervia)* located near the eastern boundary in an area of lawn. This tree is endemic to the North Head area. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 6 is a mature young Sydney Red Gum *(Angophora costata)* located near the eastern boundary (Plate 1). This tree is in excellent health and appears structurally sound. The tree has a symmetrical canopy that is codominant with Trees 7 and 9. This tree is proposed to be retained. It is likely that the proposed development will affect at least 30% of the root zone due to excavation required for the new administration building (Plate 2). The lowest branch on the northern side is 7.3 metres from ground level.

Tree 7 is a mature Bangalay *(Eucalyptus botryoides)* located near the southern boundary (Plate 1). This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 6 and 9. Woody surface roots can be observed at ground level on the northern side of the tree. It is apparent that there are hollows within old wounds that have been colonised by bees. This tree is proposed to be retained. It is likely that the proposed development will affect at least 30% of the root zone due to excavation required for the new building (Plate 2). The lowest branch on the northern side is 8.6 metres from ground level. The lower northern branches on Trees 6 and 7 may have to be removed to accommodate the new structure.

Tree 8 is a mature Water gum *(Tristaniopsis laurina*) located to the east of Building 22 (offices) next to the car park. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. There is evidence of termite tracks on the lower portion of the trunk. This termite evidence may indicate that there is a termite nest within the root crown area of this tree. This tree is proposed to be removed for the purpose of development. It should be noted that there is abundant termite activity within the surrounding trees of the site.

Tree 9 is a mature Sydney Red Gum *(Angophora costata)* located near the southern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 6 and 7. This tree is proposed to be retained.

Tree 10 is a mature Native Daphne (*Pittosporum undaulatum)* located near the southern boundary along a small stream. This tree is endemic to the North Head area. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be retained.

Tree 11 is a mature Native Daphne (*Pittosporum undaulatum)* located near the southern boundary along a small stream. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be removed for the purpose of development.

Tree 12 is a young Sydney Red Gum *(Angophora costata)* located near the southern boundary along a small stream. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be retained.

Tree 13 is a young Native Daphne *(Pittosporum undaulatum)* located near the southern boundary along a small stream. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be removed for the purpose of development.

Note: Trees 10, 11, 13 and 16 are proposed to be removed (Plate 3) to allow for the landscaping and reestablishment of the small creek that is located to the south of Building 22.

Tree 14 is a mature Swamp oak *(Eucalyptus robusta)* located near the southern boundary. This tree is endemic to the North Head area. This tree is in poor health however appears structurally sound. The tree has a symmetrical, decurrent canopy that contains dead wood of less than one hundred (100) millimetres in diameter. There is evidence of termites. This tree is proposed to be retained.

Tree 15 is a mature Sydney Red Gum *(Angophora costata)* located near the southern boundary (Plate 3). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 17. This tree is 7.8 metres south of the library (Building 21). This tree is proposed to be retained.

Tree 16 is a mature Blueberry Ash *(Elaeocarpus reticulatus)* located near the southern boundary. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be removed for the purpose of development.

Tree 17 is a mature Sydney Red Gum *(Angophora costata)* located on a raised embankment near the southern boundary, 2.4 metres from an existing building (Plate 3). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 15. This tree is proposed to be retained.

Tree 18 is a mature Wattle (*Acacia*) species located between the library (Building 21) and the office (Building 22). The tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed.

Tree 19 is a mature Himalayan Pine *(Pinus roxburghii)* that is an exotic. The tree is located near the southern boundary to the south of Building 22. The trunk is 3.1 metres from the existing building structure and 2 metres from the proposed creek works. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed for the purpose of development.

Tree 20 The tree marked on the site survey as Tree 20 is not present. This location is on a large sandstone shelf that shows no evidence of a tree having been located here.

Tree 21 is a young Swamp Mahogany *(Eucalyptus robusta)* located near the southern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 22. This tree is proposed to be retained.

Tree 22 is a young Native Daphne *(Pittosporum undaulatum)* located near the southern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 21. This tree is proposed to be retained.

Tree 23 is a mature Port Jackson Fig *(Ficus rubiginosa)* attached to a large sandstone boulder, a normal habit for this species. It is located near the southern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 22 and 24. This tree is proposed to be retained.

Tree 24 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 22 and 23. This tree is proposed to be retained.

Tree 25 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 24 and 26. This tree is proposed to be retained.

Tree 26 is a mature Swamp Mahogany *(Eucalyptus robusta)* located near the southern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 25. This tree is proposed to be retained.

Tree 27 is a young Native Daphne *(Pittosporum undaulatum)* located near the southern boundary. This tree is in poor health however appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 28 is a mature Cheese Tree *(Glochidion ferdinandii)* growing in the drainage gutter located south of Building 20 (common room) (Plate 4). This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed as it will continue to cause damage as it reaches maturity.

Tree 29 The tree marked on the site survey as Tree 29 is not present. It has most likely been removed as it has been poorly located and would have caused damage to the surrounding infrastructure.

Tree 30 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary (Plate 5). This tree is in good health and appears structurally sound. The tree is codominant with Tree 31. This tree is proposed to be removed for the purpose of development.

Tree 31 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary (Plate 5). This tree is in good health and appears structurally sound. The tree has a

symmetrical, decurrent canopy that is codominant with Trees 30 and 33. This tree is proposed to be removed for the purpose of development.

Tree 32 is a young Blueberry Ash *(Elaeocarpus reticulatus)* located near the southern boundary (Plate 5). This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 30 and 31. This tree is proposed to be removed for the purpose of development.

Tree 33 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary (Plate 5). This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 31. This tree is proposed to be removed for the purpose of development.

Trees 34 & 35 are mature Blueberry Ash *(Elaeocarpus reticulatus)* located near the southern boundary in an area of lawn. Trees 34 and 35 are regrowth from an old stump. They are in good health and appear structurally sound. These trees have symmetrical, decurrent canopies which are codominant with each other. These trees are proposed to be removed for the purpose of development.

Tree 36 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the southern boundary between the stores (Buildings 19 and 25). This tree contains a possum box at approximately 2 metres from ground level (Plate 6). Many of the trees on site contain possum boxes. They appear to have been attached by a rubber coated wire so as to reduce damage to the trunks of trees. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to have car parking spaces located very close to it however it is proposed to be retained.

Trees 37, 38 and 40-43 are young Broad-leafed Paperbark *(Melaleuca quinquenervia)* located 2 metres from the western boundary fence on the lawn area. These trees are in excellent health and appear structurally sound. These trees have symmetrical, decurrent canopies where they are not quite interconnected with each other (codominant). These trees are proposed to be retained.

Tree 39 is a mature Cheese Tree *(Glochidion ferdinandii)* The tree marked on the site survey as Tree 39 is not present. It has most likely been removed as it has been poorly located and would have caused damage to the adjacent cottage.

Trees 44, **45 and 46** are mature Coastal Banksia *(Banksia integrifolia)* located near the south eastern corner of the harbour cottage (Building 19). This group of small trees is growing as a screen planting within a small garden bed. These trees are in excellent health and appear structurally sound. These trees are proposed to be removed for the purposes of the development.

Tree 47 is a mature Pencil Pine *(Cupressus sempervirens "Stricta")* located between the senior common room (Building 15) and the laundry (Building 14) (Plate 7). This tree is in poor health however appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is an exotic and is proposed to be removed for the purpose of development.

Tree 48 is a young Weeping Bottlebrush *(Callistemon viminalis)* located near the south eastern corner of the senior common room (Building 15). This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed for the purpose of development.

Tree 49 is a young Willow Bottlebrush *(Callistemon salignus)* located near the eastern corner of the senior common room (Building 15). This tree has been heavily pruned reducing it to a small shrub. It is in poor health however appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed for the purpose of development.

Tree 50 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the western boundary (Plate 8). This tree is in excellent health. It has a symmetrical, decurrent broad spreading canopy that is dominant. The tree appears to have poor structure. This poor structure is due to a major bark inclusion at ground level where the trunk bifurcates (Plate 9). The bifurcation of the trunk has caused a build up of organic matter that is retaining moisture within the central stem of the tree. This tree is proposed to be removed to allow for the new classroom No. 1 building.

Tree 50a is a mature Broad-leafed Paperbark *(Melaleuca quinquenervia)* located to the north of the senior common room (Building 15) (Plate 10). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed to allow for the new classroom No. 1 building.

Tree 51 is a mature willow myrtle *(Agonis flexuosa)* located near the western boundary. This tree is in poor health. The tree has a symmetrical, decurrent canopy that is becoming stag headed due to declining health. The tree appears to have poor structure due to decay and a major bark inclusion at ground level. This tree is proposed to be removed for the purpose of development.

Tree 52 is a mature Bangalay *(Eucalyptus botryoides)* located near the western boundary fence. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 53. This tree is proposed to be retained.

Tree 53 is a mature Bangalay *(Eucalyptus botryoides)* located near the western boundary. This tree is in fair health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 52. The canopy is sparse and the lower trunk has epicormic growth that is a sign that the tree is slightly stressed. This tree is could be retained however the site could easily accommodate new plantings to allow for the removal of this tree.

Tree 54 is a mature Blueberry Ash *(Elaeocarpus reticulatus)* located on the north western lawn area. This tree is in poor health however appears structurally sound. The tree has an asymmetrical, decurrent canopy that is dominant. This tree is to the west of Kookaburra cottage (proposed to be retained) and is proposed to be retained.

Tree 55 is a mature Cheese Tree *(Glochidion ferdinandii)* located on the north western lawn area. This tree is in excellent health and appears structurally sound. It has a symmetrical,

decurrent canopy that is dominant. This tree is to the west of Kookaburra cottage (proposed to be retained) and is proposed to be retained.

Tree 56 is a mature Broad-leafed Paperbark *(Melaleuca quinquenervia)* located on the north western lawn area. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is to the west of Kookaburra cottage (proposed to be retained) and is proposed to be retained.

Tree 57 The tree marked on the site survey as Tree 57 is not present.

Tree 58 is a mature Coastal Banksia *(Banksia integrifolia)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is to the north of Kookaburra cottage (proposed to be retained) and is proposed to be retained.

Tree 59 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary on the cliff ledge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 60 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary on the cliff ledge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 61 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a canopy that is codominant with Trees 62 and 63. This tree is proposed to be retained.

Tree 62 is a mature Coastal Banksia *(Banksia integrifolia)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 61 and 63. This tree is proposed to be retained.

Tree 63 and 65 are mature Cheese Trees *(Glochidion ferdinandii)* located near the northern boundary on a lawn area (Plate 11). These trees are in good health and appear structurally sound. Discolouring was observed on the trunk possibly due to raised soil levels at the base of the tree. The canopy of these trees are codominant with surrounding trees and as with the other Cheese trees on site, they are suffering from caterpillar damage. There is minor borer damage on old pruning wounds. These trees are proposed to be retained.

Tree 64 is a mature Dwarf Date Palm *(Phoenix robellini)* located one (1) metre from the existing accommodation rooms (Building 9). This palm is not endemic to the area. The palm is in excellent health and appears structurally sound (Plate 11). The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed for the purpose of development. This palm is three (3) metres tall and could be transplanted, if required.

Tree 66 is a mature Coastal Banksia *(Banksia integrifolia)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a canopy that is codominant with Tree 67. This tree is proposed to be retained.

Tree 67 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has an asymmetrical, decurrent canopy that is codominant with Trees 66 and 68. This tree is proposed to be retained.

Tree 68 is a mature Cheese Tree *(Glochidion ferdinandii)* located near the northern boundary on the cliff edge. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 67 and 69. This tree is proposed to be retained.

Tree 69 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 68. This tree is proposed to be retained.

Tree 70 is a mature Native Daphne (*Pittosporum undaulatum)* located near the northern boundary on the cliff edge. This tree is in good health and appears structurally sound. The tree has an asymmetrical, decurrent canopy that is suppressed. This tree is proposed to be retained.

Tree 71 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 72 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in good health and appears structurally sound. The tree has an asymmetrical, decurrent canopy that is suppressed. This tree is proposed to be retained.

Tree 73 is a young Native Daphne *Pittosporum undaulatum)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. This tree is proposed to be retained.

Tree 74 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 75. This tree is proposed to be retained.

Tree 75 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 74 and 76. This tree is proposed to be retained.

Tree 76 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 75 and 77. This tree is proposed to be retained.

Tree 77 is a mature Coral tree *(Erythrina x sykesii)* located near the northern boundary on the cliff edge. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Trees 76 and 78. This tree is proposed to be retained.

> A note on the Coral tree *(Erythrina x sykesii).* The Coral tree is a deciduous tree that originates from the Philippines. Since establishing in Australia it has become wide spread as it performs well in our climate and grows readily from branches that fall to the ground. Many Local Government areas have listed this species as a weed for various reasons.

Tree 78 is a mature Broad-leafed Paperbark *(Melaleuca quinquenervia)* located near the northern boundary on the lawn area (Plate 12). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be retained.

Tree 79 is a mature Sydney Red Gum *(Angophora costata)* located near the north western corner of the site. The stag headed canopy of this tree indicates that the tree is in poor health (Plate 13). The tree has a symmetrical, decurrent canopy that is codominant with Tree 87. A small *Casurina spp* growing at the base could be removed as it will only compete with the tree. There is a termite nest located at the base of the tree (Plate 14) to the north which does not appear active. The tree is producing epicormic growth, also a sign that the tree is stressed. This tree is proposed to be retained. It is most likely that this tree is in poor health due to poor drainage caused by the sandstone ledges below ground level. These sandstone ledges can be seen in Plate 15.

Tree 80 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a canopy that is codominant with Tree 81. This tree is proposed to be retained.

Tree 81 is a mature Port Jackson Fig *(Ficus rubiginosa)* located near the northern boundary. This tree is in excellent health and appears structurally sound. The tree has a canopy that is codominant with Tree 80. This tree is proposed to be retained.

Tree 82 is a mature Sydney Red Gum *(Angophora costata)* located near the north eastern corner boundary (Plate 15). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. There are no works proposed near this location. This tree is proposed to be retained.

Tree 83 is a mature Sydney Red Gum *(Angophora costata)* located near the north eastern corner boundary (Plate 15). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. There are no works proposed near this location. This tree is proposed to be retained.

Tree 84 is a mature Sydney Red Gum *(Angophora costata)* located near the north eastern corner boundary (Plate 15). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. There are no works proposed near this location. This tree is proposed to be retained.

Tree 85 is a mature Sydney Red Gum *(Angophora costata)* located near the north eastern corner boundary (Plate 15). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. There are no works proposed near this location. This tree is proposed to be retained.

Tree 86 is a mature Sydney Red Gum *(Angophora costata)* located near the north eastern corner boundary (Plate 15). This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with surrounding trees. There are no works proposed near this location. This tree is proposed to be retained.

Tree 87 is a mature Broad leaved white mahogany *(Eucalyptus umbra)* located in the north eastern corner of the site. This tree is in good health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is codominant with Tree 79. The tree has multiple trunks that grow from ground level. There is evidence of termite damage on the lower trunks however the termites do not appear active. The proposed car park will affect the root zone of this tree. This tree is proposed to be retained.

Tree 88 is a mature Lemon-scented Tea Tree *(Leptospermum petersonii)* located near the eastern boundary fence. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. New car parking spaces are proposed to be constructed near this tree. This tree is proposed to be retained.

Tree 89 is a mature Broad-leafed Paperbark *(Melaleuca quinquenervia)* located in the lawn area to the north of the library. This tree is in excellent health and appears structurally sound. The tree has a symmetrical, decurrent canopy that is dominant. This tree is proposed to be removed and replaced with a feature specimen tree.

Tree 90 is a mature Kentia Palm *(Howea forsteriana)* located in a raised brick bed between Buildings 4 and 24. This palm is in excellent health and although not native, could be transplanted to another location. This palm is proposed to be removed to allow for the construction of the kitchen and support room.

SULE ratings: All trees have been allocated a Safe Useful Life Expectancy (SULE). A detailed explanation of SULE can be found in Appendix 3.

Table 1**: Schedule of trees the proposed development site.**

Tree #	Species	SULE rating
1	*Glochidion ferdinandii* Cheese Tree	5a
2	*Glochidion ferdinandii* Cheese Tree	5a
3	*Angophora costata* Sydney Red Gum	1a
4	*Tristaniopsis laurina* Water gum	1a
5	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
6	*Angophora costata* Sydney Red Gum	1a
7	*Eucalyptus botryoides* Bangalay	1a

8	*Tristaniopsis laurina* Water gum	2c
9	*Angophora costata* Sydney Red Gum	1a
10	*Pittosporum undaulatum* Native Daphne	1a
11	*Pittosporum undaulatum* Native Daphne	5a
12	*Angophora costata* Sydney Red Gum	1a
13	*Pittosporum undaulatum* Native Daphne	5a
14	*Elaeocarpus reticulatus* Blueberry Ash	1a
15	*Angophora costata* Sydney Red Gum	1a
16	*Elaeocarpus reticulatus* Blueberry Ash	5a
17	*Angophora costata* Sydney Red Gum	1a
18	*Acacia sp.* Wattle	2c
19	*Pinus roxburghii* Himalayan Pine	1a
20	*Not present*	
21	*Elaeocarpus reticulatus* Blueberry Ash	1a
22	*Pittosporum undaulatum* Native Daphne	1a
23	*Ficus rubiginosa* Port Jackson Fig	1a
24	*Glochidion ferdinandii* Cheese Tree	1a
25	*Glochidion ferdinandii* Cheese Tree	1a
26	*Eucalyptus robusta* Swamp Mahogany	1a
27	*Pittosporum undaulatum* Native Daphne	1a
28	*Glochidion ferdinandii* Cheese Tree	2b
29	*Not present*	
30	*Glochidion ferdinandii* Cheese Tree	5a
31	*Glochidion ferdinandii* Cheese Tree	5a
32	*Elaeocarpus reticulatus* Blueberry Ash	5a
33	*Glochidion ferdinandii* Cheese Tree	5a
34	*Elaeocarpus reticulatus* Blueberry Ash	4a
35	*Elaeocarpus reticulatus* Blueberry Ash	4a
36	*Glochidion ferdinandii* Cheese Tree	1a
37	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
38	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
39	*Not present*	
40	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
41	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
42	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
43	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
44	*Banksia ericifolia* Heath Banksia	5a
45	*Banksia ericifolia* Heath Banksia	5a
46	*Banksia ericifolia* Heath Banksia	5a
47	*Cupressus sempervirens "Stricta"* Pencil Pine	1a
48	*Callistemon viminalis* Weeping Bottlebrush	5a
49	*Callistemon salignus* Willow Bottlebrush	5a

50	*Glochidion ferdinandii* Cheese Tree	2a
50a	*Melaleuca quinquenervia* Broad-leafed Paperbark	2a
51	*Agonis flexuosa* Willow Myrtle	4a
52	*Eucalyptus botryoides* Bangalay	1a
53	*Eucalyptus botryoides* Bangalay	2b
54	*Elaeocarpus reticulatus* Blueberry Ash	1a
55	*Glochidion ferdinandii* Cheese Tree	1a
56	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
57	*Not present*	
58	*Banksia integrifolia* Coastal Banksia	1a
59	*Ficus rubiginosa* Port Jackson Fig	1a
60	*Ficus rubiginosa* Port Jackson Fig	1a
61	*Erythrina x sykesii* Coral tree	1a
62	*Banksia integrifolia* Coastal Banksia	1a
63	*Glochidion ferdinandii* Cheese Tree	1a
64	*Phoenix robellini* Dwarf Date Palm	1a
65	*Glochidion ferdinandii* Cheese Tree	1a
66	*Banksia integrifolia* Coastal Banksia	1a
67	*Erythrina x sykesii* Coral tree	1a
68	*Glochidion ferdinandii* Cheese Tree	1a
69	*Erythrina x sykesii* Coral tree	1a
70	*Pittosporum undaulatum* Native Daphne	1a
71	*Ficus rubiginosa* Port Jackson Fig	1a
72	*Erythrina x sykesii* Coral tree	1a
73	*Pittosporum undaulatum* Native Daphne	1a
74	*Erythrina x sykesii* Coral tree	1a
75	*Erythrina x sykesii* Coral tree	1a
76	*Ficus rubiginosa* Port Jackson Fig	1a
77	*Erythrina x sykesii* Coral tree	1a
78	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
79	*Angophora costata* Sydney Red Gum	1a
80	*Ficus rubiginosa* Port Jackson Fig	1a
81	*Ficus rubiginosa* Port Jackson Fig	1a
82	*Angophora costata* Sydney Red Gum	1a
83	*Angophora costata* Sydney Red Gum	1a
84	*Angophora costata* Sydney Red Gum	1a
85	*Angophora costata* Sydney Red Gum	1a
86	*Angophora costata* Sydney Red Gum	1a
87	*Eucalyptus umbra* White mahogany	1a
88	*Leptospermum petersonii* Lemon-scented Tea Tree	1a
89	*Melaleuca quinquenervia* Broad-leafed Paperbark	1a
90	*Howea forsteriana* Kentia Palm	1a

4 RECOMMENDATIONS

4.1 The majority of trees on this site will not be affected by the redevelopment however tree protection fencing will be required for most trees to protect them from any demolition and construction works.

4.2 **Trees 6 and 7:** It is recommended to undertake further investigation due to the proposed design of the administration building that will require up to 30% of the root zone to be excavated to allow for the footings of the new building. The issue with excavating such a large proportion of root zone is the likelihood of structural woody roots being severed. This will affect the overall health of the tree but more importantly will affect the structure of the tree. Severing large woody roots can lead to whole tree failure.

Root mapping is recommended to determine the presence of roots. This is undertaken by excavating a trench by hand to expose roots at a specified location. A trench is dug (approximately 300mm wide x 800mm deep) and roots are exposed and recorded so that a factual assessment can be undertaken and applied to the proposed design.

The lowest branch on the northern side of Tree 6 is 7.3 metres from ground level. The lowest branch on the northern side of Tree 7 is 8.6 metres from ground level. These northerly branches may require pruning to allow for the new administration building. These branches are small enough that the trees will tolerate the pruning provided that the branches are pruned back to their branch collars. This pruning will not disfigure the trees.

4.3 Structural issues:

Tree 7 has evidence of hollows and may, due to the lower bulges in the trunk, have decay or a termite nest in the base. Having a large proportion of unsound wood in the root crown area (termite damage or decay pathogens) can render a tree structurally compromised. This tree requires further testing.

Tree 79 has evidence of a termite nest at the base (Plate 14). Due to the location of this tree being in a lawn area it would be recommended to assess the quantity of damage at the base of the tree to determine whether the tree is viable to retain in an open lawn area.

Various methods of testing can reveal proportions of sound wood within a tree. Some of these methods include drilling the trunk, Resistograph testing. A less invasive form of testing uses sonic ultra sound equipment. These tests will determine the amount of sound wood at the test site thus enabling a more accurate assessment of the tree.

4.4 Of the total trees, sixty three (63) of these trees will require tree protection fencing as specified in Section 5.3 of this report. This fencing will be located at the Tree protection

zones (TPZ) listed in the Tree schedule (Appendix 2) and also in Table 3. The specifications for a TPZ are in Section 5.5 of this report.

4.5 **Trees 6, 7, 15, 17, and 58** will require trunk protection as specified in Section 5.4 of this report. This trunk protection will be required due to the proximity of heavy equipment operating near these trees. It is also possible that tree protection fencing near these trees will have to be removed at various stages. This trunk protection is an additional measure to help protect the trunks.

4.6 **Tree Removal:** Due to the site being located in close proximity to National Park and also being located on a harbour headland it is certainly a visually prominent location. It is for this reason that I have detailed the trees recommended for removal below. Twenty nine (29) trees are proposed to be removed for the purposes of the development. Of these 29 trees four (4) are exotics, fourteen (14) are less than 5 metres in height and two (2) have been planted or self sown in locations where they will eventually cause infrastructure damage. Four (4) trees are proposed to be removed to allow for the redevelopment of the site. These removals will not significantly affect the canopy cover of the site. In Table 2 (below) I have categorised the proposed tree removals for ease of reference.

Reason for proposed removal	Tree No.
Poor health or structural problems from which the tree will not recover.	34, 35, 50, 51, 53
Exotic species to the site.	19, 47, 64, 90
Small tree <5 metres in height.	1, 2, 11, 13, 16, 30, 31, 32, 33, 44, 45, 46, 48, 49
Growing in poor location.	39, 28
To allow for development.	8, 18, 50a, 89

Table 2: Proposed tree removals

It should be noted that the site has ample opportunity to allow for replacement plantings of trees that are required to be removed for the purpose of the development.

4.7 All tree work shall be carried out by a qualified Arborist and work shall be completed following AS 4373 (Pruning of Amenity Trees, 2007).

5 TREE PROTECTION

5.1 Trees to be protected: Several trees require fencing to ensure they are protected from any demolition or construction works**.** All fencing shall be installed as specified in Section 5.3 (Tree Protection – Implementation of Tree Protection Zone). The locations of the fencing are shown in the Tree Protection Plan (Appendix 1).

5.2 Fencing requirements: Trees 3, 4, 5, 6, 7, 8, 9 and **10** will require fencing protection from the works that will occur near buildings 21 and 22.

5.2.1 Tree 36 and 52 will require a single fence.

5.2.2 The demolition of the accommodation rooms (Building 9) will require **Trees 65** and **63** to be fenced as a group.

5.2.3 The demolition of the accommodation rooms (Building 7) will require **Trees 79, 82, 83, 84, 85, 86** and **87** to be fenced as a group. These fencing locations can be seen in Tree Protection Plan (Appendix 1).

5.3 Implementation of Tree Protection Zone: All tree protection works should be carried out before the start of demolition or building work in the vicinity of trees. It is recommended that chain mesh fencing with a minimum height of 1.8 metres be erected as shown in the Tree Protection Plan (Appendix 1). Specifications for this fencing are shown in Tree Protection Fencing Specifications (Appendix 5).

5.4 Individual trunk protection: Trees 6, 7, 15, 17, and 58 will require trunk protection. It is important to protect the bark on trees. Bark is a very effective barrier that helps to protect trees from pest, disease and decay pathogens. Trunk protection is highly recommended on any construction site. This is achieved by attaching lengths of timber (75mm x 50mm x 2000mm) fastened to the trunk. These timbers are to be fastened with hoop iron strapping and not attached directly into the bark of the tree. These timbers are only to be removed when all construction is complete. Some of these trees also have fencing. The trunk protection is an additional measure in case the fencing is required to be moved to complete works. See Plate 16 for an example of trunk protection.

5.5 The TPZ is a radial measurement measured from the centre of the trunk. The following activities shall be avoided within the TPZ of each tree;

- Erecting site sheds or portable toilets.
- Trenching, ripping or cultivation of soil (with the exception of approved foundations and underground services).
- Soil level changes or fill material (pier and beam or suspended slab construction are acceptable).
- Storage of building materials.
- Disposal of waste materials, solid or liquid.

The TPZ measurement for each tree is listed below in Table 3. Although some trees have been recommended for removal I have provided measurements for all trees.

Table 3

Tree #	TPZ measurement (radius) from trunk
1	3.6
2	2
3	2
4	2.7
5	2
6	8
7	8
8	7
9	7
10	2.7
11	2
12	5
13	2
14	6
15	3.6
16	2
17	7
18	2.7
19	5
20	Not present
21	1
22	2.7
23	2.7
24	2.7

25	1
26	1
27	1
28	1
29	Not present
30	2
31	2
32	2
33	2.7
34	2.7
35	2.7
36	2
37	2
38	2
39	Not present
40	8
41	2.7
42	2.7
43	2
44	2
45	1
46	1
47	3.6
48	2
49	2.7
50	10
50a	6
51	8
52	7
53	4.5
54	2.7
55	4.5
56	2
57	Not present
58	4.5
59	7
60	2.7
61	7
62	4.5

63	4.5
64	1
65	6
66	1
67	8
68	5
69	8
70	2
71	4
72	8
73	8
74	8
75	8
76	8
77	2
78	7
79	7
80	7
81	7
82	4.5
83	2.7
84	4.5
85	3.6
86	7
87	9
88	2.7
89	2.7
90	2.7

Table 3: Tree protection measurements.

5.6 **Tree Damage:** If the retained trees are damaged a qualified Arborist should be contacted as soon as possible. The Arborist will recommend remedial action so as to reduce any long term adverse effect on the tree's health.

5.7 **Signage:** Each area of TPZ fencing requires signage. This signage should be attached at 10 metre intervals at head height along fenced areas. A sample sign has been attached in Appendix 6. This sign may be copied and laminated then attached to any TPZ fencing.

5.8 Root Pruning: If excavations are required within a TPZ this excavation shall be done by hand to expose any roots. Any roots less than fifty (50) millimetres in diameter may be pruned cleanly with a sharp saw. Tree root systems are essential for the health and stability of the tree.

5.9 Construction Plan: To assist with the implementation of the Tree Protection Plan a construction version has been provided within this report. This Plan is to be removed from this report and retained at the site office for use in the field. The construction version can be found in Appendix 1.

Paul Vezgoff
Consulting Arborist
Moore Trees
3rd December, 2008

www.mooretrees.com.au

6 IMAGES

Plate 1: Trees 6 (left) and 7 (right). P. Vezgoff.

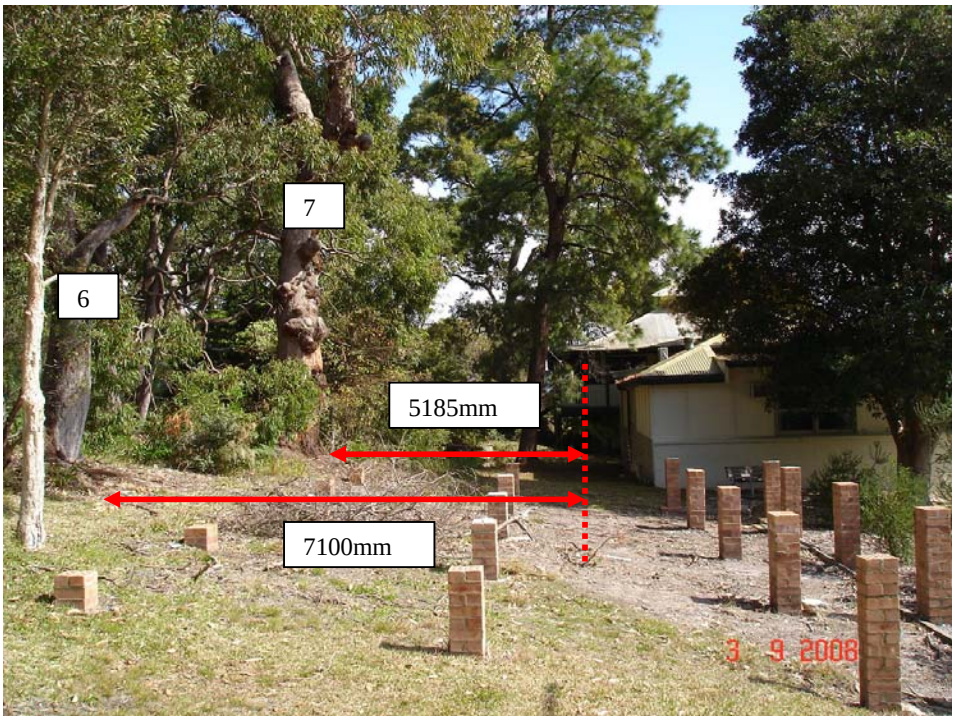


Plate 2: Trees 6 and 7 showing the approximate distance of the new administration building. P. Vezgoff.

Plate 3: The low growing trees within the red square are proposed to be removed to enable landscaping of a small creek area. Trees 15 and 17 are to be retained. P. Vezgoff.

Plate 4: Tree 28 proposed to be removed. P. Vezgoff.

Plate 5: Trees 30-33 are proposed to be removed to allow for the new library extension. P. Vezgoff.

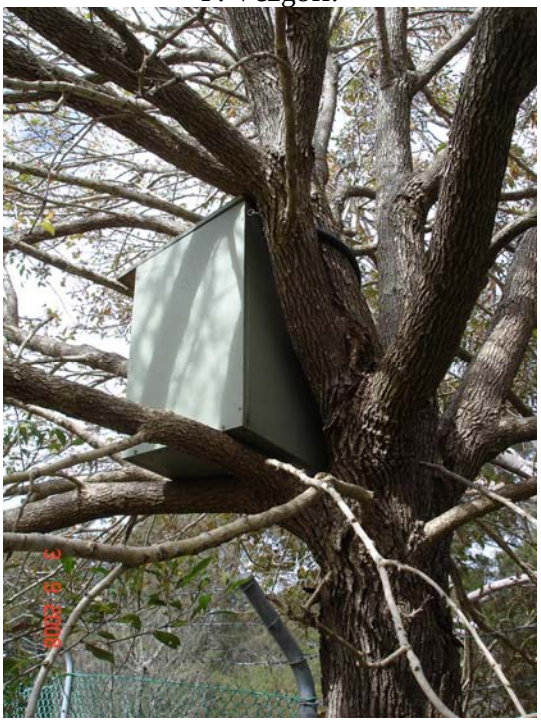


Plate 6: Possum box within Tree 36 (Proposed to be retained). P. Vezgoff.

Plate 7: Trees 47, 48 and 49. All proposed to be removed. P. Vezgoff.

Plate 8: Tree 50, proposed to be removed. P. Vezgoff.

Plate 9: Image showing the trunk of Tree 50. The bifurcation of the trunk has caused a build up of organic matter that is retaining moisture within the central stem of the tree. P. Vezgoff.

Plate 10: Tree 50a to the north of the senior common room (Building 15), proposed to be removed. P. Vezgoff.

Plate 11: Trees 63, 64 and 65. P. Vezgoff.

Plate 12: Tree 78 is to the left of the image. The buildings to the right are proposed to be demolished Trees 60-80 are located along the cliff edge that is to the left of the image. Trees 60-80 will not be affected by the proposed development. P. Vezgoff.

Plate 13: The canopy of Tree 79. P. Vezgoff.

Plate 14: Termite nest (Blue arrow) at the base of Tree 79. P. Vezgoff.

Plate 15: Trees 82-86. P.Vezgoff.

Plate 16: Example of trunk protection recommended for Trees 6, 7, 15, 18 and 58. P. Vezgoff.

Appendix 1

Plan 1

Tree protection plan

Appendix 2

Tree health & condition assessment schedule

TREE HEALTH AND CONDITION ASSESSMENT SCHEDULE

Tree #	Species	Height (m)	Spread R (m)	DBH (mm) At 1.4m	Live Crown Ratio (%)	Description Sapling Young Mature Overmature	Form/Habit Dominant Co-dominant Intermediate Suppressed	Canopy Distribution Symmetrical Asymmetrical	Previous Pruning Nil Minor Lopped	SULE rating
1	*Glochidion ferdinandii* Cheese Tree	4	3	400	90	Young	Dominant	Symmetrical	Minor	5a
2	*Glochidion ferdinandii* Cheese Tree	4	2	200	90	Young	Dominant	Symmetrical	Minor	5a
3	*Angophora costata* Sydney Red Gum	4	3	250	95	Mature	Dominant	Symmetrical	Minor	1a
4	*Tristaniopsis laurina* Water gum	7	2.5	300	95	Mature	Dominant	Symmetrical	Minor	1a
5	*Melaleuca quinquenervia* Broad-leafed Paperbark	10	1	200	90	Mature	Dominant	Symmetrical	Minor	1a
6	*Angophora costata* Sydney Red Gum	15	8	900	85	Mature	Co-dominant	Symmetrical	Minor	1a
7	*Eucalyptus botryoides* Bangalay	20	8	1000	75	Mature	Co-dominant	Symmetrical	Minor	1a
8	*Tristaniopsis laurina* Water gum	17	4	800	95	Mature	Co-dominant	Symmetrical	Minor	2c
9	*Angophora costata* Sydney Red Gum	12	8	4x400	95	Mature	Co-dominant	Symmetrical	Minor	1a
10	*Pittosporum undaulatum* Native Daphne	4	2	300	95	Mature	Co-dominant	Symmetrical	Minor	1a
11	*Pittosporum undaulatum* Native Daphne	4	2	200	95	Mature	Co-dominant	Symmetrical	Minor	5a
12	*Angophora costata* Sydney Red Gum	14	5	1x500 1x200	95	Young	Co-dominant	Symmetrical	Minor	1a
13	*Pittosporum undaulatum* Native Daphne	4	2	200	95	Young	Co-dominant	Symmetrical	Minor	5a
14	*Elaeocarpus reticulatus* Blueberry Ash	4	2	700	45	Mature	Co-dominant	Symmetrical	Minor	1a
15	*Angophora costata* Sydney Red Gum	12	6	400	95	Mature	Co-dominant	Symmetrical	Minor	1a

16	*Elaeocarpus reticulatus* Blueberry Ash	7	2	200	45	Mature	Co-dominant	Symmetrical	Minor	5a
17	*Angophora costata* Sydney Red Gum	17	6.5	800	95	Mature	Co-dominant	Symmetrical	Minor	1a
18	*Acacia sp.* Wattle	8	3	300	95	Mature	Dominant	Symmetrical	Minor	2c
19	*Pinus roxburghii* Himalayan Pine	15	2.5	600	90	Mature	Dominant	Symmetrical	Minor	1a
20	*Not present*									
21	*Elaeocarpus reticulatus* Blueberry Ash	7	2	100	60	Young	Co-dominant	Symmetrical	Minor	1a
22	*Pittosporum undaulatum* Native Daphne	3	1.5	300	95	Young	Co-dominant	Symmetrical	Minor	1a
23	*Ficus rubiginosa* Port Jackson Fig	5	3	300	90	Mature	Co-dominant	Symmetrical	Minor	1a
24	*Glochidion ferdinandii* Cheese Tree	5	3	300	60	Mature	Co-dominant	Symmetrical	Minor	1a
25	*Glochidion ferdinandii* Cheese Tree	3	2	150	70	Mature	Co-dominant	Symmetrical	Minor	1a
26	*Eucalyptus robusta* Swamp Mahogany	5	2.5	150	70	Mature	Co-dominant	Symmetrical	Minor	1a
27	*Pittosporum undaulatum* Native Daphne	4	2	2x100	10	Young	Dominant	Symmetrical	Minor	1a
28	*Glochidion ferdinandii* Cheese Tree	6	3	150	85	Mature	Dominant	Symmetrical	Minor	2b
29	*Not present*									
30	*Glochidion ferdinandii* Cheese Tree	3	2.5	200	45	Mature	Co-dominant	Symmetrical	Minor	5a
31	*Glochidion ferdinandii* Cheese Tree	3	2.5	200	60	Mature	Co-dominant	Symmetrical	Minor	5a
32	*Elaeocarpus reticulatus* Blueberry Ash	3	1.5	200	30	Young	Co-dominant	Symmetrical	Minor	5a
33	*Glochidion ferdinandii* Cheese Tree	3	2.5	300	60	Mature	Co-dominant	Symmetrical	Minor	5a
34	*Elaeocarpus reticulatus* Blueberry Ash	5	2.5	300	75	Mature	Co-dominant	Symmetrical	Minor	4a
35	*Elaeocarpus reticulatus* Blueberry Ash	5	2.5	300	75	Mature	Co-dominant	Symmetrical	Minor	4a
36	*Glochidion ferdinandii* Cheese Tree	6	3	200	60	Mature	Dominant	Symmetrical	Minor	1a
37	*Melaleuca quinquenervia* Broad-leafed Paperbark	7	2	200	95	Young	Co-dominant	Symmetrical	Minor	1a
38	*Melaleuca quinquenervia* Broad-leafed Paperbark	4	1.5	200	95	Young	Co-dominant	Symmetrical	Minor	1a

39	*Not present*									
40	*Melaleuca quinquenervia* Broad-leafed Paperbark	5	2.5	1000	95	Young	Co-dominant	Symmetrical	Minor	1a
41	*Melaleuca quinquenervia* Broad-leafed Paperbark	3	1.5	300	95	Young	Co-dominant	Symmetrical	Minor	1a
42	*Melaleuca quinquenervia* Broad-leafed Paperbark	3	1.5	300	95	Young	Co-dominant	Symmetrical	Minor	1a
43	*Melaleuca quinquenervia* Broad-leafed Paperbark	3	1.5	200	95	Young	Co-dominant	Symmetrical	Minor	1a
44	*Banksia ericifolia* Heath Banksia	5	1	200	100	Mature	Co-dominant	Symmetrical	Minor	5a
45	*Banksia ericifolia* Heath Banksia	5	1	150	100	Mature	Co-dominant	Symmetrical	Minor	5a
46	*Banksia ericifolia* Heath Banksia	5	1	150	100	Mature	Co-dominant	Symmetrical	Minor	5a
47	*Cupressus sempervirens "Stricta"* Pencil Pine	8	1.5	400	45	Mature	Dominant	Symmetrical	Minor	1a
48	*Callistemon viminalis* Weeping Bottlebrush	3	1	200	85	Young	Dominant	Symmetrical	Minor	5a
49	*Callistemon salignus* Willow Bottlebrush	4	3	300	90	Young	Dominant	Symmetrical	Lopped	5a
50	*Glochidion ferdinandii* Cheese Tree	7	6	1100	85	Mature	Dominant	Symmetrical	Minor	2a
50a	*Melaleuca quinquenervia* Broad-leafed Paperbark	6	4	multi	95	Mature	Dominant	Symmetrical	Minor	2a
51	*Agonis flexuosa* Willow Myrtle	6	3	1000	40	Mature	Dominant	Symmetrical	Minor	4a
52	*Eucalyptus botryoides* Bangalay	10	7.5	800	80	Mature	Co-dominant	Symmetrical	Minor	1a
53	*Eucalyptus botryoides* Bangalay	8	2.5	500	40	Mature	Co-dominant	Symmetrical	Minor	2b
54	*Elaeocarpus reticulatus* Blueberry Ash	3	2.5	300	40	Mature	Dominant	Asymmetrical	Minor	1a
55	*Glochidion ferdinandii* Cheese Tree	5	3	500	80	Mature	Dominant	Symmetrical	Minor	1a
56	*Melaleuca quinquenervia* Broad-leafed Paperbark	5	1.5	200	95	Mature	Dominant	Symmetrical	Minor	1a
57	*Not present*									

58	*Banksia integrifolia* Coastal Banksia	12	4	500	100	Mature	Dominant	Symmetrical	Minor	1a
59	*Ficus rubiginosa* Port Jackson Fig	6	5		100	Mature	Dominant	Symmetrical	Nil	1a
60	*Ficus rubiginosa* Port Jackson Fig	5	2.5	300	100	Mature	Dominant	Symmetrical	Nil	1a
61	*Erythrina x sykesii* Coral tree	10	7.5	2x700	90	Mature	Co-dominant	Symmetrical	Minor	1a
62	*Banksia integrifolia* Coastal Banksia	7	3	500	95	Mature	Co-dominant	Symmetrical	Minor	1a
63	*Glochidion ferdinandii* Cheese Tree	8	3	500	85	Mature	Co-dominant	Symmetrical	Minor	1a
64	*Phoenix robellini* Dwarf Date Palm	3	1.5	150	100	Mature	Dominant	Symmetrical	Minor	1a
65	*Glochidion ferdinandii* Cheese Tree	7	4	700	95	Mature	Co-dominant	Symmetrical	Minor	1a
66	*Banksia integrifolia* Coastal Banksia	6	1.5	150	95	Mature	Co-dominant	Symmetrical	Minor	1a
67	*Erythrina x sykesii* Coral tree		4	1000	90	Mature	Co-dominant	Asymmetrical	Minor	1a
68	*Glochidion ferdinandii* Cheese Tree				75	Mature	Co-dominant	Symmetrical	Minor	1a
69	*Erythrina x sykesii* Coral tree		4	1000	90	Mature	Co-dominant	Symmetrical	Minor	1a
70	*Pittosporum undaulatum* Native Daphne	4	2	300	80	Mature	Suppressed	Asymmetrical	Minor	1a
71	*Ficus rubiginosa* Port Jackson Fig	8	6	2x400	100	Mature	Dominant	Symmetrical	Minor	1a
72	*Erythrina x sykesii* Coral tree	12	6	1500	80	Mature	Suppressed	Asymmetrical	Minor	1a
73	*Pittosporum undaulatum* Native Daphne		5	1000	90	Young	Co-dominant	Symmetrical	Nil	1a
74	*Erythrina x sykesii* Coral tree		5	1000	90	Mature	Co-dominant	Symmetrical	Minor	1a
75	*Erythrina x sykesii* Coral tree		5	1000	90	Mature	Co-dominant	Symmetrical	Minor	1a
76	*Ficus rubiginosa* Port Jackson Fig		5	1000	95	Mature	Co-dominant	Symmetrical	Minor	1a
77	*Erythrina x sykesii* Coral tree	12	5	200	90	Mature	Co-dominant	Symmetrical	Minor	1a
78	*Melaleuca quinquenervia* Broad-leafed Paperbark	12	5	800	95	Mature	Dominant	Symmetrical	Minor	1a
79	*Angophora costata* Sydney Red Gum	10	6	800	45	Mature	Co-dominant	Symmetrical	Minor	1a
80	*Ficus rubiginosa* Port Jackson Fig	10	5	800	90	Mature	Co-dominant	Symmetrical	Minor	1a

81	*Ficus rubiginosa* Port Jackson Fig	10	5	800	90	Mature	Co-dominant	Symmetrical	Minor	1a
82	*Angophora costata* Sydney Red Gum	11	5	500	100	Mature	Co-dominant	Symmetrical	Minor	1a
83	*Angophora costata* Sydney Red Gum	11	5	300	100	Mature	Co-dominant	Symmetrical	Minor	1a
84	*Angophora costata* Sydney Red Gum	9	5	500	100	Mature	Co-dominant	Symmetrical	Minor	1a
85	*Angophora costata* Sydney Red Gum	9	5	400	100	Mature	Co-dominant	Symmetrical	Minor	1a
86	*Angophora costata* Sydney Red Gum	12	6	800	100	Mature	Co-dominant	Symmetrical	Minor	1a
87	*Eucalyptus umbra* White mahogany	7	4	2x400 1x300	85	Mature	Co-dominant	Symmetrical	Minor	1a
88	*Leptospermum petersonii* Lemon-scented Tea Tree	6	3	300	90	Mature	Dominant	Symmetrical	Minor	1a
89	*Melaleuca quinquenervia* Broad-leafed Paperbark	10	2	300	90	Mature	Dominant	Symmetrical	Minor	1a
90	*Howea forsteriana* Kentia Palm	8	3	300	95	Mature	Dominant	Symmetrical	Minor	1a

Tree #	Species	Health	Pest & Disease	Condition	Remaining useful life expectancy	Significance	Priority for retention	Tree protection radius (m R)
		Excellent	Foliar insect infest.	Bark inclusion		High	Priority for retention	
		Very good	Borer	Unstable	Long (>40 years)	Moderate	Consider for retention	
		Good	Termite activity	Root damage	Medium (15-40)	Low	Consider for removal	
		Fair	Vines or Ivy	Prev.lopping	Short (5-15)	Noxious weed	Priority for removal	
		Poor	Parasitic plant	Mech. Damage	Remove/hazardous	Heritage	Transplant	
			Root rot	Storm damage		Exempt TPO		
			Decay fungi	Cavity				
			Fruiting body present	Structural defects				
			Nil	Soil level changes				
				Severed roots				
				Compaction present				
				Dead wood present				
				Nil visual damage				
1	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	3.6
2	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
3	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
4	*Tristaniopsis laurina* Water gum	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
5	*Melaleuca quinquenervia* Broad-leafed Paperbark	Very good	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
6	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	8
7	*Eucalyptus botryoides* Bangalay	Good	Nil	Cavity	Long (>40 years)	High	Priority for retention	8
8	*Tristaniopsis laurina* Water gum	Very good	Termite activity	Nil visual damage	Long (>40 years)	High	Consider for removal	7

9	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	7
10	*Pittosporum undaulatum* Native Daphne	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
11	*Pittosporum undaulatum* Native Daphne	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
12	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	5
13	*Pittosporum undaulatum* Native Daphne	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
14	*Elaeocarpus reticulatus* Blueberry Ash	Poor	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	6
15	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	3.6
16	*Elaeocarpus reticulatus* Blueberry Ash	Good	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
17	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	7
18	*Acacia sp.* Wattle	Very good	Nil	Nil visual damage	Short (5-15)	Moderate	Consider for removal	2.7
19	*Pinus roxburghii* Himalayan Pine	Very good	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	5
20	*Not present*							
21	*Elaeocarpus reticulatus* Blueberry Ash	Good	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	1
22	*Pittosporum undaulatum* Native Daphne	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
23	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	2.7
24	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
25	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	1
26	*Eucalyptus robusta* Swamp Mahogany	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	1
27	*Pittosporum undaulatum* Native Daphne	Poor	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	1
28	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	1
29	*Not present*							
30	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
31	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
32	*Elaeocarpus reticulatus* Blueberry Ash	Good	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2

33	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2.7
34	*Elaeocarpus reticulatus* Blueberry Ash	Good	Nil	Nil visual damage	Medium (15-40)	Moderate	Consider for removal	2.7
35	*Elaeocarpus reticulatus* Blueberry Ash	Good	Nil	Nil visual damage	Medium (15-40)	Moderate	Consider for removal	2.7
36	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
37	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
38	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
39	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	1
40	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	8
41	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
42	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
43	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
44	*Banksia ericifolia* Heath Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	2
45	*Banksia ericifolia* Heath Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	1
46	*Banksia ericifolia* Heath Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	1
47	*Cupressus sempervirens "Stricta"* Pencil Pine	Poor	Nil	Nil visual damage	Medium (15-40)	Low	Consider for removal	3.6
48	*Callistemon viminalis* Weeping Bottlebrush	Good	Nil	Prev.lopping	Long (>40 years)	Low	Consider for removal	2
49	*Callistemon salignus* Willow Bottlebrush	Poor	Nil	Prev.lopping	Long (>40 years)	Low	Consider for removal	2.7
50	*Glochidion ferdinandii* Cheese Tree	Excellent	Foliar insect infest.	Nil visual damage	Short (5-15)	Moderate	Consider for removal	10
50a	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Structural defects	Long (>40 years)	Moderate	Consider for removal	6

51	*Agonis flexuosa* Willow Myrtle	Poor	Nil	Bark inclusion	Short (5-15)	Low	Consider for removal	8
52	*Eucalyptus botryoides* Bangalay	Good	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	7
53	*Eucalyptus botryoides* Bangalay	Fair	Nil	Nil visual damage	Medium (15-40)	Moderate	Consider for removal	4.5
54	*Elaeocarpus reticulatus* Blueberry Ash	Poor	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
55	*Glochidion ferdinandii* Cheese Tree	Excellent	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	4.5
56	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
57	*Not present*							
58	*Banksia integrifolia* Coastal Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	4.5
59	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	7
60	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	2.7
61	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	7
62	*Banksia integrifolia* Coastal Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	4.5
63	*Glochidion ferdinandii* Cheese Tree	Good	Borer	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	4.5
64	*Phoenix robellini* Dwarf Date Palm	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Consider for removal	1
65	*Glochidion ferdinandii* Cheese Tree	Good	Borer	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	6
66	*Banksia integrifolia* Coastal Banksia	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	1
67	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	8
68	*Glochidion ferdinandii* Cheese Tree	Good	Foliar insect infest.	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	5
69	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	8
70	*Pittosporum undaulatum* Native Daphne	Good	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2
71	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	4
72	*Erythrina x sykesii* Coral tree	Good	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	8
73	*Pittosporum undaulatum* Native Daphne	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	8

74	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	8
75	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	8
76	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	8
77	*Erythrina x sykesii* Coral tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Priority for retention	2
78	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	7
79	*Angophora costata* Sydney Red Gum	Poor	Termite activity	Structural defects	Long (>40 years)	High	Priority for retention	7
80	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	7
81	*Ficus rubiginosa* Port Jackson Fig	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	7
82	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	4.5
83	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	2.7
84	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	4.5
85	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	3.6
86	*Angophora costata* Sydney Red Gum	Excellent	Nil	Nil visual damage	Long (>40 years)	High	Priority for retention	7
87	*Eucalyptus umbra* White mahogany	Good	Termite activity	Nil visual damage	Long (>40 years)	High	Priority for retention	9
88	*Leptospermum petersonii* Lemon-scented Tea Tree	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
89	*Melaleuca quinquenervia* Broad-leafed Paperbark	Excellent	Nil	Nil visual damage	Long (>40 years)	Moderate	Priority for retention	2.7
90	*Howea forsteriana* Kentia Palm	Excellent	Nil	Nil visual damage	Long (>40 years)	Low	Consider for removal	2.7

Appendix 3

SULE categories (after Barrell, 2001)[1]

SULE Category	Description
Long	Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.
1a	Structurally sound trees located in positions that can accommodate for future growth
1b	Trees that could be made suitable for retention in the long term by remedial tree care.
1c	Trees of special significance that would warrant extraordinary efforts to secure their long term retention.
Medium	Trees that appeared to be retainable at the time of assessment for 15-40 years with an acceptable level of risk.
2a	Trees that may only live for 15-40 years
2b	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons
2c	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide for new planting.
2d	Trees that could be made suitable for retention in the medium term by remedial tree care.
Short	Trees that appeared to be retainable at the time of assessment for 5-15 years with an acceptable level of risk.
3a	Trees that may only live for another 5-15 years
3b	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.
3c	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
3d	Trees that require substantial remedial tree care and are only suitable for retention in the short term.
Remove	Trees that should be removed within the next five years.
4a	Dead, dying, suppressed or declining trees.
4b	Dangerous trees because of instability or loss of adjacent trees
4c	Dangerous trees because of structural defects
4d	Damaged trees not safe to retain.
4e	Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
4f	Trees that are damaging or may cause damage to existing structures within 5 years.
Small	Small, or young trees that can be reliably moved or replaced.
5a	Small trees less than 5m in height.
5b	Young trees less than 15 years old but over 5m in height.

1 (Barrell,J. (2001) "SULE: Its use and status into the new millennium" in *Management of mature trees*, Proceedings of the 4th NAAA Tree Management Seminar, NAAA, Sydney.

Appendix 4

The Tree Protection Zone (TPZ) for the subject trees were created from this adaptation of the British Standard. This is calculated by X centimetres trunk diameter x 0.12 which equals the TPZ radius for each tree.

For the purposes of this measurement the trees to be retained were classed as 'Mature' with a Species Tolerance of 'Good' to give a more realistic TPZ.

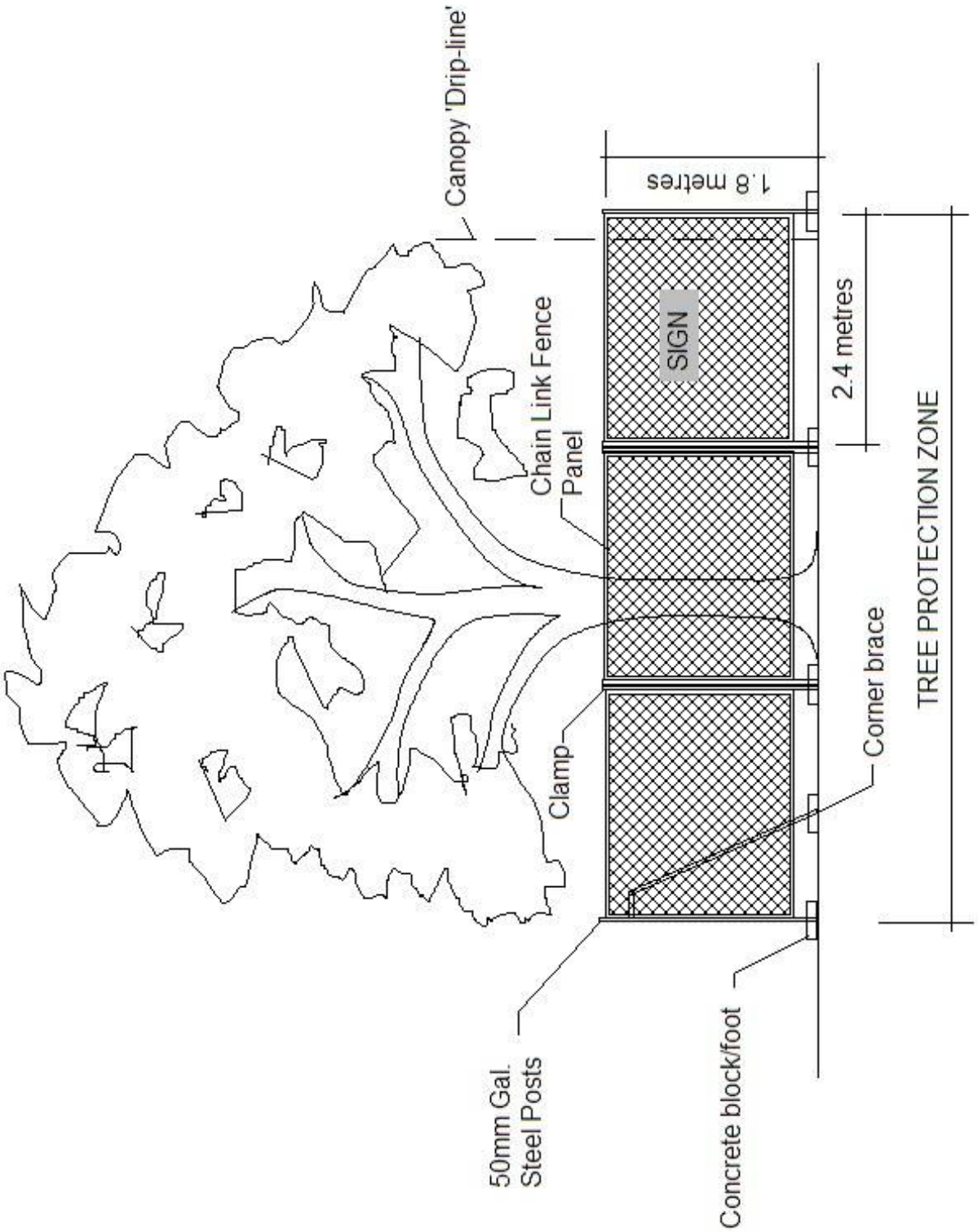
Guidelines for Optimum Tree Protection Zone for Trees

Species Tolerance	**Tree Age**	**Distance from Trunk per Unit Trunk Diameter (m/cm)**
Good	Young (<20% life expectancy)	0.06
	Mature (20% - 80% life expectancy)	0.09
	Overmature (>80% life expectancy)	0.12
Moderate	Young	0.09
	Mature	0.12
	Overmature	0.15
Poor	Young	0.12
	Mature	0.15
	Overmature	0.18

Modified from the British Standards Institute (2005)

Appendix 5

Tree protection fencing specifications


Canopy 'Drip-line'
1.8 metres
SIGN
2.4 metres
Chain Link Fence Panel
TREE PROTECTION ZONE
Clamp
Corner brace
50mm Gal. Steel Posts
Concrete block/foot

Appendix 6

Tree protection fencing sign sample

Moore Trees
Tree Consultancy
0411 712 887

Tree Protection Zone

Fence not to be moved without approval from Arborist

Within this fence there is to be

NO

Storage of materials

Trenching or excavation

Washing of tools or equipment

Appendix 7

Explanatory Notes

- **Mathematical abbreviations:** > = Greater than; < = Less than.

- **Measurements/estimates:** All dimensions are estimates unless otherwise indicated. Measurements taken with a tape, Clinometer or laser are indicated with a '*'. Less reliable estimated dimensions are indicated with a '?'.

- **Species:** The species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after in brackets. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicate it with a '?' after the name in order to avoid delay in the production of the report. The botanical name is followed by the abbreviation sp if only the genus is known. The species listed for groups and hedges represent the main component and there may be other minor species not listed.

- **Height:** Height is estimated to the nearest metre.

- **Spread:** The maximum crown spread is visually estimated to the nearest metre from the centre of the trunk to the tips of the live lateral branches.

- **Diameter:** These figures relate to 1.4m above ground level and are recorded in centimetres. If appropriate, diameter is measure with a diameter tape. 'M' indicates trees or shrubs with multiple stems.

- **Estimated Age:** Age is estimated from visual indicators and it should only be taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records or local knowledge.

- **Distance to Structures:** This is estimated to the nearest metre and intended as an indication rather than a precise measurement.

Appendix 8

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Curriculum Vitae

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EDUCATION and QUALIFICATIONS

- 2007 – Diploma of Arboriculture (AQF Cert V) Ryde TAFE. (Distinction)
- 1997 – Completed Certificate in Crane and Plant Electrical Safety
- 1996 – Attained Tree Surgeon Certificate (AQF Cert II) at Ryde TAFE
- 1990 – Completed two month intensive course on garden design at the Inchbald School of Design, London, United Kingdom
- 1990 – Completed patio, window box and balcony garden design course at Brighton College of Technology, United Kingdom
- 1989 – Awarded the Big Brother Movement Award for Horticulture (a grant by Lady Peggy Pagan to enable horticulture training in the United Kingdom)
- 1989 – Attained Certificate of Horticulture (AQF Cert IV) at Wollongong TAFE

INDUSTRY EXPERIENCE

Moore Trees Arboricultural Services **January 2006 to date**

Tree Consultancy and tree ultrasound. Tree hazard and risk assessment, Arborist development application reports
Tree management plans.

Woollahra Municipal Council **Oct 1995 to February 2008**

ARBORICULTURE TECHNICAL OFFICER
August 2005 – February 2008
Tree asset management, programmed inspection, inventory and condition surveys of council trees, hazard and risk appraisal, Tree root damage investigation and reporting, assessment of impacts of capital works projects on council trees.
ACTING COORDINATOR OF TREES MAINTENANCE
June – July 2005, 2006
Responsible for all duties concerning park and street trees. Prioritising work duties, delegation of work and staff supervision.
TEAM LEADER
January 2003 – June 2005
TEAM LEADER
September 2000 – January 2003
HORTICULTURALIST
October 1995 – September 2000

Northern Landscape Services **July to Oct 1995**

Tradesman for Landscape Construction business

Paul Vezgoff Garden Maintenance (London, UK) **Sept 1991 to April 1995**

CONFERENCES AND WORKSHOPS ATTENDED

- Tree Disputes in the Land & Environment Court – The Law Society (Sydney 2007)
- Barrell Tree Care Workshop- Trees on construction sites (Sydney 2005).
- Tree Logic Seminar- Urban tree risk management (Sydney 2005)
- Tree Pathology and Wood Decay Seminar presented by Dr F.W.M.R. Schwarze (Sydney 2004)
- Inaugural National Arborist Association of Australia (NAAA) tree management workshop- Assessing hazardous trees and their Safe Useful Life Expectancy (SULE) (Sydney 1997).

References available upon request