ALLIED TREE CONSULTANCY
Level 5 and 8 Arboriculturist

# Arboricultural Impact Assessment Report

For the site address

Leppington Public School
Lot 38E and 39C DP 8979 and
Lot B DP 411211
No. 144 Rickard Road, LEPPINGTON, NSW

Prepared for

School Infrastructure
Department of Education NSW

**AUTHOR**
Warwick Varley

**STATUS**
Final January 2025

**REFERENCE** D4881

**OFFICE**
**A** PO Box 456, WOLLONGONG NSW 2520
**P** 1300 767 414
**E** admin@alliedtrees.com.au
**W** www.alliedtrees.com.au

## ABSTRACT

This Arboricultural Impact Assessment is prepared to support the proposed activity at Leppington Public School, 144 Rickard Road, Leppington. This is prepared to support the proposed activity that forms part of a REF approval and involves upgrades to existing school infrastructure. The site contains one hundred and nineteen (119) trees located on, and adjacent to it, and discusses the viability of these trees based on the proposed activity. The trees are a combination of remnant and planted where the remnant trees are classed as High significance based on the vegetation community to which they form. This community is classed as a Critically Endangered Environmental Community and is protected by commonwealth legislation.

In summary, the following trees (Trees No. Trees No. 5-10, 16, 17, 31-36, 40-62, 67-89, 90-96, 100, 110-113, 115-117, 119-126, 129-131, 133-137, 141-144 and 148), ninety-five (95) can be retained based on conditions assigned to the work methodology, while these remaining trees (Trees No. 4, 14, 15, 18-31, 63-66, 128 and 146-147), twenty-four (24) in total will require removal to accommodate the design.

No mitigation has been proposed for bushfire protection. In response to this report, the assigned contractor shall provide a Tree Management Plan to protect the trees during construction.

## TABLE OF CONTENTS



**THE USE OF THIS REPORT IS RESTRICTED FOR THOSE TREES MENTIONED WITHIN FOR WHICH THE REPORT WAS ISSUED.**

## COPYRIGHT

## 1.0 Introduction

**1.1** This Arboricultural Impact Assessment Report (AIA) has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of Leppington Public School (APS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The proposed activity is for upgrades to the existing LPS at 144 Rickard Road, Leppington, NSW, 2179 (the site).

**1.2** The purpose of this report is to determine the viability of the site trees based on the proposed activity. This report includes one hundred and nineteen (119) trees located on and adjacent to the lot as described in Section 1.3. As part of this, the report shall address the:

- species' identification, location, dimensions, and condition;
- SULE (Safe Useful Life Expectancy) and STARS (Significance of a Tree Assessment Rating System) rating;
- discussion and impact of the proposed works on each tree;
- tree protection zones and protection specifications for trees recommended for retention.

### 1.3 Site Assessment

Leppington Public School is located at 144 Rickard Road, Leppington on the eastern side of Rickard Road, north of Ingleburn Road and south of Byron Road. The site has an area of 3.013 ha and comprises four allotments, legally described as:

- Lot 1 DP 127446
- Lot 1 DP 439310
- Lot 38E DP 8979
- Lot 39C DP 8979

The site currently comprises an existing co-education primary (K-6) public school with:

- 14 permanent buildings;
- 11 demountable structures (including 2 male/female toilet blocks);
- interconnected paths;
- covered walkways;
- play areas; and
- at-grade parking.

The site also contains locally listed heritage buildings along its southern boundary.

The buildings are single-story, and there is a sports oval in the eastern portion of the site. The existing buildings are clustered in the northwestern part of the site.


**Figure 1, Aerial image of the site, outlined in red (Source: NearMap, taken 24 Sept 2024)**

## 1.4 Proposed Activity Description

The proposed activity involves upgrades to the existing LPS, including the following:

- Demolition of existing structures and trees;
- Erection of a new 3-story teaching space along the northern boundary that includes 20 permanent teaching spaces and three support teaching spaces;
- Erection of a new hall and COLA comprising of a hall, canteen and OSHC hub towards the eastern boundary of site;
- Extension of the existing library (Building E) and adjoining playground;
- Upgraded sports and play facilities;
- Relocation of the Yarning Circle;
- Erection of a substation and upgrades to site services;
- Footpaths, fencing and associated works; and
- Landscaping.

The intent of the activity is to allow for upgrades to LPS that will provide a 'CORE 35' school standard in line with the Educational Facilities Standards and Guidelines (EFSG). The activity will increase the capacity of the school

from 430 to 621 students. Figure 2 below show the scope of works for the proposed activity.

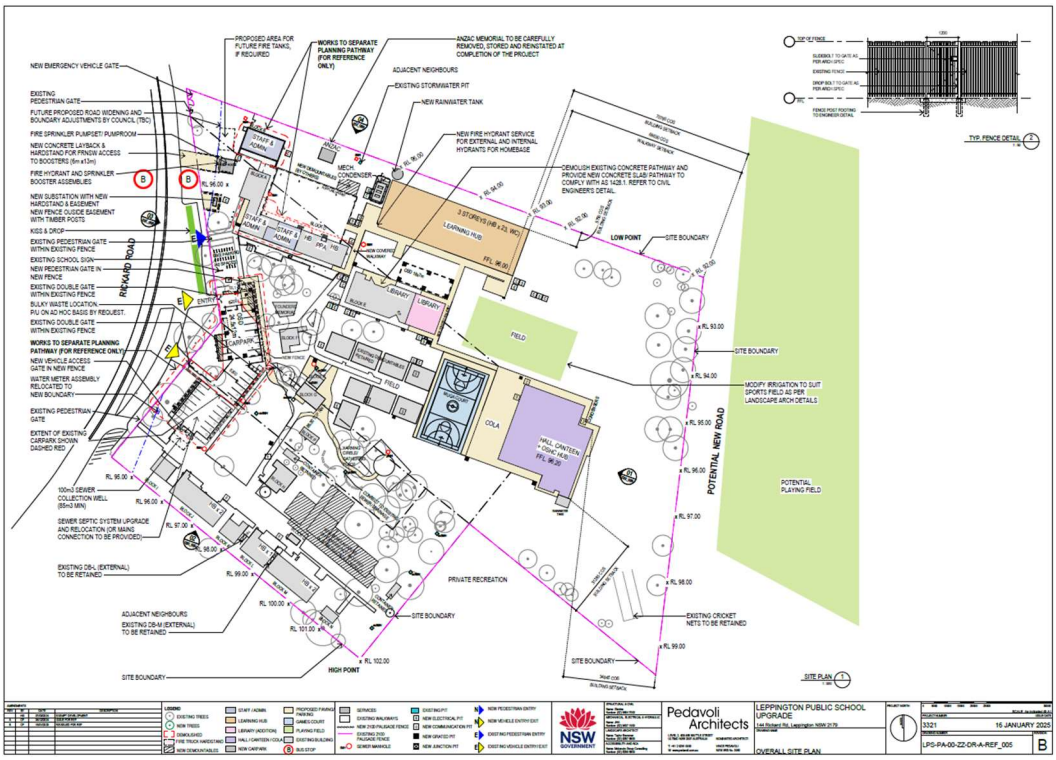



**Figure 2 Proposed Activity (Source: Pedavoli Architects, Overall Site Plan (Rev B))**

## 2.0 Standards

**2.1** Allied Tree Consultancy provides an ethical and unbiased approach to all assignments, possessing no association with private utility arboriculture or organisations that may reflect a conflict of interest.

**2.2** This report must be made available to all contractors during the tendering process so that any cost associated with the required works for the protection of trees can be accommodated.

**2.3 It is the responsibility of the project manager to provide the requirements outlined in this report relative to the Protection Zones, Measures (Section 7.0) and Specifications (Section 8.0) to all contractors associated with the project before the initiation of work**.

**2.4** All tree-related work outlined in this report is to be conducted in accordance with the:

- Australian Standard – AS4373; Pruning of Amenity Trees.
- Guide to Managing Risks of Tree Trimming and Removal Work[1].
- All tree works must be carried out at a tertiary level (minimum Certificate-level 3) qualified and experienced (minimum five years) arboriculturist.

[1] Safe Work Australia; July 2016; Guide to Managing Risks of Tree Trimming and Removal Work, Australia

- For any works in the vicinity of electrical lines, the arboriculturist must possess the ISSC26 endorsement (Interim guide for operating cranes and plant in proximity to overhead powerlines).

**2.5** As a minimum requirement, all trees recommended for retention in this report must have removed all deadwood, hangers and branch stubs to be pruned to the branch collar. This work must comply with the local government tree policy (Camden City Council) and Section 2.4.

**2.6** Any tree stock subject to conditions for works carried out in this report must be supplied by a registered Nursery that adheres to the AS 2303; 2015[2].

- All tree stock must be of at least 'Advanced' size (minimum 75lt) unless otherwise requested.
- All tree stock requested must be planted with adequate protection. This may include tree guards (protect stem and crown) and if planted in a lawn area, a suitable barrier (planter ring) of an area, at least, $1m^2$ to prevent grass from growing within the area adjacent to the stem.

## 3.0 Disclosure Statement

Trees are living organisms and, for this reason, possess natural variability. This cannot be controlled. However, risks associated with trees can be managed. An arborist cannot guarantee that a tree will be safe under all circumstances, nor predict the time when a tree will fail. To live or work near a tree involves some degree of risk, and this evaluation does not preclude all the possibilities of failure.

## 4.0 Methodology

**4.1** The following tree assessment was undertaken using criteria based on the guidelines issued by the International Society of Arboriculture.

**4.2** The format of the report is summarised below;

**4.2.1** **Plan 1;** Tree Location Relative to Site: This is an unscaled plan reproduced from the Survey Plan as referenced in Section 4.4.1, depicting the area of assessment.

**4.2.2** **Table 1;** This table compiles the tree species, dimensions**,** brief assessment (history, structure, pest, disease or any other variables subject to the tree), significance, allocation of the zones of protection (i.e., Tree Protection Zone[3] ;TPZ and Structural Root Zone; SRZ) for each tree illustrated in Plan 1, Section 5.0. All measurements are in metres.

[2] Australian Standard; 2015, AS2303, Tree stock for landscape use, Australia

[3] Australian Standard, 4970; 2009 – Protection of Trees on Development Sites, Australia

**4.2.3 Discussion relating to the site assessment and proposed works regarding the trees.**

**4.2.4 Protection Specification**; Section 8.0 details the requirements for that area designated as the Tree Protection Zone (TPZ), for those trees recommended for retention.

**4.3** The opinions expressed in this report, and the material, upon which they are based, were obtained from the following process and data supplied:

**4.3.1** The initial site assessment occurred on the 25th and 26th July 2022 using the method of the Visual Tree Assessment[4]. This has included a Level 2 risk assessment, being a *Basic Assessment*[5]. The assessment has been conducted by Geoff Beisler [6] on behalf of *Allied Tree Consultancy*. This assessment formed part of a Preliminary Arboricultural Assessment Report, and assisted in identifying trees that are considered significant for the intent of retaining and designing around.

A follow-up assessment and meeting occurred on 14th December 2023 by Warwick Varley[7] on behalf of *Allied Tree Consultancy*. This has included discussion relative to areas of work, location of demountable buildings, car park modification, and establishing trees that have been removed from the site since the initial assessment. Tree removal since the initial assessment has been described in Section 7.0, and the Arborist statement issued, referenced in Section 4.4.5. These tree numbers have been retained in the plans, although highlighted (Section 5.0), and removed from Table 1, Section 6.0. That is, the tree numbering is no longer sequential.

**4.3.2** Trees included in this report are those that conform to the description of a prescribed tree by the local government policy.

Trees not included

Since the initial assessment conducted for the Preliminary assessment report (25th and 26th July 2022), numerous trees have been removed from site for unknown reasons. These trees have been described in an Arborist Statement[8] (see Section 4.4.6) and include, trees No. 1, 2, 3, 11-13, 37-39,

[4] Mattheck, C. Breloer, H.,1994, The Body Language of Trees – A handbook for failure analysis The Stationary Office, London

[5] Dunster J.A., 2013, Tree Risk Assessment Manual, International Society of Arboriculture, 2013, USA

[6] Consulting Arborist, Diploma of Arboriculture (level 5)

[7] Consulting Arborist, Graduate Certificate and Diploma of Arboriculture (level 8 and 5)

[8] Allied Tree Consultancy, February 2024, Arboricultural Statement; Trees removed since the last assessment, Reference: D4881.1, Pages: 7

97-99, 101-109, 114, 118, 127, 132, 138, 139, 140, and 145. These trees have been removed from the Plans, Section 5.0-5.4 and Table 1, Section 6.0, therefore numbering is no longer sequential.

**4.3.3** All measurements, unless specified otherwise are taken from the tree centre.

**4.3.4** Tagging of trees with scribed aluminium tags nailed to the trees at chest level and facing the centre of the site.

**4.3.5** Raw data from the preliminary assessment, including the specimen's dimensions, were compiled using a diameter tape, height clinometer, angle finder, compass, steel probes, Teflon hammer, binoculars, and recording instruments.

**4.3.6** Plans 1-5, Sections 5.0-5.4, provide the location of each tree, with a corresponding number relative to Table 1 (Section 6.0) for means of interpretation within this report.

### 4.4 Documentation provided

The following documentation has been provided to Allied Tree Consultancy and utilised within the report.

#### 4.4.1 Surveyor

Drawn by *Monteath and Powys*
Date: 30 June 2022
Reference: 22/0216
Drawing No: 5 Sheets, revision 6 (10 May 2024)

#### 4.4.2 Design

Drawn by *Pedavoli Architects P/L*
Date: 16 January 2025
Reference: 3321
Drawing No: LPS-PA-00-00-DR-A-REF, Rev. B

#### 4.4.3 Engineering (Civil)

Drawn by *Stantec P/L*
Date: 17 January 2025
Reference: 304000722
Drawing No: LPS-STA-00-XX-DR-C Issue G

#### 4.4.4 Landscape

Drawn by *Taylor Brammer P/L*
Date: 16 January 2025

Reference: 22-039W
Drawing No: 4 Sheets, Revision A

**4.4.5 Document; Biodiversity Initial Findings**

Author *ERM*
Date: 20 January 2025
Reference: SI.P0627186-02&03, Version 3.

**4.4.6 Document**

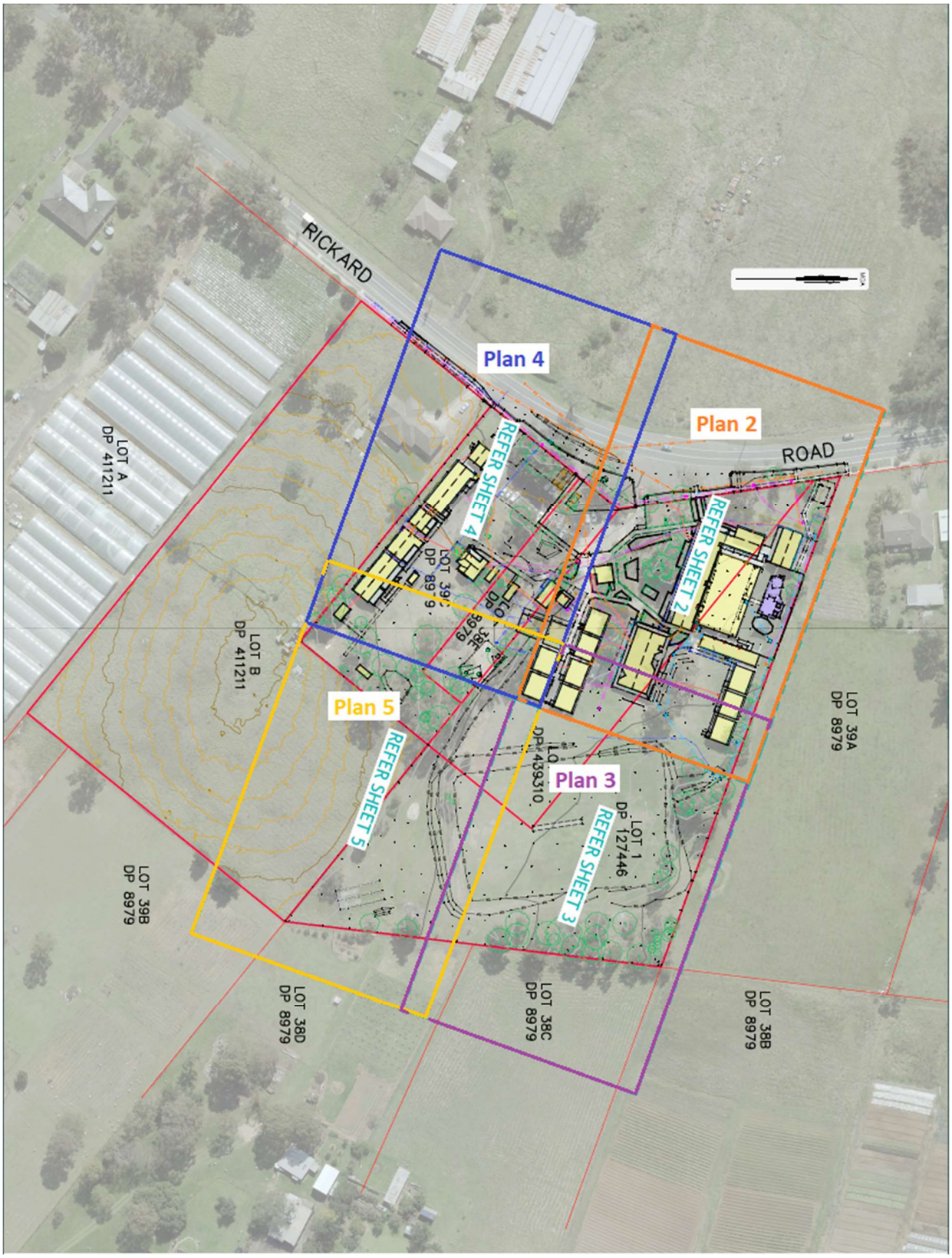
Bushfire Assessment Report
Author: *Blackash*
Date: 30 January 2025
Version: Vo.1
Page number: 45 pages

**4.5 Limitations of the assessment/discussion process**

**4.5.1** Any tree, regardless of apparent defects, would fail if the forces applied exceed the strength of the tree or its parts, for example, in extreme storm conditions.

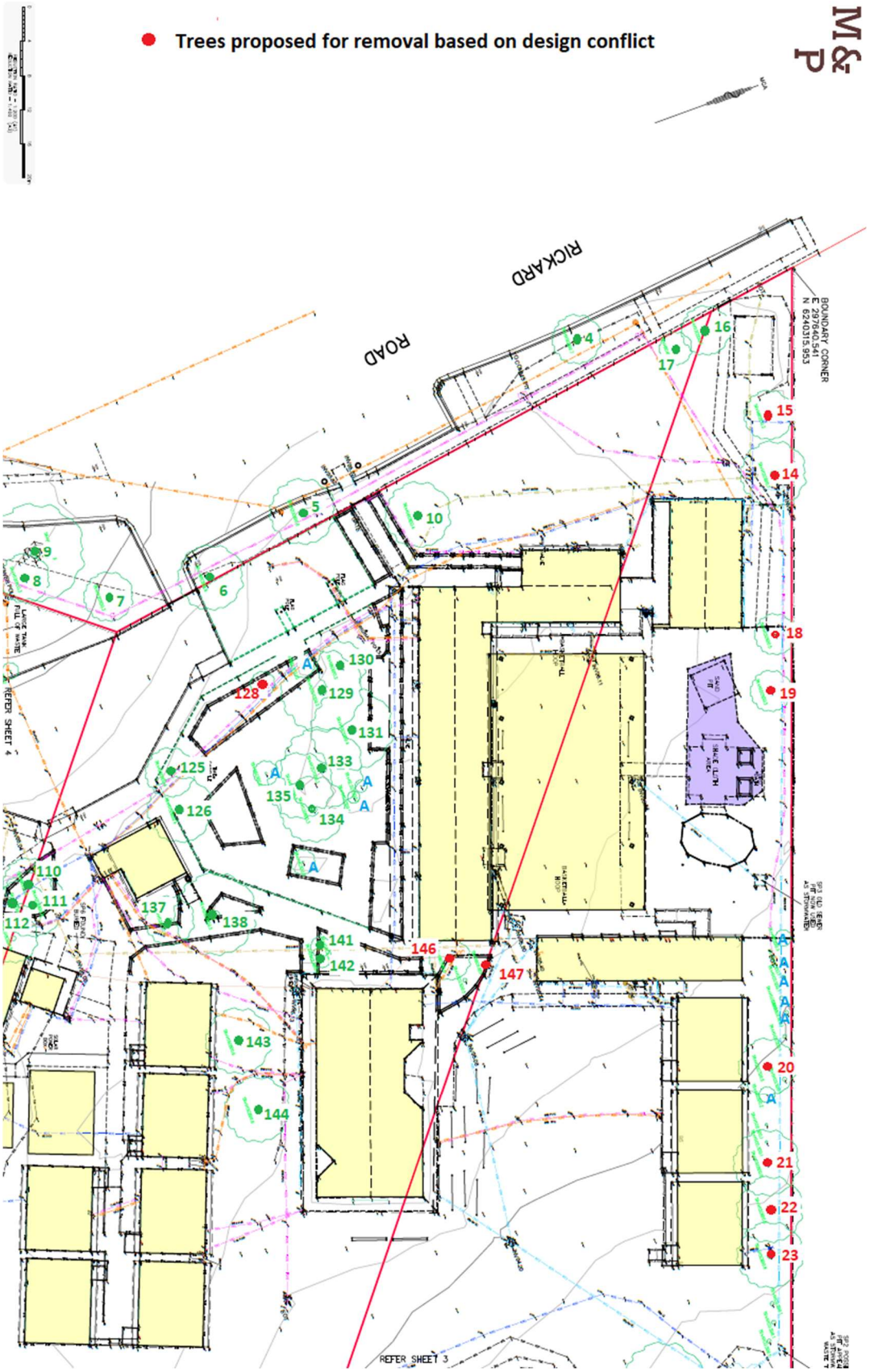
**4.5.2** The assessment has been limited to that part of the tree which is visible, existing from the ground level to the crown. Root decay can exist and in some circumstances provide no symptoms of the presence. This assessment responds to all the symptoms provided by a tree; however, it cannot provide a conclusive recommendation regarding any tree that may have extensive root decay that leads to windthrow without the appropriate symptoms.

## 5.0 Plan 1; Area of assessment



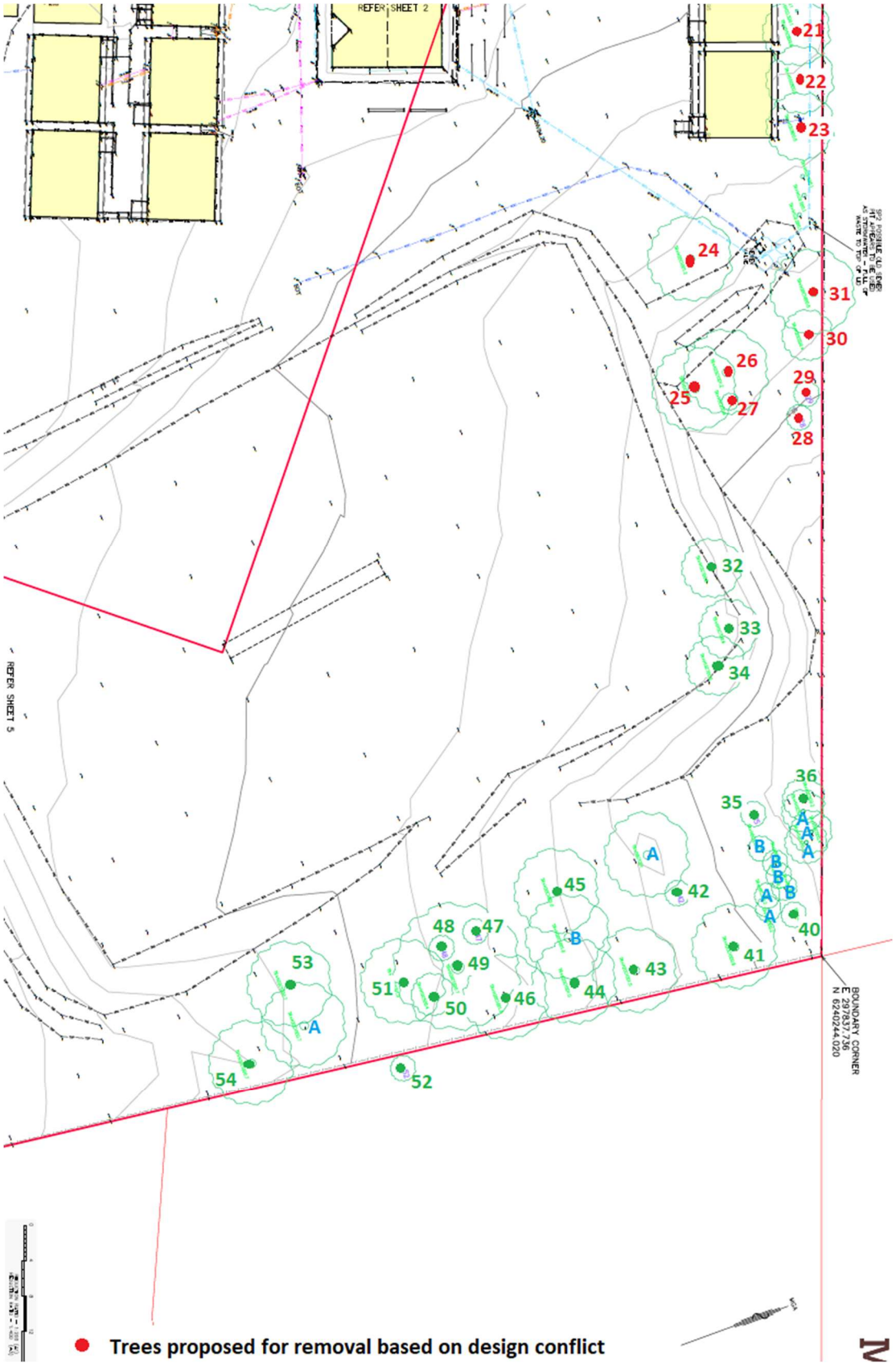

Not to scale
Source: Adapted from *Monteath and Powys,* see Section 4.4.1

## 5.1 Plan 2; Area of assessment illustrating tree location



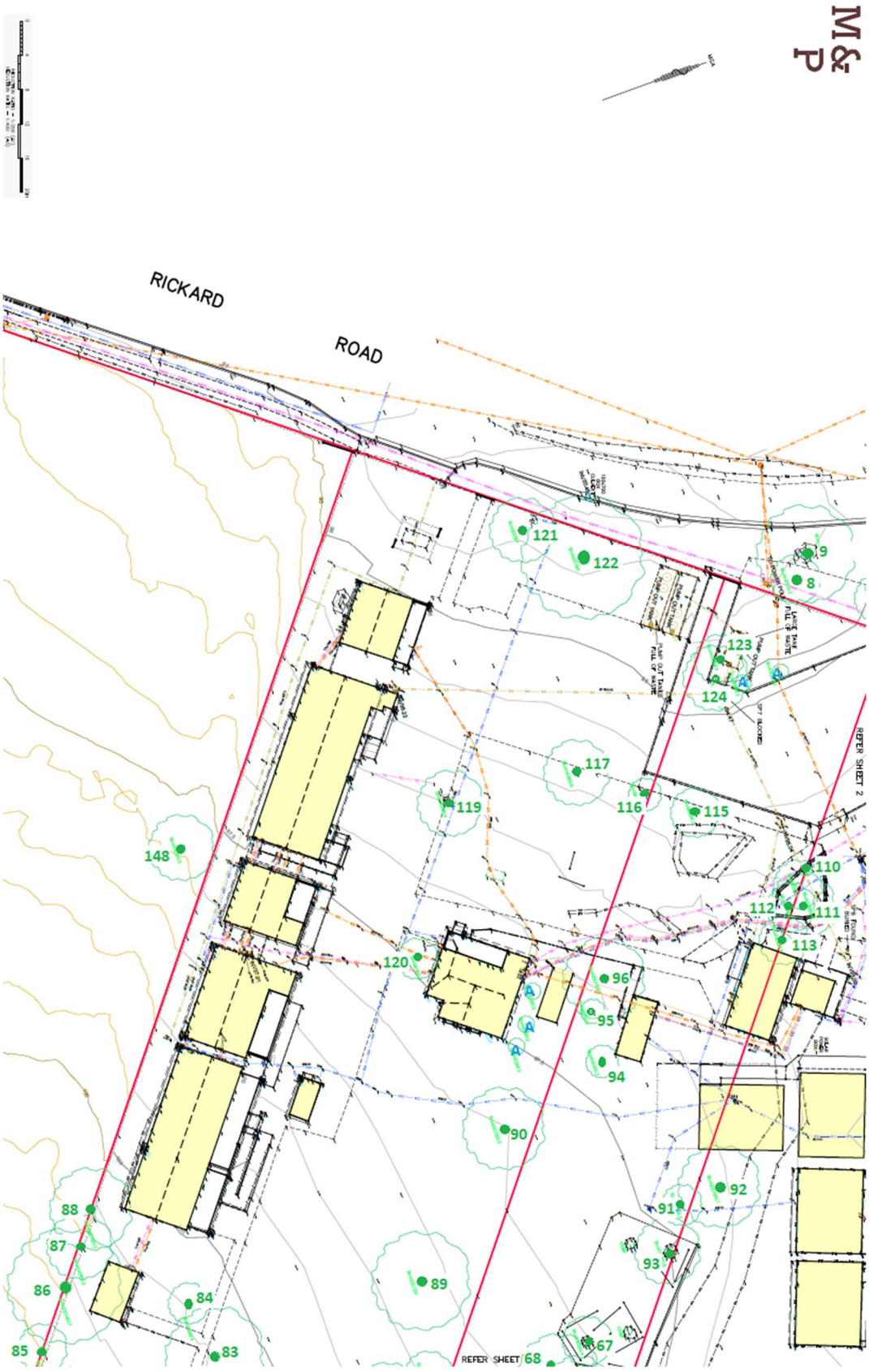

Trees labelled A, see Section 7.0
Not to scale.
Source: Adapted from *Monteath and Powys,* see Section 4.4.1.

## 5.2 Plan 3; Area of assessment illustrating tree location



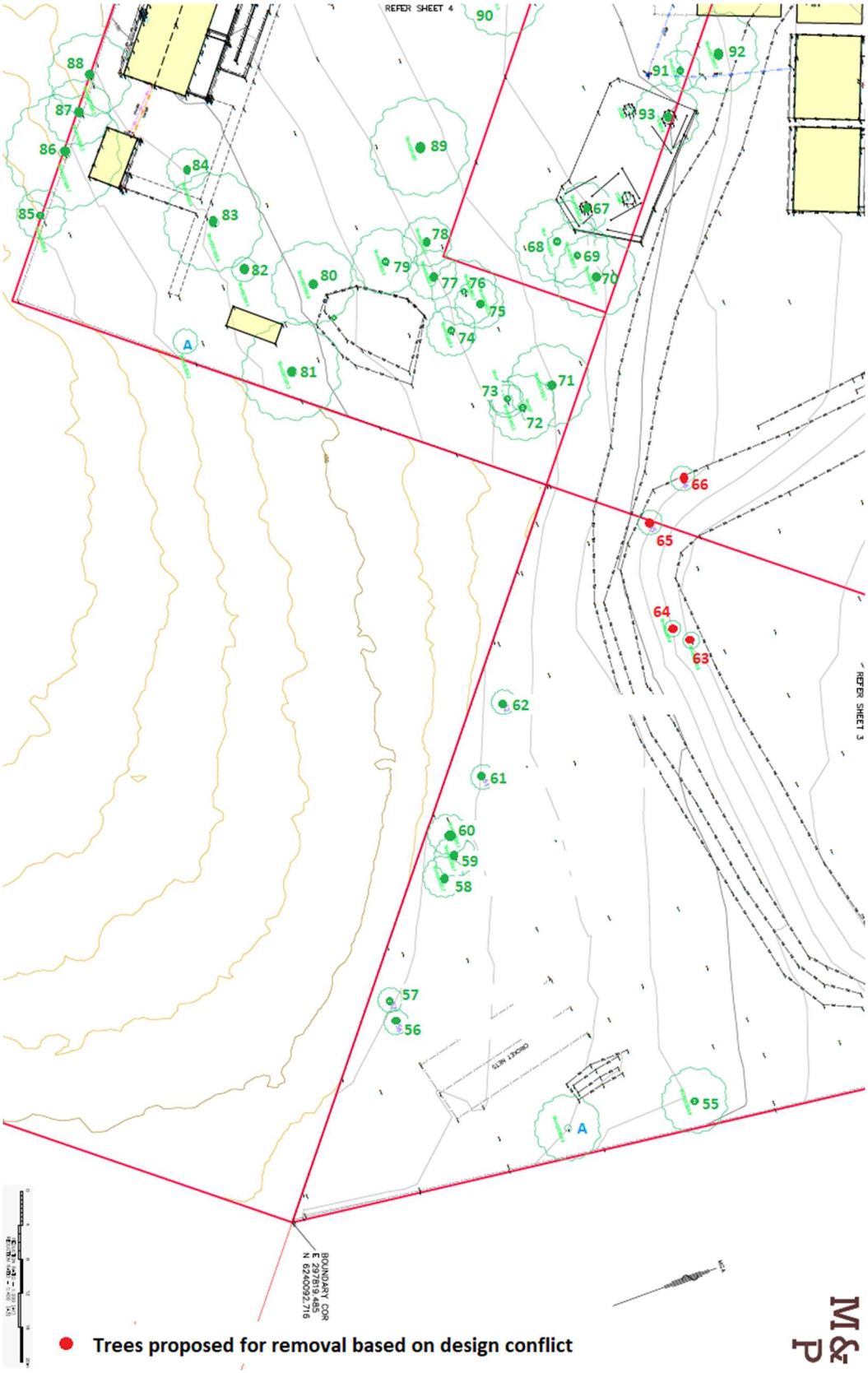

Trees labelled A and B, see Section 7.0
Not to scale.
Source: Adapted from *Monteath and Powys,* see Section 4.4.1.

### 5.3 Plan 4; Area of assessment illustrating tree location




Trees labelled A, see Section 7.0
Not to scale.
Source: Adapted from *Monteath and Powys,* see Section 4.4.1.

## 5.4 Plan 5; Area of assessment illustrating tree location




Trees labelled A, see Section 7.0
Not to scale.
Source: Adapted from *Monteath and Powys,* see Section 4.4.1.

## 6.0 Table 1 – Tree Species Data

Terminology/references provided in Appendix A.

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4** | *Eucalyptus moluccana* Grey Box | 14 | 0.34 0.23 0.27 | 4 x 6 | M | D | N | A | **2A/2D** C,E | **High** | **5.90** | **2.46** |
| **Assessment** This (apparently) council owned tree is composed of 2 stems; the westerly stem has a long, sunken strip (southern side), between an old deadwood stub and an aged pruning wound at 3.5m. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **5** | *Eucalyptus moluccana* Grey Box | 15 | 0.67 | 10 x 10 | M | D | Sym | A-B | **2A/2D** | **High** | **8.04** | **2.80** |
| **Assessment** This (apparently) council owned tree presents minor decline. Excessive crown lift pruning has been undertaken and services have been installed in the SRZ. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **6** | *Eucalyptus tereticornis* Forest Red Gum | 14 | 0.60 | 8 x 9 | M | D | Sym | A | **1B** | **High** | **7.20** | **2.67** |
| **Assessment** This (apparently) council owned tree presents as typical of the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **7** | *Eucalyptus moluccana* Grey Box | 9 | 0.26 | 8 x 6 | M | D | Sym | A | **1B** | **High** | **3.12** | **1.88** |
| **Assessment** This (apparently) council owned tree presents as typical of the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **8** | *Eucalyptus moluccana* Grey Box | 10 | 0.31 | 8 x 5 | M | I | S | A, B | **2A/2D** C,E | **High** | **3.72** | **2.02** |
| **Assessment** This (apparently) council owned tree presents as typical of the species, however minor decline is evident. A long wound on | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| the lower stem is almost occluded; resonance suggests a cavity. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | | |
| **9** | *Eucalyptus tereticornis* Forest Red Gum | 15 | 0.74 | 10 x 11 | M | D | Sym | A | **1B**[C,E] | **High** | **8.88** | **2.92** |
| **Assessment** This (apparently) council owned tree presents as typical of the species. Apparent wounding is present in the codominant union at 8m; this cannot be adequately assessed from the ground and would require level 3 assessment (aerial assessment) to provide further details. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **10** | *Corymbia citriodora* Lemon Scented Gum | 12 | 0.32 | 7 x 8 | M | D | Sym | A | **1B** | **Medium** | **3.84** | **2.05** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **14** | *Pinus radiata* Monterey Pine[A] | 10 | 0.64[B] | 8 x 9 | M | D | Sym | A | **2A** | **Medium** | **7.68** | **2.74** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **15** | *Eucalyptus scoparia* Wallangarra White Gum[A] | 6 | 0.27[B,C] | 6 x 6 | M | I | Sym | A | **3D**[C,E] | **Low** | **3.24** | **1.91** |
| **Assessment** This tree is composed of 2 stems at the base; the western stem is dead, i.e., is a large deadwood stub is entering the basal region and requires removal. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **16** | *Casuarina cunninghamiana* River Oak | 7 | 0.17 0.19 | 3 x 3 | M | D | Sym | A | **1B** | **Medium** | **3.06** | **1.86** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **17** | *Melaleuca styphelioides* Prickly-leaved Paperbark | 5 | 0.27[B,C] | 3 x 3 | M | I | Sym | A | **1B** | **Medium** | **3.24** | **1.91** |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **18** | *Eucalyptus elata* [A] River Peppermint | 8 | 0.29 | 5 x 4 | M | C | Sym | A | **1B** | **High** | **3.48** | **1.97** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **19** | *Eucalyptus elata* [A] River Peppermint | 9 | 0.26 | 5 x 4 | M | C | Sym | A | **1B** | **Medium** | **3.12** | **1.88** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **20** | *Eucalyptus elata* [A] River Peppermint | 10 | 0.35 | 4 x 5 | M | D | Sym | A | **2A** | **Medium** | **4.20** | **2.13** |
| **Assessment** This tree presents as typical for the species. Acute angle unions are present | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **21** | *Eucalyptus elata* [A] River Peppermint | 10 | 0.25 | 4 x 4 | M | C | Sym | A | **1B** | **Medium** | **3.00** | **1.85** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **22** | *Eucalyptus tereticornis* Forest Red Gum[A] | 8 | 0.28 | 4 x 3 | M | C | W | A | **2D**[C,E] | **High**[C,E] | **3.36** | **1.94** |
| **Assessment** This tree presents an aged, open wound, lower stem, southern side. Frass is present, and swelling is evident. This tree would require level 3 assessment (internal diagnostics) to provide further details of the internal issue. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **23** | *Eucalyptus grandis* Flooded Gum[A] | 10 | 0.50 | 1 x 8 | M | C | Sym | A | **3D**[C,E] | **Low** | **6.00** | **2.47** |
| **Assessment** This tree presents as typical for the species, however, is conflicting with building adjacent. The decay pathogen, *Phellinus*, is | | | | | | | | | | | **Development impact** See Section 7.1.2 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| located within an aged wound at 2.8m, eastern side. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation. | | | | | | | | | | | | |
| **24** | *Casuarina cunninghamiana* River Oak | 10 | 0.78[B] | 9 x 9 | M | C | Sym | A | **1B** | **High** | **9.36** | **2.98** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **25** | *Callistemon viminalis* Weeping Red Bottlebrush | 5 | 0.37[B] | 5 x 6 | M | I | S | A | **2A** | **Medium** | **4.44** | **2.18** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **26** | *Casuarina cunninghamiana* River Oak | 11 | 0.95[B,C] | 10 x 11 | M | C | Sym | A | **1B** | **High** | **11.40** | **3.24** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **27** | *Callistemon viminalis* Weeping Red Bottlebrush | 5 | 0.27 0.14[B] | 5 x 4 | M | S | NE | A | **2A** | **Medium** | **3.65** | **2.01** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **28** | *Eucalyptus elata* [A] River Peppermint | 9 | 0.28 | 4 x 4 | M | C | E | A | **2A** | **Medium** | **3.36** | **1.94** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. An acute angle union is present at 6m. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **29** | *Eucalyptus elata* [A] River Peppermint | 9 | 0.27 | 4 x 3 | M | C | N | A | **1B** | **Medium** | **3.24** | **1.91** |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **30** | *Eucalyptus elata* [A] River Peppermint | 11 | 0.30 | 4 x 4 | M | C | Sym | A | **1B** | **Medium** | **3.60** | **2.00** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **31** | *Casuarina cunninghamiana* River Oak | 11 | 0.54 | 8 x 8 | M | C | Sym | A | **1A** | **Medium** | **6.48** | **2.55** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **32** | *Eucalyptus elata* [A] River Peppermint | 10 | 0.35 | 5 x 5 | M | D | Sym | A | **2D** | **Medium** | **4.20** | **2.13** |
| **Assessment** This tree reveals a large open wound from a failed codominant union at 4m, east side. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **33** | *Eucalyptus elata* [A] River Peppermint | 10 | 0.32 | 4 x 4 | M | C | Sym | A | **1B** | **Medium** | **3.84** | **2.05** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **34** | *Eucalyptus elata* [A] River Peppermint | 10 | 0.33 | 7 x 6 | M | C | Sym | A | **1B** | **Medium** | **3.96** | **2.08** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **35** | *Eucalyptus elata* [A] River Peppermint | 8 | 0.27 | 4 x 4 | M | D | Sym | A | **1A** | **Medium** | **3.24** | **1.91** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **36** | *Casuarina cunninghamiana* River Oak | 6 | 0.12 | 2 x 2 | Y | D | Sym | A | **1A** | **Medium** | **1.44** | **1.36** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **40** | *Casuarina cunninghamiana* River Oak | 9 | 0.47 | 6 x 6 | M | D | Sym | B | **2D** | **Medium** | **5.64** | **2.41** |
| **Assessment** This tree presents decline, upper crown. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **41** | *Pinus radiata* Monterey Pine[A] | 10 | 0.56 | 9 x 9 | M | D | Sym | B | **3D** | **Low** | **6.72** | **2.59** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **42** | *Casuarina cunninghamiana* River Oak | 6 | 0.17 | 2 x 2 | M | D | Sym | B | **3A** | **Low** | **2.04** | **1.57** |
| **Assessment** This tree presents significant decline. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **43** | *Pinus radiata* Monterey Pine[A] | 10 | 0.45 | 6 x 6 | M | S | Sym | A | **2A** | **Medium** | **5.40** | **2.37** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **44** | *Pinus radiata* Monterey Pine[A] | 10 | 0.45 | 7 x 6 | M | C | Sym | A | **2A** | **Medium** | **5.40** | **2.37** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **45** | *Eucalyptus saligna* Sydney Blue Gum | 11 | 0.60[B,C] | 7 x 6 | M | D | NW | A | **3D** | **Low** | **7.20** | **2.67** |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assessment** Multi -stemmed at the base this tree presents multiple open sounds, borer infestation and decay are evident. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **46** | *Pinus radiata* Monterey Pine[A] | 10 | 0.52 | 8 x 7 | M | C | Sym | A | **2A** | **Medium** | **6.24** | **2.51** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **47** | *Casuarina cunninghamiana* River Oak | 8 | 0.37 | 5 x 4 | M | I | W | B | **2D** | **Medium** | **4.44** | **2.18** |
| **Assessment** This tree presents decline. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **48** | *Casuarina cunninghamiana* River Oak | 7 | 0.22 | 3 x 4 | M | I | W | B | **2D** | **Low** | **2.64** | **1.75** |
| **Assessment** This tree presents decline. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **49** | *Casuarina cunninghamiana* River Oak | 13 | 0.46[C] | 7 x 7 | M | D | Sym | - | **4A** | **Low** | **-** | **-** |
| **Assessment** This tree is dead. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **50** | *Casuarina cunninghamiana* River Oak | 7 | 0.23[B,C] | 4 x 4 | M | I | SW | A | **2A** | **Medium** | **2.76** | **1.79** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **51** | *Corymbia citriodora* Lemon Scented Gum | 10 | 0.46 | 8 x 8 | M | C | Sym | A | **2A** | **Medium** | **5.52** | **2.39** |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assessment** This tree presents as typical for the species. Some wounding is located on the lower stem, frass is evident. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **52** | *Pinus radiata* Monterey Pine[A] | 8 | 0.40[C] | 8 x 8 | M | I | Sym | A | **2A** | **Medium** | **4.80** | **2.25** |
| **Assessment** This tree presents as typical for the species. Located outside of the school perimeter fencing, the ownership is unknown. No tree tag has been installed. Limited assessment due to lack of access. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **53** | *Eucalyptus viminalis*[A] Ribbon Gum | 9 | 0.40[C] | 6 x 6 | M | D | Sym | A | **2D**[C,E] | **Medium** | **4.80** | **2.25** |
| **Assessment** This tree presents swelling in the stem suggesting an internal issue, however the assessment is limited by extensive decorticating bark and surrounding vegetation. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **54** | *Pinus radiata* Monterey Pine[A] | 11 | 0.57 | 9 x 9 | M | D | Sym | A | **2A** | **Medium** | **6.84** | **2.61** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **55** | *Pinus radiata* Monterey Pine[A] | 11 | 0.59 | 9 x 9 | M | D | Sym | A | **2A** | **Medium** | **7.08** | **2.65** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **56** | *Eucalyptus viminalis*[A] Ribbon Gum | 7 | 0.31[B,C] | 6 x 6 | M | I | E | A | **2A** | **Medium** | **3.72** | **2.02** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **57** | *Eucalyptus elata* [A] River Peppermint | 8 | 0.27 | 4 x 4 | M | D | Sym | A | **1B** | **Medium** | **3.24** | **1.91** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **58** | *Eucalyptus elata* [A] River Peppermint | 7 | 0.21 | 4 x 4 | M | C | Sym | A | **1B** | **Medium** | **2.52** | **1.72** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **59** | *Eucalyptus viminalis*[A] Ribbon Gum | 7 | 0.26 | 4 x 4 | M | C | Sym | B | **2D** | **Medium** | **3.12** | **1.88** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **60** | *Eucalyptus elata* [A] River Peppermint | 9 | 0.23 0.24 | 4 x 4 | M | D | Sym | A | **1A** | **Medium** | **3.99** | **2.08** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **61** | *Eucalyptus viminalis*[A] Ribbon Gum | 6 | 0.23 | 5 x 4 | M | D | W | B | **3D** | **Low** | **2.76** | **1.79** |
| **Assessment** This tree presents decline and borer infestation. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **62** | *Eucalyptus viminalis*[A] Ribbon Gum | 6 | 0.26[B] | 6 x 6 | M | D | Sym | A | **2A** | **Medium** | **3.12** | **1.88** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **63** | *Eucalyptus moluccana* Grey Box | 8 | 0.26[B] | 4 x 4 | M | C | W | A | **2A** | **High** | **3.12** | **1.88** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **64** | *Eucalyptus moluccana* Grey Box | 8 | 0.21 | 3 x 3 | M | C | SE | A | **2A** | **High** | **2.52** | **1.72** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **65** | *Eucalyptus moluccana* Grey Box | 7 | 0.17 [B] | 2 x 2 | Y | D | Sym | A | **2A** | **High** | **2.04** | **1.57** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. An acute angle union is present at 0.4m, the bark is included. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **66** | *Eucalyptus moluccana* Grey Box | 6 | 0.16 | 2 x 2 | Y | D | Sym | A | **2A** | **High** | **1.92** | **1.53** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **67** | *Eucalyptus moluccana* Grey Box | 19 | 0.38 | 6 x 8 | M | C | W | A | **1B** | **High** | **4.56** | **2.20** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **68** | *Eucalyptus moluccana* Grey Box | 17 | 0.60 | 8 x 8 | M | C | Sym | B | **2D**[C,E] | **High** | **7.20** | **2.67** |
| **Assessment** This tree presents as typical for the species, however significant crown lift pruning has been undertaken and some decline is evident. Wounding is present on the lower stem and a small cavity is evident at 2.2m, north western side. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **69** | *Eucalyptus moluccana* Grey Box | 9 | 0.29 | 5 x 6 | M | I | N | A | **2A** | **High** | **3.48** | **1.97** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **70** | *Eucalyptus moluccana* Grey Box | 19 | 0.57 | 11 x 11 | M | C | N | B | **2D** | **High** | **6.84** | **2.61** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **71** | *Eucalyptus moluccana* Grey Box | 18 | 0.70 | 11 x 10 | M | C | NE | B | **2D** | **High** | **8.40** | **2.85** |
| **Assessment** This tree presents decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **72** | *Eucalyptus moluccana* Grey Box | 13 | 0.62[B] | 11 x 9 | M | I | E | A, B | **2A** | **High** | **7.44** | **2.71** |
| **Assessment** This tree presents minor decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **73** | *Eucalyptus moluccana* Grey Box | 12 | 0.26 0.31 | 5 x 6 | M | I | S | B | **2D** | **High** | **4.86** | **2.26** |
| **Assessment** This is 2 trees, side by side, and may have been 2 individual trees however now share a common root mass and root grafting seems very likely. Some decline is evident. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **74** | *Eucalyptus moluccana* Grey Box | 16 | 0.36 | 7 x 7 | M | C | E | A | **1B** | **High** | **4.32** | **2.15** |
| **Assessment** This tree presents as typical of the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **75** | *Eucalyptus moluccana* Grey Box | 10 | 0.32[B] | 5 x 5 | M | S | N | B | **2D** | **High** | **3.84** | **2.05** |
| **Assessment** This tree presents decline, and an aged wound lower stem, southern side. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **76** | *Eucalyptus moluccana* Grey Box | 19 | 0.25 0.47 | 9 x 9 | M | C | Sym | A | **2A** | **High** | **6.39** | **2.54** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **77** | *Eucalyptus moluccana* Grey Box | 19 | 0.38 | 8 x 8 | M | C | Sym | B | **2D** | **High** | **4.56** | **2.20** |
| **Assessment** This tree presents decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **78** | *Eucalyptus moluccana* Grey Box | 9 | 0.24 | 6 x 4 | M | I | NW | A | **2A** | **High** | **2.88** | **1.82** |
| **Assessment** This tree presents minor decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **79** | *Eucalyptus moluccana* Grey Box | 16 | 0.47 | 11 x 8 | M | C | Sym | B | **3A** | **Medium** | **9.48** | **3.00** |
| **Assessment** This tree presents a large, aged wound on the lower stem, decline and frass are evident. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **80** | *Eucalyptus moluccana* Grey Box | 18 | 0.79 | 9 x 11 | M | C | Sym | C | **3D** | **Medium** | **5.64** | **2.41** |
| **Assessment** This tree presents excessive decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **81** | *Eucalyptus moluccana* Grey Box | 21 | 0.97[B] | 12 x 12 | M | C | Sym | A | **2A** | **High** | **11.64** | **3.27** |
| **Assessment** This tree presents as typical for the species, however a smaller stem that has emerged at the basal flare presents decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **82** | *Brachychiton populneus* Kurrajong | 5 | 0.22 | 3 x 3 | M | D | Sym | A | **1A** | **Medium** | **2.64** | **1.75** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **83** | *Eucalyptus moluccana* Grey Box | 19 | 0.73 | 12 x 12 | M | D | Sym | A | **1B** | **High** | **8.76** | **2.90** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **84** | *Schinus molle* Peppercorn Tree | 6 | 0.24 0.18 | 6 x 6 | M | D | Sym | A | **2A** | **Medium** | **3.60** | **2.00** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **85** | *Eucalyptus scoparia* Wallangarra White Gum[A] | 7 | 0.23 | 4 x 4 | M | I | Sym | B | **3A** | **Low** | **2.76** | **1.79** |
| **Assessment** This tree presents significant decline. Located outside of the school perimeter fencing, the ownership is unknown. Limited assessment due to lack of access. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **86** | *Corymbia maculata* Spotted Gum | 12 | 0.38[C] | 9 x 9 | M | D | Sym | A | **1B** | **Medium** | **4.56** | **2.20** |
| **Assessment** This tree presents as typical of the species. Located outside of the school perimeter fencing, the ownership is unknown. Limited assessment due to lack of access. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **87** | *Ficus rubiginosa* Port Jackson Fig | 7 | 0.24[C] | 5 x 5 | M | I | Sym | A | **1B** | **Medium** | **2.88** | **1.82** |
| **Assessment** This tree presents as typical of the species. Located outside of the school perimeter fencing, the ownership is unknown. Limited assessment due to lack of access. Pruning will be required to accommodate the adjacent building. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **88** | *Eucalyptus microcorys* Tallowwood | 14 | 0.42[C] | 10 x 9 | M | C | Sym | A | **1B** | **Medium** | **5.04** | **2.30** |
| **Assessment** This tree presents as typical of the species. Located outside of the school perimeter fencing, the ownership is unknown. Limited assessment due to lack of access. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **89** | *Eucalyptus moluccana* Grey Box | 20 | 0.78 | 11 x 11 | M | D | Sym | A | **1B** | **High** | **9.36** | **2.98** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **90** | *Corymbia citriodora* Lemon Scented Gum | 13 | 0.40 | 9 x 10 | M | D | Sym | A, B | **2D** | **Medium** | **4.80** | **2.25** |
| **Assessment** This tree presents minor decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **91** | *Eucalyptus moluccana* Grey Box | 9 | 0.23 | 4 x 4 | M | I | W | A | **2A** | **High** | **2.76** | **1.79** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **92** | *Eucalyptus moluccana* Grey Box | 18 | 0.69 | 11 x 11 | M | C | Sym | A, B | **2A** | **High** | **8.28** | **2.83** |
| **Assessment** This tree presents minor decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **93** | *Eucalyptus moluccana* Grey Box | 15 | 0.70 | 9 x 8 | M | I | NE | B | **2D** | **High** | **8.40** | **2.85** |
| **Assessment** This tree presents decline. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **94** | *Brachychiton populneus* Kurrajong | 6 | 0.32 | 4 x 4 | M | D | Sym | A | **1B** | **Medium** | **3.84** | **2.05** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **95** | *Cupressus sempervirens* Mediterranean Cypress | 7 | 0.20[C,B] | 2 x 2 | M | I | Sym | A | **2A** | **Medium** | **2.40** | **1.68** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **96** | *Eucalyptus microcorys* Tallowwood | 16 | 0.60 | 12 x 12 | M | D | Sym | A | **1B** | **High** | **7.20** | **2.67** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **100** | *Cupaniopsis anacardioides* Tuckeroo | 6 | 0.17[B,C] | 4 x 4 | M | I | Sym | A | **1B** | **Medium** | **2.04** | **1.57** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **110** | *Eucalyptus moluccana* Grey Box | 9 | 0.20 0.09 | 4 x 3 | M | I | NW | A | **2A** | **High** | **2.63** | **1.75** |
| **Assessment** This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **111** | *Eucalyptus moluccana* Grey Box | 11 | 0.40 | 7 x 8 | M | I | N | A | **2D**[C,E] | **High** | **4.80** | **2.25** |
| **Assessment** This tree presents an acute angle union at 3m; swelling is evident in the stem, and frass is present in the union. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **112** | *Eucalyptus moluccana* Grey Box | 15 | 0.49 | 12 x 8 | M | C | Sym | A | **2A**[C,E] | **High** | **5.88** | **2.45** |
| **Assessment** This tree presents as typical for the species. A lopping event has occurred at 9m, northern side. An acute angle union located at 4m appears sound. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **113** | *Eucalyptus moluccana* Grey Box | 14 | 0.36 0.42 | 9 x 7 | M | C | E | A | **2A** | **High** | **6.64** | **2.58** |
| **Assessment** This tree is composed of 2 stems at the base. Not located on the survey supplied. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact** See Section 7.1.4 | |
| **115** | *Lophostemon confertus* Brush Box | 9 | 0.30 | 7 x 7 | M | C | Sym | C | **3A** | **Low** | **3.60** | **2.00** |
| **Assessment** This tree presents significant decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **116** | *Grevillia robusta* Silky Oak | 9 | 0.20 | 4 x 4 | M | I | Sym | A | **1A** | **Medium** | **2.40** | **1.68** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

| Tree No. | Botanical Name<br>Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **117** | *Lophostemon confertus*<br>Brush Box | 11 | 0.62 | 9 x 9 | M | D | Sym | A | **1B** | **Medium** | **7.44** | **2.71** |
| **Assessment**<br>This tree presents as typical for the species. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **119** | *Eucalyptus saligna*<br>Sydney Blue Gum | 14 | 0.42 | 7 x 7 | M | D | Sym | A | **1B** | **Medium** | **5.04** | **2.30** |
| **Assessment**<br>This tree presents as typical for the species. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **120** | *Lagerstroemia indica*<br>Crape Myrtle | 6 | 0.37[B,C] | 5 x 5 | M | D | Sym | -[D] | **2A** | **Medium** | **4.44** | **2.18** |
| **Assessment**<br>This deciduous tree was void of foliage, negating comments on vitality. Not located on the survey supplied. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **121** | *Pinus radiata*<br>Monterey Pine[A] | 13 | 0.88[C] | 9 x 10 | M | C | SE | B | **3D** | **Low** | **10.56** | **3.14** |
| **Assessment**<br>This tree presents significant decline. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **122** | *Ficus obliqua*<br>Small Leafed Fig | 12 | 1.05[B] | 14 x 14 | M | C | Sym | A | **1B** | **Medium** | **12.60** | **3.38** |
| **Assessment**<br>This tree presents as typical for the species. | | | | | | | | | | | **Development impact**<br>See Section 7.1.3 | |
| **123** | *Eucalyptus moluccana*<br>Grey Box | 9 | 0.32 | 4 x 6 | M | I | W | A | **2A** | **High** | **3.84** | **2.05** |
| **Assessment**<br>This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **124** | *Eucalyptus moluccana*<br>Grey Box | 16 | 0.62 | 11 x 10 | M | D | Sym | A | **1B** | **High** | **7.44** | **2.71** |
| **Assessment**<br>This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **125** | *Lophostemon confertus* Brush Box | 8 | 0.36 | 6 x 5 | M | C | W | B | **2D** | **Medium** | **4.32** | **2.15** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **126** | *Lophostemon confertus* Brush Box | 8 | 0.42 | 7 x 8 | M | C | Sym | B | **2D** | **Medium** | **5.04** | **2.30** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **128** | *Eucalyptus saligna* Sydney Blue Gum | 6 | 0.07 | 1 x 1 | Y | D | Sym | A | **1B** | **Low** | **1.50** | **0.50** |
| **Assessment** This tree presents as typical for the species. Not located on the survey supplied. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **129** | *Corymbia citriodora* Lemon Scented Gum | 14 | 0.45 | 8 x 9 | M | D | Sym | A | **1B**[C] | **Medium** | **5.40** | **2.37** |
| This tree presents as typical for the species. Limited assessment due to surrounding vegetation. | | | | | | | | | | | **Development impact** See Section 7.1.3 | |
| **130** | *Ficus obliqua* Small Leafed Fig | 6 | 0.23 | 5 x 5 | Y | I | Sym | A | **1B** | **Medium** | **2.76** | **1.79** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **131** | *Ficus obliqua* Small Leafed Fig | 8 | 0.24 0.35 | 9 x 9 | M | I | Sym | A | **1B** | **Medium** | **5.09** | **2.31** |
| **Assessment** This tree presents as typical for the species, however, will require pruning to be retained adjacent the building to the north. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **133** | *Ficus obliqua* Small Leafed Fig | 8 | 0.38[B] | 9 x 9 | M | I | Sym | A | **1B** | **Medium** | **4.56** | **2.20** |
| **Assessment** This tree presents as typical for the species. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **134** | *Ficus obliqua* Small Leafed Fig | 8 | 0.37[B] | 7 x 7 | M | I | Sym | A | **1B** | **Medium** | **4.44** | **2.18** |

| Tree No. | Botanical Name<br>Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Assessment**<br>This tree presents as typical for the species. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **135** | *Ficus obliqua*<br>Small Leafed Fig | 8 | 0.30[B] | 7 x 6 | M | I | Sym | A | **1B** | **Medium** | **3.60** | **2.00** |
| **Assessment**<br>This tree presents as typical for the species. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **136** | *Corymbia maculata*<br>Spotted Gum | 12 | 0.47 | 9 x 9 | M | D | Sym | A | **2D**[C,E] | **Medium** | **5.64** | **2.41** |
| **Assessment**<br>This tree presents as typical for the species, however an aged wound is evident at the base, western side. Borer infestation is evident, and swelling suggest a possible internal issue. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation.. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **137** | *Eucalyptus tereticornis*<br>Forest Red Gum | 9 | 0.24 | 4 x 4 | M | I | S | A | **1B** | **High** | **2.88** | **1.82** |
| **Assessment**<br>This tree presents as typical for the species. This tree is believed to be remnant, and related to the CEEC (see Section 7.0). | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **141** | *Acacia spp.*<br>Wattle | 9 | 0.20 | 2 x 2 | O | C | Sym | B | **3A** | **Low** | **2.40** | **1.68** |
| **Assessment**<br>This tree presents indicators of early senescence. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **142** | *Acacia spp.*<br>Wattle[A] | 9 | 0.19 | 2 x 2 | O | C | Sym | B | **3A** | **Low** | **2.28** | **1.65** |
| **Assessment**<br>This tree presents indicators of early senescence. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |
| **143** | *Eucalyptus saligna*<br>Sydney Blue Gum | 14 | 0.43 | 9 x 9 | M | C | Sym | A | **2A** | **Medium** | **5.16** | **2.32** |
| **Assessment**<br>This tree presents as typical of the species, however a large, aged pruning wound is present, lower stem, southern side. | | | | | | | | | | | **Development impact**<br>See Section 7.1.1 | |

| Tree No. | Botanical Name Common Name | Height (m) | DBH (m) | Crown Spread (m) | Age | Crown Class | Crown Aspect | Vitality Rating | SULE Rating | STARS Rating | TPZ | SRZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **144** | *Eucalyptus saligna* Sydney Blue Gum | 12 | 0.44 | 9 x 10 | M | S | Sym | A | **2D**[C,E] | **Low** | **5.28** | **2.34** |
| **Assessment** This tree presents a fruiting body of the decay pathogen, *Phellinus*, in the open wound on the lower stem, eastern side. This tree would require level 3 assessment (internal diagnostics) to determine risk and respective mitigation. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |
| **146** | *Callistemon viminalis* Weeping Red Bottlebrush | 5 | 0.14 0.13 | 3 x 3 | M | C | E | B | **2D** | **Low** | **2.29** | **1.65** |
| **Assessment** This tree presents decline. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **147** | *Callistemon viminalis* Weeping Red Bottlebrush | 6 | 0.40[B,C] | 5 x 4 | M | C | Sym | A | **2A** | **Medium** | **4.80** | **2.25** |
| **Assessment** This tree presents as typical for the species; multi-stemmed at base. | | | | | | | | | | | **Development impact** See Section 7.1.2 | |
| **148** | *Eucalyptus robusta* Swamp Mahogany | 8 | 0.37 [C] | 8 x 8 | M | D | Sym | A | **2A**[C] | **Medium** | **4.44** | **2.18** |
| **Assessment** This neighbouring tree presents as typical of the species, however the assessment is limited by lac k of access to the adjacent lot. No tag has been installed. | | | | | | | | | | | **Development impact** See Section 7.1.1 | |

A. Incomplete identification of species due to insufficiently available plant material
B. Diameter taken below 1.4m due to low stem bifurcation
C. Estimate due to the overgrown area and/or limited access
D. Deciduous species, void of foliage at the time of assessment
E. Level 3 assessment required to determine the accurate rating

## 7.0 Site Trees Relative to Proposed Activity

The following sections refer to data and impacts to the site trees described in Table 1, Section 5.0. The trees are divided into two groups: those that are planted (a combination of native and exotic) and those that are remnants. The site forms part of the South West Growth Area and is biodiversity certified. The planted trees are of similar age and likely related to the school construction.

### 7.0.1 Tree significance

The remnant trees form part of the vegetation assembly of the Cumberland Plain Woodland (CPW). This vegetation community is classed as a Critically Endangered Environmental Community (CEEC) and protected under Biosecurity Act, 2015 and under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). None of the trees contained in this report are endangered species, and do not warrant legislative protection other than the vegetation community for which they belong. The significance for this planting, relative to the vegetation community is beyond the scope of an arborist. Based on this point, the protection offered as an EEC would require further consultation by an ecologist, although trees identified in this community are rated as high significance.

### 7.0.2 Exempt trees

The trees labeled as A and B, that have been included on the survey drawing (Plan 1) however excluded from this report because of the failure to conform to the description of a prescribed tree based on the Camden City Councils Development Control Plan[9].

Tree A: trees below 5m in height

Tree B: dead trees

### 7.0.3 Trees providing a potential limited useful life expectancy based on risk

Trees No. 4, 8, 9, 22, 23, 49, 53, 68, 111, 136 and 144

These trees present signs and symptoms of active decay pathogens that can (pending the amount of decay) provide the tree as a risk for failure. The opportunity for failure will be pending the proportion of decay, and although such decay exists, does not necessarily warrant a risk. Based on the assigned significance and industry standards, a level 3 assessment or pruning is recommended to determine and mitigate the risk. Based on the annual audit for tree risk assessment conducted by the Department of Education, some or all of these trees may have been subject to such tests. This can be confirmed via the most recent tree risk assessment report

[9] Camden City Council; Camden City Council, Growth Centre Precinct, Development Control Plan, November 2016, Appendix C- Prescribed trees and preferred species.

provided to the school. For those trees that have not been included for this testing, the level 3 test is recommended for determining risk mitigation and the useful life expectancy. This should be conducted within 3 months. See Section 7.3.1, Table 2; Environmental Mitigation.

### 7.1 Activity Impact Method

The calculations included in the following discussion have not considered;

- Subsurface utilities that have not been included in the design,
- Work methods related to subsurface utilities, for example concrete encasing or replacement of existing lines
- or work methods related to construction (stockpiling, site sheds, scaffolding) unless otherwise specified.
- Public infrastructure including footpaths, new kerb/guttering, subsurface utilities on Rickard Road.

These may also increase the encroachment and tree impact and therefore the opportunity for tree retention.

This report discusses the impact of the proposed design on the trees. One hundred and nineteen (119) trees have been listed within this report based upon the vicinity of the proposed works. This has included any tree where any part of the zones of protection; Tree Protection Zone (TPZ) and Structural Root Zone (SRZ), encroach into the area proposed for work. Recommendations based on the tree significance and condition, together with the impact on these trees regarding the proposed development (based on the documents contained in Section 4.4) and mitigation where available follow.

#### 7.1.1 Trees and zones of protection (TPZ/SRZ) outside of the proposed design

Trees No. 5, 7-10, 16, 17, 32-36, 40-62, 70, 73-79, 81-88, 90, 91, 94, 95, 100, 110, 115-117, 119-121, 123-126, 130, 131, 133-137, 141-144 and 148.

None of the proposed works conflict with the location of these trees or respective zones of protection. These trees can be retained without impact by the proposed design.

#### 7.1.2 Trees directly conflicting with the design and construction methodology

Trees No. 4, 14, 15, 18-31, 63-66, 128 and 146-147

These trees are located in the footprint of the proposed design and would require removal based on this premise alone. The conflict is summarised as follows.

Tree No. 4; within the footprint of the hydrant hardstand,

Tree No. 24; within the footprint of the building, Learning Hub

Trees No. 25-27 are within the footprint of the fill required for the building, Learning Hub, as well as a major encroachment of this building.

Trees No. 63-64; within the footprint of the proposed fill
Tree No. 65-66; within the footprint of the building, Hall,OSHC Hub
Tree No. 128; within the footprint of the the car park extension
Trees No. 146-147 are within the footprint of the fill required for the building, Hall, OSHC Hub, as well as a major encroachment of this building.
Trees No. 14, 15, 18-23 and 28-31: This tree group extends along the northern boundary. As part of the construction methodology is access to the area where the building 'Learning hub' is proposed. Access to this area is proposed from a few routes, including the neighbours lot, being preferred, and the narrow corridor alongside the northern boundary where these trees reside. If alternative options for site access are unviable, then the removal of these trees could proceed. The trees offer predominately medium significance, and those adjacent to the proposed building footprint may require removal, pending building design and construction access.

### 7.1.3 Trees subject to a minor encroachment

Trees No. 6, 31, 67, 69, 80, 89, 92, 93, 111, 122, 129

These trees are not directly located in the footprint of the proposed design, however, are subject to a *minor encroachment*. That is, the proportion (<10%) of encroachment provided by design will not adversely impact on the tree. These trees can be retained relative to the design.
Trees No. 67 and 93: based on correspondence from *Taylor Brammer*, these trees are proposed to have a 'yarning circle and pavement' constructed around them. No grade changes are proposed based on the Civil drawings, Bulk Earthworks plan. The requirements of Section 8.0, Protection specification shall apply to the design work required within the TPZ of each tree.

### 7.1.4 Trees subject to a major encroachment

Trees No. 68, 71, 72, 96, 112 and 113.

These trees are not directly located in the footprint of the proposed design, however, are located close and adjacent to the design footprint and subject to a *major encroachment*, that is, in excess of 10% of the TPZ. The extent and type of encroachment for each tree are discussed and the relative implications.

The extent and type of encroachment for each tree are summarised within Table 2, Summary of encroachment and includes respective impacts and mitigation where available.

**Table 2; Summary of major encroachments**

| Tree No. | Encroachment (%) | Encroachment Type | Drawing Reference | Comments |
|---|---|---|---|---|
| 68 | Approximately 30% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Note 1 |
| 71 | 20% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Note 1 |
| 72 | 11% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Minimal impact |
| 96 | 23% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Note 1 |
| 112 | 24% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Note 1 |
| 113 | 30% Outside SRZ | Concrete surface and cut (<0.5m) | 100-001(D) Section 4.4.3 | Note 1 See Section 4.5.1 |

**Notes**

Note 1: High significant tree; the encroachment consists of cut required for a pathway on the southern side. Based on email correspondence with Stantec, the area of encroachment is subject to a maximum of 10mm cut and 20mm fill. This proportion of grade change is negligible and will not offer an impact to these trees.

## 7.2 Sub-surface utilities

Although drawings have been provided for the proposed route of sub-surface utilities, they have not been included as part of the tree impacts. For this reason, the impacts imposed by all sub-surface utilities will need to form part of the scope of works for the Arboricultural Method Statement and the proposed design routes as part of the application stage to be considered preliminary with possible amendment.

Any trenching, other than what has been allowed for should be avoided within the area of the TPZ's for any tree nominated for retention. Any proposed route shall be re-routed outside of the TPZ, and based on the flexibility of electrical and communications, these services can be rerouted. Other options for limiting impact will be bundling services. Underboring will be required based on some proposed routes. Underboring will need to be instructed by the project arborist, and entry and exit pits must be outside the SRZ, although in some circumstances and based on instruction by the project arborist, they can be within the TPZ. Any excavation in the area of a TPZ must be authorised and conditioned by the project arborist.

The final design for all subsurface utilities will be determined as part of the Arboricultural Method Statement.

## 7.3 Mitigation Measures

The following measures are required to avoid, minimise and offer options for rectification to reduce or eliminate any adverse environmental impacts of a Division 5.1 activity. These are summarised in Table 2; Environmental Mitigation.

### 7.3.1 Table 2: Environmental Mitigation

| Activity Type | Hold Point | Mitigation Measure | Reason for mitigation |
|---|---|---|---|
| Tree management | Before Start | A project arborist (conforms to the AS 4970) is required to be nominated before works start, and they are to be provided with all related site documents. | Protection of trees |
| Demolition/Construction | Before start of work | A Tree Management Plan (Arboricultural Method Statement) is prepared and issued to the entity responsible for the demolition/construction. | Protection of trees |
| Tree protection | Before start of work | Installation of tree protection measures as per Tree Management Plan (Arboricultural Method Statement) | Protection of trees |
| Tree removal | Demolition | Trees are identified and marked for removal | Avoid incorrect tree removal. |
| Tree removal | Demolition | Native wildlife habitats are identified to avoid injury to animals. A licensed wildlife handler[10] supervises the tree removal. Tree removal shall avoid nesting season. Refer to the biodiversity report for additional guidance. | Protection of native fauna. |
| Tree protection | Demolition/Construction stages | Site induction; All workers must be briefed about the conditions outlined in Tree Management Plan before the | Protection of trees |

[10] NSW National Parks and Wildlife Act 1074

| Activity Type | Hold Point | Mitigation Measure | Reason for mitigation |
|---|---|---|---|
| | | initiation of work. This is required as part of the site induction process. | |
| Subsurface utilities not been included in the design | Construction stages | Trenching, shall avoid the TPZ's. Proposed routes shall be re-routed outside of the TPZ. Underboring required if unable reroute. Any excavation in the area of a TPZ must be authorised and conditioned by the project arborist. | Protection of trees intended for retention |
| Demolition/Construction Methods | Demolition/Construction stages | Work-related to demolition/construction, e.g. stockpiling, site sheds, and scaffolding, shall avoid the TPZs. Any activity within a TPZ must be authorised and conditioned by the project arborist. | Protection of trees intended for retention |
| Demolition/Construction Methods | Demolition/Construction stages | Measures/Conditions outlines in Section 8.0; Protection Specification. | Protection of trees intended for retention |

## 8.0 Protection Specification

The retention and protection of these trees require the remaining Tree Protection Zone (TPZ) not subject to encroachment to conform to the conditions outlined below. These conditions provide the limitations of work permitted within the area of the Tree Protection Zone (TPZ) and must be adhered to unless otherwise stated.

1. Subsurface utilities can extend through the TPZ and Structural Root Zone (SRZ), however, are limited to the method of installation. That is under boring is permitted, however trenching is limited and depends on the proposed route within the TPZ. No trenching is permitted within the area of the TPZ unless stipulated by the project arborist.

2. Soil levels within the TPZ must remain the same. Any excavation within the TPZ must have been previously specified and allowed for by the project arborist:

   a) So it does not alter the drainage to the tree.

   b) Under specified circumstances,

   - Added fill soil does not exceed 100mm in depth over the natural grade. Construction methodologies exist that can allow grade increases in excess of 100mm, via the use of an impervious cover, an approved permeable material or permanent aeration system or other approved methods.

   - Excavation cannot exceed a depth of more than 50mm within the area of the TPZ, not including the SRZ. The grade within the SRZ cannot be reduced without the consent from a project arborist.

3. No form of material or structure, solid or liquid, is to be stored or disposed of within the TPZ.

4. No lighting of fires is permitted within the TPZ.

5. All drainage runoff, sediment, concrete, mortar slurry, paints, washings, toilet effluent, petroleum products, and any other toxic wastes must be prevented from entering the TPZ.

6. No activity that will cause excessive soil compaction is permitted within the TPZ. That is, machinery, excavators, etc. must refrain from entering the area of the TPZ unless measures have been taken, in consultation with the project arborist.

7. No site sheds, amenities or similar site structures are permitted to be located or extend into the area of the TPZ unless the project arborist provides prior consent.

8. No form of construction work or related activity such as the mixing of concrete, cutting, grinding, generator storage or cleaning of tools is permitted within the TPZ.

9. No part of any tree may be used as an anchorage point, nor should any noticeboard, telephone cable, rope, guy, framework, etc. be attached to any part of a tree.

10. (a) All excavation work within the TPZ will utilise methods to preserve root systems intact and undamaged. Examples of methods permitted are by hand tools, hydraulic, or pneumatic air excavation technology.

(b) Any root unearthed which is less than 50mm in diameter must be cleanly cut and dusted with a fungicide, and not allowed to dry out, with minimum exposure to the air as possible.

(c) Any root unearthed which is greater than 50mm in diameter must be located regarding their directional spread and potential impact. A project arborist will be required to assess the situation and determine future action regarding retaining the tree in a healthy state.

## 9.0 Summary of tree impact by design

Based on the design supplied, the following summary provides the impacts imposed on the trees included in this report and not all site trees.

### 9.1 Trees that can be retained

Trees and zones of protection (TPZ/SRZ) that conform with the proposed design

Trees No. 5-10, 16, 17, 31-36, 40-62, 67-89, 90-96, 100, 110-113, 115-117, 119-126, 129-131, 133-137, 141-144 and 148.

These trees are not adversely impacted by the design, that is, they conform to an acceptable encroachment based on the nominated zones of protection (TPZ, SRZ) and the requirements of the Protection Specification, Section 8.0. The proposed design does not adversely affect these trees. These trees can be retained.

Trees No. 4, 8, 9, 22, 23, 49, 53, 68, 111, 136 and 144

These trees present signs and symptoms of active decay pathogens that can (pending the amount of decay) provide the tree as a risk for failure. Based on the assigned significance and industry standards, a level 3 assessment (see Appendix A) is recommended to determine the risk and can be conducted via an internal diagnostic evaluation. This should be conducted within 3 months.

### 9.2 Trees that require removal

Trees directly conflicting with the design

Trees No. 4, 14, 15, 18-31, 63-66, 128 and 146-147.

The proposed design will conflict with the location of these trees and they are unable to be retained based on the design. These trees will require removal.

Trees No. 14, 15, 18-23 and 28-31.

As part of the construction methodology is access to the area where the building 'Learning hub' is proposed. If alternative options for site access are unviable, then the removal of these trees could proceed. Based on the removal, compensatory planting will be required of a similar number of trees that produce a similar mature height, see Section 7.2. These will be necessary for inclusion within the landscape drawing.

### 9.3 Tree Protection during the proposed activity

A project arborist (conforms to the AS 4970) is required to be nominated before works start, and they are to be provided with all related site documents.

A Tree Management Plan (Arboricultural Method Statement) is prepared and issued to the entity responsible for the demolition/construction.

Protection measures are required to be implemented for the trees nominated for retention (referenced in Section 9.1) and installed before initiation of site works

(including demolition/excavation) and retained until the landscaping works are required unless otherwise specified.

All workers related to the construction process and before entering the site must be briefed about the requirements/conditions outlined in this report relative to the zone of protection, measures, and specifications before the initiation of work.

### 9.4 Planning for Bushfire Protection

A report (Section 4.4.6) has been provided for the management of the school relative to the Asset Protection Zone. Based on Section 12.7, Asset Protection Zones of the Bushfire Report, either an APZ is not required or complies, therefore no vegetation mitigation for bushfire protection is required.

### 9.5 Overall tree impact

Accounting for the tree removal and respective design impacts and mitigation assigned to limit any construction impact, this proposal is not considered to have a significant impact on the site trees.

**The opinions expressed in this report by the author have been provided within the capacity of a Consulting Arborist. Any further explanation or details can be provided by contacting the author.**

Assessed by Geoff Beisler
Consulting Arborist
Level 5 Arborist
ISA Tree Risk Assessment Qualification

Assessed and Prepared by Warwick Varley
Consulting Arborist; Principal
Level 5 and 8; Arborist
ISA Tree Risk Assessment Qualification
IACA and ISA Member

## 10.0 Appendix A- Terminology Defined

**Height**
Is a measure of the vertical distance from the average ground level around the root crown to the top surface of the crown, and on palms - to the apical growth point.

**DBH**
Diameter at Breast Height – being the stem diameter in meters, measured at 1.4m from ground level, including the thickness of the bark.; Mult. refers to multiple stems, that is in excess of 4 stems.

**Crown Spread**
A two-dimension linear measurement (in metres) of the crown plan. The first figure is the north-south span, the second being the east-west measurement.

**Age**
Is the estimate of the specimen's age based upon the expected lifespan of the species. This is divided into three stages.

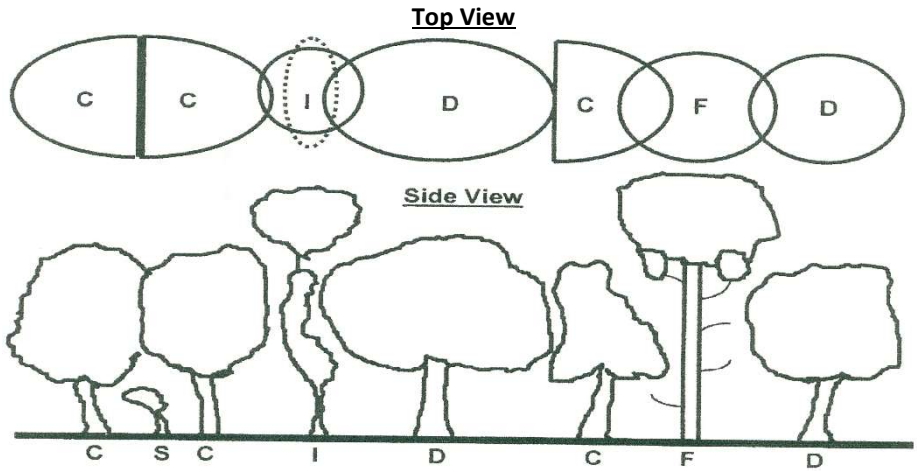
| | |
|---|---|
| Young (Y) | Trees less than 20% of life expectancy. |
| Mature (M) | Trees aged between 20% to 80% life expectancy. |
| Over-mature (O) | Trees aged over 80% of life expectancy with probable symptoms of senescence. |

**Crown Aspect**
In relation to the root crown, this refers to the aspect the majority of the crown resides in. This will be either termed Symmetrical (Sym.) where the centre of the crown resides over the root crown or the cardinal direction the centre of the crown is biased towards, being either North (N), South (S), East (E) or West (W).

**Vitality Rating**
Is a rating of the health of the tree, irrespective and independent of the structural integrity, and defined by the 'ability for a tree to sustain its life processes' ((Draper, Richards, 2009). This is divided between three variables, and based on the assessment of symptoms including, but not limited to; leaf size, colour, crown density, woundwood development, adaptive growth formation, and epicormic growth.
**A**: Normal vitality, typical for the species
**B**: Below average vitality, possibly temporary loss of health, partial symptoms.
**C**: Poor vitality; obvious decline, potentially irreversible

**Crown Class**
Is the differing crown habits as influenced by the external variables within the surrounding environment. They are:

| | | |
|---|---|---|
| **D** | – *Dominant* | Crown is receiving uninterrupted light from above and sides, also known as emergent. |
| **C** | – *Codominant* | Crown is receiving light from above and one side of the crown. |
| **I** | – *Intermediate* | Crown is receiving light from above but not the sides of the crown. |
| **S** | – *Suppressed* | Crown has been shadowed by the surrounding elements and receives no light from above or sides. |
| **F** | – *Forest* | Characterised by an erect, straight stem (usually excurrent) with little stem taper and virtually no branching over the majority of the stem except for the top of the tree which has a small concentrated branch structure making up the crown. |




D C, I & S, and side view, after (Matheny, N. & Clark, J. R. 1998, Trees Development, Published by International Society of Arboriculture, P.O. Box 3129, Champaign IL 61826-3129 USA, p.20, adapted from the Hazard Tree Assessment Program, Recreation and Park Department, City of San Francisco, California).

**Levels of assessment**

Level 1: Limited visual: a visual tree assessment to manage large populations of trees within a limited period and in order to identify obvious faults which would be considered imminent.

Level 2: Basic assessment: a standard performed assessment providing for a detailed visual assessment including all parts of the tree and surrounding environment and via the use of simple tools.

Level 3: Advanced assessment: specific type assessments conducted by either arborist who specialise with specific areas of assessment or via the use of specialised equipment. For example, aerial assessment by use of an EWP or rope/harness, or decay detection equipment.

**TPZ; Tree Protection Zone**

Is an area of protection required for maintaining the trees vitality and long-term viability. Measured in meters as a radius from the trees centre. The requirements of this zone are outlined within the Protection Specification, Section 8.0, and are to be adhered to unless otherwise stated.

The size of the Tree Protection Zone (TPZ) has been calculated from the *Australian Standard, 4970; 2009* – Protection of Trees on Development Sites

The TPZ does not provide the limit of root extension, however, offers an area of the root zone that requires predominate protection from development works. The allocated TPZ can be modified by some circumstances; however will require compensation equivalent to the area loss, elsewhere and adjacent to the TPZ.

**SRZ; Structural Root Zone**

Is the area around the tree containing the woody roots necessary for stability. Measured in meters as a radius from the trees centre. The requirements of this zone are outlined within the Protection Specification, Section 8.0, and are to be adhered to unless otherwise stated.

**Protection Measures**

These are required for the protection of trees during demolition/construction activities.
Protective barriers are required to be installed before the initiation of demolition and/or construction and are to be maintained up to the time of landscaping. Samples of the recommended protection measures are illustrated in Appendix B.

**All other definitions are referenced from**;

Draper D.B., Richards P.A., 2009, Dictionary for Managing Trees in Urban Environments, CSIRO Pub., Australia

**Significance Rating,** Significance of a Tree Assessment Rating System (S.T.A.R.S), IACA, 2010[11]

Tree Significance – Assessment Criteria

**1.** High Significance in landscape

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

**2.** Medium Significance in landscape

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

**3.** Low Significance in landscape

- The tree is in fair-poor condition and good or low vitality;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences,

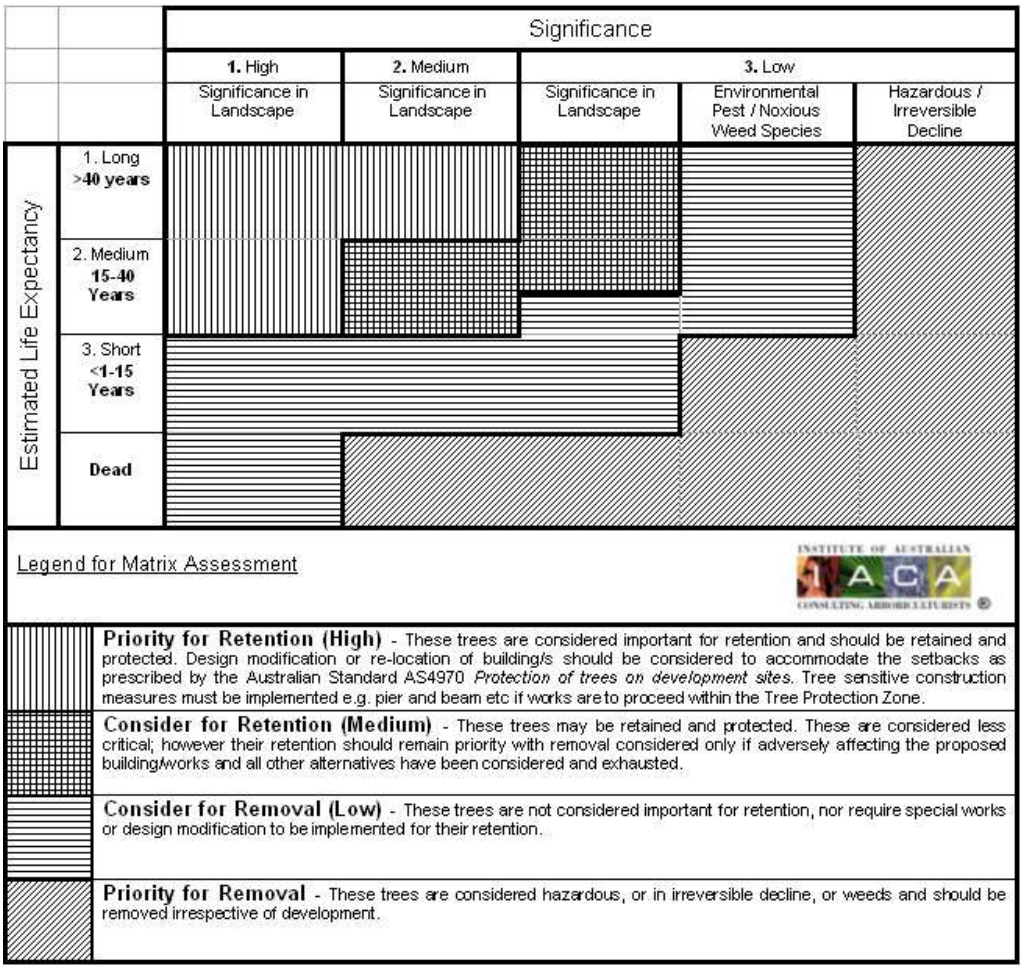
[11] IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.
Environmental Pest / Noxious Weed Species
- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.
Hazardous/Irreversible Decline
- The tree is structurally unsound and/or unstable and is considered potentially dangerous, - The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short-term.

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

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

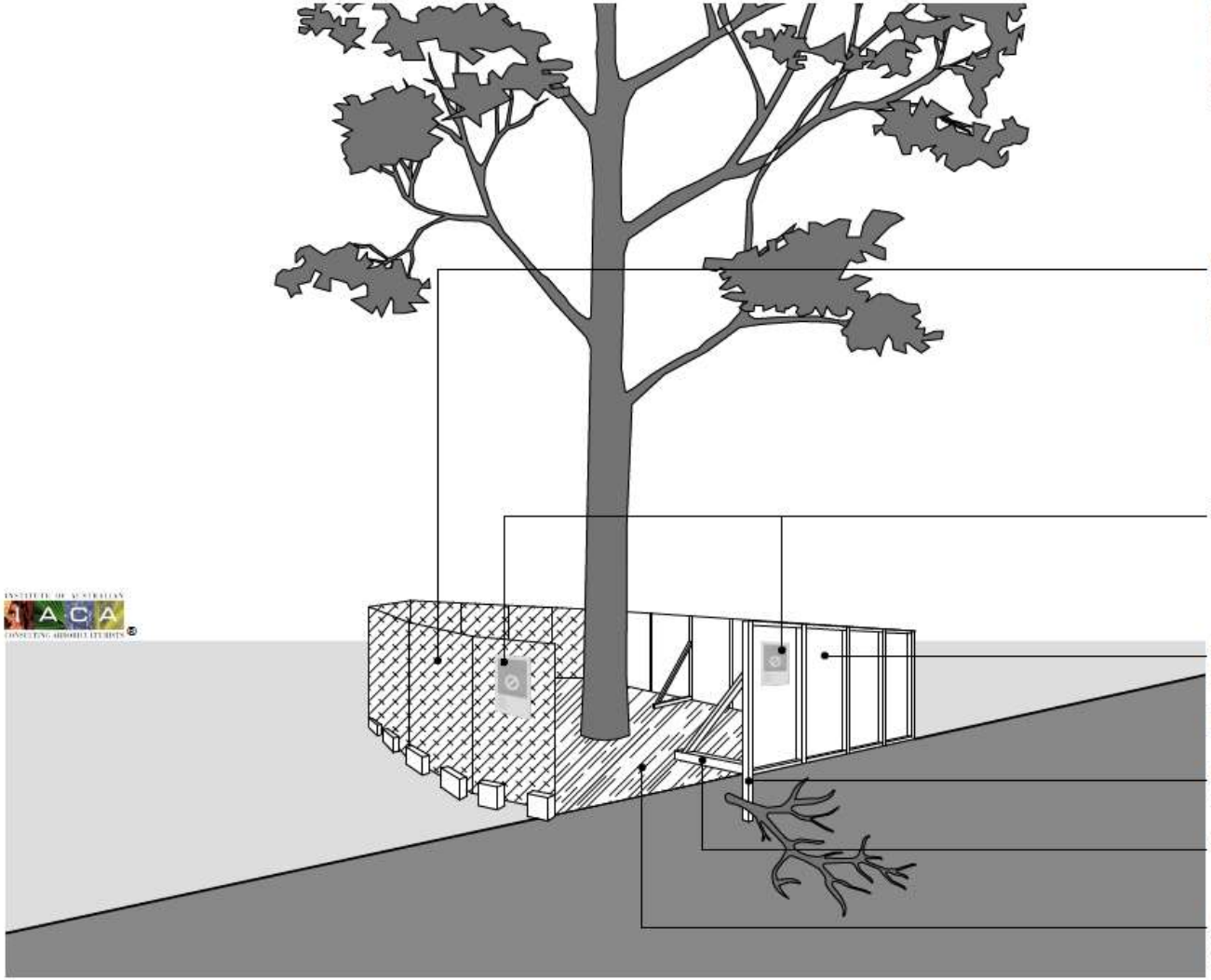
**Table 3; Tree Retention Value – Priority Matrix.**



## Safe Useful Life Expectancy – S.U.L.E (Barell 1995)

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

**Appendix B- Protection measures; Protective fence**



**Note:**
No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.

**Option 1 - Fencing**
1.8m high chain wire mesh panels with shade cloth attached (if required), held in place with concrete feet.

Tree Protection Zone (TPZ) sign

**Option 2 - Fencing**
Plywood or wooden panel paling fence. This type of fencing material also prevents building materials or soil entering the TPZ.

Installation of supports should avoid damaging roots.

Bracing is permissible within the TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer installed across surface of TPZ.

**Stem and Ground protection**