AUSTRALIS
Tree Management

Trinity Grammar School, Summer Hill Campus

The Renewal Project

Arboriculture Impact Assessment

Lot 11 in DP 1171965
Trinity Grammar School
113-119 Prospect Rd, Summer Hill NSW 2130

Commissioned By:	**Bloompark Consulting Pty Ltd** **Suite 2.04 / 41 McLaren Street** **North Sydney NSW 2060**
Date:	**14 October 2020** **File Reference: 20201603.2**
Prepared By:	**Meredith Gibbs (Dip. Hort. Arb.)**

Australis Tree Management
PO Box 3453
DURAL NSW 2158
Mobile 0407 103 895
Email: info@australistrees.com.au
Website: www.australistrees.com.au

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Meredith Gibbs
Australis Tree Management
14 October 2020

Disclaimer
Australis Tree Management has no affiliation with any private contractors, associations or nurseries involved in the tree removal and pruning business. This ensures an impartial approach to all recommendations given regarding tree removals, tree hazard inspections and surveys. The Principal of the business, Meredith Gibbs, has a certificate level 5 in Arboriculture obtained from Northern Sydney Institute, Ryde TAFE College, NSW in 2003.

This report/assessment is made solely for the use and benefit of the client named on the front of this report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the report/assessment wholly or in part. Any third party acting or relying on this report / assessment in whole, or in part, does so at their own risk.

The addressee is required to peruse the report and contact Australis Tree Management within fourteen days for corrections. The addressee is also required to advise if any of the information or data supplied is inaccurate or incomplete, thereby affecting the conclusions and recommendations given in this report.

Any required updates, reassessments or re-examinations of the original report required by any other party will incur a fee.

Because of the nature of living organisms and the circumstances and condition that can affect their health and well-being this report will have a validity of 3 months from the date hereof. Where further information/data is supplied to Australis Tree Management, which nullifies the original report then a further fee will apply.

Summary

Australis Tree Management has been commissioned by Mr Peter Brogan from Bloompark Consulting Pty Ltd to complete an arboriculture impact assessment. This report aims to identify the health and condition of the trees, potential impacts from proposed works and to provide recommendations regarding tree retention, protection and removals.

The development proposed is for the building upgrades, new buildings and car parking facilities and associated works.

On the 29 October 2019, I attended the site at 113-119 Prospect Rd, Summer Hill NSW 2130 and inspected thirty-eight (38) trees, which are located on site and within 5m of the boundaries of the site on adjoining properties.

I completed a modified Tree Survey Form (Matheny & Clark, 1994), applied 'TreeAZ' ratings (Barrell, 2016) as well as taking supporting photographs of the trees.

The inspection performed by visibly inspecting the trees from accessible points at ground level and assessing the supplied proposed plans. In total thirty-nine (39) trees were assessed.

- Seven (7) trees are located on the subject site and proposed for retention.
- Twenty-nine (29) trees on site are proposed for removal as they are located within proposed development works with two (2) are trees exempt from council protection.
- Two (2) trees are located on the Seaview Street nature strip and proposed for retention.
- Thirty-six (36) trees are protected by council.

Trees proposed for retention within the subject site and within adjoining properties will require tree protection measures throughout the development works to ensure their long-term survival.

The tree defects and symptoms that were encountered have been discussed in section 5 and a detailed tree schedule is included in appendix a.

A Tree Protection Plan has been prepared containing specifications related to the proposed works.

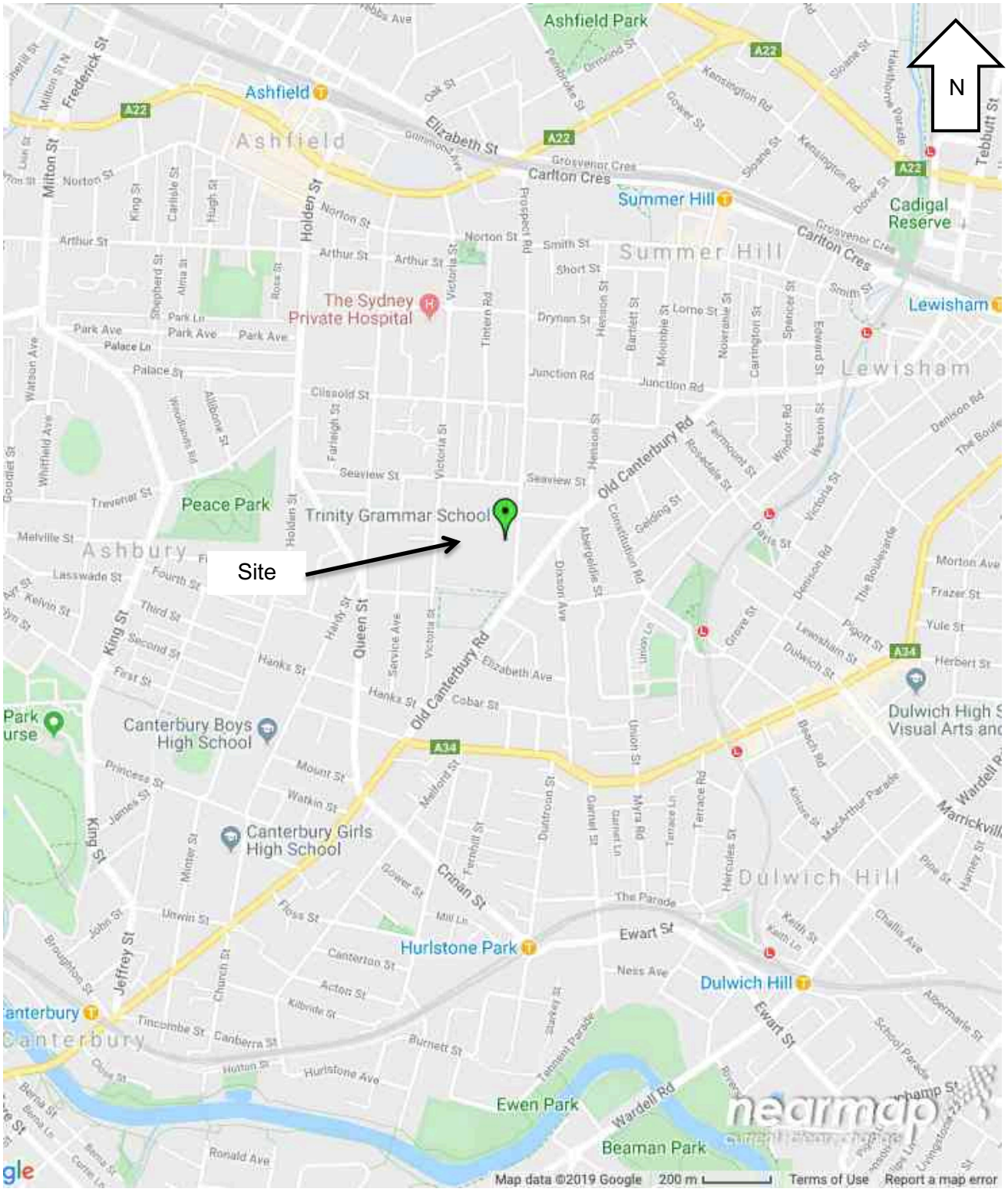
Table of Contents

Abbreviations

DCP…….Development Control Plan
LEP……..Local Environmental Plan
LGA…….Local Government Authority
SRZ…….Structural Root Zone
TPO…….Tree Preservation Order
TPZ…….Tree Protection Zone

Location Map

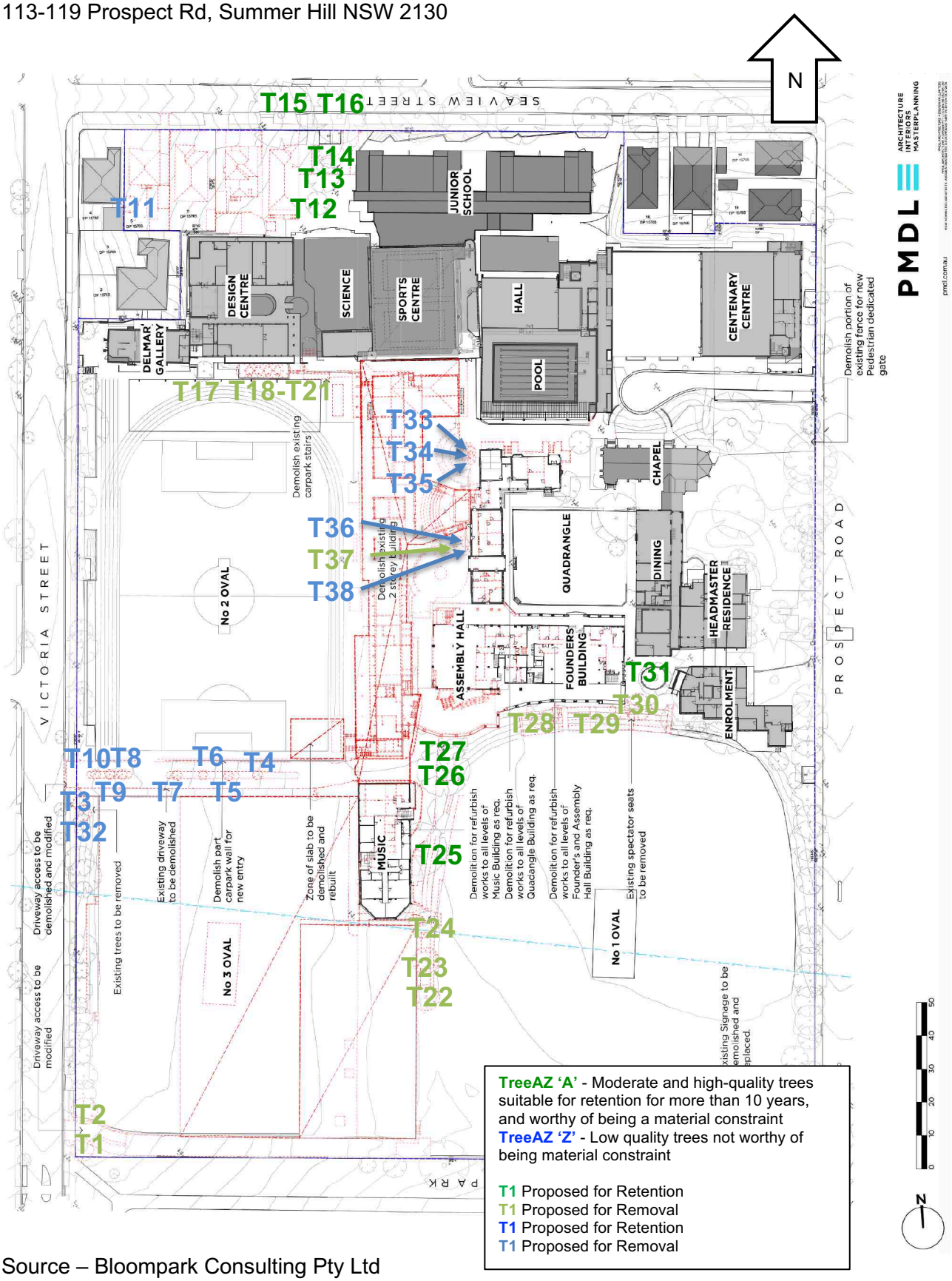
113-119 Prospect Rd, Summer Hill NSW 2130



Source – Near Map 30 October 2019
Figure 1. Location Map

Site Map

113-119 Prospect Rd, Summer Hill NSW 2130



Source – Bloompark Consulting Pty Ltd
Figure 2. Site Map

1 Introduction

1.1 Brief

Mr Peter Brogan from Bloompark Consulting Pty Ltd provided instructions to inspect and assess the health and condition of the trees at 113-119 Prospect Rd, Summer Hill, including any tree within the vicinity of the proposed works including trees on adjoining properties. I have prepared an Arboriculture Impact Assessment on the proposed impacts of the development works on the subject trees. The report will provide recommendations regarding tree protection during the development process.

1.2 The Proposed Development

The proposed development seeks detailed built form approval of new teaching and educational facilities, as detailed below:

- New five (5) storey building at the heart of the Campus to accommodate modern, flexible teaching and learning spaces;
- Improve movement and flow for students, with better east-west and north-south links across the school grounds and between levels, including more accessible connections between the Junior School, ovals and car park, and providing strong visual and physical connections;
- Renewal and Refurbishment of existing teaching and learning facilities;
- Reconfiguration and connection of underground car park improve traffic flow for the school drop-off and pick-up zone and improve the safety of boys and visitors who enter the school grounds as pedestrians from Victoria Street;
- New multipurpose pavilion between Ovals 1 and 3 containing a multipurpose space and basketball court;
- Demolition of school-owned residences at 46, 48, 50 and 52 Seaview Street, improving the existing service, maintenance and delivery facilities;
- Improvement and extension to Junior School outdoor teaching area and outdoor assembly area.

Overall, the proposed built form approval seeks to provide a framework for the future physical development of the Campus to ensure the best teaching and learning outcomes, and ongoing evolution of the School.

1.3 Aims

The following objectives have been identified as forming the basis of the proposed development of the existing educational establishment:

- Create an education precinct to create a high-quality teaching and learning environment for staff and students;
- Establish additional floor space to increase availability and efficiency of teaching functions for Trinity Grammar School Summer Hill Campus;
- Improve site access, car parking and surrounding traffic functions in the precinct;
- Strengthen pedestrian linkages throughout the campus;
- Upgrade the public domain to create visually interesting transitions through the campus, and promote the heritage elements of the campus;
- Ensure minimal environmental impact; and

- Ensure development is compatible with surrounding development and the local context.

The site and proposed design are considered to meet the objectives of the project as it allows for development on land that has been previously used for educational purposes.

1.4 Qualifications and Experience

This report has been based upon site observations and the assessment of the subject trees. Conclusions have been reached from experience and follow up research. Qualification details are included in the appendix.

1.5 Documents Provided

- Provided by Bloompark Consulting Pty Ltd – 29 January 2020
  - 2808-PRELIMINARY-TGS SSDA Architectural Set.pdf
  - 2808-SSDA-10371 - Architectural Design Analysis Report DRAFT.pdf

1.6 Scope

- This report is only concerned with the health and condition of the subject trees and the potential impacts from the proposed development. Root mapping, invasive structural strength of the trees, soils assessments or aerial inspections were not performed. This report has been prepared in accordance with Inner West (Ashfield) LEP and DCP. It includes a detailed assessment based on the site visit and the documents provided.
- Recommendations may be provided regarding alterations to the proposed design or construction methods to mitigate detrimental impacts on the subject trees.
- Only trees which qualify as a being protected under Inner West (Ashfield) 's Tree Preservation Policy have been included in the body of this report. All tree species assessed (including unprotected trees) are located in the 'Tree Schedule' in Appendix A.

2 Methodology

2.1 Methods

The following relevant information was compiled for consideration of the proposed works. Details are located in the appendices.

- AS 4970- 2009 Protection of trees on development sites
- AS 4373 - 2007 Pruning of amenity trees
- Tree Survey Form (Matheny & Clark, 1994)
- Visual Tree Assessment (Mattheck & Breloer, 1994)

2.2 *TreeAZ* (Barrell, 2016)

- **TreeAZ 'A'** - Moderate and high-quality trees suitable for retention for more than 10 years, and worthy of being a material constraint
- **TreeAZ 'Z'** - Low quality trees not worthy of being material constraint

2.3 Information Collected

Information collected includes tree species, dimensions, tree health and condition, tree assessment ratings and tree protection zones etc. Trees located on adjoining properties will be inspected from the ground on the subject site or public land only. All relevant information is included in the Tree Schedule (Appendix A). The inspection was of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level.

2.4 Species Identification

Identification of the subject trees are determined by visible features only at the time of the inspection. Every effort is made to correctly identify the subject trees where time permits. Photographs are compared with varying text listed in 'References'.

2.5 Tree Measurements

In accordance with AS 4970-2009 tree trunk diameters were measured with a diameter tape at 1.4m high (unless stated). Tree heights are measured with a clinometer and canopy spreads estimated accordingly.

2.6 Photography

A Nikon D5200 SLR camera or an iPhone were used. In low light levels photographs maybe altered to improve visual quality, this involves adjustments to exposure, contrast, reduction of shadows and increased sharpness. No adjustments to vibrancy that alter colours were applied.

2.7 Proposed Pruning

All pruning specifications are written in compliance of *AS 4373 - 2007 Pruning of amenity trees* and should be carried out in accordance with *AS 4373 - 2007* and Workcover NSW Code of Practice '*Amenity Tree Industry*', 1998. Definitions for all terminology used in this report are taken from *AS 4373 - 2007 Pruning of amenity trees,*

AS 4970- 2009 Protection of trees on development sites and the International Society of Arboriculture's Glossary of Arboricultural Terms.

2.8 Vegetation in Non-Rural Areas [NSW] (2017)

The State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 includes provisions requiring the preservation of trees and bushland within Inner West (Ashfield) LGA.

3 Aims of Policy

The aims of this Policy are:

(a) to protect biodiversity values of trees and vegetation in non-rural areas of the State, and

(b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.

2.9 Tree Protection

The State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 includes provisions requiring the preservation of trees and bushland within Inner West (Ashfield) LGA. This report relies on the information contained within Inner West (Ashfield) Local Environmental Plan (2013) and Development Control Plan (2016). This report may include trees on adjoining properties that are likely to be impacted by the proposed development regardless of the definition contained in the LEP and DCP. Council may require a greater setback from proposed structures to ensure the preservation and protection of the tree.

2.9.1 Exempt Species

The following tree species are listed in councils' list of exempt species, exempt of works or undersized.

- Tree no. 30 *Celtis australis* (European Hackberry) exempt species
- Tree no. 26 *Acer negundo* (Box Elder) exempt species

2.10 Vegetation

Vegetation types have been determined using a variety of methods depending on the location and LGA. Depending on the sources results can vary and should be used as a guide only.

3 Site Visit and Observations

3.1 Field Visit

The unaccompanied site visit was conducted on 29 October 2019. All observations were from ground level without detailed investigations. The weather at the time of the inspection was clear, still and dry with good visibility.

3.2 NSW Property Details

The following relevant information was gathered from NSW Planning Portal on 30 October 2019.

- Terrestrial Biodiversity – No
- Environmental Protection – No
- Native Vegetation Protection – No
- Riparian Lands & Watercourses – No
- Bushland in Urban Areas (SEPP No. 19) – Yes
- Green Asset – No

3.3 Brief Site Description

Trinity Grammar School at Summer Hill is located in the residential suburb of Summer Hill. The campus grounds are bordered by Prospect Road, Victoria Street and Seaview Street. The grounds consist of school buildings, classrooms, recreational areas, driveway's and sports fields.

3.4 Location of the Trees

The trees in question are located throughout the site. The trees have been located on the supplied site plans and numbered accordingly. This plan is for illustrative purposes only and it should not be used for directly scaling measurements. The site contains indigenous, planted native and exotic tree species. They are of varying ages and stages of maturity with some over mature specimens.

3.5 On Site Vegetation

The site contains indigenous, planted native and exotic tree species. They are of varying ages and stages of maturity. There is no remnant vegetation on site.

3.6 The Benefits of Trees

- Reduce urban heat island effects
- Purify and oxygenate the air
- Sequester carbon through photosynthesis
- Intercepting rainfall and modifying runoff
- Enhance biodiversity
- Providing habitat and wildlife corridors

3.7 Biodiversity Values

The subject site is mapped as not having Biodiversity Values according to The Biodiversity Values Map (BV Map) defined by the *Biodiversity Conservation Regulation 2017*.

3.8 Threatened Species

The following tree species are listed in the NSW Biodiversity Conservation Act (2016), they are horticultural plantings and the specimens are of no relevance to the conservation of the species.

- Trees no. 36 & 37 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint)
  - Conservation status in NSW: Vulnerable (BC Act 2016)
  - Commonwealth: Vulnerable (EPBC Act 1999)

3.9 Biosecurity Act 2015

The following tree species are listed in the Biosecurity Act 2015 and classed as 'General'. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

- Tree no. 30 *Celtis australis* (European Hackberry)

3.10 Replacement Tree Planting

Replacement trees should preferably include indigenous tree species. These will aid in preserving landscape character and wildlife habitat. The trees proposed for removal must be offset through replacement plantings. Council may recommend an increased replacement ratio. All replacement plantings must be species selected from indigenous tree species such as

Location and Size of Plantings

- All replacement trees must be located in the designated areas on the Tree Protection Plan and must be 4 metres or greater from the foundation walls of any proposed dwelling.
- The pot size of the replacement tree(s) must be a minimum 25 litres.
- All replacement tree(s) must be maintained until they reach the height of 3 metres.
- All replacement trees must have the potential to reach a mature height greater than six metres.
- All tree stock must meet the specifications outlined in "Specifying Trees" by Ross Clark, Publisher NATSPEC Books.
- Planting methods must meet professional (best practice) industry standards.

4 Results

- A complete tree schedule is located in appendix a.
- **TreeAZ 'A'** - Moderate and high-quality trees suitable for retention for more than 10 years, and worthy of being a material constraint
- **TreeAZ 'Z'** - Low quality trees not worthy of being material constraint

4.1 Trees Species and Life Expectancy

Tree no.	Species	Life Expectancy
1, 2	*Lophostemon confertus* (Queensland Brush Box)	40+yrs
3	*Lophostemon confertus* (Queensland Brush Box)	40+yrs
4, 5, 6, 7, 8, 9, 10	*Araucaria cunninghamii* (Hoop Pine)	15-40yrs
11	*Bauhinia variegata* (Orchid Tree)	5-15yrs
12, 13, 14	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	40+yrs
15, 16	*Ficus microcarpa* var. *hillii* (Hills Weeping Fig)	40+yrs
17, 18, 19, 20, 21	*Populus sp* (Hybrid Poplar)	40+yrs
22, 23, 24, 25, 27	*Platanus x hybrida* (London Plane)	40+yrs
26	*Acer negundo* (Box Elder)	40+yrs
28, 29	*Liquidambar styraciflua* (Liquidamber)	40+yrs
30	*Celtis australis* (European Hackberry)	40+yrs
31	*Ficus rubiginosa* (Port Jackson Fig)	15-40yrs
32	*Syncarpia glomulifera* (Turpentine)	40+yrs
33, 34, 35	*Juniperus chinensis* (Chinese Juniper)	15-40yrs
36	*Eucalyptus nicholii* (Narrow-leaved Black Peppermint)	<5yrs
37	*Eucalyptus nicholii* (Narrow-leaved Black Peppermint)	15-40yrs
38	*Melaleuca armillaris* (Bracelet Honey Myrtle)	15-40yrs

Table 1. On Site Trees and Life Expectancy

4.2 On Site Proposed for Retention

Tree no.	Species	TPZ	Proposed TPZ Encroachment
12	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	10.2m	0.0%
13	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	12.6m	0.0%
14	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	11.4m	0.0%
25	*Platanus x hybrida* (London Plane)	15.0m	0.0%
26	*Acer negundo* (Box Elder)	8.4m	0.0%
27	*Platanus x hybrida* (London Plane)	5.4m	1.2%
31	*Ficus rubiginosa* (Port Jackson Fig)	12.0m	To determine

Table 2. On Site Trees Proposed for Retention

4.3 On Site Proposed for Removal

Tree no.	Species	TPZ	Proposed TPZ Encroachment
1, 2	*Lophostemon confertus* (Queensland Brush Box)	6.0m	100.0%
3	*Lophostemon confertus* (Queensland Brush Box)	3.6m	100.0%
4, 6, 7, 9	*Araucaria cunninghamii* (Hoop Pine)	3.0m	100.0%
5, 8	*Araucaria cunninghamii* (Hoop Pine)	3.6m	100.0%
10	*Araucaria cunninghamii* (Hoop Pine)	2.4m	100.0%
11	*Bauhinia variegata* (Orchid Tree)	2.6m	100.0%
18	*Populus sp* (Hybrid Poplar)	3.0m	100.0%
17, 19, 20	*Populus sp* (Hybrid Poplar)	3.6m	100.0%
21	*Populus sp* (Hybrid Poplar)	4.8m	100.0%
22, 23, 24	*Platanus x hybrida* (London Plane)	7.8m	100.0%
28	*Liquidambar styraciflua* (Liquidamber)	7.2m	100.0%
29	*Liquidambar styraciflua* (Liquidamber)	5.4m	100.0%
30	*Celtis australis* (European Hackberry)	6.0m	100.0%
32	*Syncarpia glomulifera* (Turpentine)	3.6m	45.0%
33, 34, 35	*Juniperus chinensis* (Chinese Juniper)	2.4m	100%
36	*Eucalyptus nicholii* (Narrow-leaved Black Peppermint)	5.0m	100%
37	*Eucalyptus nicholii* (Narrow-leaved Black Peppermint)	5.0m	100%
38	*Melaleuca armillaris* (Bracelet Honey Myrtle)	4.0m	100%

Table 3. On Site Trees Proposed for Removal

4.4 Nature Strip Trees

Tree no.	Species	TPZ	Proposed TPZ Encroachment	Location
15	*Ficus microcarpa* var. *hillii* (Hills Weeping Fig)	15.0m	0.9%	Seaview Street
16	*Ficus microcarpa* var. *hillii* (Hills Weeping Fig)	15.0m	0.0%	Seaview Street

Table 4. Nature Strip Trees

5 Discussion

5.1 On Site Trees Proposed for Retention

5.1.1 Trees no. 12, 13 & 14 *Melaleuca quinquenervia* (Broad-leaved Paperbark)

5.1.1.1 These native trees are located on site. They are mature in age and in good (4) health and condition with 'TreeAZ' ratings of 'A' and life expectancies of 40+yrs.

5.1.1.2 The trees are not located within any proposed works.

5.1.2 Tree no. 25 *Platanus x hybrida* (London Plane)

5.1.2.1 This exotic tree is located on site. It is mature in age and in excellent (5) health and condition with a 'TreeAZ' rating of 'AA1' and a life expectancy of 40+yrs with no significant issues sighted.

5.1.2.2 To retain this tree next to the multipurpose hall all proposed works should be in existing structure locations allowing for canopy spread without significant pruning.

5.1.3 Tree no. 26 *Acer negundo* (Box Elder)

5.1.3.1 This exotic tree is located on site. It is mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs. This tree has a suffered from the removal of a large limbs resulting in a cavity at approximately 1.5m high.

5.1.3.2 The proposed new five storey building is located approximately 8.8m from the trunk, which is outside the 8.4m TPZ. Canopy management may be required for the proposed works.

5.1.4 Tree no. 27 *Platanus x hybrida* (London Plane)

5.1.4.1 This exotic tree is located on site. It is semi mature in age and in excellent (5) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.1.4.2 The proposed new five storey building is located approximately 5m from the trunk, which is inside the 5.4m TPZ. Canopy management may be required for the proposed works.

5.1.5 Tree no. 30 *Celtis australis* (European Hackberry)

5.1.5.1 This exotic tree is located on site. It is mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs. This tree has a hollow located on the trunk at approximately 1m high likely caused from a previously removed limb. This tree species is not protected by council.

5.1.5.2 The proposed refurbish existing six storey building is located approximately 1m from each trunk, which is inside their TPZ's. The

trees are already subject to regular pruning for building clearance. As a result, may not require any further pruning.

5.1.6 Tree no. 31 *Ficus rubiginosa* (Port Jackson Fig)

5.1.6.1 This indigenous tree is located on site. It is mature in age and in low (2-3) health and condition with a 'TreeAZ' rating of 'AA1' and a life expectancy of 15-40yrs. The tree has a thin canopy and numerous included bark unions that are not showing any signs of potential separation at this time. There are also numerous pruning wounds where some have developed into hollows.

5.1.6.2 The proposed refurbish existing six storey building is located approximately 6m from each trunk, which is inside the TPZ and current canopy projection.

5.2 On Site Trees Proposed for Removal

5.2.1 Tree no. 1 *Lophostemon confertus* (Queensland Brush Box)

5.2.1.1 This native tree is located on site. It is semi mature in age and in excellent (5) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.1.2 The tree is located within the proposed driveway widening and therefore proposed for removal.

5.2.2 Tree no. 2 *Lophostemon confertus* (Queensland Brush Box)

5.2.2.1 This native tree is located on site. It is mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.2.2 The tree is located within the proposed driveway widening and therefore proposed for removal.

5.2.3 Tree no. 3 *Lophostemon confertus* (Queensland Brush Box)

5.2.3.1 This native tree is located on site. It is young in age and in average (3) health and condition with a 'TreeAZ' rating of 'Z1' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.3.2 The tree is located within the proposed pedestrian entry and therefore proposed for removal.

5.2.4 Trees no. 4, 5, 6, 7, 8, 9, & 10 *Araucaria cunninghamii* (Hoop Pine)

5.2.4.1 These native trees located on site. They are young in age and in low (2-3) to average (3) health and condition with 'TreeAZ' ratings of 'Z1' and life expectancies of 15-40yrs.

5.2.4.2 The trees are located within the proposed driveway entrance upgrade and development envelope and therefore proposed for removal.

5.2.5 Tree no. 11 *Bauhinia variegata* (Orchid Tree)

5.2.5.1 This exotic tree is located on site. It is semi mature in age and in low (2-3) health and condition with a 'TreeAZ' rating of 'Z1' and a life expectancy of 5-15yrs with a thin canopy.

5.2.5.2 The tree is located within the proposed maintenance area envelope and therefore proposed for removal.

5.2.6 Tree no. 17 *Populus sp* (Hybrid Poplar)

5.2.6.1 This exotic tree is located on site. It is semi mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.6.2 The tree is located within the proposed development envelope and therefore proposed for removal.

5.2.7 Tree no. 18 *Populus sp* (Hybrid Poplar)

5.2.7.1 This exotic tree is located on site. It is semi mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.7.2 The tree is located within the proposed development envelope and therefore proposed for removal.

5.2.8 Tree no. 19 *Populus sp* (Hybrid Poplar)

5.2.8.1 This exotic tree is located on site. It is semi mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.8.2 The tree is located within the proposed development envelope and therefore proposed for removal.

5.2.9 Tree no. 20 *Populus sp* (Hybrid Poplar)

5.2.9.1 This exotic tree is located on site. It is semi mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.9.2 The tree is located within the proposed development envelope and therefore proposed for removal.

5.2.10 Tree no. 21 *Populus sp* (Hybrid Poplar)

5.2.10.1 This exotic tree is located on site. It is semi mature in age and in good (4) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted. The tree is located within the proposed part of new 5 storey building envelope and therefore proposed for removal.

5.2.11 Trees no. 22 & 23 *Platanus x hybrida* (London Plane)

5.2.11.1 These exotic trees are located on site. They are semi mature in age and in excellent (5) health and condition with 'TreeAZ' ratings of 'A' and life expectancies of 40+yrs. There were no significant issues sighted.

5.2.11.2 The trees are located within the proposed music hall refurbishment and therefore proposed for removal.

5.2.12 Tree no. 24 *Platanus x hybrida* (London Plane)

5.2.12.1 This exotic tree is located on site. It is semi mature in age and in excellent (5) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.12.2 The tree is located within the proposed music hall refurbishment and therefore proposed for removal.

5.2.13 Tree no. 28 & 29 *Liquidambar styraciflua* (Liquidamber)

5.2.13.1 These exotic trees are located on site. They are mature in age and in good (4) health and condition with 'TreeAZ' ratings of 'A' and life expectancies of 40+yrs.

5.2.13.2 These trees are located within the proposed demolition of spectator seating refurbishment and therefore proposed for removal.

5.2.14 Tree no. 32 *Syncarpia glomulifera* (Turpentine)

5.2.14.1 This native tree is located on site. It is young in age and in average (3) health and condition with a 'TreeAZ' rating of 'Z1' and a life expectancy of 40+yrs with no significant issues sighted.

5.2.14.2 The tree is located immediately adjacent to the proposed pedestrian entry and therefore proposed for removal.

5.2.15 Trees no. 33, 34 & 35 *Juniperus chinensis* (Chinese Juniper)

5.2.15.1 These exotic trees are located on site. They are mature in age and in adequate (3) health and condition with 'TreeAZ' ratings of 'Z1' and life expectancies of 15-40yrs.

5.2.15.2 These trees are located within proposed new building works and therefore proposed for removal.

5.2.16 Tree no. 36 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint)

5.2.16.1 This native tree is located on site. It is mature in age and in poor (2) health and condition with a 'TreeAZ' rating of 'Z3' and a life expectancy of less than 5yrs due to the its declining in health and vigour.

5.2.16.2 The tree is located within proposed new building works and therefore proposed for removal.

5.2.17 Tree no. 37 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint)

5.2.17.1 This native tree is located on site. It is mature in age and in adequate (3) health and condition with a 'TreeAZ' rating of 'A' and a life expectancy of 15-40yrs with no significant defects sighted.

5.2.17.2 The tree is located within proposed new building works and therefore proposed for removal.

5.2.18 Tree no. 38 *Melaleuca armillaris* (Bracelet Honey Myrtle)

5.2.18.1 This native tree is located on site. It is young in age and in average (3) health and condition with a 'TreeAZ' rating of 'Z1' and a life expectancy of 15-40yrs with no significant issues sighted.

5.2.18.2 The tree is located within proposed new building works and therefore proposed for removal.

5.3 Nature Strip Trees

5.3.1 Tree no. 15 *Ficus microcarpa* var. *hillii* (Hills Weeping Fig)

5.3.1.1 This native tree is located the Seaview Street nature strip. It is mature in age and in excellent (5) health and condition with a 'TreeAZ' rating of 'AA1' and a life expectancy of 40+yrs. The tree has numerous pruning events resulting watersprouts.

5.3.1.2 The tree has a previously constructed driveway immediately west of the trunk encroaching the TPZ. The proposed new services and delivery is located approximately 10m from the tree encroaching the TPZ by a minimal 1%. The potential for roots to be located within the proposed new services and delivery area is possible and ground penetrating radar root mapping may be required prior to any proposed excavation within 15m of the trunk.

5.3.2 Tree no. 16 *Ficus microcarpa* var. *hillii* (Hills Weeping Fig)

5.3.2.1 This native tree is located nature strip. It is mature in age and in low (2-3) health and condition with a 'TreeAZ' rating of 'AA1' and a life expectancy of 40+yrs with no significant issues sighted. The tree also has numerous pruning events and wounds with weakly attached watersprout growth. On the lower limbs, wounds can be seen mostly likely form passing traffic, thin canopy.

5.3.2.2 The tree has previously constructed driveway immediately south of the trunk encroaching the TPZ. Once again, the potential for roots to be located within the proposed outdoor play space upgrade is possible and ground penetrating radar root mapping may be required prior to any proposed excavation within 15m of the trunk.

6 Conclusion & Recommendations

6.1 Trees Proposed for Retention

6.1.1 Tree no. 12 *Melaleuca quinquenervia* (Broad-leaved Paperbark) is a mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The tree is not located within the vicinity of proposed works.

- Recommendation
  - Protection from passing construction vehicles
  - Apply general tree protection methods (section 7)

6.1.2 Tree no. 13 *Melaleuca quinquenervia* (Broad-leaved Paperbark) is a mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The tree is not located within the vicinity of proposed works.

- Recommendation
  - Protection from passing construction vehicles
  - Apply general tree protection methods (section 7)

6.1.3 Tree no. 14 *Melaleuca quinquenervia* (Broad-leaved Paperbark) is a mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The tree is not located within the vicinity of proposed works.

- Recommendation
  - Protection from passing construction vehicles
  - Apply general tree protection methods (section 7)

6.1.4 Tree no. 15 *Ficus microcarpa* var. *hillii* (Hills Weeping Fig) is a mature tree located nature strip with a 'TreeAZ' rating of 'AA1' and a 40+yrs life expectancy. Root mapping may be required within the proposed outdoor play area upgrade of excavations are proposed. The TPZ for this tree is 15m. (proposed design required)

- Recommendation
  - Protection from passing construction vehicles
  - Apply general tree protection methods (section 7)

6.1.5 Tree no. 16 *Ficus microcarpa* var. *hillii* (Hills Weeping Fig) is a mature tree located nature strip with a 'TreeAZ' rating of 'AA1' and a 40+yrs life expectancy. The proposed driveway is located within the existing driveway location. Root mapping may be required within the proposed outdoor play area upgrade of excavations are proposed. The TPZ for this tree is 15m.

- Recommendation
  - Protection from passing construction vehicles
  - Apply general tree protection methods (section 7)

6.1.6 Tree no. 25 *Platanus x hybrida* (London Plane) is a mature tree located on site with a 'TreeAZ' rating of 'AA1' and a 40+yrs life expectancy. The proposed multipurpose hall storey building appears to be approximately within the existing structures.

- Recommendation
  - Canopy pruning maybe required to allow clearance for the proposed construction
  - Apply general tree protection methods (section 7)

6.1.7 Tree no. 26 *Acer negundo* (Box Elder) is a mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. There are no proposed works within the 8.4m TPZ for this tree.

- Recommendation
  - Apply general tree protection methods (section 7)

6.1.8 Tree no. 27 *Platanus x hybrida* (London Plane) is a semi mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The proposed demolition of the adjacent building is within the vicinity of the tree therefore, canopy protection will be required.

- Recommendation
  - Apply general tree protection methods (section 7)

6.1.9 Tree no. 31 *Ficus rubiginosa* (Port Jackson Fig) is a mature tree located on site with a 'TreeAZ' rating of 'AA1' and a 15-40yrs life expectancy. The proposed refurbishment of the adjacent building is within the vicinity of the tree therefore, canopy protection will be required.

- Recommendation
  - Apply general tree protection methods (section 7)

6.2 Trees Proposed for Removal

6.2.1 Tree no. 1 *Lophostemon confertus* (Queensland Brush Box) is a semi mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The tree is located within the proposed driveway widening, therefore proposed for removal.

6.2.2 Tree no. 2 *Lophostemon confertus* (Queensland Brush Box) is a mature tree located on site with a 'TreeAZ' rating of 'A' and a 40+yrs life expectancy. The tree is located within the proposed driveway widening, therefore proposed for removal.

6.2.3 Tree no. 3 *Lophostemon confertus* (Queensland Brush Box) is a young tree located on site with a 'TreeAZ' rating of 'Z1' and a 40+yrs life expectancy. The tree is located within the proposed pedestrian entry, therefore proposed for removal.

6.2.4 Trees no. 4 to 10 *Araucaria cunninghamii* (Hoop Pine) are all young trees located on site with 'TreeAZ' ratings of ‘Z1’ and 15-40yrs life expectancies. The trees are located within the proposed driveway upgrade and therefore proposed for removal

6.2.5 Tree no. 11 *Bauhinia variegata* (Orchid Tree) is a semi mature tree located on site with a 'TreeAZ' rating of ‘Z1’ and a 5-15yrs life expectancy. The tree is located within the proposed development envelope and therefore proposed for removal.

6.2.6 Tree no. 17 *Populus sp* (Hybrid Poplar) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.7 Tree no. 18 *Populus sp* (Hybrid Poplar) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.8 Tree no. 19 *Populus sp* (Hybrid Poplar) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.9 Tree no. 20 *Populus sp* (Hybrid Poplar) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.10 Tree no. 21 *Populus sp* (Hybrid Poplar) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.11 Tree no. 22 *Platanus x hybrida* (London Plane) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. T The tree is located within the proposed development envelope therefore proposed for removal.

6.2.12 Tree no. 23 *Platanus x hybrida* (London Plane) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.13 Tree no. 24 *Platanus x hybrida* (London Plane) is a semi mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed carpark ramp therefore proposed for removal.

6.2.14 Tree no. 28 *Liquidambar styraciflua* (Liquidamber) is a mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.15 Tree no. 29 *Liquidambar styraciflua* (Liquidamber) is a mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed development envelope therefore proposed for removal.

6.2.16 Tree no. 30 *Celtis australis* (European Hackberry) is a mature tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The species is listed under the Biosecurity Act 2015 as having General Biosecurity Duty. The tree is located immediately adjacent to the proposed development envelope with an excessive encroachment therefore it is proposed for removal.

6.2.17 Tree no. 32 *Syncarpia glomulifera* (Turpentine) is a young tree located on site with a 'TreeAZ' rating of ‘A’ and a 40+yrs life expectancy. The tree is located within the proposed pedestrian entry, therefore proposed for removal.

6.2.18 Tree no. 33 *Juniperus chinensis* (Chinese Juniper) is a mature tree located on site with a 'TreeAZ' rating of ‘Z1’ and a 15-40yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

6.2.19 Tree no. 34 *Juniperus chinensis* (Chinese Juniper) is a mature tree located on site with a 'TreeAZ' rating of ‘Z1’ and a 15-40yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

6.2.20 Tree no. 35 *Juniperus chinensis* (Chinese Juniper) is a mature tree located on site with a 'TreeAZ' rating of ‘Z1’ and a 15-40yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

6.2.21 Tree no. 36 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint) is a mature tree located on site with a 'TreeAZ' rating of ‘Z3’ and a less than 5yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

6.2.22 Tree no. 37 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint) is a mature tree located on site with a 'TreeAZ' rating of ‘A’ and a less than 15-40yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

6.2.23 Tree no. 38 *Melaleuca armillaris* (Bracelet Honey Myrtle) is a mature small tree located on site with a 'TreeAZ' rating of ‘Z1’ and a I15-40yrs life expectancy. The tree is located within the proposed building envelope therefore proposed for removal.

7 Tree Protection Measures

These specifications are for the trees identified and selected for retention including any tree located on adjoining properties.

7.1 Tree Protection

7.1.1 **All tree parts must be protected** - This includes roots, trunks and branches.

7.1.2 **Trunk Protection** - If working within TPZ, trunk protection shall consist of hessian or padding wrapped around the trunk, two metre lengths of timber (100 x 50mm) spaced at 100-150mm centres secured together with 2mm galvanised wire. These shall be strapped around the trunk and not fixed to the tree in any way to avoid mechanical injury or damage.

7.1.3 **Fencing** - A 1.8m chain wire fence with concrete footings placed in accordance to tree protection zones and AS 4687. The TPZ distances are located within the tree schedule.

7.1.4 **Signage** - “Tree Protection Zone, No Entry”. With project arborist contact details to be attached to the protective fencing.

7.1.5 **Machinery Movements** - When machinery movements are required within the TPZ then a geotextile permeable membrane to be laid under mulch or crushed rock under rumble boards must be in place.

7.1.6 **Foot Traffic** - Raised platforms using scaffolding and boards or similar must be constructed if foot traffic occurs within TPZ. Scaffold with boards is sufficient.

7.1.7 **AS4970-2009** - Activities generally excluded from the TPZ include but are not limited to;

- machine excavation including trenching;
- excavation for silt fencing;
- cultivation;
- storage;
- preparation of chemicals, including preparation of cement products;
- parking of vehicles and plant;
- refuelling;
- dumping of waste;
- wash down and cleaning of equipment;
- placement of fill;
- lighting of fires;
- soil level changes;
- temporary or permanent installation of utilities and signs, and
- physical damage to the tree.

7.1.8 **Scaffolding** - All construction scaffolding must be erected around all branches not approved for pruning/removal.

7.1.9 **Pruning** - Pruning is limited to the removal of ?? order branches with a maximum diameter of 100mm at the branch collar that encroaches and overhangs the proposed development. Remove of all dead stubs and failed branches leaving a clean cut with no splinters or pieces of wood that may prevent wound wood closure. This will enable wound wood development and reduce the risk of fungal infection. Any pruning required must be in accordance with AS 4373-2007 *Pruning of Amenity Trees*, Standards Australia and completed by level 3 qualified arborist or higher. Climbing spikes **MUST NOT** be used.

7.1.10 **Mulch** - Within the TPZ fencing 75mm of **COMPOSTED** organic mulch must be applied to help retain moisture levels, suppress weed growth and reduce tree stress. Mulch must be in accordance with AS4454-2012 *Composts, soil conditioners and mulches*.

7.1.11 **Irrigation** - All trees must be thoroughly watered regularly throughout the development process. This is dependent on weather conditions where more water applied during hot and or winding weather. Micro-irrigation lines must be connected to a designated water source that remains connected throughout the development works. Install irrigation lines at 450mm centres beneath the driveway and forward-facing sprayers from the fence line for use during and post construction activities.

7.1.12 **Tree Damage** - If any tree is damaged the project arborist should be notified, engaged to inspect and provide advice as well as written documentation to be supplied to the certifying authority.

7.1.13 Tree Monitoring Schedule

- During site occupation all TPZ's and trees must be monitored, assessed and recorded by the project arborist according to council's determinations.
- Any work that must occur within a TPZ must be witnessed and directed by the project arborist
- In the event that any tree is declining in health the project arborist shall be engaged to supply written remedial applications that must be applied immediately.

7.2 Excavation Within Tree Protection Zones

7.2.1 Monitoring

- Any excavation work within a Tree Protection Zone must be monitored by the project arborist.

7.2.2 Root Pruning

- Roots measuring over 40mm in diameter must **not** be pruned within the Structural Root Zone unless directed by the project arborist ONLY.
- Roots measuring over 40mm in diameter within the Tree Protection Zone and outside the Structural Root Zone may be pruned at the discretion of the project arborist.

- Root exposure must be applied with hand tools or Air Spade to prevent damage to the root system.
- Root pruning can be performed by a level 3 arborist or higher.
- All pruning equipment must be sharp and clean. Secateurs, loppers or pruning saws should be used and can be cleaned with methylated spirits to prevent disease and pathogen spread.
- Bolt or wire cutters must not be used for root pruning.

7.2.3 Root Care

- Any roots exposed must be wrapped or covered with hessian or cloth and kept moist to prevent drying out and sunburn until backfilling occurs.
- Backfill must be watered in and mulched with composted leaf mulch.

7.3 Project Arborist Monitoring

1	Project arborist (level 5) must oversee tree retention
2	All tree related matters must be discussed with the project arborist
3	The builder / site manager is responsible to inform the project arborist of any issues during works
4	Project arborist must maintain a monthly log including site visits, notes and photographs.
5	Project arborist must provide feedback the builder / site manager / council.

Table 5. Project Arborist Monitoring

7.4 Project Arborist Hold Points

Hold Point	Task	Timing	Certification
	Appoint project arborist to ensure protection of trees	Prior to demolition of structures	
2	Tree Protection Plan be onsite prior to works (Sect 5, AS4970-2009)		
3	Inspect Tree Protection Fencing with signage. (App C, AS4970-2009)	Prior to demolition of structures	Project Arborist
4	Supervise all work within any TPZ's	As required prior to works proceeding	
5	Install Trunk Protection where applicable (Sect 7.2.)		
6	Tree Inspection	Bi-monthly during all construction works	
7	Final Tree Inspection	Post construction	

Table 6. Project Arborist Hold Points

Appendix A - Tree Schedule

Tree no.	1	2	3	4	5
Species	Lophostemon confertus (Queensland Brush Box)	Lophostemon confertus (Queensland Brush Box)	Lophostemon confertus (Queensland Brush Box)	Araucaria cunninghamii (Hoop Pine)	Araucaria cunninghamii (Hoop Pine)
Location	on site	on site	on site	on site	on site
DBH	50cm	50cm	30cm	25cm	30cm
DGL	60cm	50cm	35cm	25cm	25cm
Height	6m	9m	6m	5m	5m
Canopy	8m	7m	5m	5m	4m
Age	semi mature	mature	young	young	young
Life Expectancy	40+yrs	40+yrs	40+yrs	15-40yrs	15-40yrs
Crown Class	dominant	dominant	dominant	dominant	dominant
Crown Condition	excellent (5)	good (4)	average (3)	low (2-3)	average (3)
Type	native	native	native	native	native
Health & Condition					
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	A	A	Z1	Z1	Z1
Root Zone	garden	fill	grass	garden	garden
Structures	driveway	fence and pathway	fence and pathway	driveway	driveway
SRZ	2.7m	2.5m	2.1m	1.8m	1.8m
TPZ	6.0m	6.0m	3.6m	3.0m	3.6m
Proposed Works Comments	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development
Proposed Works Encr	100.0%	100.0%	100.0%	100.0%	100.0%
Proposed Status	Remove	Remove	Remove	Remove	Remove

Tree no.	6	7	8	9	10
Species	Araucaria cunninghamii (Hoop Pine)	Araucaria cunninghamii (Hoop Pine)	Araucaria cunninghamii (Hoop Pine)	Araucaria cunninghamii (Hoop Pine)	Araucaria cunninghamii (Hoop Pine)
Location	on site	on site	on site	on site	on site
DBH	25cm	25cm	30cm	25cm	20cm
DGL	30cm	25cm	35cm	25cm	20cm
Height	4m	5m	5m	5m	4m
Canopy	3m	4m	4m	4m	3m
Age	young	young	young	young	young
Life Expectancy	15-40yrs	15-40yrs	15-40yrs	15-40yrs	15-40yrs
Crown Class	dominant	dominant	dominant	dominant	dominant
Crown Condition	low (2-3)	average (3)	low (2-3)	low (2-3)	low (2-3)
Type	native	native	native	native	native
Health & Condition					
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	Z1	Z1	Z1	Z1	Z1
Root Zone	garden	garden	garden	garden	garden
Structures	driveway	driveway	driveway	driveway	driveway
SRZ	2.0m	1.8m	2.1m	1.8m	1.7m
TPZ	3.0m	3.0m	3.6m	3.0m	2.4m
Proposed Works Comments	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development	driveway upgrade and development
Proposed Works Encr	100.0%	100.0%	100.0%	100.0%	100.0%
Proposed Status	Remove	Remove	Remove	Remove	Remove

Tree no.	11	12	13	14	15
Species	Bauhinia variegata (Orchid Tree)	Melaleuca quinquenervia (Broad-leaved Paperbark)	Melaleuca quinquenervia (Broad-leaved Paperbark)	Melaleuca quinquenervia (Broad-leaved Paperbark)	Ficus microcarpa var. hillii (Hills Weeping Fig)
Location	on site	on site	on site	on site	nature strip
DBH	22cm	85cm	105cm	95cm	150cm
DGL	40cm	100cm	90cm	90cm	200cm
Height	7m	13m	15m	13m	16m
Canopy	10m	9m	8m	8m	30m
Age	semi mature	mature	mature	mature	mature
Life Expectancy	5-15yrs	40+yrs	40+yrs	40+yrs	40+yrs
Crown Class	dominant	dominant	dominant	dominant	dominant
Crown Condition	low (2-3)	good (4)	good (4)	average (3)	excellent (5)
Type	exotic	native	native	native	native
Health & Condition	thin canopy				Numerous pruning events, watersprouts, branch wounds from traffic, thin canopy
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	Z1	A	A	A	AA1
Root Zone	grass	paved	garden	garden paved	grass paved
Structures	fence	pathway	pathway	driveway	foot path and road
SRZ	2.3m	3.3m	3.2m	3.2m	4.4m
TPZ	2.6m	10.2m	12.6m	11.4m	15.0m
Proposed Works Comments	New building	no works	no works	no works	new services and delivery
Proposed Works Encr	100.0%	0.0%	0.0%	0.0%	0.0%
Proposed Status	Remove	Retain	Retain	Retain	Retain

Tree no.	16	17	18	19	20
Species	Ficus microcarpa var. hillii (Hills Weeping Fig)	Populus sp (Hybrid Poplar)	Populus sp (Hybrid Poplar)	Populus sp (Hybrid Poplar)	Populus sp (Hybrid Poplar)
Location	nature strip	on site	on site	on site	on site
DBH	125cm	30cm	25cm	30cm	30cm
DGL	140cm	35cm	30cm	30cm	40cm
Height	15m	15m	15m	15m	15m
Canopy	25m	8m	8m	8m	8m
Age	mature	semi mature	semi mature	semi mature	semi mature
Life Expectancy	40+yrs	40+yrs	40+yrs	40+yrs	40+yrs
Crown Class	dominant	codominant	intermediate	intermediate	intermediate
Crown Condition	low (2-3)	good (4)	good (4)	good (4)	good (4)
Type	native	exotic	exotic	exotic	exotic
Health & Condition	Numerous pruning events, watersprouts, branch wounds from traffic, thin canopy				
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	AA1	A	A	A	A
Root Zone	grass paved	garden	garden	garden	garden
Structures	foot path and road	sports court	sports court	sports court	sports court
SRZ	3.8m	2.1m	2.0m	2.0m	2.3m
TPZ	15.0m	3.6m	3.0m	3.6m	3.6m
Proposed Works Comments	no works	new 5 storey building	new 5 storey building	new 5 storey building	new 5 storey building
Proposed Works Encr	0.0%	100.0%	100.0%	100.0%	100.0%
Proposed Status	Retain	Remove	Remove	Remove	Remove

Tree no.	21	22	23	24	25
Species	Populus sp (Hybrid Poplar)	Platanus x hybrida (London Plane)	Platanus x hybrida (London Plane)	Platanus x hybrida (London Plane)	Platanus x hybrida (London Plane)
Location	on site	on site	on site	on site	on site
DBH	40cm	65cm	65cm	65cm	125cm
DGL	50cm	75cm	65cm	75cm	150cm
Height	18m	13m	14m	14m	18m
Canopy	15m	14m	14m	16m	24m
Age	semi mature	semi mature	semi mature	semi mature	mature
Life Expectancy	40+yrs	40+yrs	40+yrs	40+yrs	40+yrs
Crown Class	codominant	codominant	codominant	codominant	dominant
Crown Condition	good (4)	excellent (5)	excellent (5)	excellent (5)	excellent (5)
Type	exotic	exotic	exotic	exotic	exotic
Health & Condition					
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	A	A	A	A	AA1
Root Zone	garden	garden	garden	garden paved grass	paved
Structures	sports court	seating	seating	seating	pathway seating
SRZ	2.5m	2.9m	2.8m	2.9m	3.9m
TPZ	4.8m	7.8m	7.8m	7.8m	15.0m
Proposed Works Comments	new 5 storey building	music hall refurbishment	music hall refurbishment	music hall refurbishment	music hall refurbishment
Proposed Works Encr	100.0%	100.0%	100.0%	100.0%	0.0%
Proposed Status	Remove	Remove	Remove	Remove	Retain

Tree no.	26	27	28	29	30
Species	Acer negundo (Box Elder)	Platanus x hybrida (London Plane)	Liquidambar styraciflua (Liquidamber)	Liquidambar styraciflua (Liquidamber)	Celtis australis (European Hackberry)
Location	on site	on site	on site	on site	on site
DBH	70cm	45cm	60cm	45cm	50cm
DGL	70cm	45cm	65cm	50cm	50cm
Height	12m	17m	16m	15m	11m
Canopy	14m	10m	10m	9m	16m
Age	mature	semi mature	mature	mature	mature
Life Expectancy	40+yrs	40+yrs	40+yrs	40+yrs	40+yrs
Crown Class	dominant	dominant	dominant	dominant	dominant
Crown Condition	good (4)	excellent (5)	good (4)	good (4)	good (4)
Type	exotic	exotic	exotic	exotic	exotic
Health & Condition					
TPO Protected	No	Yes	Yes	Yes	No
TreeAZ	A	A	A	A	A
Root Zone	garden	garden	paved	paved	paved
Structures	pathway	pathway building	pathway seating building	pathway seating building	pathway
SRZ	2.8m	2.4m	2.8m	2.5m	2.5m
TPZ	8.4m	5.4m	7.2m	5.4m	6.0m
Proposed Works Comments	no works	adjacent building refurbishment	new seating refurbishment	new seating refurbishment	new seating refurbishment
Proposed Works Encr	0.0%	1.2%	100.0%	100.0%	100.0%
Proposed Status	Retain	Retain	Remove	Remove	Remove

Tree no.	31	32	33	34	35
Species	Ficus rubiginosa (Port Jackson Fig)	Syncarpia glomulifera (Turpentine)	Juniperus chinensis (Chinese Juniper)	Juniperus chinensis (Chinese Juniper)	Juniperus chinensis (Chinese Juniper)
Location	on site	on site	on site	on site	on site
DBH	100cm	30cm	20cm	20cm	20cm
DGL	100cm	35cm	30cm	30cm	30cm
Height	13m	6m	8m	8m	8m
Canopy	25m	5m	2m	2m	2m
Age	mature	young	mature	mature	mature
Life Expectancy	15-40yrs	40+yrs	15-40yrs	15-40yrs	15-40yrs
Crown Class	dominant	dominant	codominant	codominant	codominant
Crown Condition	low (2-3)	average (3)	average (3)	average (3)	average (3)
Type	indigenous	native	exotic	exotic	exotic
Health & Condition					
TPO Protected	Yes	Yes	Yes	Yes	Yes
TreeAZ	AA1	A	Z2	Z2	Z2
Root Zone	garden	grass	garden	garden	garden
Structures	pathway	fence and pathway	pathway	pathway	pathway
SRZ	3.3m	2.1m	2m	2m	2m
TPZ	12.0m	3.6m	2.4m	2.4m	2.4m
Proposed Works Comments	adjacent building refurbishment	driveway upgrade and development	new building envelope	new building envelope	new building envelope
Proposed Works Encr	13.7%	45.0%	100.0%	100.0%	100.0%
Proposed Status	Retain	Remove	Remove	Remove	Remove

Tree no.	36	37	38
Species	Eucalyptus nicholii (Narrow-leaved Black Peppermint)	Eucalyptus nicholii (Narrow-leaved Black Peppermint)	Melaleuca armillaris (Bracelet Honey Myrtle)
Location	on site	on site	on site
DBH	50cm	50cm	30cm
DGL	55cm	55cm	30cm
Height	16m	16m	8m
Canopy	8m	8m	6m
Age	mature	mature	mature
Life Expectancy	<5yrs	15-40yrs	15-40yrs
Crown Class	dominant	dominant	codominant
Crown Condition	low (2)	average (3)	average (3)
Type	native	native	native
Health & Condition	Decline, Thaumasticorid		
TPO Protected	Yes	Yes	Yes
TreeAZ	Z3	A	Z1
Root Zone	garden	garden	garden
Structures	pathway	pathway	pathway
SRZ	2.6m	2.1m	2.0m
TPZ	6.0m	3.6m	3.6m
Proposed Works Comments	new building envelope	new building envelope	new building envelope
Proposed Works Encr	100.0%	100.0%	100.0%
Proposed Status	Remove	Remove	Remove

Appendix B - Tree Schedule Definitions & Information

Dimensions	Diameter at breast height (1.4m) (mm) DBH Diameter at ground level (mm) DGL Approximate height x canopy spread (m) H x C			
Age Class	Sapling Mature	Young Over mature	Semi mature Senescent	
Life Expectancy	>5 years	5-15 years	15-40 years	40+ years
Crown Class	Dominant Co-dominant Intermediate Suppressed Dead	Crown extends above general canopy; not restricted by other trees. Crown forms the bulk of the general canopy but crowded by other trees. Crown extends into dominant/ co dominant canopy but quite crowded on all sides. Crown development restricted from overgrowing trees. Dead Tree		
Crown Condition / Vitality	1 Severe decline 2 Declining 3 Average / low vigour 4 Good 5 Excellent	<20% canopy density; major dead wood 20-60% canopy density; twig and branch dieback 60-90% canopy density; twig dieback 90-100% canopy density; little or no dieback or other problems 100% canopy density; no deadwood or other problems		
Location	Adjoining - Nature Strip	On Site	Adjoining Property	
Tree Type	Endemic	Species that occur naturally and are restricted to a given area.		
	Exotic	An introduced plant from outside Australia.		
	Indigenous	Species that occur naturally to a given area but may not be restricted to only that area.		
	Native	A general term referring to any plant indigenous to Australia including cultivars.		
Root Zone	Compaction Garden Grass	Kerb Lifting Pavement Mulched	Paving etc Soil level lowered Soil level raised	
Structures	Fence Garage	Footpath Verandah	Dwelling Road	Driveway Seat

Appendix C - Thumbnail Photographs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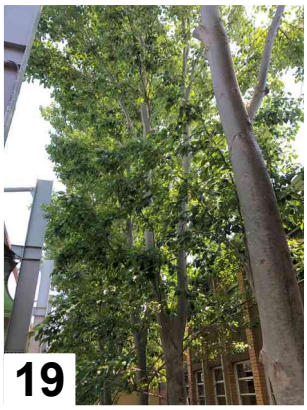
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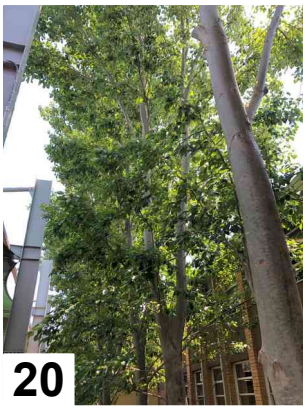
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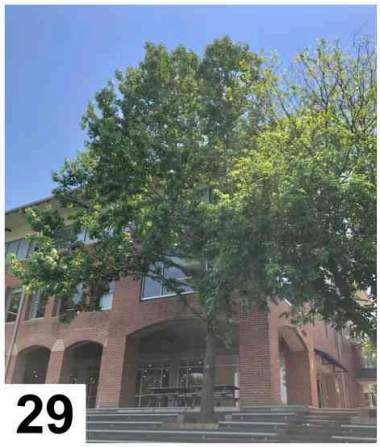
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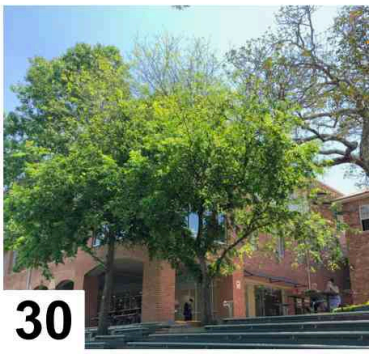
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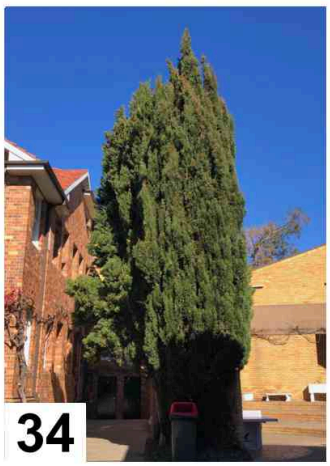
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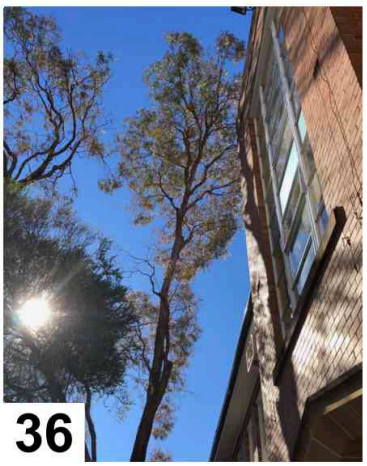
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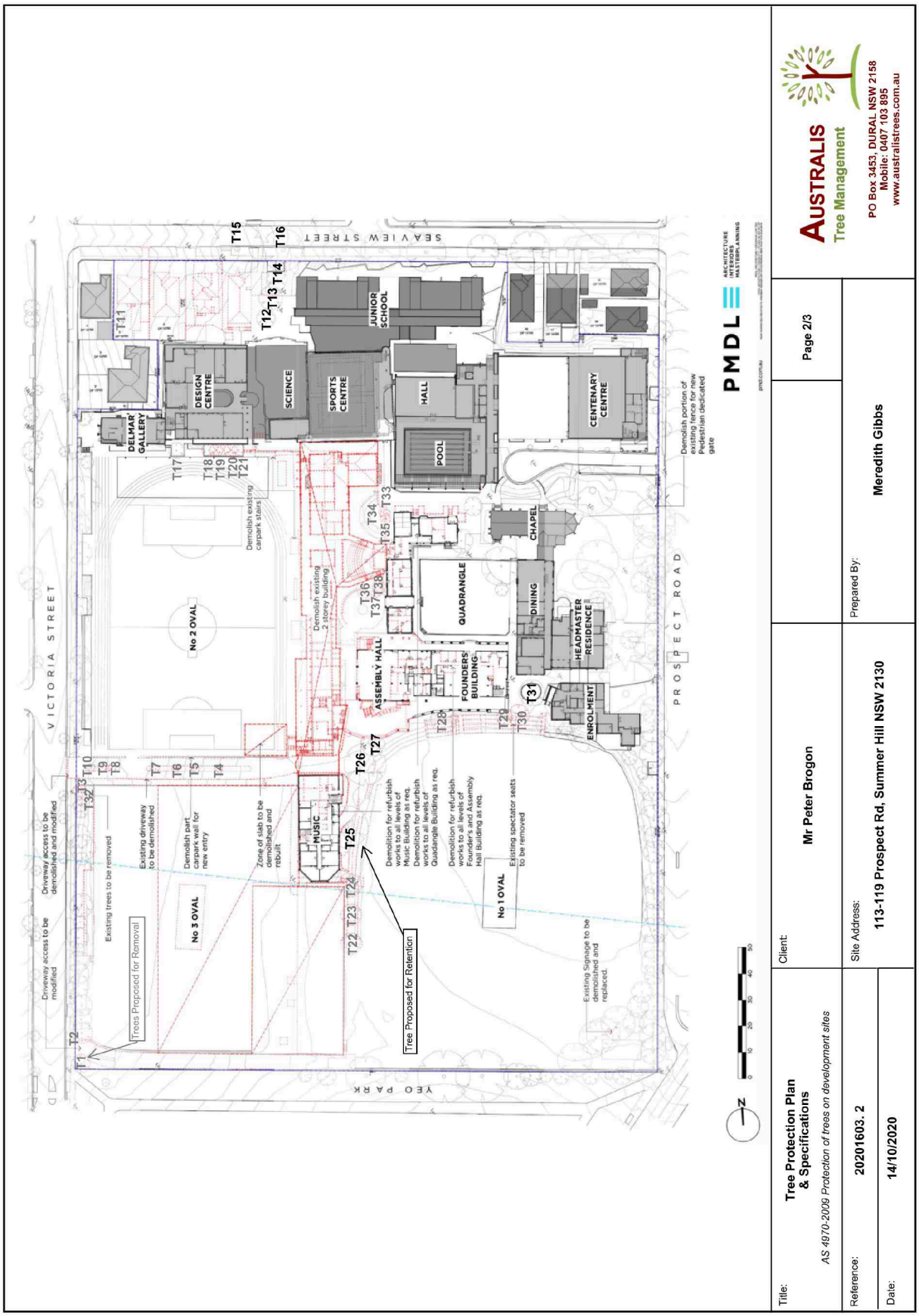
Appendix D- Proposed Site Plan



Appendix E - Tree Protection Plan

Tree Protection Plan & Specifications

AS 4970-2009 Protection of trees on development sites

Site Address:

113-119 Prospect Rd, Summer Hill NSW 2130

Client:

Mr Peter Brogon

Date:

14 October 2020

Reference:

20201603.2

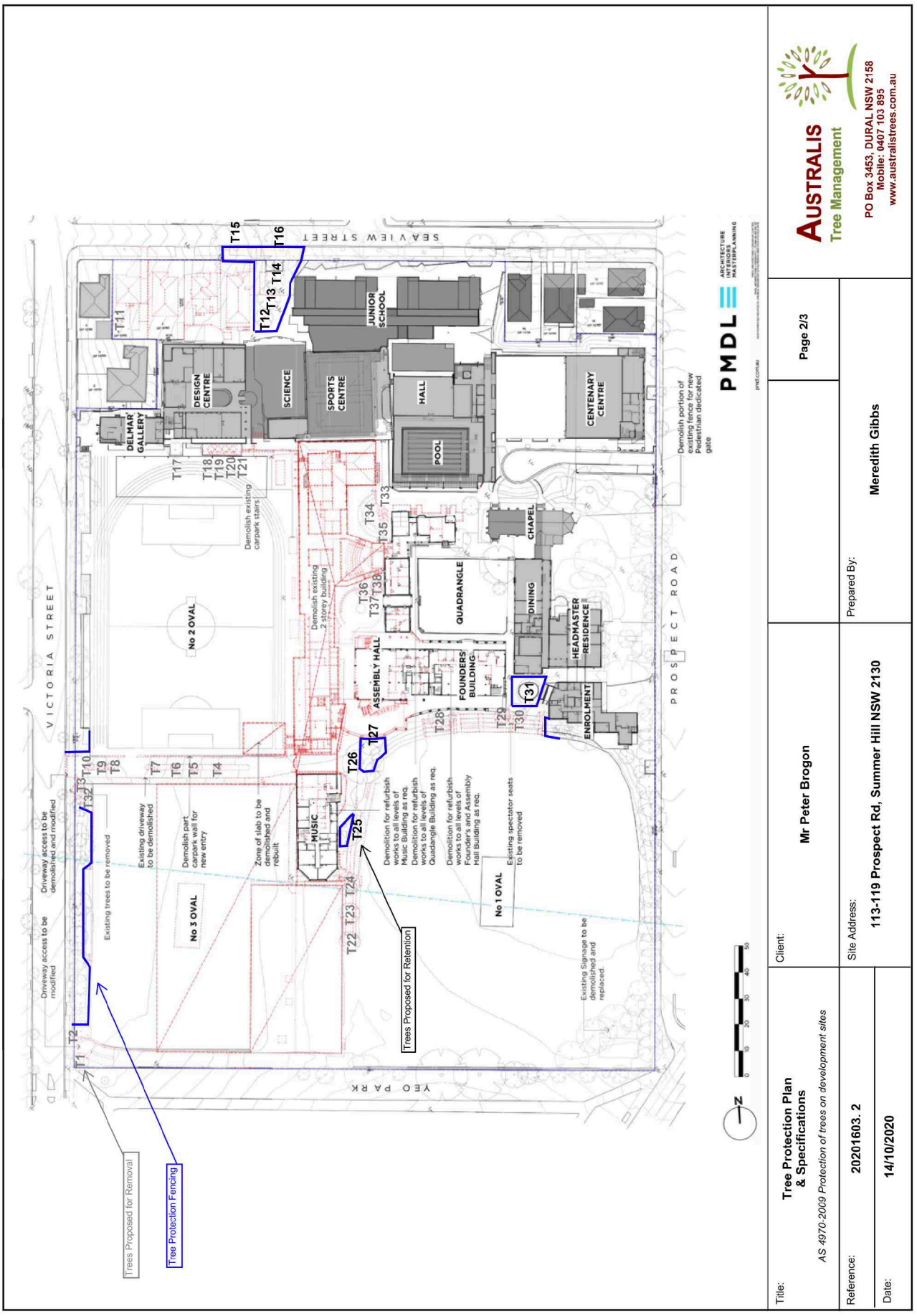
Prepared By:

Meredith Gibbs

AUSTRALIS
Tree Management

PO Box 3453, DURAL NSW 2158
Mobile: 0407 103 895
www.australistrees.com.au

Tree Schedule	
1	Lophostemon confertus (Queensland Brush Box)
2	Lophostemon confertus (Queensland Brush Box)
3	Lophostemon confertus (Queensland Brush Box)
4	Araucaria cunninghamii (Hoop Pine)
5	Araucaria cunninghamii (Hoop Pine)
6	Araucaria cunninghamii (Hoop Pine)
7	Araucaria cunninghamii (Hoop Pine)
8	Araucaria cunninghamii (Hoop Pine)
9	Araucaria cunninghamii (Hoop Pine)
10	Araucaria cunninghamii (Hoop Pine)
11	Bauhinia variegata (Orchid Tree)
12	Melaleuca quinquenervia (Broad-leaved Paperbark)
13	Melaleuca quinquenervia (Broad-leaved Paperbark)
14	Melaleuca quinquenervia (Broad-leaved Paperbark)
15	Ficus microcarpa var. hillii (Hills Weeping Fig)
16	Ficus microcarpa var. hillii (Hills Weeping Fig)
17	Populus sp (Hybrid Poplar)
18	Populus sp (Hybrid Poplar)
19	Populus sp (Hybrid Poplar)
20	Populus sp (Hybrid Poplar)
21	Populus sp (Hybrid Poplar)
22	Platanus x hybrida (London Plane)
23	Platanus x hybrida (London Plane)
24	Platanus x hybrida (London Plane)
25	Platanus x hybrida (London Plane)
26	Acer negundo (Box Elder)
27	Platanus x hybrida (London Plane)
28	Liquidambar styraciflua (Liquidamber)
29	Liquidambar styraciflua (Liquidamber)
30	Celtis australis (European Hackberry)
31	Ficus rubiginosa (Port Jackson Fig)
32	Syncarpia glomulifera (Turpentine)
33	Juniperus chinensis (Chinese Juniper)
34	Juniperus chinensis (Chinese Juniper)
35	Juniperus chinensis (Chinese Juniper)
36	Eucalyptus nicholii (Narrow-leaved Black Peppermint)
37	Eucalyptus nicholii (Narrow-leaved Black Peppermint)
38	Melaleuca armillaris (Bracelet Honey Myrtle)


SEA VIEW STREET
VICTORIA STREET
PROSPECT ROAD
YEO PARK
No 2 OVAL
No 3 OVAL
No 1 OVAL
JUNIOR SCHOOL
SCIENCE
SPORTS CENTRE
HALL
POOL
DESIGN CENTRE
DELMAR GALLERY
CENTENARY CENTRE
CHAPEL
QUADRANGLE
DINING
HEADMASTER RESIDENCE
ENROLMENT
FOUNDERS' BUILDING
ASSEMBLY HALL
MUSIC
T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38
Trees Proposed for Removal
Tree Protection Fencing
Trees Proposed for Retention
Existing trees to be removed
Existing driveway to be demolished
Demolish part carpark wall for new entry
Zone of slab to be demolished and rebuilt
Demolish existing carpark stairs
Demolish existing 2 storey building
Demolition for refurbish works to all levels of Music Building as req.
Demolition for refurbish works to all levels of Quadangle Building as req.
Demolition for refurbish works to all levels of Founder's and Assembly Hall Building as req.
Existing spectator seats to be removed
Existing Signage to be demolished and replaced.
Demolish portion of existing fence for new Pedestrian dedicated gate
Driveway access to be modified
Driveway access to be demolished and modified
PMDL
ARCHITECTURE INTERIORS MASTERPLANNING
Title: Tree Protection Plan & Specifications
AS 4970-2009 Protection of trees on development sites
Client: Mr Peter Brogon
Page 2/3
Reference: 20201603. 2
Site Address: 113-119 Prospect Rd, Summer Hill NSW 2130
Prepared By: Meredith Gibbs
Date: 14/10/2020
AUSTRALIS Tree Management
PO Box 3453, DURAL NSW 2158
Mobile: 0407 103 895
www.australistrees.com.au

Tree No.	Species	TREE AZ	TPZ (m)	Proposed
1	Lophostemon confertus (Queensland Brush Box)	A	6.0	Remove
2	Lophostemon confertus (Queensland Brush Box)	A	6.0	Remove
3	Lophostemon confertus (Queensland Brush Box)	Z1	3.6	Remove
4	Araucaria cunninghamii (Hoop Pine)	Z1	3.0	Remove
5	Araucaria cunninghamii (Hoop Pine)	Z1	3.6	Remove
6	Araucaria cunninghamii (Hoop Pine)	Z1	3.0	Remove
7	Araucaria cunninghamii (Hoop Pine)	Z1	3.0	Remove
8	Araucaria cunninghamii (Hoop Pine)	Z1	3.6	Remove
9	Araucaria cunninghamii (Hoop Pine)	Z1	3.0	Remove
10	Araucaria cunninghamii (Hoop Pine)	Z1	2.4	Remove
11	Bauhinia variegata (Orchid Tree)	Z1	2.6	Remove
12	Melaleuca quinquenervia (Broad-leaved Paperbark)	A	10.2	Retain
13	Melaleuca quinquenervia (Broad-leaved Paperbark)	A	12.6	Retain
14	Melaleuca quinquenervia (Broad-leaved Paperbark)	A	11.4	Retain
15	Ficus microcarpa var. hillii (Hills Weeping Fig)	AA1	18.0	Retain
16	Ficus microcarpa var. hillii (Hills Weeping Fig)	AA1	15.0	Retain
17	Populus sp (Hybrid Poplar)	A	3.6	Remove
18	Populus sp (Hybrid Poplar)	A	3.0	Remove
19	Populus sp (Hybrid Poplar)	A	3.6	Remove
20	Populus sp (Hybrid Poplar)	A	3.6	Remove
21	Populus sp (Hybrid Poplar)	A	4.8	Remove
22	Platanus x hybrida (London Plane)	A	7.8	Remove
23	Platanus x hybrida (London Plane)	A	7.8	Remove
24	Platanus x hybrida (London Plane)	A	7.8	Remove
25	Platanus x hybrida (London Plane)	AA1	15.0	Retain
26	Acer negundo (Box Elder)	A	8.4	Retain
27	Platanus x hybrida (London Plane)	A	5.4	Retain
28	Liquidambar styraciflua (Liquidamber)	A	7.2	Remove
29	Liquidambar styraciflua (Liquidamber)	A	5.4	Remove
30	Celtis australis (European Hackberry)	A	6.0	Remove
31	Ficus rubiginosa (Port Jackson Fig)	AA1	12.0	Retain
32	Syncarpia glomulifera (Turpentine)	Z1	3.6	Remove
33	Juniperus chinensis (Chinese Juniper)	Z1	2.4	Remove
34	Juniperus chinensis (Chinese Juniper)	Z1	2.4	Remove
35	Juniperus chinensis (Chinese Juniper)	Z1	2.4	Remove
36	Eucalyptus nicholii (Narrow-leaved Black Peppermint)	Z3	6.0	Remove
37	Eucalyptus nicholii (Narrow-leaved Black Peppermint)	A	6.0	Remove
38	Melaleuca armillaris (Bracelet Honey Myrtle)	Z1	3.6	Remove

Project Arborist Monitoring	
1	All tree related matters must be discussed with the project arborist
2	The builder / site manager is responsible to inform the project arborist of any issues during works
3	The project arborist MUST supervise all work within any Tree Protection Zone
4	The project arborist must maintain a monthly log including site visits, notes and photographs
5	The project arborist must provide feedback to the owner / builder / notes and site manager / council.
6	All tree related matters must be discussed with the project arborist
7	Any pruning required must be in accordance with AS 4373-2007 Pruning of Amenity Trees, Standards Australia and completed by a level 3 qualified arborist or higher.Climbing spikes MUST NOT be used.

Project Hold Points

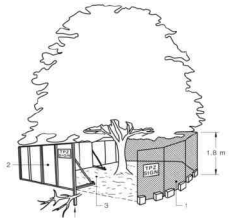
Hold Point	Task	Timing
1	Tree Protection Plan & Specifications must be onsite prior to works	Prior to demolition of structures
2	Project arborist must oversee tree retention	
3	Project arborist must inspect Tree Protection Fencing including adequate signage	
4	The builder / site manager is responsible to inform the project arborist of any issues during works	As required
5	Project arborist must inspect trees monthly	During all construction works
6	Final Tree Inspection	Post construction

Activities Excluded From Tree Protection Zones	
1	No soil level changes
2	Machine excavation including trenching
3	Excavation for silt fencing
4	Cultivation
5	Preparation of chemicals
6	Parking of vehicles and machinery
7	Refuelling
8	Dumping of waste
9	Wash down and cleaning of equipment
10	Placement of fill
11	Lighting of fires
12	Temporary or permanent installation of utilities
13	Physical damage to the tree
14	Bolt cutters or wire cutters must not be used for root pruning

Activities Permissable Within Tree Protection Zones

1	Any excavation work within a Tree Protection Zone must be monitored by the project arborist.
2	Roots measuring over 30mm in diameter within the Tree Protection Zone and outside the Structural Root Zone may be pruned at the discretion of the project arborist.
3	Root exposure must be applied with hand tools or Air Spade to prevent damage to the root system.
4	All root pruning equipment must be sharp and clean. Secateurs, loppers or pruning saws should be used and can be cleaned with methylated spirits to prevent disease and pathogen spread. No bolt cutters.
5	Any roots exposed must be wrapped or covered with hessian or cloth and kept moist to prevent drying out and sunburn until backfilling occurs.
6	Backfill must be watered in and mulched with composted leaf mulch.

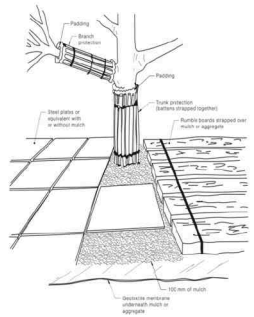
Tree Protection Fencing	
1	A 1.8m chain wire fence with concrete footings placed in accordance to tree protection zones and AS 4687. The TPZ distances are located within the tree schedule. All tree parts must be protected. This includes roots, trunks and branches.
2	Signage - "Tree Protection Zone, No Entry". With project arborist contact details to be attached to the protective fencing.
3	Within the TPZ fencing 75mm of COMPOSTED organic mulch must be applied to help retain moisture levels, suppress weed growth and reduce tree stress. Mulch must be in accordance with AS4454-2012 Composts, soil conditioners and mulches.
4	All trees must be thoroughly watered regularly throughout the development works. This is dependent on weather conditions where more water applied during hot and or winding weather.



Trunk Protection	
1	Trunk protection shall consist of hessian wrapped around the trunk.
2	Two metre lengths of timber (100 x 50mm) spaced at 100-150mm centres secured together with 2mm galvanised wire.
3	These shall be strapped around the trunk and not fixed to the tree in any way to avoid mechanical injury or damage.

Rumble Boards	
1	Ground protection If temporary access for machinery is required within the TPZ ground protection measures will be required.
2	The purpose of ground protection is to prevent root damage and soil compaction within the TPZ.
3	Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards.
4	These measures may be applied to root zones beyond the TPZ.

Foot Traffic Platforms	
1	Ground protection against foot traffic is required within the TPZ. Scaffolding with timber boards attached



Title: **Tree Protection Plan & Specifications** *AS 4970-2009 Protection of trees on development sites*	Client: **Mr Peter Brogon**		Page 3/3
Reference: **20201603. 2**	Site Address: **113-119 Prospect Rd, Summer Hill NSW 2130**	Prepared By: **Meredith Gibbs**	
Date: **14/10/2020**			

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PO Box 3453, DURAL NSW 2158
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www.australistrees.com.au

Appendix F - Glossary

Shigo, A.L. (1986) A New Tree Biology Dictionary.
*Docktor, D (2001) City of Palo Alto, Tree Technical Manual.

Bark*	All tissue outside the vascular cambium. Bark is usually divided into inner bark active phloem and aging and dead crushed phloem.
Basal	Lower trunk area of the tree.
Branch*	Organ which supports leaves, flowers and fruit.
Branch collar*	Trunk tissue that forms around the base of a branch between the main stem and the branch wood and trunk wood to meet. Formed by compaction or expansion as the girth of the branch and trunk increase.
Canopy	The part of the crown composed of the leaves and small twigs.
Cavity	An open wound, characterized by the presence of decay and resulting in a hollow (Matheny & Clarke, 1994).
Codominant stems*	Stems or trunks of about the same size originating from the same position from the main stem.
Compaction	Compaction of soils causes roots to die due to lack of oxygen and water.
Compartmentalization*	Dynamic tree defense process involving protection features that resist the spread of pathogens.
Crown*	Portion of the tree consisting of branches and leaves and any part of the trunk from which branches arise.
Decay*	Degeneration and delignification of plant tissue, including wood, by pathogens or microorganisms.
Dieback	Dieback is the reduction in the dynamic mass of a tree as twigs and branches die and are walled off by protection boundaries.
Epicormic shoots*	Shoots produced by dormant buds within the bark or stems of a tree as a result of stress, lopping or increase light. Epicormic shoots usually have a weaker form of branch attachment.
Included bark*	Inwardly formed bark at the junction of branches or codominant stems.
Kino	A dark red to brown resin-like substance produced by the trees in the genera Eucalyptus and other related genera. Kino forms when living cells are injured and infected.
Lopping*	Random cutting of branches or stems between branch union or at internodes on young trees.
Mycorrhiza	A symbiotic, nonpathogenic, or weakly pathogenic association of fungi and non woody, absorbing roots of plants. The common belief is that the mycorrhiza help the tree with mineral absorption, especially phosphorus.
Microorganisms	An organism of microscopic size. Bacteria, the tree pathogens, may be as small as 3 microns wide by 5 microns long.
Pathogen	Any agent that causes disease.
Photosynthesis	A process where chlorophyll in plants traps the energy of the sun in a molecule of carbon dioxide and water that is called sugar.
Roots	An organ of a tree that serves to maintain mechanical support, to provide water and essential elements from the soil through absorption, and to store energy reserves.
Stem*	Organ which supports branches, leaves flowers and fruit.
Tree*	Long lived woody perennial plant greater than (or potentially greater than) 3m in height with one or relatively few stems.
Trunk*	The main stem.
Wound*	An opening that is created when the bark is cut, removed or injured.

Appendix G - TreeAZ (Barrell 2016)

TreeAZ Field Sheet

Heritage: Each tree is assessed by a visual check. If it is a designated heritage tree, then it is automatically categorized as AA, and is not subjected to any of the category ZZ, Z or A considerations.
Category ZZ (unsuitable for retention): Any remaining trees that are severely compromised and unsuitable for retention, even short term, are categorized as ZZ, i.e. Dead; irreversibly declining health; irremediable structural conditions; or, causing severe inconvenience to people or structural damage.
Category Z (low quality): Any remaining trees are systematically reviewed to decide if they fit into any of the four Z subcategory groups listed in the table below.
Category A (moderate quality): Any remaining trees are automatically category A, with the possibility of being promoted to category AA.
Category AA (high quality): If a category A tree is already Large, or has the potential to become so with limited intervention, it can be promoted to category AA, at the discretion of the assessor.

Category Z: Low quality trees not worthy of being material constraint

Z	Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
	1	Size: Young or insignificant small trees, e.g. below the local size threshold for legal protection, etc
	2	Proximity, hedge or species: Exempt from legal protection because of proximity to structures, a maintained hedge or unsuitable species, e.g. scheduled noxious weed, out of character in a setting of acknowledged importance, etc
	Deteriorating health/condition: Trees that are likely to be removed within 10 years because of deteriorating health and/or structural condition	
	3	Health: Deteriorating health with little realistic prospect of recovery
	4	Crown instability: Deteriorating structural conditions where an increasing risk of failure can be temporarily addressed by reasonable intervention, e.g. storm damage, cavities, decay, included bark, wounds, excessive imbalance, etc
	5	Root instability: Deteriorating whole tree stability through poor anchorage, increased exposure to weather, etc
	Ongoing nuisance: Trees that are likely to be removed within 10 years because of unsuitable impact on people	
	6	Inconvenience: Ongoing and increasing inconvenience to residents to the extent that a locally recognised court or tribunal would be likely to authorise removal, e.g. dominance, debris, interference, etc
	7	Damage: Ongoing and increasing structural damage to property to the extent that a locally recognised court or tribunal would be likely to authorise removal, e.g. worsening damage to surfacing and structures, etc
	Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
	8	No future potential: Poor condition or location with no realistic potential for recovery or improvement, e.g. dominated by adjacent trees or buildings, poor architectural framework, etc
	9	Benefit nearby trees: Removal would benefit better adjacent trees, e.g. relieve physical interference, suppression, etc
	10	Maintenance costs: Unacceptably high maintenance costs, e.g. structural conditions requiring high levels of regular pruning, etc

NOTE: Although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate

Categories A and AA: Moderate and high quality trees suitable for retention for more than 10 years, and worthy of being a material constraint

A	All trees that are not categories ZZ or Z that can be retained with limited intervention

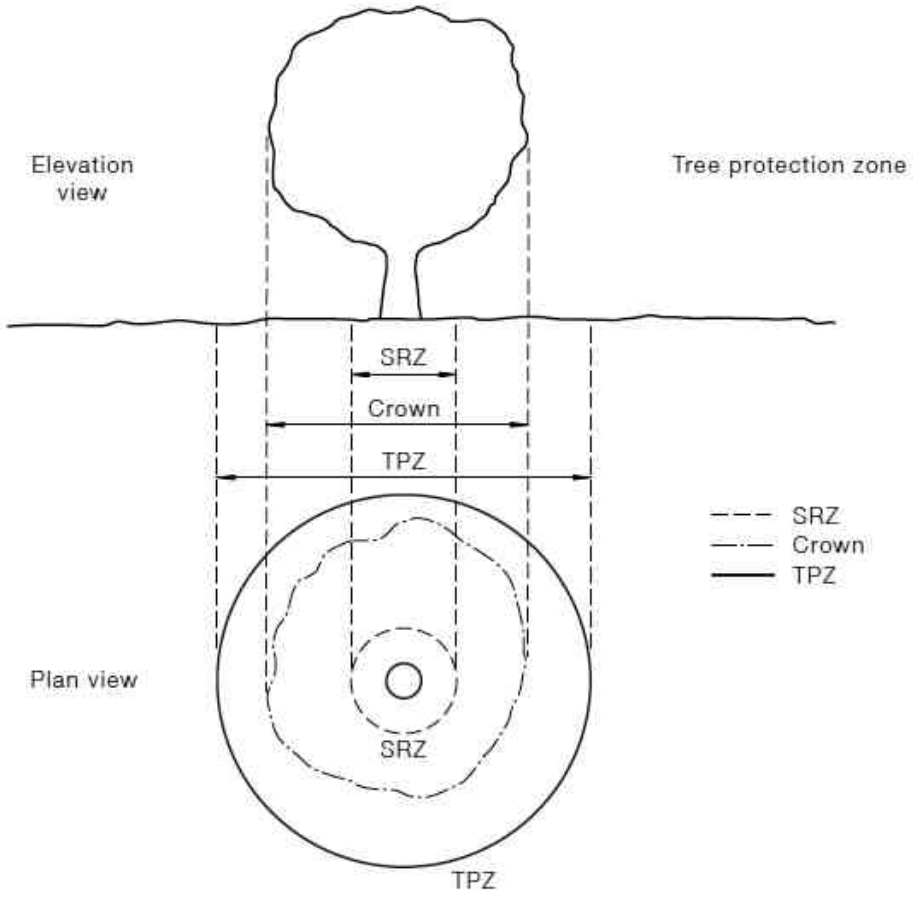
NOTE: Category A trees that are already large, or have the potential to become so, with limited intervention, can be promoted to category AA(1), at the discretion of the assessor. Designated heritage trees are automatically category AA(2). Although all category AA and A trees are sufficiently important to be material constraints, category AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

AA	1	Single category A trees or small groups which, at the discretion of assessor, can be promoted to category AA because they are already large, or have the potential to become large
	2	Designated heritage tree

Appendix H - Tree Protection Zones AS4970-2009

Tree Protection Zone

The tree protection zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.



Determining the TPZ

The **radius** of the TPZ is calculated for each tree by multiplying its DBH × 12.
TPZ = DBH×12
Where DBH = trunk diameter measured at 1.4 m above ground

Radius is measured from the centre of the stem at ground level.

A TPZ should not be less than 2m nor greater than 15m (except where crown protection is required). Clause 3.3 covers variations to the TPZ.

The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1 m outside the crown projection.

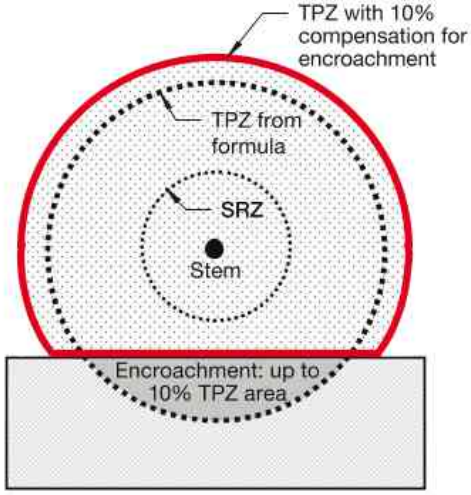
Appendix I - Tree Protection Zone Encroachments AS4970-2009

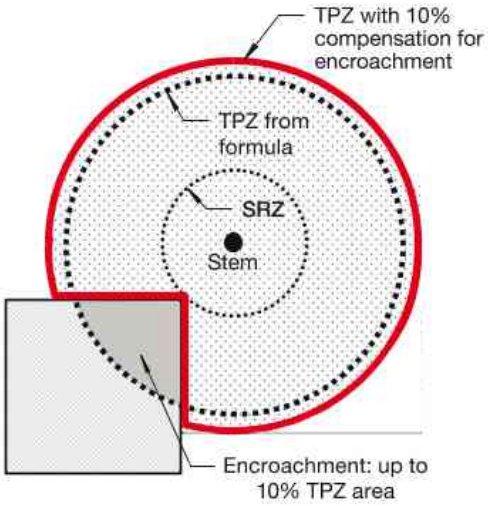
Minor Encroachments

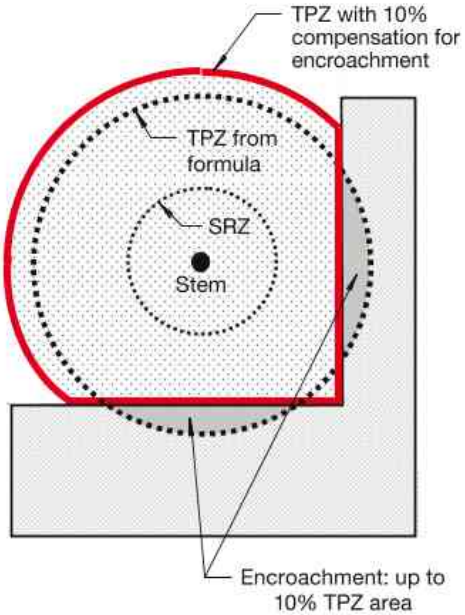
The proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.

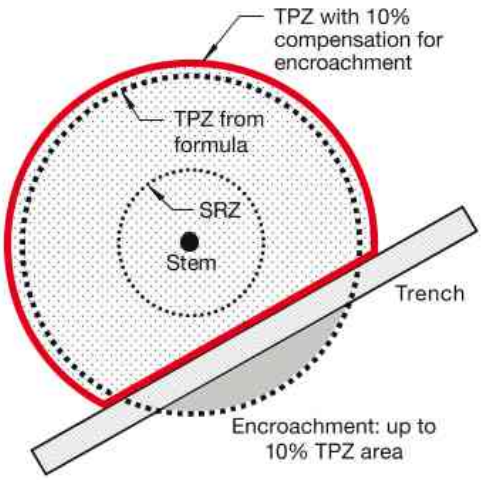
Major Encroachments

The proposed encroachment is greater than 10% of the TPZ or inside the SRZ, the project arborist must demonstrate that the tree(s) would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non-destructive methods.









Appendix J - Qualifications & Experience

Meredith Gibbs (January 2020)

Qualifications:

1999 Advanced Certificate in Urban Horticulture
2002 Horticulture Diploma (Arboriculture) Level 5
2002 Occupational Health & Safety course
2002 Risk Management course
2002 Smart Train 008397
2010 Collecting Catchment Data
2011 Quantified Tree Risk Assessment
2014 Quantified Tree Risk Assessment
2015 Horticulture Diploma (Arboriculture), Level 5
2018 White Card Number 2234996

Practical experience:

1996 - 1998 Nursery Hand - Horticulturist
1988 - 2001 Garden Maintenance - Horticulturist
1997 - 2004 Silver Springs Nursery (Owner/Operator)
2000 - Australis Tree Management (Owner/Operator)

Memberships and affiliations:

Arboriculture Australia
Australian Institute of Horticulture
Australian Plant Society of NSW
Burrendong Botanic Garden & Arboretum
International Society of Arboriculture
Quantified Tree Risk Assessment Registered User
Society of Municipal Arborists
Women in Arboriculture

Insurance:

Professional Indemnity Insurance
Liberty International Underwriters
$5,000,000.00
Policy No. HC-ME-SPC-01-104260

Public Liability Insurance
Liberty International Underwriters
$20,000,000.00
Policy No. 463763

Pro Bono Work:

Middle Dural Public School

Continuing Professional Development:

NAAA Conference, Mature Trees, 2001
Claus Mattheck Seminar 2001
ISAAC Conference - Parramatta 2004
AILA Tree Management Forum 2005
Jeremy Barrell Tree AZ & Report Writing Workshop 2006
A Practitioner's Guide to Visual Tree Assessment – Mike Ellison 2007
Quantified Tree Risk Assessment Workshop – Mike Ellison 2007
ISAAC Conference - Brisbane 2008
ISAAC Conference Workshop Dr. David Lonsdale 2008
ISAAC Conference Workshop Dr. Phillip Gibbons 2008
ISAAC Conference - Newcastle 2009
ISAAC Conference - Adelaide 2010
ISA International Conference Parramatta 2011
ISA International Conference Workshop Dr. Ken James 2011
Arboriculture Australia Annual Conference - Sunshine Coast 2014
Arboriculture Australia Annual Conference - Adelaide 2015
Arboriculture Australia Annual Conference - Canberra 2017
Jeremy Barrell Arboriculture Australia Workshop 2017
Arboriculture Australia Annual Conference - Hobart 2018
Arboriculture Australia Annual Conference - Alice Springs 2019

Past Projects

Pennant Street Castle Hill (Castle Towers) 2006
Fairway Drive, Kellyville 2012
Summit Care, Baulkham Hills 2013
105-115 Portman Street, Zetland 2016
114 Tallawong Road, Rouse Hill 2016
2 Lexington Dr Bella Vista 2016
The Hermitage - Gledswood Hills 2010-2019
105 Cudgegong Rd Rouse Hill Development 2018
33 Greenwich Road, Greenwich Redevelopment 2017-2019
Gosford Park Redevelopment 2019
Blacktown Workers Sports Club Redevelopment 2016-2019
Gregory Hills Industrial Estate 2019

Appendix K – References

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NSW Government (2018) *NSW Planning Portal.* https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address Visited 30 October 2019

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NSW Government Office of Environment & Heritage (2018) *Threatened Biodiversity Profile Search* http://www.environment.nsw.gov.au/threatenedSpeciesApp/ Visited 30 October 2019

NSW Government Office of Environment & Heritage (2018) *Search for NSW Heritage http://www.environment.nsw.gov.au/heritageapp/heritagesearch.aspx* Visited 30 October 2019

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Rowell, R.J. (1991) *Ornamental Flowering Trees in Australia.* UNSW, Sydney Australia.

Rowell, R.J. (1996) *Ornamental Conifers for Australian Gardens*. UNSW, Sydney Australia.

State Environmental Planning Policy No 19 - Bushland in Urban Areas :(pub1986-10-24)

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017: Subject Land :(pub2017-08-25)