CPS

CREATIVEPLANNINGSOLUTIONS

ARBORICULTURAL IMPACT ASSESSMENT

Proposed Group Home Development

29-35 Lochinvar Road
Revesby NSW 2212

Project No: F881
Date: 30 October 2024
Revision: A

CREATIVE PLANNING SOLUTIONS PTY LIMITED
Level 3, 397 Riley Street, Surry Hills NSW 2010 | 1/6 Tilley Lane, Frenchs Forest NSW 2086
PO Box 1074 Broadway NSW 2007
+61 2 8039 7461 | info@cpsplanning.com.au | www.cpsplanning.com.au | ABN: 70 135 093 926

Document Control

Project No. F881

Prepared for

Prepared by
Sophie Diller
Consulting Arborist
Dip. Arboriculture – AQF Level 5

Reviewed by
Toby Piper
Principal Consulting Arborist
Dip. Arboriculture – AQF Level 5
Arboriculture Australia – Registered Consulting Arborist No. 12352
B.LArch

Authorised by
Greg Tesoriero
Director
Dip. Hort. (Arboriculture) – AQF Level 5
Regd. Consulting Arborist No. 3008
QTRA No. 6291
B.LArch (Hons)

Revision	Date	Description
A	30th October 2024	For Council Approval

Accreditations

Disclaimer
The Client acknowledges this Report, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data, inspections, measurements and analysis carried out or obtained by CPS and referred to in the Report. No guarantee is implied with respect to future tree safety. The Client should rely on the Report and its contents, only to that extent.

TABLE OF CONTENTS

APPENDICES

1 EXECUTIVE SUMMARY

This Arboricultural Impact Assessment (AIA) was commissioned by NSW Land and Housing Corporation (LAHC) on the 5th of June 2023. It relates to the construction of a proposed seniors group home development on the subject site at 29-35 Lochinvar Road, Revesby, which is located within the Canterbury-Bankstown Council local government area (LGA).

The report relates to twenty-eight (28) trees located on and adjoining the subject site and provides an evaluation of the likely impact to existing trees (within the subject site, adjoining the site within 5m of the boundaries and within Council street verge areas) as a result of the proposed development.

A summary of those trees identified has been provided in ***Table 1*** below along with a description of their location, retention values and nominated retention/removal status under the proposal.

Table 1 *– Tree assessment summary*

Tree No.	*Genus & species* Common Name	Location	Retention Value	Retain / Remove
1	***Lagerstroemia indica*** Crepe Myrtle	Subject Site	Medium	Remove[1]
2	***Liquidambar styraciflua*** Sweetgum	Subject Site	High	Retain & Protect[1]
3	***Musa sp.*** Banana	Subject Site	Low	Remove[1]
4	***Callistemon cv.*** Bottlebrush Cultivar	No. 28 Ferndale Road	Low	Retain & Protect
5	***Melia azedarach*** Chinaberry	Subject Site	Medium	Remove
6	***Morus sp.*** Mulberry	Subject Site	Low	Remove[1]
7	***Araucaria heterophylla*** Norfolk Island Pine	Subject Site	High	Retain & Protect

[1]**Note:** Seven (7) trees (**Trees 1, 2, 3, 6, 13, 20** & **22**) are exempt from protection pursuant to Chapter 2.3, section 2, clause 2.3 of the Canterbury-Bankstown DCP 2023 due to species or size classification.

Tree No.	*Genus & species* Common Name	Location	Retention Value	Retain / Remove
8	***Cupressus torulosa*** Bhutan Cypress	Subject Site	Medium	Remove
9	***Cupressus torulosa*** Bhutan Cypress	Subject Site	Medium	Remove
10	***Archontophoenix cunninghamiana*** Bangalow Palm	Subject Site	Medium	Remove
11	***Callistemon viminalis*** Weeping Bottlebrush	Subject Site	Medium	Retain & Protect
12	***Koelreuteria bipinnata*** Chinese Rain Tree	Subject Site	Low	Remove
13	***Syagrus romanzoffiana*** Cocos Palm	Subject Site	Low	Retain & Protect[1]
14	***Callistemon viminalis*** Weeping Bottlebrush	Subject Site	Medium	Remove
15	***Jacaranda mimosifolia*** Jacaranda	Subject Site	High	Retain & Protect
16	***Cupressus sempervirens*** Mediterranean Cypress	No. 34 Ferndale Road	Medium	Retain & Protect
17	***Cupressus sempervirens*** Mediterranean Cypress	No. 34 Ferndale Road	Medium	Retain & Protect
18	***Cupressus sempervirens*** Mediterranean Cypress	No. 34 Ferndale Road	Medium	Retain & Protect
19	***Jacaranda mimosifolia*** Jacaranda	Subject Site	Medium	Remove
20	***Murraya paniculata*** Orange Jessamine	Subject Site	Low	Retain & Protect[1]
21	***Casuarina cunninghamiana*** River Sheoak	Subject Site	Low	Remove

Tree No.	*Genus & species* Common Name	Location	Retention Value	Retain / Remove
22	***Murraya paniculata*** Orange Jessamine	Subject Site	Low	Remove[1]
23	***Wodyetia bifurcata*** Foxtail Palm	Subject Site	Low	Remove
24	***Jacaranda mimosifolia*** Jacaranda	Subject Site	Medium	Remove
25	***Acer sp.*** Maple	No. 32 Ferndale Road	Medium	Retain & Protect
26	***Corymbia ficifolia*** Red Flowering Gum	No. 13 McLaren Grove	Low	Retain & Protect
27	***Callistemon viminalis*** Weeping Bottlebrush	Council Street Verge	Low	Retain & Protect
28	***Callistemon viminalis*** Weeping Bottlebrush	Council Street Verge	Low	Retain & Protect

Based on the plans supplied and should the proposed works proceed in their current form, it is recommended that fourteen (14) trees (**Trees 1, 3, 5, 6, 8, 9, 10, 12, 14, 19, 21, 22, 23** & **24**) from the subject site be removed.

Fourteen (14) trees (**Trees 2, 4, 7, 11, 13, 15, 16, 17, 18, 20, 25, 26, 27** & **28**) on and adjoining the subject site have been recommended to be retained and protected.

Specific recommendations as per ***Section 7*** will need to be adopted to ensure root sensitive construction techniques and methodology are employed which mitigate any potential negative impacts to retained trees.

2 INTRODUCTION

2.1 Background

This Arboricultural Impact Assessment (AIA) was commissioned by The NSW Land and Housing Corporation on the 5th of June 2024 to evaluate the potential impacts that group home development works will have on existing trees located on and adjoining the subject site at 29-35 Lochinvar Road, Revesby (refer to ***Figure 1***).

Accordingly, the purpose of this report is to assess the potential impact of the proposed revised development on the subject trees, as well as provide recommendations for further amendments to the design or construction methodology where necessary to minimise any adverse impact. The report also provides recommended tree protection measures to ensure the long-term preservation of the trees to be retained where appropriate.

2.2 Objectives

This report has been prepared to assess the level of impact development works are likely to cause to existing trees and make a determination as to whether trees will be adversely affected. The report will provide guidance as to those trees requiring removal, retention or protection in accordance with the provisions of *AS4970-2009 Protection of trees on development sites*. Where necessary, it will also provide recommendations for design modifications and any replacement planting. As such, the objectives of this report are as follows:

- Assess the current site and growing conditions of trees;
- Assess the current health, condition, lifespan & significance of the trees within the site;
- Identify relative retention values of trees within the site;
- Calculate anticipated encroachment levels resulting from proposed works;
- Determine the likely impact as a result of the calculated encroachments;
- Assess potential for retention and protection of trees where possible;
- Advise any design modifications necessary to retain important trees;
- Recommend tree and root sensitive design and construction methodologies to mitigate impacts to trees to be retained;
- Inform of any tree removal necessary due to unsustainable impacts;

No aerial inspection, root mapping or internal diagnostic testing have been carried out as part of this report. Further, no cation exchange capacity testing or plant tissue analysis has been undertaken.

2.3 Legislation & Regulating Documents

This Arboricultural Impact Assessment has considered the following regulatory documents:

- *State Environmental Planning Policy (Biodiversity and Conservation) 2021;*
- *State Environmental Planning Policy (Housing) 2021;*
- *Canterbury-Bankstown Local Environmental Plan 2023 (Canterbury Bankstown LEP 2023);*
- *Canterbury-Bankstown Development Control Plan 2023 (Canterbury Bankstown DCP 2024).*

2.4 Tree Preservation Order

Chapter 2.3 - *Tree Management* of the Canterbury-Bankstown DCP 2023 applies to all trees and vegetation within the Canterbury-Bankstown local government area (LGA). The provisions included within the DCP generally protect any tree that corresponds with the following criteria:

a) All trees that are 5m or more in height; and
b) All mangroves, regardless of size: and
c) All trees, regardless of size, listed as Vulnerable or Endangered or a component of an Endangered Ecological Community listed under the Biodiversity Conservation Act 2016; and
d) All trees, regardless of size, listed under the Environmental Protection and Biodiversity Conservation Act 1999; and
e) All trees regardless of size, located on land included on the Biodiversity Map under the Canterbury-Bankstown LEP 2023; and
f) All trees regardless of size, located on sites listed as a heritage item in Schedule 5 of the Canterbury-Bankstown LEP 2023; and
g) All trees regardless of size, located in the foreshore area under the Canterbury-Bankstown LEP 2023.

2.5 Documentation Received

The following documents were received and have been relied upon for this Assessment:

Table 2 *– Documentation received and reviewed as part of the Arboricultural Impact Assessment*

Document Description	Author	Revision No. / Date
Architectural Plans	DTA Architects	A /25/10/2024
Stormwater Layout Plan	MSL Consulting Engineers	B/ 04/10/2024
Landscape Plans	DTA Architects	C/ 02/10/2024
Detail Survey	S.J Surveying Services	-/ 17/06/2023

Note: care has been taken to obtain all information from reliable sources; however, the author makes no representations, guarantees or warranties as to the accuracy of information provided by others. No other information has been reviewed, should this become available impacts may be subject to change.

2.6 The Site

The site is known as 29-35 Lochinvar Road, Revesby and is legally described as Lots 52, 53, 54 & 55 in DP 36467 (the site). The site comprises four (4) lots, with each lot currently containing a single-storey residential dwelling with associated driveways and detached sheds within the rear open garden areas (refer to ***Figure 1*** below).

2.7 Biodiversity Values Map and Threshold Tool

The site was reviewed in The NSW Government Biodiversity Values Map & Threshold Tool and does not contain Biodiversity Value and does not exceed the area clearing threshold.

2.8 Proposed Development

The proposed development is for the demolition of existing structures, tree removal and construction of a seniors group home development with associated driveway crossover, stormwater infrastructure and landscaping. Specifically, those works considered likely to impact the existing trees on and adjoining the subject site include the new building footprints, stormwater alignment, landscaping and new driveway and crossover. (Refer to ***Figure 2*** below).

2.9 Limitations

Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations in this report are valid for one (1) year only from the date of the report, unless otherwise stated. Any changes to the site as it stands at present, for example building extensions, excavation works, importing of soils, extreme weather events etc. will invalidate this report. Any reproduction of this report must be in full colour using the report in its entirety.

Figure 1 – Aerial image indicating subject site (outlined red) Source: Nearmap – July 2024

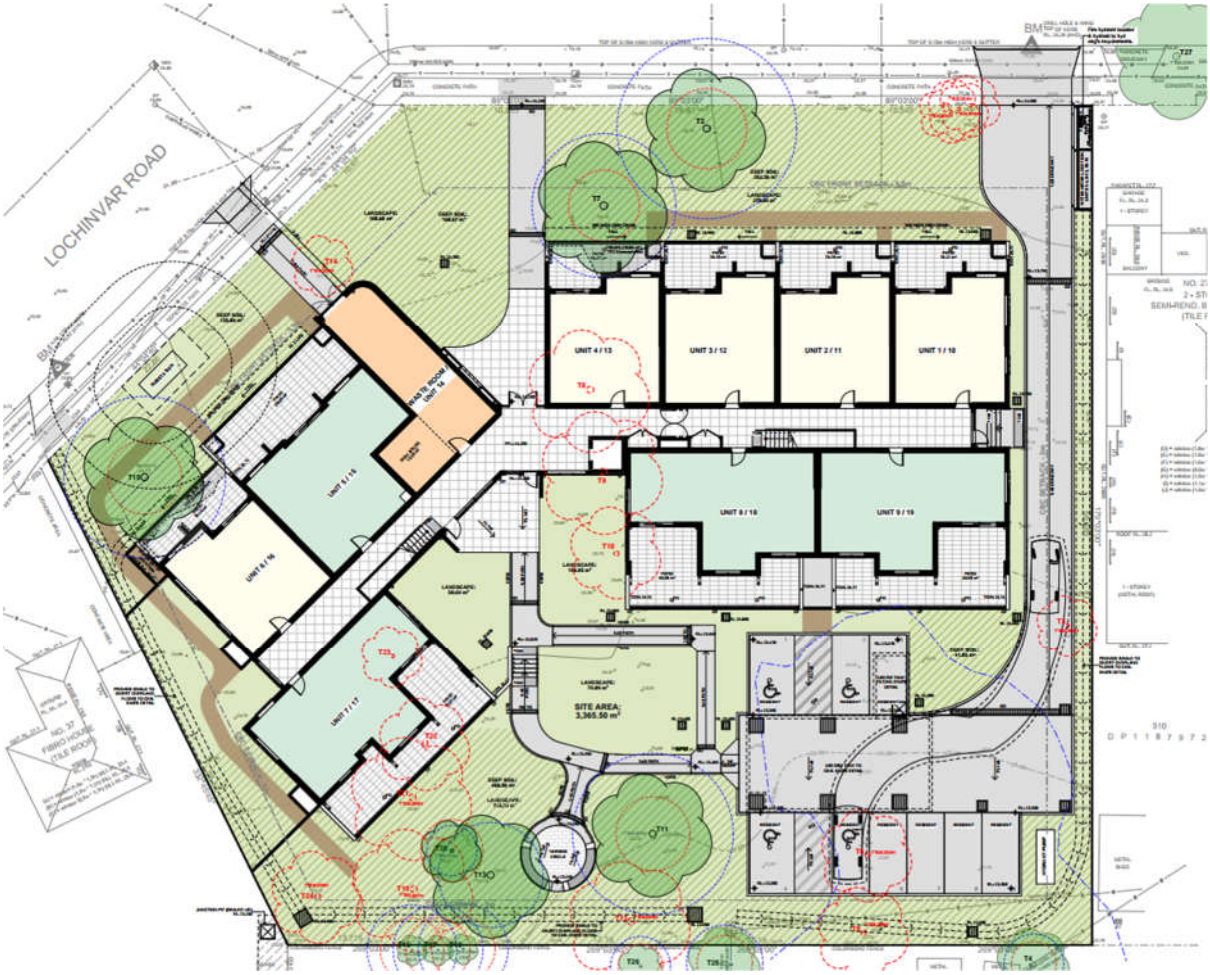


Figure 2 – Proposed Ground Floor Plan extract indicating the proposed layout of the development.

Source: DTA Architects – 25/10 2024

3 METHOD

3.1 Method

3.1.1 Site Inspection

A site inspection was carried out by the Author with the subject trees and the general growing environment was evaluated on the 21st of June 2023. The weather at the time of inspection was sunny with good visibility.

The subject trees were inspected visually from ground level with the following information recorded and provided in tabulated form at ***Appendix 1***:

- Tree Species (Botanical & Common Name);
- Approximate height;
- Approximate canopy spread;
- Trunk Diameter (measured at 1.4 metres from ground level);
- Trunk Diameter at base (above root crown);
- Age class;
- Health & vigour; using foliage size, colour, extension growth, presence of disease or pest infestation, canopy density, presence of deadwood, dieback and epicormic growth as indicators;
- Condition; using visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators;
- Suitability of the tree to the site and its existing location;
- Safe Useful Life Expectancy (SULE).

3.1.2 Safe Useful Life Expectancy (SULE)

The remaining Safe Useful Life Expectancy of a tree is an estimate of the sustainability of the tree in the landscape, calculated based on an estimate of the average age of the species in an urban area, less its estimated current age. The life expectancy of each tree has been further modified where necessary in consideration of its current health, vigour, condition and suitability to the site. The estimated SULE of each tree is shown in ***Appendix 1***.

The following ranges have been allocated to each tree:

- Long SULE: Trees that appear to be retainable with an acceptable level of risk for > 40 years.
- Medium SULE: Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.
- Short SULE: Trees that appear to be retainable with an acceptable level of risk for 5–15 years.
- Remove: Trees with a high level of risk that would need removing within the next 5 years.
- Small, Young or Regularly Pruned.

3.1.3 Landscape Significance

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. Several factors contribute towards the assessment of a tree's significance including but not limited to condition and vigour, form, visual prominence, heritage status, indigeneity, legislative protection, cultural sentiment and future growth potential.

For the purposes of this report the Australian Institute of Consulting Arborists (IACA) Significance of a Tree, Assessment Rating System (STARS)© has been utilised. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

Appendix 3 provides a full outline of assessment criteria for each significance rating as per IACA STARS (2010).

3.1.4 Retention Value

Retention values have been determined for each tree on site to establish a hierarchy for tree retention. Retention values are based on estimated life spans and their associated landscape significance rating in accordance with the Tree Retention Value Priority Matrix. This matrix established the following retention values and can be found at ***Appendix 3*** with attributed retention values found within ***Appendix 1***:

- Priority for Retention (High)
- Consider for Retention (Medium)
- Consider for Removal (Low)
- Priority for Removal

3.1.5 AS4970-2009 Protection of Trees on Development Sites

The Australian Standard, *AS4970-2009-'Protection of trees on development sites'*, has been used as a guide to provide recommendations for the assessed trees. The Standard provides guidance on the principles for protecting trees on land subject to development as well as principles for determining viability of tree retention. Terminology and recommended methods are consistent with *AS4970-2009*.

3.1.6 Tree Protection Zones

The assessed trees have been allocated Tree Protection Zones (TPZ). The Australian Standard, *AS4970-2009-'Protection of trees on development sites'*, has been used as a guide in the allocation of TPZs for the assessed trees. The TPZ is calculated based on trunk (stem) diameter at breast height (DBH), measured at 1.4 metres above ground level. The radius of the TPZ is calculated by multiplying the trees DBH by 12. The method provides a TPZ that addresses health and growing requirements of a tree as well as the trees stability. TPZ distances are measured as a radius from the centre of the trunk at (or near) ground level. The maximum TPZ should be no more than 15m radius and the minimum TPZ should be no less than 2m radius.

An extract of the *AS4970-2009* for calculating TPZ has been provided at ***Appendix 4*** for reference.

3.1.7 Structural Root Zone

The assessed trees have been allocated Structural Root Zones (SRZ). The Australian Standard, *AS4970-2009 - 'Protection of trees on development sites'*, has been used as a guide in the allocation of SRZ's for the assessed trees. The SRZ is a radial area extending outwards from the centre of the trunk and is calculated as follows: **SRZ (Radius) = (D x 50)$^{0.42}$ x 0.64**

4 OBSERVATIONS

4.1 General

The site area subject to this assessment was observed as highly disturbed with minor understory present. All trees observed on site and neighbouring properties appeared to be planted native and exotic species. Health, vigour and condition was varied across the trees forming part of the assessment. Root zones of assessed trees were generally observed as modified groundcover within deep soil areas. No endangered or critically endangered ecological communities were observed.

4.2 The Trees

A total of twenty-eight (28) trees were observed within the subject site and adjoining the site within 5m of the boundaries including the Council street verge and adjoining allotments. All trees have been surveyed as part of this assessment prior to their assessment. All tree data recorded on site has been tabulated and is contained at ***Appendix 1***. Each tree has been provided with an identification number for reference purposes and is denoted on the attached Tree Location and Protection Plan at ***Appendix 2***.

4.2.1 Site Trees

Trees 2, 7 & **15** (*Liquidambar styraciflua, Araucaria heterophylla,* and *Jacaranda mimosifolia)* respectively were assessed as having a 'high' retention value due to their prominence in the landscape and large size. Despite this, **Tree 2** is exempt from protection under provisions of *Chapter 2.3 Tree Management* of the Canterbury-Bankstown DCP 2023 due to species classification and may be removed without Council consent.

Trees 1, 5, 8, 9, 10, 11, 14, 19 & **24** (*Lagerstroemia indica, Melia azedarach, Cupressus torulosa* x2, *Archontophoenix cunninghamiana, Callistemon viminalis* x 2, and *Jacaranda mimosifolia* x 2) respectively, were assessed as having a 'medium' retention value due to providing a fair contribution to the landscape and having fair to good health and structure.

Trees 3, 6, 12, 13, 20, 21, 22 & **23** (*Musa sp., Morus sp. Koelreuteria bipinnata, Syagrus romanzoffiana, Casuarina cunninghamiana, Murraya paniculata and Wodyetia bifurcata*) respectively, were assessed as providing a 'low' retention value due to minor contribution to the landscape or poor health and structure.

4.2.2 Exempt Trees

Seven (7) trees (**Trees 1, 2, 3, 6, 13, 20** & **22**) located on site are exempt from protection under Chapter 2.3 - *Tree Management* of the Canterbury Bankstown DCP 2023 due to species or size provisions.

4.2.3 Neighbouring trees

Tree 4 *(Callistemon cv.)* is a neighbouring small tree located in the rear setback of 28 Ferndale Road. It was observed to be in good health and condition and has been provided a 'low' retention value due to its young age class. This tree, as well as the other neighbouring trees to follow in this section, is protected irrespective of their retention values.

Trees 16, 17 & **18** (*Cupressus sempervirens*) are located in the rear setback of 32 Ferndale Road. The trees form a row/semi-formal privacy screen, are of good health and condition and consequently were given a 'medium' retention value.

Tree 25 *(Acer sp.)* & **Tree 26** *(Corymbia ficifolia)* are located in the rear setbacks of 32A and 32 Ferndale Road respectively. Both trees were observed to be in good health and average condition. They were designated as 'medium' and 'low' retention value respectively.

4.2.4 Council Street Trees

Trees 27 & **28** (*Callistemon viminalis*) are located on the street verge fronting 27A & 37 Lochinvar Road respectively. Both trees are young to semi-mature Weeping Bottlebrush in fair health and condition with a short-life expectancy. Accordingly, they were assigned 'low' retention values.

5 DISCUSSION

5.1 Impact Assessment

The impact assessment is to calculate the incursions to the root zones and canopies as a result of the proposed demolition and construction works and evaluate the likely impact of the proposed works on the subject trees. A summary of the impacts anticipated is contained within the Tree Schedule at ***Appendix 1***. Additionally, plans demonstrating the level of incursion and conflict to TPZ's and SRZ's can be found at ***Appendix 2***. As part of the assessment the following criteria have been considered:

- Existing Relative Levels (R.L.);
- Proposed Relative Levels;
- Tree Protection Zones (TPZ);
- Structural Root Zones (SRZ);
- Footprint of the proposed development (incl. stormwater and services) and temporary structures (scaffolding, hoardings etc.);
- Incursions to the TPZ & SRZ, including estimated cut & fill beyond the building footprint;
- Incursions to the tree canopy from the building envelope and temporary structures;
- Pruning necessary for building clearance;
- Remediation works for soil contaminants;
- Species tolerance to disturbance; and
- Assessment of the likely impact of the works on existing trees.

5.2 Trees Recommended for Removal

Should the proposed works proceed in their current form, it is recommended that fourteen (14) site trees (**Trees 1, 3, 5, 6, 8, 9, 10, 12, 14, 19, 21, 22, 23** & **24**) be removed. Removals have been recommended based upon;

- Trees located within proposed stormwater infrastructure footprint: **Trees 3, 5** & **12**.
- Trees located within proposed building footprint: **Trees 8, 9, 10, 22** & **23**.
- Trees located within proposed driveway, parking bay or pathway footprint: **Trees 6** & **14**.
- Tree subject to a 'major' and unsustainable encroachment from the proposed building footprint and paved areas development works as per AS4970-2009 *Protection of Trees on Development Sites*: **Tree 21.**
- Trees subject to a 'major' and unsustainable encroachment from the proposed stormwater infrastructure alignment works as per AS4970-2009 *Protection of Trees on Development Sites* and to allow for new landscaping scheme: **Tree 24** & **19.**
- Exempt tree subject to a 'major' and unsustainable encroachment from the proposed driveway footprint as per AS4970-2009 *Protection of Trees on Development Sites* and removal proposed for removed to facilitate the new landscape scheme of improved amenity value: **Tree 1.**

Refer to ***Appendix 2*** for a plan indicating the location of trees that will require removal (dashed red).

***Table 3** – Trees recommended for removal*

Tree No.	Genus & Species	Retention Value	Reason for Removal
1	***Lagerstroemia indica*** Crepe Myrtle	Medium	Major 14% TPZ and 12% SRZ encroachment from proposed driveway. Removal proposed to facilitate landscape scheme of improved amenity.
3	***Musa sp.*** Banana	Low	Full encroachment. Within proposed new driveway footprint and stormwater infrastructure alignment. Total loss of roots and canopy.
5	***Melia azedarach*** White Cedar	Medium	Full encroachment. Within proposed stormwater infrastructure alignment. Total loss of roots and canopy.
6	***Morus sp.*** Mulberry	Low	Full encroachment. Within proposed new parking bay footprint. Total loss of roots and canopy.
8	***Cupressus torulosa*** Bhutan Cypress	Medium	Full encroachment. Within proposed building footprint. Total loss of roots and canopy.
9	***Cupressus torulosa*** Bhutan Cypress	Medium	Full encroachment. Within proposed building footprint. Total loss of roots and canopy.
10	***Archontophoenix cunninghamiana*** Bangalow Palm	Medium	Within proposed building footprint and stormwater infrastructure. Total loss of roots and canopy.
12	***Koelreuteria bipinnata*** Chinese Rain Tree	Low	Full encroachment. Within proposed stormwater infrastructure footprint. Total loss of roots and canopy.
14	***Callistemon viminalis*** Weeping Bottlebrush	Medium	Full encroachment. Within proposed driveway footprint. Total loss of roots and canopy.
19	***Jacaranda mimosifolia*** Jacaranda	Medium	Major 38% TPZ and 18% SRZ encroachment from proposed stormwater infrastructure (swale & pipes). Significant loss of root system including structural roots. Unsustainable impact anticipated to tree health and long-term viability
21	***Casuarina cunninghamiana*** River Sheoak	Low	Major 33% TPZ and 19.5% SRZ encroachment from proposed building footprint and paved footpath. Significant loss of root system including structural roots. Unsustainable impact anticipated to tree health and long-term viability.
22	***Murraya paniculata*** Orange Jessamine	Low	Full encroachment. Within proposed building and stormwater infrastructure footprint. Total loss of roots and canopy.
23	***Wodyetia bifurcata*** Foxtail Palm	Low	Full encroachment. Within proposed building footprint. Total loss of roots and canopy.
24	***Jacaranda mimosifolia*** Jacaranda	Medium	Major 51% TPZ and 64% SRZ encroachment from proposed stormwater infrastructure. Significant loss of root system including structural roots. Unsustainable impact anticipated to tree health and long-term viability

5.3 Trees Recommended for Retention & Protection

Should the proposed works proceed in their current form, it is recommended that fourteen (14) trees (**Trees 2, 4, 7, 11, 13, 15, 16, 17, 18, 20, 25, 26, 27** & **28**) be retained and protected subject to the implementation of Tree Protection Measures as per ***Section 7*** below. Specifically:

Site trees (**Trees 2, 4** & **20**), neighbouring trees (**Tree 4** & **26)** and Council street trees (**Trees 27** & **28**) have been recommended for retention and protection as there are no anticipated impacts from the proposed development. Accordingly, no impacts are anticipated to the long-term health and viability of these trees.

Tree 7 (*Araucaria heterophylla*) located in the front set back of site is recommended for retention and protection despite a 'major' (31% TPZ & 13% SRZ) encroachment as per AS4970-2009 *Protection of Trees on Development Sites,* from the proposed building footprint, outdoor patio and stormwater infrastructure including swale and drain. Although the proposed stormwater pipe alignment is outside the structural root zone (SRZ), surface excavation for the propose swale is within the SRZ and therefore could impact structural roots. Root mapping has been recommended to be undertaken prior to construction certificate (refer to **Section 7**) to determine the extent of root loss and confirm the structural viability of this tree should proposed works proceed. Nevertheless, the proposed extent of soil and feeder root loss within the TPZ would likely result in a decline to tree health. This may be partially offset by the availability of deep soil to the north contiguous with the TPZ that may provide for long-term retention of this tree.

Tree 11 (*Callistemon viminalis*) located in the rear setback of site is recommended for retention and protection despite a 'major' (15% TPZ) encroachment as per AS4970-2009 *Protection of Trees on Development Sites,* from the proposed pedestrian path and yarning circle with kerb. This impact is considered sustainable although it is likely to result in some minor -moderate root loss and short-term tolerable decline to tree health that would be partly offset by contiguous areas of deep soil to the north, south and west of the TPZ would allow for the long-term retention of the tree.

Tree 13 (*Syagrus romanzoffiana*) located in the rear setback of site is recommended for retention despite a 'major' (21% TPZ) encroachment as per AS4970-2009 *Protection of Trees on Development Sites,* from the proposed yarning circle and stormwater infrastructure. This impact is considered sustainable due to the species know tolerance to high root disturbance, the impact being outside the root ball and the availability of areas of deep soil contiguous with the TPZ allowing for the long-term retention of this palm tree.

Tree 15 (*Jacaranda mimosifolia*) located in the front set back of site is recommended for retention and protection despite a 'major' (25% TPZ & 9% SRZ) encroachment as per AS4970-2009 *Protection of Trees on Development Sites,* from the proposed building footprint, outdoor patio and stormwater infrastructure including swale and drain. A large structural root growing towards the existing footpath has been previously severed. The proposed encroachment would result in approximately an additional 500mm extent of structural root severance. This is likely sustainable as the existing loss of root function does not appear to have affected tree health and stability. The species is known to tolerate moderate amounts of root damage. However, root mapping has been recommended to

be undertaken prior to construction certificate (refer to **Section 7**) to determine the extent of root loss and confirm the structural viability of this tree. Extensive areas of deep soil contiguous with the TPZ are available to the north west of the tree. The proposed swale along the western boundary within the footprint of the existing concrete driveway would not result in additional impacts.

Trees 16-18 (*Cupressus sempervirens*) located in the neighbouring allotment at No. 34 Ferndale Rd near the southern site boundary are recommended for retention and protection despite a 'major' (12% TPZ & 2% SRZ) encroachment as per AS4970-2009 *Protection of Trees on Development Sites,* from the proposed stormwater alignment including the swale and pipe. The proposed pipe alignment is located outside the SRZ and therefore is unlike to result in structural impacts to these trees. Whilst the extent of root loss expected from surface grading for the swale and excavation for the stormwater pipe would result in some low to moderate root loss, this is considered tolerable for these trees due to the low level of impacts, their good to average to health and vigour and the availability of deep soil contiguous with the TPZ to the south available for compensatory root development.

Refer to ***Appendix 2*** for a plan indicating the location of trees that are to be retained and protected (shaded green).

Table 4 *– Trees recommended for retention & protection*

Tree No.	Genus & Species	Retention Value	Works within the Tree Protection Zone (TPZ)	Recommendation
2	***Liquidambar styraciflua*** Liquidambar	High	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
4	***Callistemon cv.*** Bottlebrush Cultivar	Low	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
7	***Araucaria heterophylla*** Norfolk Island Pine	High	Major 31% TPZ and 13% SRZ encroachment from proposed driveway, patio slab and swale. Significant loss of root system including structural roots. Unsustainable impact anticipated to tree health and long-term viability.	Retain & protect subject to root map investigation to determine extent and impacts to structural root as detailed in **Section 7**, and the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
11	***Callistemon viminalis*** Weeping Bottlebrush	Medium	Major 15% TPZ encroachment from proposed path and stormwater infrastructure.	Retain & protect subject to the implementation of root sensitive construction methodology and Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.

Tree No.	Genus & Species	Retention Value	Works within the Tree Protection Zone (TPZ)	Recommendation
13	***Syagrus romanzoffiana*** Cocos Palm	Medium	Minor 21% TPZ encroachment from proposed path & stormwater alignment	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
15	***Jacaranda mimosifolia*** Jacaranda	High	Major 25% TPZ and 9% SRZ encroachment from proposed building footprint, patio, and stormwater swale. Significant loss of root system including structural roots.	Retain & protect subject to root map investigation to determine extent and impacts to structural root as detailed in **Section 7**, and the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
16	***Cupressus sempervirens*** Mediterranean Cypress	Medium	Major 12% TPZ and 2% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & protect subject to the implementation of root sensitive construction methodology and Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
17	***Cupressus sempervirens*** Mediterranean Cypress	Medium	Major 12% TPZ and 2% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & protect subject to the implementation of root sensitive construction methodology and Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
18	***Cupressus sempervirens*** Mediterranean Cypress	Medium	Major 13% TPZ and 3% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & protect subject to the implementation of root sensitive construction methodology and Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
20	***Murraya paniculata*** Orange Jessamine	Low	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
25	***Acer sp.*** Maple	Medium	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
26	***Corymbia ficifolia*** Red Flowering Gum	Low	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.

Tree No.	Genus & Species	Retention Value	Works within the Tree Protection Zone (TPZ)	Recommendation
27	***Callistemon viminalis*** Weeping Bottlebrush	Low	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.
28	***Callistemon viminalis*** Weeping Bottlebrush	Low	No works proposed within TPZ	Retain & protect subject to the implementation of general Tree Protection Measures as detailed within ***Section 7*** & ***Appendix 5*** below.

5.4 Ancillary Construction Related Impacts

Vehicles, machinery and equipment requiring access to the site have potential to result in inadvertent impacts to those trees being retained including compaction of the root zone, soil disturbance, physical damage to roots, trunk damage etc. and as such will require management.

Furthermore, storage and stockpiling of material may result in similar impacts and will require management. In this regard, protection for those trees to be retained is to be carried out in accordance with ***Appendix 5***.

6 CONCLUSION

6.1 Proposed Development Impact

Development consent and relevant approvals must be obtained from Canterbury-Bankstown Council prior to the removal or pruning of any tree protected pursuant to Chapter 2.3, section 2 – *Tree Management* of the Canterbury-Bankstown DCP 2023.

Based on the plans and information supplied, the proposal would result in the following impacts to existing trees on site:

Removal of fourteen (14) site trees, including:

- Trees located within proposed stormwater infrastructure footprint: **Trees 3, 5** & **12.**
- Trees located within proposed building, driveway footprint: **Trees 6, 8, 9, 10, 14, 22** & **23.**
- Trees subject to a 'major' and unsustainable encroachment from the proposed building footprint and paved areas or driveway development works**: Tree 1** & **21.**
- Trees subject to a 'major' and unsustainable encroachment from the proposed stormwater infrastructure alignment works: **Tree 24** & **19.**

Retention and protection of fourteen (14) trees, including:

- Two (2) site trees (**Trees 7** & **15**) subject to 'major' but possibly tolerable encroachment from proposed stormwater infrastructure alignment and building patio, subject to root mapping investigation to determine extent of impact and tree tolerance to impact.
- Two (2) site trees (**Tree 11** & **13)** subject to 'major' but tolerable encroachment from proposed stormwater alignment and pathway subject to root sensitive construction and appropriate protection being implemented.
- Three (3) neighbouring trees (**Tree 16, 17** & **18)** subject to 'major' but tolerable encroachment from proposed stormwater alignment, subject to root sensitive construction and appropriate protection being implemented.
- Three (3) Site trees (**Trees 2, 4** & **20**), two (2) neighbouring trees (**Tree 4** & **26)** and two (2) Council street trees (**Trees 27** & **28**) which are not subject to any TPZ encroachment or anticipated impacts subject to appropriate protection being implemented;

Specific recommendations as per ***Section 7*** will need to be adopted to ensure root sensitive construction techniques and methodology are employed which mitigate the potential negative impacts to trees nominated for retention.

7 RECOMMENDATIONS

7.1 Tree Removal

Remove **Trees 1, 3, 5, 6, 8, 9, 10, 12, 14, 19, 21, 22, 23** & **24** (14 trees) to facilitate the proposed development works.

Relevant approvals and consent must be obtained from Canterbury Bankstown Council prior to the removal or pruning of any tree protected under Chapter 2.3, *Tree Management* of the Canterbury Bankstown DCP 2023 (amended August 2024).

All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with *AS4373-2007 - Pruning of Amenity Trees*, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation.

7.2 Tree Retention & Protection

Retain and protect fourteen (14) trees (**Trees 2, 4, 7, 11, 13, 15, 16, 17, 18, 20, 25, 26, 27** & **28**) in accordance with the Tree Location Plan & Tree Protection Specifications held at ***Appendix 2*** & ***5***, *AS497-2009 Protection of trees on development sites* and the specific recommendations below:

7.2.1 Project Arborist Engagement

A Project Arborist experienced in tree protection on construction sites should be engaged prior to the commencement of any works on site. The Project Arborist shall monitor and report regularly to the Principal Certifying Authority (PCA) and the Applicant on the condition and protection of the retained trees during the works. The Project Arborist is to supervise and monitor any excavation, machine trenching or compacted fill placement within the TPZ of retained trees throughout construction including during construction of basement, dwelling, stormwater infrastructure and driveway.

7.2.2 Specific Tree Protection Measures

Tree Protection Fencing and Trunk Protection must be installed as shown on the Tree Location & Protection Plan Specification held at ***Appendix 2*** and in accordance with Section 4.3 of AS4970-2009 and ***Appendix 5*** to provide a development exclusion zone. Tree protection must not be removed or altered without prior approval of the Project Arborist.

7.2.3 Root Mapping Investigation

Prior to the issue of Construction Certificate, detailed root mapping investigation using non-destructive methodology such as air spade or hand digging, are required within the TPZ of **Trees 7** & **15**. The root mapping shall determine and document the number and extent of roots that would be impacted by the proposed development. The design and construction of the stormwater infrastructure shall then be refined in consultation with the Project Arborist to ensure impacts to **Trees 7** & **15** are mitigated to a sustainable level.

7.2.4 Root-sensitive Excavation under Project Arborist Supervision

Excavation required for construction of the pathway and installation of the stormwater infrastructure within the TPZ of **Tree 11, 16, 17** & **18** must be undertaken in a root sensitive manner to ensure roots are maintained and un-damaged. Excavation should be undertaken using non-motorised hand tools under supervision of the Project Arborist in accordance with **Appendix 5**. Should significant roots be identified (>25mmØ) during construction, works are to cease and direction sought from the Project Arborist with regards to root pruning, modification of construction methodology or design alteration.

8 REFERENCES

Council of Standards Australia. 2009 AS 4970 – 2009 – *Protection of Trees on Development Sites* Standards Australia, Sydney.

Council of Standards Australia. 2007 AS 4373 – 2007 – *Pruning of Amenity Trees* Standards Australia, Sydney.

Google Australia. 2024. *Google Maps*. [ONLINE] Available at: https://www.google.com.au/maps. [Accessed June 2024].

Canterbury Bankstown. Development Control Plan 2023 (amended August 2024): Chapter 2.3, Tree Management.

Mattheck, C 2007, *Updated Field Guide for Visual Tree Assessment,* 1st Ed., Forschungszentrum Karlsruhe, Germany

Nearmap Australia. 2024, Photo Maps. [ONLINE] Available at: https://maps.au.nearmap.com [Accessed June 2024].

NSW Government - Biodiversity Values Map and Threshold Tool. Available at: https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap [Accessed July 2024].

NSW Government – Local Land Services. *Greater Sydney Regional Strategic Weed Management Plan* 2023-2027.

Slee, A.V., Brooker, M.I.H., Duffy, S.M. & West, J.G. 2006, Euclid: Eucalypts of Australia. 3rd ed. (CSIRO: Canberra.)

APPENDIX 1: TREE ASSESSMENT DATA - 29-35 Lochinvar Road, Revesby

Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH #1 (mm)	DBH #2 (mm)	DBH #3 (mm)	DBH #4 (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
1	***Lagerstroemia indica*** Crepe Myrtle	4	4	100	100	100	100	400	2.40	2.25	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major 14% TPZ & 12% SRZ encroachment from proposed driveway. Removal proposed to facilitate new landscape scheme.	Remove	Multi-stemmed at base, DBH is approximate - 50mm x 20 stems. Exempt from protection due to height (CBDCP 2023)
2	***Liquidambar styraciflua*** Sweetgum	9	8	500				600	6.00	2.67	M	Good	Good	Long 40yrs +	Medium	High	No works proposed within TPZ	Retain & Protect	Exempt from protection due to species.
3	***Musa sp.*** Banana	4	6	150	150	150	150	900	4.00	N/A	M	Good	Good	Medium 15-40yrs	Low	Low	Within footprint of proposed driveway & stormwater infrastructure	Remove	Large cluster - typical form. Exempt from protection due to species (CBDCP 2023).
4	***Callistemon cv.*** Bottlebrush Cultivar	2	5					100	2.00	1.50	SM	Good	Good	Medium 15-40yrs	Low	Low	No works proposed within TPZ	Retain & Protect	Neighbouring hedge No. 28 Ferndale Rd. Viewed over fence - measurements estimated.
5	***Melia azedarach*** White Cedar	7	5	200	250			350	3.84	2.13	M	Good	Good	Medium 15-40yrs	Medium	Medium	Within footprint of proposed stormwater infrastructure	Remove	Growing close to boundary fence - branches resting on fence
6	***Morus sp.*** Mulberry	7	4	150	200			300	3.00	2.00	M	Good	Average	Medium 15-40yrs	Low	Low	Located within proposed driveway	Remove	Included leaders at base. Exempt from protection due to species.
7	***Araucaria heterophylla*** Norfolk Island Pine	14	9	400				450	4.80	2.37	M	Fair	Good	Medium 15-40yrs	High	High	Major 31% TPZ and 13% SRZ encroachment from proposed building patio and stormwater infrastructure	Retain & Protect	Prominent in streetscape. Thinning canopy.
8	***Cupressus torulosa*** Bhutan Cypress	13	7	450	550			900	8.53	3.17	M	Good	Average	Medium 15-40yrs	Medium	Medium	Located within proposed building footprint	Remove	Co-dominant leaders from 1m. Crown raised to 6m.Trunk base hard against boundary fence
9	***Cupressus torulosa*** Bhutan Cypress	13	7	600	500			900	9.37	3.17	M	Fair	Average	Medium 15-40yrs	Medium	Medium	Located within proposed building footprint	Remove	Co-dominant leaders from 0.5m. Southern leader crown dieback. Crown raised to 2m. Trunk base hard against boundary fence.
10	***Archontophoenix cunninghamiana*** Bangalow Palm	13	4	250	300			600	3.00	N/A	M	Good	Good	Medium 15-40yrs	Medium	Medium	Located within proposed building footprint	Remove	Codominant leaders
11	***Callistemon viminalis*** Weeping Bottlebrush	6	7	200	400			500	5.37	2.47	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major 15% TPZ encroachment from proposed path & stormwater infrastructure	Retain & Protect	Asymmetrical canopy
12	***Koelreuteria bipinnata*** Chinese Rain Tree	10	9	550				650	6.60	2.76	OM	Fair	Poor	Very Short <5yrs	Medium	Low	Located within proposed stormwater infrastructure	Remove	Previous branch failures. Hanging branches throughout canopy. Central leader is dead, decay present to lower main stem.
13	***Syagrus romanzoffiana*** Cocos Palm	12	5	400				500	3.50	N/A	M	Good	Good	Medium 15-40yrs	Low	Low	Major 21% TPZ encroachment from proposed path and stormwater infrastructure alignment	Retain & Protect	Exempt from protection due to species.
14	***Callistemon viminalis*** Weeping Bottlebrush	5	4	150	150	150		350	3.12	2.13	M	Good	Average	Medium 15-40yrs	Medium	Medium	Located within proposed driveway	Remove	Multi-stemmed at base
15	***Jacaranda mimosifolia*** Jacaranda	9	9	450				500	5.40	2.47	M	Good	Good	Medium 15-40yrs	High	High	Major 25% TPZ and 9% SRZ encroachment from proposed building footprint and swale	Retain & Protect	Dominant in landscape Raised surface roots - lawn mower damage, one 150mm diameter root severed for footpath
16	***Cupressus sempervirens*** Mediterranean Cypress	7	2	250				350	3.00	2.13	M	Good	Good	Medium 15-40yrs	Medium	Medium	Major 12% TPZ and 2% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & Protect	Neighbouring tree No. 34 Ferndale Rd - viewed over fence - measurements estimated.
17	***Cupressus sempervirens*** Mediterranean Cypress	7	2	250				350	3.00	2.13	M	Good	Good	Medium 15-40yrs	Medium	Medium	Major 12% TPZ and 2% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & Protect	Neighbouring tree No. 34 Ferndale Rd - viewed over fence - measurements estimated.
18	***Cupressus sempervirens*** Mediterranean Cypress	7	2	250				350	3.00	2.13	M	Good	Good	Medium 15-40yrs	Medium	Medium	Major 13% TPZ and 3% SRZ from proposed stormwater infrastructure (swale & pipe)	Retain & Protect	Neighbouring tree No. 34 Ferndale Rd - viewed over fence - measurements estimated.
19	***Jacaranda mimosifolia*** Jacaranda	9	8	350	350			450	5.94	2.37	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major 38% TPZ and 18% SRZ encroachment from proposed stormwater infrastructure (swale & pipe)	Remove	No site access - viewed over fence - measurements estimated. Codominant leaders.

Tree No.	*Genus & species* Common Name	Height (m)	Crown Spread (m)	DBH #1 (mm)	DBH #2 (mm)	DBH #3 (mm)	DBH #4 (mm)	DGL (mm)	TPZ Radius (m)	SRZ Radius (m)	Age Class	Health / Vitality	Structure/ Condition	SULE Rating	Landscape Significance	Retention Value	Development Impact	Retain / Remove	Comments
20	***Murraya paniculata*** Orange Jessamine	4	5	100	100	100		200	2.08	1.68	M	Good	Average	Medium 15-40yrs	Low	Low	No works proposed within TPZ.	Retain & Protect	No site access - viewed over fence - measurements estimated. Multi-stemmed at base. Exempt from protection due to height (CBDCP 2023)
21	***Casuarina cunninghamiana*** River Sheoak	9	5	250	250			400	4.24	2.25	OM	Poor	Poor	Very Short <5yrs	Medium	Low	Major 33.5% TPZ and 19.5% SRZ encroachment from proposed building footprint and paved pathway	Remove	No site access - viewed over fence - measurements estimated.
22	***Murraya paniculata*** Orange Jessamine	4	5	100	100	100		200	2.08	1.68	M	Good	Average	Medium 15-40yrs	Low	Low	Located within paved pathway & stormwater infrastructure	Remove	No site access - viewed over fence - measurements estimated. Exempt from protection due to height (CBDCP 2023)
23	***Wodyetia bifurcata*** Foxtail Palm	5	2	250				350	3.00	N/A	M	Good	Good	Medium 15-40yrs	Low	Low	Located within proposed building footprint	Remove	No site access - viewed over fence - measurements estimated.
24	***Jacaranda mimosifolia*** Jacaranda	8	8	200	200			300	3.39	2.00	M	Good	Average	Medium 15-40yrs	Medium	Medium	Major 50% TPZ and 37% SRZ encroachment from proposed stormwater infrastructure	Remove	No site access - viewed over fence - measurements estimated.
25	***Acer sp.*** Maple	5	5	150	150			250	2.55	1.85	SM	Good	Average	Medium 15-40yrs	Medium	Medium	No works proposed within TPZ	Retain & Protect	Neighbouring tree No. 32 Ferndale Rd - viewed over fence - measurements estimated. Branch overhanging site.
26	***Corymbia ficifolia*** Red Flowering Gum	3	3	100	50			150	2.00	1.50	SM	Good	Average	Medium 15-40yrs	Low	Low	No works proposed within TPZ	Retain & Protect	Neighbouring tree No. 32A Ferndale Rd - viewed over fence - measurements estimated.
27	***Callistemon viminalis*** Weeping Bottlebrush	5	6	100	100			150	2.00	1.50	M	Fair	Fair	Short 5-15yrs	Medium	Low	No works proposed within TPZ	Retain & Protect	Council street tree
28	***Callistemon viminalis*** Weeping Bottlebrush	6	4	50	50	50	50	150	2.00	1.50	M	Fair	Fair	Short 5-15yrs	Medium	Low	No works proposed within TPZ	Retain & Protect	Council street tree

Tree Inspection Data Notes & Terminology

Tree No. (Tree Number)
The tree number associated to each tree located on or adjacent to the subject site. Relates to the Tree Location Plan held at Appendix 2.

Botanical Name and Common Name
The botanical and common name of each tree is identified and recorded. Occasionally the exact species name is unknown; sp. is recorded to indicate this.

Height, Crown Width and DBH
- The trees height and crown spread is recorded in metres (m);
- The tree DBH is recorded in millimetres (mm). DBH is an abbreviation of Diameter (of the trunk) measured at Breast Height (or 1.4m from the base of the trunk). If more than one trunk is present the DBH is calculated in accordance with AS4970-2009 Protection of Trees on Development Sites

Age Class
The age class of each tree is estimated as either:
IM – Immature refers to well established but juvenile tree
SM – Semi Mature, a tree that has not grown to mature size
M – Mature, a tree that has reached mature size and will slowly increase in size over time
OM – Over Mature, a tree that has been mature for a long period and is beginning to display signs of decline, e.g. large dead branches
S – Senescent, an over mature tree that is now in decline

Health & Condition
The trees health and vigour is recorded as a measurement of:
Good - the tree does not appear to appear stressed with no excessive dieback, insect infestation, decay, deadwood or epicormic shoots
Average - the tree appears stressed and has some crown dieback, and /or a few epicormic shoots, and/or some deadwood in the crown and some new growth at branch tips. These trees may benefit from remediation of the growing environment to reduce stress and return it to good health
Fair - the tree may have areas of crown dieback, and/or epicormic shoots, and/or areas of decay, and/or reduced new growth at branch tips. These trees have been stressed for a short period of time, remediation of the growing environment may improve trees health
Poor - the tree may have large areas of crown dieback, and/or many epicormic shoots, and/or reduced new growth at branch tips. These trees have been stressed for a long period of time, remediation of the growing environment would not return the tree to good health.

SRZ (Structural Root Zone)
The SRZ is a radial area extending outwards from the centre of the trunk. This area contains the majority of the structural woody roots. This area is responsible primarily for stability. Root damage or root loss within this zone greatly increases the opportunity for decay fungi to ingress into the heartwood, causing internal decay in addition to destabilising the trees structural integrity. The SRZ is calculated as follows (This calculation is taken from the Australian Standard 4970 – 2009 Protection of Trees on Development Sites): (D x 50)0.42 x 0.64

TPZ (Tree Protection Zone)
The TPZ is a radial area measured by multiplying the DBH by twelve (12) or a circular area the size of the trees drip line, whichever is greater. This area contains the majority of the structural and feeder roots responsible for stability, gaseous exchange and water and nutrient uptake. Excavation, back filling, compaction or other disturbance should not occur in this area. The TPZ is used to identify the minimum area required for the safe retention of a given tree. This calculation is derived from the Australian Standard 4970-2009 Protection of Trees in Development Sites. An incursion up to 10% within the TPZ is potentially acceptable if no other option is available. A major encroachment (in excess of 10%) is required to be clearly justified by the Project Arborist and compensated for elsewhere. Justification methodology may vary depending on site or individual tree's health, vigour and ability to withstand disturbance and may require root investigation.

Landscape Significance
The landscape significance of a tree or group of trees is determined using a combination of health/vigour/condition, amenity, heritage and ecological values in accordance with IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©.
1. High Significance in Landscape
2. Medium Significance in Landscape
3. Low Significance in Landscape

Retention Value (RV)
Determined by [1] tree free of visual defects and viable for retention, [2] viable for retention with minor faults which may reduce SULE, [3] trees which should not restrict development applications containing faults that are likely to become problematic in the short term, [4] trees to be considered for removal due to average condition.
High Retention - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented e.g. pier and beam etc. if works are to proceed within the Tree Protection Zone.
Medium Retention - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
Low Retention - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

S.U.L.E. Categories
Safe Useful Life Expectancy (after *Barrell* 1996, modified by the author). A trees S.U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. S.U.L.E. assessments may be modified as dictated by changes in trees health and environment.
Long - Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.
Medium - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.
Short - Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk assuming reasonable maintenance.
Very Short - Removal - Trees which should be scheduled for removal within the very short term or as specified within this report.
Small, Young or Regularly Pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

Development Impact
Brief outline of the impact of the proposed development works or ancillary construction related activities likely to impact the tree.

Retain/Remove
The proposed removal or retention recommendation in light of the proposed development related impacts.

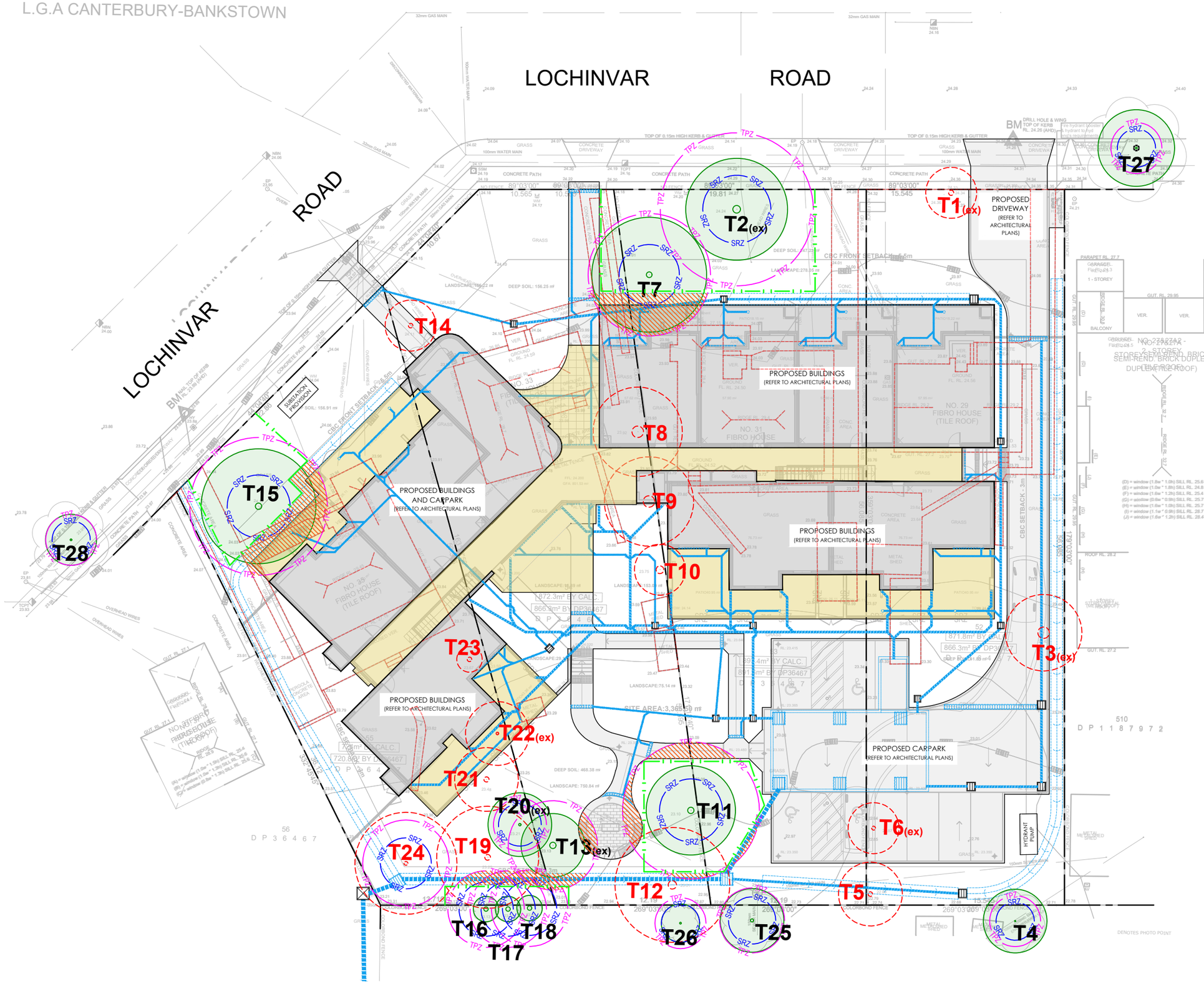
NOTES: This report acknowledges the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1,Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability, development must take into consideration protection of the TPZ radius. The extent of inclusion within the TPZ radius has been categorised within this report as follows:

<10% - negligible incursion
>10 - <15% - low to moderate level of incursion
>15 - <20% - moderate level of incursion
>20 - <25% - moderate to high level of incursion
>25 - <35% - high level of incursion
>35% - significant incursion within the TPZ

APPENDIX 2 - TREE LOCATION PLAN

NOTE: MUST BE READ IN CONJUNCTION WITH ARBORICULTURAL IMPACT ASSESSMENT

L.G.A CANTERBURY-BANKSTOWN



CPS
CREATIVEPLANNINGSOLUTIONS
LEVEL 3
397 RILEY STREET
SURRY HILLS NSW 2010
PO BOX 1074 BROADWAY NSW 2007
TEL: + (61) 2 8039 7461
INFO@CPSPLANNING.COM.AU
CPSPLANNING.COM.AU

DIMENSIONS :
All dimensions are in millimetres unless otherwise noted. Do not scale from this drawing.

Verify all dimensions on site prior to construction.

CIVIL, STRUCTURAL, HYDRAULIC, ELECTRICAL AND SPECIALIST WATER FEATURE WORKS :
Refer to specialist and consultant's drawings for all information contained within these documents relating to and nominated as specialist and consultant work. Specialist and consultant drawing information contained in the landscape documents are indicative only and not for construction or certification purposes.

LEGEND

- EXISTING TREE TO BE RETAINED (ex = exempt)
- TREE PROTECTION ZONE (TPZ)
- STRUCTURAL ROOT ZONE (SRZ)
- SITE BOUNDARY
- EXISTING SURVEYED STRUCTURES DEMOLISHED
- STORMWATER PIPELINE
- TPZ INCURSION ZONE
- EXISTING TREE TO BE REMOVED (ex = exempt)
- TREE PROTECTION FENCING *(AS PER APPENDIX 1)*
- TRUNK PROTECTION *(AS PER APPENDIX 1)*

Issue	Code	Issue Description	By	Chk	Date
C	-	UPDATED	SD	GT	30.10.24
B	-	UPDATED	NZ	GT	21.08.24
A	-	FOR APPROVAL	SD	GT	23.07.24

PRE - Preliminary CA - Council Approval T - Tender CON - Construction

PROJECT

FUTURE DEVELOPMENT

29-35 LOCHINVAR RD, REVESBY

DRAWING TITLE

TREE LOCATION PLAN

CLIENT

Land and Housing Corporation

Drawn : SD
Designed : GT
Project No. : F881

N

1:300 @ A3

SHEET NUMBER F881_TLP_04

REVISION C

APPENDIX 3

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

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

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

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

Tree Significance - Assessment Criteria

1. High Significance in landscape

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

2. Medium Significance in landscape

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

3. Low Significance in landscape

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

Environmental Pest / Noxious Weed Species

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

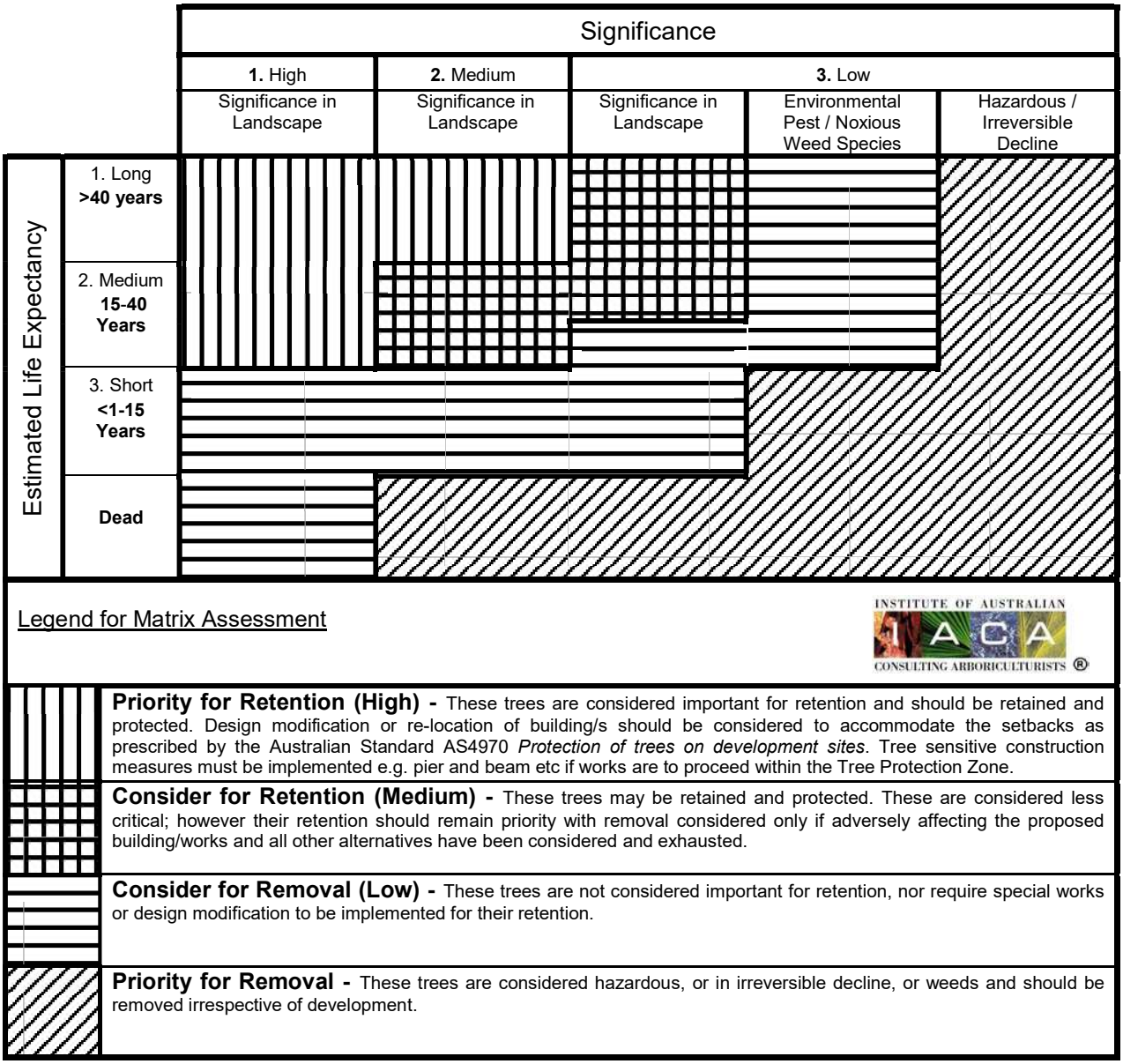
Hazardous/Irreversible Decline

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

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

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

Table 1.0 Tree Retention Value - Priority Matrix.



USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

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

REFERENCES

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

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

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

The following example shows the IACA **Significance** of a **Tree, Assessment Rating System** (STARS) used in an Arboricultural report.

Tree Significance

Determined by using the Tree Significance - Assessment Criteria of the *IACA Significance of a Tree, Assessment Rating System* (STARS)© (IACA, 2010), Appendix B.

Trees 14, 16, 17/3, 19 and 20/4 are of high significance with the remaining majority of medium significance and a few of low significance. Tree 14 is significant as a prominent specimen and a food source for indigenous avian fauna. Tree 16 as a non-locally indigenous planting is of good from and prominent *in situ*; Tree 17/3 as a stand of 6 street trees along the Davey Street frontage screening views to and from the site and contiguous with trees in Victoria Park extending the aesthetic influence of the urban canopy to the site. Similarly for Trees 20/4 as street trees in Long Road and Tree 19 as an extant exotic planting as a senescent component of the original landscaping. The trees of low significance are recent plantings as fruit trees – Avocados, and 1 Cootamundra Wattle as a non-locally indigenous tree in irreversible decline and potentially structurally unsound.

Significance Scale

1 – High
2 – Medium
3 – Low

Significance Scale	1	2	3
Tree No. / Stand No.	14, 16, 17/3, 19, 20/4	1/1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12/2, 15, 18, 21/5	3, 13, 22

Tree Retention Value

Determined by using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System* (STARS)© (IACA, 2010), Appendix B.

Retention Value

High – Priority for Retention
Medium – Consider for Retention
Low – Consider for Removal
Remove - Priority for Removal

Retention Value	High Priority for Retention	Medium Consider for Retention	Low Consider for Removal	Remove Priority for Removal
Tree No. / Stand No.	1/1, 5, 17/3*, 19	2, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20/4*, 21/5	3, 12/2, 13,	22

* Trees located within the neighbouring property and should be retained and protected.

APPENDIX 4 - EXTRACT FROM AS4970 2009 PROTECTION OF TREES ON DEVELOPMENT SITES

Section 3, Determining the tree protection zones of the selected trees

3.1 Tree protection zone (TPZ)

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

The TPZ incorporates the structural root zone (SRZ) (refer to Clause 3.3.5)."

3.2 Determining the TPZ

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

TPZ = DBH x 12

where

DBH = trunk diameter measured at 1.4 m above ground

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

3.3.5 Structural root zone (SRZ)

"The SRZ is the area required for street stability. A larger area is required to maintain a viable tree. The SRZ only needs to be calculated when a major encroachment into a TPZ is proposed. Root investigation may provide more information on the extent of these roots."

Determining the SRZ

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

SRZ radius = $(D \times 50)^{0.42} \times 0.64$

where

D = trunk diameter, in metres, measured above the root buttress.

Note: The SRZ for trees less than 0.15 m will be 1.5 m (see Figure 1).

The curve can be expressed by the following formula:

$R_{SRZ} = (D \times 50)^{0.42} \times 0.64$

NOTES:

1 R_{SRZ} is the structural root zone radius.

2 D is the stem diameter measured immediately above root buttress.

3 The SRZ for trees less than 0.15 m diameter is 1.5 m.

4 The SRZ formula and graph do not apply to palms, other monocots, cycads and tree ferns.

5 This does not apply to trees with an asymmetrical root plate.

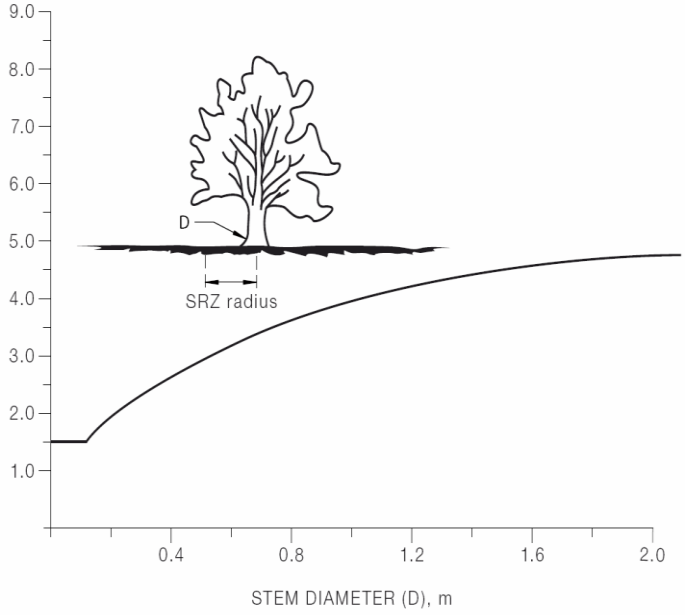


FIGURE 1 STRUCTURAL ROOT ZONE

APPENDIX 5 – GENERAL TREE PROTECTION SPECIFICATION

1.0 Project Arborist

A Project Arborist with AQF Level 5 qualifications may be appointed prior to works commencing to ensure trees to be retained are appropriately monitored and protected throughout the proposed works. The Project Arborist shall review all tree protection measures, ensure compliance with requirements set out by the Principal Certifying Authority and provide compliance reports as per the schedule of works and responsibilities below.

Table 5 - *Schedule of Works and Responsibilities*

HOLD POINT	TASK	RESPONSIBILITY	CERTIFICATION	TIMING OF INSPECTION
1	Review & certification of all tree protection measures	Principal Contractor	Project Arborist (AQF5)	Prior to demolition or site establishment
2	Supervise all excavation works proposed within the TPZ	Principal Contractor	Project Arborist (AQF5)	As required prior to works proceeding within TPZ
3	Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Quarterly during construction
4	Final Inspection of trees by Project Arborist	Principal Contractor	Project Arborist (AQF5)	Following removal of tree protection measures prior to Occupation Certificate

2.0 Compliance

Compliance Documentation shall be prepared by the Project Arborist following each site inspection. The Compliance Documentation shall include documentary evidence of compliance with the tree protection measures and methods as outlined within this Specification. Upon the completion of the works, a final assessment of the trees shall be undertaken by the Project Arborist and future management strategies recommended.

3.0 Tree Removal

The trees to be removed shall be removed prior to the establishment of the tree protection measures. Tree removal works shall be undertaken in accordance with the *Workcover Code of Practice for the Amenity Tree Industry (1998)*. All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - Pruning of Amenity Trees, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation. Care should be taken to avoid damaging trees to be retained.

4.0 Tree Protection Zone

The Tree Protection Zone (TPZ) is a specified area above and below ground set aside for the protection of a tree. The TPZ should be protected to ensure development activities do not have an adverse effect on the viability and stability of trees to be retained. Activities restricted within the TPZ include:

- Soil cutting or filling, including excavation and trenching
- Soil compaction and modification
- Storage of materials and waste
- Parking of vehicles and plant
- Temporary or permanent installation of sheds, utilities and signs
- Cement or chemical preparation
- Refuelling
- Any other action leading to damage of the tree

5.0 Tree Protection Fencing

TPZ fencing shall be located at the perimeter of the TPZ. Where TPZ areas overlap, TPZ fencing may be combined to form a single larger TPZ area. The exact location of the fencing shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.

Fencing may be setback to allow for demolition/construction access only where appropriate ground protection is installed and approved by the Project Arborist.

Tree Protection Fencing shall consist of galvanised steel temporary fencing panels supported by concrete feet with panels coupled together. Care should be taken to avoid damaging the tree during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (***Appendix 2***).

6.0 Scaffolding

Scaffolding shall be erected outside of the TPZ. If scaffolding is deemed essential within the TPZ, the ground shall be protected, and branch removal minimised. Ground below scaffolding shall be protected by boarding placed over a layer of mulch to prevent soil compaction. Scaffolding shall be designed to avoid branches or branches tied back. Refer to Typical Tree Protection Details (***Appendix 2***).

7.0 Ground Protection

Where deemed necessary by the Project Arborist, temporary ground protection, such as ground mats or steel road plates placed over a mulch layer with geotextile fabric underneath, shall be utilised to prevent damage to tree roots during construction. Refer to Typical Tree Protection Details (***Appendix 2***).

8.0 Trunk Protection

Trunk protection shall be installed by wrapping padding around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (***Appendix 2***).

9.0 Works within the Tree Protection Zones

The Principal Certifying Authority may approve works within Tree Protection Zones. The Project Arborist shall ensure compliance with the prescribed requirements as set out by the Principal Certifying Authority to ensure trees nominated for retention are adequately retained and protected throughout the works.

10.0 Structure & Pavement Demolition

Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing slabs, pavements or areas of ground protection.

Pavement is to be shattered with a hand-operated pneumatic/electric breaker prior to removal taking place and carefully lifted to minimise damage to the underlying soil profile and tree roots. The underlying soil profile and existing sub-base materials shall remain in-situ.

When removing slab sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un- demolished sections of slab at all times. Machinery should not contact the tree's roots, trunk, branches and crown.

Exposed roots shall be irrigated by hand and covered with a 75-100mm layer of mulch as soon as possible after being exposed. The mulch must remain in place until new surfaces are put into place.

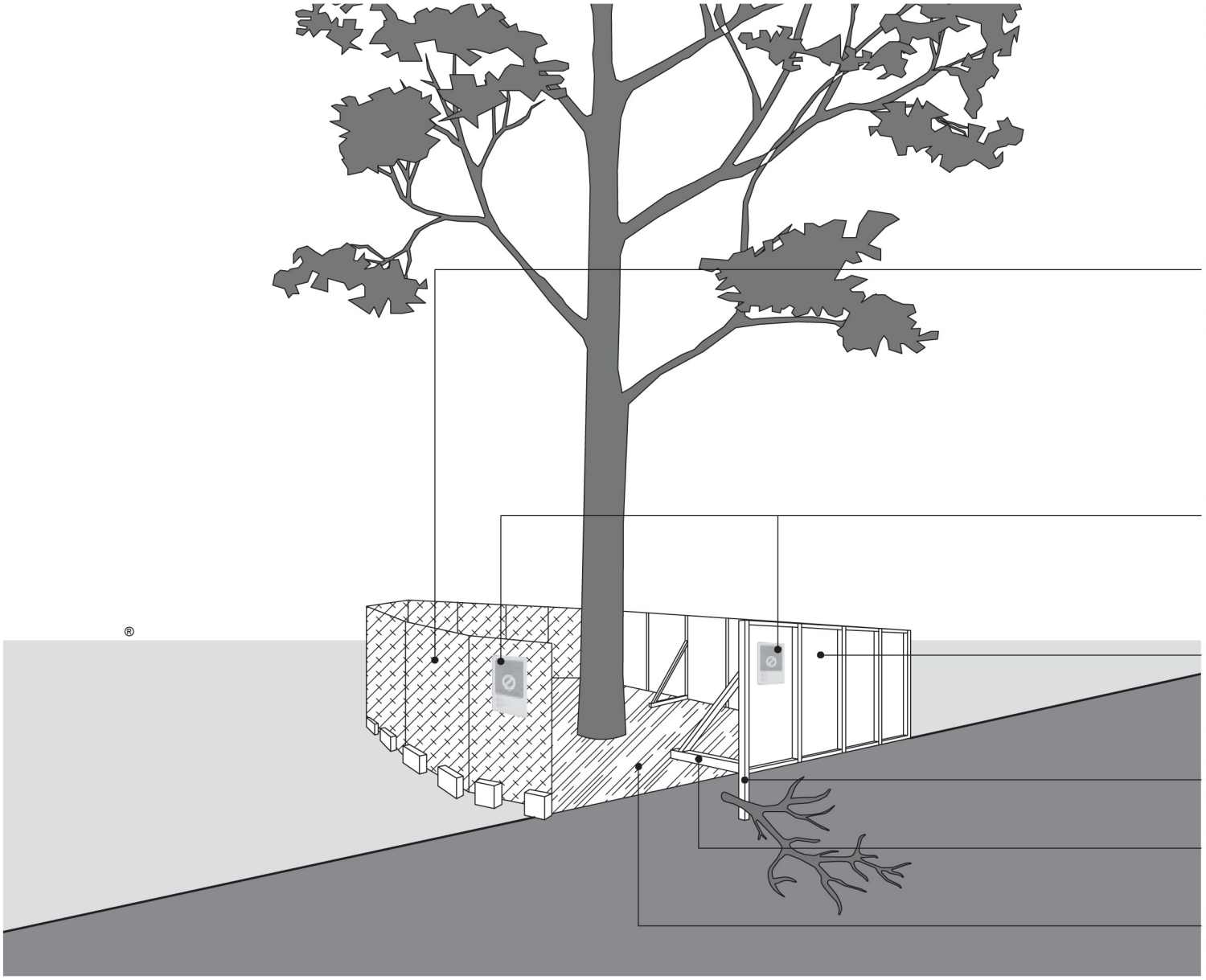
11.0 Underground Services

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using in a root-sensitive manner utilising manual hand excavation methods or employ a pneumatic excavation device to ensure roots are maintained and undamaged under supervision of the Project Arborist. Services are to be threaded in between and/or under to preserve existing roots.

13.0 Excavations, Root Protection & Root Pruning

Excavation required within the TPZ shall be undertaken using non-motorised hand tools or a pneumatic excavation device under supervision of the Project Arborist. Excavation must be undertaken in a root sensitive manner to ensure roots are maintained and un-damaged. Should significant roots be identified (>25mmØ) during construction, works are to cease and direction sought from the Project Arborist with regards to root pruning, modification of construction methodology or design alteration.

APPENDIX 6 - TYPICAL TREE PROTECTION DETAILS



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

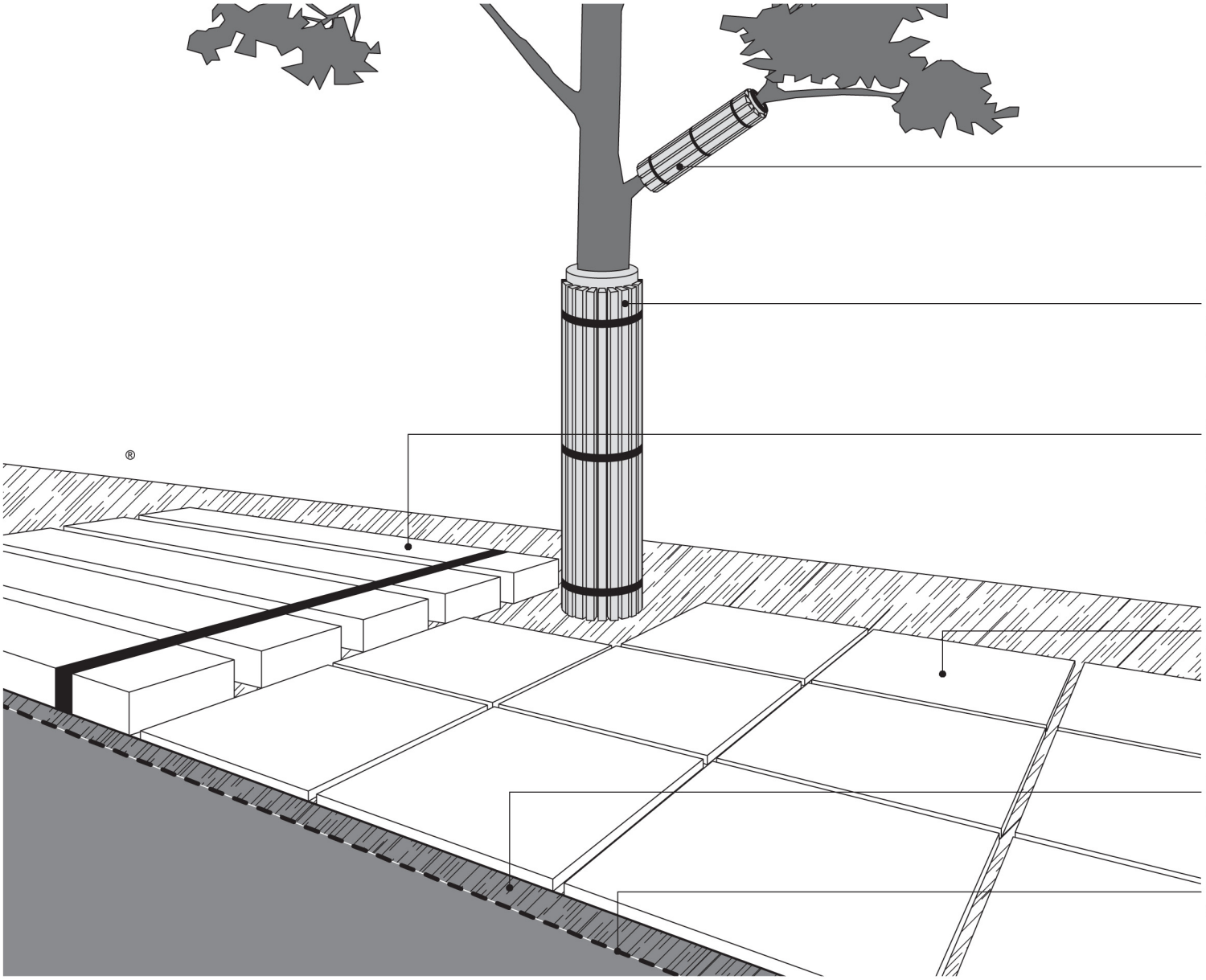
Option 2 - Fencing
Plywood or wooden panel paling fence. This type of fencing material also prevents building materials or soil entering the TPZ.

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.

01 Tree Protection Fencing



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

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

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

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

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

Geotextile fabric underneath mulch or aggregate layer.

02

Examples of Branch, Trunk and Ground Protection

INSTITUTE OF AUSTRALIAN CONSULTING ARBORICULTURISTS

IACA

MANAGING URBAN TREES™

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

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

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

Scaffold planks

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

Soleplate over geotextile. No excavation for soleplate within TPZ.

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

Geotextile fabric

03 Indicative Scaffolding within a Tree Protection Zone (TPZ)

CREATIVEPLANNINGSOLUTIONS

Creative Planning Solutions Pty Limited
Level 3, 397 Riley Street, Surry Hills NSW 2010 – PO Box 1074 Broadway NSW 2007
+61 2 8039 7461 | info@cpsplanning.com.au | www.cpsplanning.com.au
Creative Planning Solutions Pty Limited – ABN: 70 135 093 926

12th March 2025

CPS Job No.: F881

Karl Harb
Homes NSW
Locked Bag 5022
Parramatta NSW 2124

Dear Karl,

RE: ARBORICULTURAL ADVICE IN RELATION TO ADDITION TREE IMPACT FOR A PROPOSED GROUP HOME AT: 29-35 LOCHINVAR ROAD, REVESBY NSW 2212

This letter has been prepared to provide additional Arboricultural Advice to Homes NSW in relation to potential impacts of the proposed stormwater easement on trees located on adjacent properties.

It is understood that Homes NSW require an easement to drain stormwater along the rear boundary of 37 Lochinvar and the eastern side boundary of 38 Ferndale Road. In lieu of a site inspection, Near Maps aerial imagery supplied by Homes NSW has been used to assess potential impacts to trees on adjacent properties. It is noted the advice provided herein has been based off a desktop study only and on-site verification would be required to confirm tree species, sizes and final impacts.

Figure 1 - Near Maps aerial imagery annotated to show trees along proposed stormwater easement (blue line)

A review of the supplied Near Maps imagery suggest that the group of 3 x trees located in the rear corner of 38 Ferndale Road (Home NSW owned) along the proposed stormwater alignment are specimens of *Musa sp*. (Banana). This species is listed as an exempt species per Canterbury-Bankstown Tree Management Policy 2023 and can be removed without Council approval or consent. It is also noted that the survey (SJ Surveying Services, 17.06.2023) indicates 2 of these trees are <5m in height and 1 is 5m in height. On this basis 2 are exempt from protection due to size per Canterbury-Bankstown Tree Management Policy 2023.

Aerial imagery suggests that the trees located along the rear boundary and western side boundary of the property at No.36 Ferndale are likely specimens of *Dypsis lutescens* (Golden Cane Palms) or a similar palm / clumping palm species.

Proposed works for the stormwater infrastructure are unlikely to result in any long-term impacts to the health and condition of these neighbouring palm trees given the species small Tree Protection Zones, clumping form and known tolerance to root disturbance. Implementation of root sensitive excavation within the stormwater alignment adjacent to neighbouring trees must be undertaken as well as protection in accordance with *AS4970-2009 - Protection of trees on development sites*.

If you have any queries in relation to the information presented above, please do not hesitate to get in contact.

Sincerely,
Creative Planning Solutions Pty Ltd

Greg Tesoriero
PRINCIPAL CONSULTING ARBORIST
Dip. Hort. (Arboriculture) AQF Level 5
Registered Consulting Arborist No. 3008
QTRA No. 6291