



# Arboricultural Impact Assessment

## **Site Location**

826 Victoria Road Ryde NSW

## **Prepared**

24<sup>th</sup> October 2022

## **Client**

The Trustees of the Roman Catholic Church  
for The Diocese of Saint Maron Sydney

**Prepared by: DJD Tree Consultancy**  
**Revision: B**

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## 1.0 EXECUTIVE SUMMARY

This report was commissioned by *The Trustees of the Roman Catholic Church for The diocese of Saint Maron Sydney* to accompany the Development Application for 826 Victoria Road Ryde. The aim of the report is to provide an assessment of the six (6) trees on site and thirteen (13) on neighbouring allotments impacted by the proposed development.

The report collates and presents information collected Saturday 4<sup>th</sup> June and 1<sup>st</sup> October 2022. The tree data is outlined in Section 5. Table 1, 2, 3; also see Appendix D -Tree Locations /Photos.

The site is 826 Victoria Road Ryde, located within the City of Ryde LGA and constitutes a Heritage Listed Item. The current tree plantings are a mixture of exotic and native species planted as part of previous landscape works.

The proposed report considers the retention of sixteen (16) trees and the consideration of three (3) trees to be removed on site. The removals will comprise the offsetting of multiple plantings consisting of trees, shrubs, and groundcovers.

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**24<sup>th</sup> October 2022**

**The Trustees of the Roman Catholic Church  
for The diocese of Saint Maron Sydney**

**Reference: PAA/DA – 826 Victoria Road**

**Arboricultural Impact Assessment:**  
826 Victoria Road  
RYDE NSW

## **2.0 INTRODUCTION**

This report has been prepared by DJD Tree Consultancy for *The Trustees of the Roman Catholic Church of Saint Maron Sydney*. The site and general growing environment of the subject trees was inspected and evaluated by the Author on 4<sup>th</sup> June and 1<sup>st</sup> October 2022.

The site is subject to a Development Application and this report, and any works recommended herein, that require approval from the consenting authority are provided to form part of that development application and its consent conditions. The Tree Location (Appendix D) and Tree Protection Plan (Appendix E) are to be included into and used in conjunction with the approval for the site.

The aims and objectives of this report are to detail and comply with the tree protection requirements specified in AS4970 (2009) *Protection of trees on development sites* to identify and assess the condition of the subject tree/s; determine the impact of development on the subject tree/s; provide recommendations for retention or removal of the subject tree/s; provide specifications for protection of tree/s to be retained. The information in this report is intended to provide tree management and protection through all stages of development.

### 3.0 AIMS & OBJECTIVES

#### 3.1 Aims

Detail the condition of the tree/s on the site or on adjoining sites where such tree/s may be affected by the proposed works, by assessment of individual specimens or stands, and indicate remedial works or protection measures for their retention in a safe and healthy condition, or a condition not less than that at the time of initial inspection for this report, or in a reduced but sustainable condition due to the impact of the development but ameliorated through tree protection measures able to be applied, and will consider the location and condition of the trees in relation to the proposed building works, or recommend removal and replacement where appropriate.

Provide as an outcome of the assessment, the following: a description of the tree/s, observations made, discussion of the effects the location of the proposed building works may have on the tree and makes recommendations required for remedial or other works to the tree, if and where appropriate.

Determine from the assessment a description of the works or measures required to ameliorate the impact upon the tree to be retained, by the proposed building works or future impacts the tree may have upon the new building works if and where appropriate, or the benefits of removal and replacement if appropriate for the medium to long term safety and amenity of the site.

#### 3.2 Objectives

Assess the condition of the subject tree/s.

Determine impact of development on the subject tree/s.

Provide recommendations for retention or removal of the subject tree/s.

#### 3.3 Documentation

The following documents were received and have been reviewed as part of this report.

Documentation	Author	Issue/Date
Detail & Boundary Identification Survey	C & A Surveyors	REV No: - V3 12/10/2022
Architectural Plans	ALTIS Architecture	Revision 1- October 2022
Stormwater Design	SCG	DWG No: SW300- September 2022
Landscape Plans	Site Image – Landscape Architects	JOB No: SS20-5010- September 2022

## 4.0 METHODOLOGY

- 4.1 The method of assessment of tree/s is applied from the ongoing knowledge and development of the author and considers but is not confined to:
- Tree health and subsequent stability, both long and short term
  - Sustainable Retention Index Value (S.R.I.V.)© IACA 2009)
  - Amenity values
  - Significance
- 4.2 This assessment is undertaken using a standard tree assessment criteria for each tree based on the values above and is implemented as a result of at least one comprehensive and detailed site inspection.
- 4.3 In this report the dimensions of the tree recorded by the author for the trunk *diameter at breast height* (DBH) measurement is calculated at 1.4m above ground from the base of the tree. Where a tree is trunkless or branches at or near ground such as a mallee formed tree, an average diameter is determined by recording the radial extent of the stem mass at its narrowest and widest dimensions, adding the two dimensions together and dividing them by 2 to record an average.
- 4.4 Crown spreads are expressed as length by breadth measurements to accurately record their dimensions. Where appropriate, *crown spread orientation* is described along the length of the crown spread e.g. North/South, or as *radial* if the crown is distributed at an approximately even radius from the trunk e.g. 6x6m.
- 4.5 The Australian Standard AS 4970-2009 “Protection of trees on development sites, where applicable is applied to trees to be retained in this report as a point of reference and guide for the recommended minimum clearances from the centre of tree trunks to development works and is applied as a generalised benchmark and the distances may be increased or decreased by the author as a result of other factors providing mitigating circumstances or constraints as indicated by but not restricted to the following:
- *Tolerance of individual species to disturbance,*
  - *Geology e.g. physical barriers in soil, floaters, bedrock to surface*
  - *Topography e.g. slope, drainage,*
  - *Soil e.g. depth, drainage, fertility, structure,*
  - *Microclimate e.g. due to landform, exposure to dominant wind,*
  - *Engineering e.g. techniques to ameliorate impact on trees such as structural soil, lateral boring,*
  - *Construction e.g. techniques to ameliorate impact on trees such as pier and beam, bridge footings, suspended slabs*
  - *Arboriculture e.g. exploration trenches to map location of roots,*
  - *Physical limitations - existing modifications to the environment and any impact to tree/s by development e.g. property boundaries, road reserves, previous impact by excavation in other directions, soil level changes by cutting or filling, existing landscaping works within close proximity, modified drainage patterns*

## 5.0 TREE ASSESSMENTS

5.1 Table 1

Tree No.	Genus & Species Common Name	Age Y – Young M – Mature O – Overmature	Condition G – Good F – Fair P – Poor D – Dead	Branch Bark Included	Canopy Orientation Sy – Symmetrical Asy – Asymmetrical	Trunk Diameter (DBH- 1.4 m above ground level in mm)	Height X Spread (in metres)	Tree Vigour L – Low G – Good D – Dormant	SRIV Sustainable Retention Index Value
1	<b>Magnolia grandiflora</b> Bull Bay Magnolia	M	F	No	Sy	690	8 x 7(N/S) 9(W/E)	G	MGVF9
	Single tree located on site; fair condition								
2	<b>Syzygium smithii</b> Lilly Pilly	M	F	No	Sy	310	8 x 5(N/S) 5(W/E)	G	MGVF9
	Single tree located on site; fair condition; growing in a codominant canopy with tree 3; previous crown modifications.								
3	<b>Syzygium smithii</b> Lilly Pilly	M	F	No	Sy	380	8 x 5 (N/S) 45W/E	G	MGVF9
	Single tree located on site; fair condition; growing in a codominant canopy with tree 2; previous crown modifications								
4	<b>Syagrus romanzoffiana</b> Cocos Palm	M	F	No	Sy	N/A	10x 4 (N/S) 4(W/E)	G	MGVF9
	Single palm located on site; fair condition; exempt tree species as per <i>City of Ryde DCP 2014/ Part: 9.5- Tree Preservation</i>								
5	<b>Syagrus romanzoffiana</b> Cocos Palm	M	F	No	Sy	N/A	7 x 4 (N/S) 4(W/E)	G	MGVF9
	Single palm located on site; fair condition; exempt tree species as per <i>City of Ryde DCP 2014/ Part: 9.5- Tree Preservation.</i>								
6	<b>Syagrus romanzoffiana</b> Cocos Palm	Y	F	No	Sy	N/A	8 x 4(N/S) 4(W/E)	G	YGVF8
	Single palm located on site; fair condition; exempt tree species as per <i>City of Ryde DCP 2014/ Part: 9.5- Tree Preservation</i>								
7	<b>Ficus macrocarpa var hillii</b> Hills Weeping Fig	M	G	No	Sy	1100	16x 14(N/S) 16(W/E)	G	MGVG10
	Single tree located at Lot C DP 101699; good condition.								
8	<b>Fraxinus griffithii</b> Evergreen Ash	M	G	No	Sy	N/A	6 x 3 (N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot D DP 101699; good condition.								
8a	<b>Fraxinus griffithii</b> Evergreen Ash	M	G	No	Sy	N/A	6 x 3 (N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot D DP 101699; good condition.								
9	<b>Fraxinus griffithii</b> Evergreen Ash	M	G	No	Sy	N/A	6 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot D DP 101699; good condition.								
9a	<b>Fraxinus griffithii</b> Evergreen Ash	M	G	No	Sy	N/A	6 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot D DP 101699; good condition.								
10	<b>Waterhouisia floribunda</b> Weeping Lilly Pilly	M	G	No	Sy	150	6 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot C DP 356863; good condition; DBH measured by trunk width and calculated in accordance with AS4970-2009: <i>Protection of trees on development sites.</i>								
10a	<b>Waterhouisia floribunda</b> Weeping Lilly Pilly	M	G	No	Sy	150	8 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot C DP 356863; good condition; DBH measured by trunk width and calculated in accordance with AS4970-2009: <i>Protection of trees on development sites.</i>								
11	<b>Waterhouisia floribunda</b> Weeping Lilly Pilly	M	G	No	Sy	150	8 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot C DP 356863; good condition; DBH measured by trunk width and calculated in accordance with AS4970-2009: <i>Protection of trees on development sites.</i>								
11a	<b>Waterhouisia floribunda</b> Weeping Lilly Pilly	M	G	No	Sy	150	8 x 3(N/S) 3(W/E)	G	MGVG10
	Single tree located at Lot C DP 356863; good condition; DBH measured by trunk width and calculated in accordance with AS4970-2009: <i>Protection of trees on development sites.</i>								

Tree No.	Genus & Species Common Name	Age Y – Young M-Mature O- Overmature	Condition G- Good F- Fair P- Poor D- Dead	Branch Bark Included	Canopy Orientation Sy- Symmetrical Asy- Asymmetrical	Trunk Diameter (DBH- 1.4 m above ground level in mm)	Height X Spread (in metres)	Tree Vigour L- Low G- Good D- Dormant	SRIV Sustainable Retention Index Value
12	<b>Ficus macrocarpa var hillii</b> Hills Weeping Fig	M	P	No	Asy	500	12 x 6(N/S) 7(W/E)	L	MLVP2
Single tree located at 820 Victoria Road; poor condition.									
13	<b>Melaleuca styphelioides</b> Prickly – leaved paperbark	M	F	No	Sy	440	9 x 4(N/S) 4(W/E)	G	MGVF9
Single tree located at 822 Victoria Road; fair condition.									
14	<b>Cupressus sp</b> Conifer	M	F	No	Asy	380	8 x 4 (N/S) 4W/E	G	MGVF9
Single tree located at 822 Victoria Road; fair condition.									
15	<b>Eriobotrya japonica</b> Loquat	M	F	No	Sy	270	7x 5(N/S) 5(W/E)	G	MGVF9
Single tree located at 822 Victoria Road; fair condition.									

## 5.2 Tree Protection Zone (TPZ) & Structural Root Zone (SRZ)

- The Australian Standards provides a formula for calculating both TPZ and SRZ.
- Australian Standard 4970- Protection of trees on development sites-2009 stipulates a minor encroachment of the TPZ as being less than 10%, whilst more than 10% is considered a major encroachment. Such encroachment may be deemed acceptable as long the tree remains viable. This is based on many other variables including the tree species health, condition, structure, and age etc.

See Appendix D for TPZ- (Tree Protection Zone) & SRZ (Structural Root Zone)

TPZ- Tree Protection Zone and SRZ Structural Root Zone - calculated in accordance with  
*AS4970/2009- Protection of trees on development sites*

Table 2

Tree No	Common Name	TPZ- Tree Protection Zone	SRZ - Structural Root Zone
1	Bull Bay Magnolia	8.3 metres	3.0 metres
2	Lilly Pilly	3.6 metres	2.0 metres
3	Lilly Pilly	4.6 metres	2.2metres
7	Hills Weeping Fig	13.2 metres	4.0 metres
9	Weeping Lilly Pilly	2.0 metres	1.5 metres
9a	Weeping Lilly Pilly	2.0 metres	1.5 metres
10	Weeping Lilly Pilly	2.0 metres	1.5 metres
10a	Weeping Lilly Pilly	2.0 metres	1.5 metres
12	Hills Weeping Fig	6.0 metres	2.5 metres
13	Prickly-leaved paperbark	5.3 metres	2.3 metres
14	Conifer	4.6 metres	2.2 metres
15	Loquat	3.2 metres	1.9 metres



Table 3

Proposed development: encroachment into TPZ (Tree Protection Zone) in accordance with AS 4970-2009 *Protection of trees on developments sites*.

Tree No	Common Name	TPZ- Tree Protection Zone Area (m2)	Encroachment (m2/%)
1	Bull Bay Magnolia	216.4 m2	20.7 % / 9.6%
7	Hills Weeping Fig	547.4m2	56.2 m2 / 10.3%
12	Hills Weeping Fig	113.1 m2	13.5 m2 / 11.9%

### 5.3 Tree Significance See Appendix C for Assessment Criteria (IACA, 2009).

Significant Trees as established by the Rating System for Tree Significance – (IACA, 2009), Appendix C.

Table 3: Significant Scale

1 – High  
2 – Medium  
3 – Low

Significance Scale	1	2	3
Tree No.	1,7	2,3,8,9,10,11,12,13,14,15	4,5,6

### 5.4 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 C.

Retention Value.	High Priority for Retention	Medium Consider for Retention	Low Consider for Removal	Remove Priority for Removal
Tree No.	1,7	2,3,8,9,10,11,13,14,15	4,5,6,12	

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

## 5.5 DISCUSSION

Tree management is a balance between maintaining and enhancing the urban tree canopy against the safety and benefit they pose to human life. Risk management is therefore an integral part of tree management. This discussion assesses the subject trees and vegetation on site and public land then considers their long-term retention or removal.

### Tree 1:

- existing *Bull Bay Magnolia* located on site along front northern boundary.
- a mature specimen in fair condition.
- planted in conjunction with previous landscape works.
- existing hard-court area to the south-east encroaches the TPZ (Tree Protection Zone); will be replaced by landscaped area and part of the proposed building/ veranda.
- the proposed building and veranda are located outside the SRZ (Structural Root Zone) and in the TPZ (Tree Protection Zone) with a 9.6 % encroachment: resultant minor encroachment in accordance with *AS 4970- Protection of trees on development sites*.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

### Tree 2:

- existing *Lilly Pilly* located on site along south-western boundary.
- a mature specimen in good condition.
- planted in conjunction with previous landscape works.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

### Tree 3:

- existing *Lilly Pilly* located on site along south-western boundary.
- a mature specimen in good condition.
- planted in conjunction with previous landscape works.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

### Tree 4:

- an existing *Cocos Palm* located on site.
- a mature specimen in fair condition.
- planted in conjunction with previous landscape works.
- exempt tree species as per *City of Ryde DCP 2014/ Part: 9.5- Tree Preservation*
- will not be impacted by the proposed development and is to be removed and exchanged for a suitable planting in compliance with the approved development consent.

**Tree 5:**

- an existing *Cocos Palm* located on site.
- a mature specimen in fair condition.
- planted in conjunction with previous landscape works.
- exempt tree species as per *City of Ryde DCP 2014/ Part: 9.5- Tree Preservation*
- will not be impacted by the proposed development and is to be removed and exchanged for a suitable planting in compliance with the approved development consent.

**Tree 6:**

- an existing *Cocos Palm* located on site.
- a mature specimen in fair condition.
- planted in conjunction with previous landscape works.
- exempt tree species as per *City of Ryde DCP 2014/ Part: 9.5- Tree Preservation*
- will be impacted by the proposed development and is to be removed and exchanged for a suitable planting in compliance with the approved development consent.

**Tree 7:**

- an existing *Hills Weeping Fig* located on neighbouring allotment Lot C DP 101699.
- a mature tree in good condition.
- existing kerb, carpark, and drainage area to the north- east and west encroaches the SRZ (Structural Root Zone) and TPZ (Tree Protection Zone); presumed root modifications have occurred for previous construction of acoustic boundary fencing, carpark and associated drainage works.
- the proposed building and basement are located outside the SRZ (Structural Root Zone) and in the TPZ (Tree Protection Zone) with an 10.3 % encroachment: resultant minor encroachment in accordance with *AS 4970- Protection of trees on development sites*.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*

**Tree 8:**

- an existing *Evergreen Ash* located on neighbouring allotment Lot D DP 101699
- a semi to mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; previous construction of acoustic boundary fencing, carpark and associated drainage works have occurred between the two allotments.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 8a:**

- an existing *Evergreen Ash* located on neighbouring allotment Lot D DP 101699
- a semi to mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; previous construction of acoustic boundary fencing, carpark and associated drainage works has occurred between the two allotments.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 9:**

- an existing *Evergreen Ash* located on neighbouring allotment Lot D DP 101699
- a semi to mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; previous construction of acoustic boundary fencing, carpark and associated drainage works has occurred between the two allotments.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 9a:**

- an existing *Evergreen Ash* located on neighbouring allotment Lot D DP 101699
- a semi to mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; previous construction of acoustic boundary fencing, carpark and associated drainage works has occurred between the two allotments.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 10:**

- an existing *Weeping Lilly Pilly* located on neighbouring allotment Lot C DP 356863
- a mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.25 metres from common side boundary and lower than existing ground level at 826 Victoria Road; root modifications may have occurred for previous construction of acoustic boundary fencing, carpark and associated drainage works yet no evidence to suggest this has impacted growing environment
- 150mm stormwater to be installed a minimum 1.2 metres adjacent to boundary of neighbouring property: minor encroachment into TPZ.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 10a:**

- an existing *Weeping Lilly Pilly* located on neighbouring allotment Lot C DP 356863
- a mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.25 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; root modifications may have occurred for previous construction of acoustic boundary fencing, carpark and associated drainage works yet no evidence to suggest this has impacted growing environment
- 150mm stormwater to be installed a minimum 1.2 metres adjacent to boundary of neighbouring property: minor encroachment into TPZ.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 11:**

- an existing *Weeping Lilly Pilly* located on neighbouring allotment Lot C DP 356863
- a mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; root modifications may have occurred for previous construction of acoustic boundary fencing, carpark and associated drainage works yet no evidence to suggest this has impacted growing environment
- 150mm stormwater to be installed a minimum 1.2 metres adjacent to boundary of neighbouring property: minor encroachment into TPZ.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 11a:**

- an existing *Weeping Lilly Pilly* located on neighbouring allotment Lot C DP 356863
- a mature tree in good condition.
- planted in conjunction with previous landscape works.
- trunk base situated 1.0-1.5 metres from common side boundary and is situated lower than existing ground level at 826 Victoria Road; root modifications may have occurred for previous construction of acoustic boundary fencing, carpark and associated drainage works yet no evidence to suggest this has impacted growing environment
- 150mm stormwater to be installed a minimum 1.2 metres adjacent to boundary of neighbouring property: minor encroachment into TPZ.
- will not be impacted by the proposed development.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.

**Tree 12:**

- an existing *Hills Weeping Fig* located on neighbouring allotment 820 Victoria Road.
- a mature tree in poor condition.
- the proposed building is located outside the SRZ (Structural Root Zone) and in the TPZ (Tree Protection Zone) with a 11.9 % encroachment: resultant major encroachment in accordance with *AS 4970- Protection of trees on development sites*; 1.9% over a minor encroachment; resultant no major impacts into the TPZ (Tree Protection Zone)
- situated 1.0 metre above existing grade of 826 Victoria Road; presumed root modification have occurred due to previous works along adjacent boundary and within 820 Victoria Road.
- proposed works will not require any crown modifications nor have any major impact on current growing environment; tree has further declined since first inspection in early June 2022; further assessment of its health construction and structure prior to any demolition or construction works.
- to be retained and Tree Protection implemented in accordance with *AS4970 -2009 Protection of trees on development sites*.
- 

**Tree 13:**

- an existing *Prickly leaved paperbark* located on neighbouring allotment 822 Victoria Road.
- a mature tree in fair condition.
- planted in conjunction with previous landscape works.
- proposed works are located outside the SRZ (Structural Root Zone) and TPZ (Tree Protection Zone)
- will not be impacted by the proposed development.

**Tree 14:**

- an existing *Conifer* located on neighbouring allotment 822 Victoria Road.
- a mature tree in fair condition.
- planted in conjunction with previous landscape works.
- proposed works are located outside the SRZ (Structural Root Zone) and TPZ (Tree Protection Zone)
- will not be impacted by the proposed development.

**Tree 15:**

- an existing *Loquat* located on neighbouring allotment 822 Victoria Road.
- a mature tree in fair condition.
- planted in conjunction with previous landscape works.
- proposed works are located outside the SRZ (Structural Root Zone) and TPZ (Tree Protection Zone)
- will not be impacted by the proposed development.

**5.6 Tree Protection requirements for Tree 1,2,3,7,8,8a,9,9a,10,10a,11,11a,12****5.7 Tree Protection Zone Fencing*****Extract from AS4970-2009 Section 4.3 PROTECTIVE FENCING***

*Fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval by the project arborist. The TPZ should be secured to restrict access. AS 4687 specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area. Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots. Existing perimeter fencing and other structures may be suitable as part of the protective fencing.*

**Response: Tree 1,2,3,7**

TPZ signage to be attached to fencing- See also Appendix E "Tree Protection Plan".

**Response: Tree 7,8,8a,9,9a,10,10a,11,11a,12**

Existing boundary fencing is to be retained during site works. The existing fence along the common side boundary between Lot C DP 101699, Lot C DP 356863, 820 and 822 Victoria Road Ryde is to be retained during demolition and construction. See also Appendix E "Tree Protection Plan".

**5.8. Ground Protection within TPZs-*****Extract from AS4970-2009- 4.5.3 Ground protection.***

*If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards.*

**Response: Tree 1,2,3,7,12:** If structures are to be removed and site movement is required, then ground protection as per AS4970 is to be installed. See also Appendix E "Tree Protection Plan".

## 5.9 Root Protection -

### ***Extract from AS4970-2009- 4.5.4 Root protection during works within the TPZ***

*Some approved works within the TPZ, such as regrading, installation of piers or landscaping may have the potential to damage roots. If the grade is to be raised the material should be coarser or more porous than the underlying material. Depth and compaction should be minimized. Manual excavation should be carried out under the supervision of the project arborist to identify roots critical to tree stability. Relocation or redesign of works may be required. Where the project arborist identifies roots to be pruned within or at the outer edge of that, they should be pruned with a final cut to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. Pruning wounds should not be treated with dressings or paints. It is not acceptable for roots within the TPZ be 'pruned' with machinery such as backhoes or excavators. Where roots within the TPZ are exposed by excavation, temporary root protection should be installed to prevent them drying out. This may include jute mesh or hessian sheeting as multiple layers over exposed roots and excavated soil profile, extending to the full depth of the root zone. Root protection sheeting should be pegged in place and kept moist during the period that the root zone is exposed. Other excavation works in proximity to trees, including landscape works such as paving, irrigation and planting can adversely affect root systems. Seek advice from the project arborist.*

**Response:** **Tree 1,2,3,7,10,10a,11,11a,12:** All excavation within and near to prescribed TPZs should be undertaken utilising hand tools to depths of 700mm. Below these depths mechanical means could be utilised. Any roots encountered are to be clean cut with final cuts to undamaged woody tissue. All trees to be removed internal to the site should be undertaken utilising ground area outside of the TPZs of trees to be retained.

## 5.10 Inspection Schedule – Tree 1,2,3,7,8,8a,9,9a,10,10a,11,11a,12

*An inspection schedule should be adopted as follows:*

- *Establishment and certification of Tree Protection Zone (TPZ) measures implemented prior to commencement of any site works.*
- *Site inspections during any works within and adjacent to the TPZs.*
- *A final inspection at the completion of works.*



## 6.0 RECOMMENDATIONS

- 6.1 Remove Tree 6 to facilitate the proposed development.
- 6.2 Remove Trees 4 and 5 as exempt species per *City of Ryde DCP 2014/ Part: 9.5-Tree Preservation*
- 6.3 Replacement trees, shrubs, and groundcovers to be provided as part of final landscape works.
- 6.4 Inspection schedule should be introduced for the retention of Trees 1,2,3,7,8,8a,9,9a,10,10a,11,11a and 12
- An AQF5 Qualified Arborist must be engaged and on-site during any demolition or excavations works within the TPZ of Trees 1,2,3,7 and 12 (see Appendix E).
  - Final inspection of Trees 1,2,3,7,8,8a,9,9a,10,10a,11,11a and 12 at completion of all works.
- 6.5 Trees 1,2,3,7,8,8a,9,9a,10,10a,11,11a and 12 to be retained as outlined in sections 5.6 to 5.10 of this report and within Appendix E – Tree Protection Plan.

### DISCLAIMER

The tree has been assessed based on the information and facts of the site and as presented by the client at the time of inspection. No responsibility can be taken for incorrect information provided by the client. The nominated tree is assessed for biological requirements and hazard potential with reasonable care.

The tree is assessed from the ground by Visual Tree Assessment (VTA) unless otherwise stated.

Trees are inherently dangerous, therefore will always have a hazard potential. Trees fail in ways that are not predictable or fully understood. There is no guarantee expressed or implied that failure or deficiencies may not arise of the subject tree in the future. No responsibility is accepted for damage to property or injury/death caused by the nominated tree.

**Appendix A**  
**Matrix - Sustainable Retention Index Value (S.R.I.V.)©**  
 Developed by IACA – Institute of Australian Consulting Arboriculturists  
[www.iaca.org.au](http://www.iaca.org.au)  
 Version 4, 2010

To be used with the values defined in the Glossary.  
 An Index value as indicated where ten (10) is the highest value.

Age Class	Vigour Class and Condition Class					
	Good Vigour & Good Condition (GVG)	Good Vigour & Fair Condition (GVF)	Good Vigour & Poor Condition (GVP)	Low Vigour & Good Condition (LVG)	Low Vigour & Fair Condition (LVF)	Low Vigour & Poor Condition (LVP)
	<p>Able to be retained if sufficient space available above and below ground for future growth. No remedial work or improvement to growing environment required. May be subject to high vigour. Retention potential - Medium – Long Term.</p>	<p>Able to be retained if sufficient space available above and below ground for future growth. Remedial work may be required or improvement to growing environment may assist. Retention potential - Medium Term. Potential for longer with remediation or favourable environmental conditions.</p>	<p>Able to be retained if sufficient space available above and below ground for future growth. Remedial work unlikely to assist condition, improvement to growing environment may assist. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.</p>	<p>May be able to be retained if sufficient space available above and below ground for future growth. No remedial work required, but improvement to growing environment may assist vigour. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.</p>	<p>May be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment may assist condition and vigour. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.</p>	<p>Unlikely to be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment unlikely to assist condition or vigour. Retention potential - Likely to be removed immediately or retained for Short Term. Potential for longer with remediation or favourable environmental conditions.</p>
(Y) Young	<p><b>YGVG - 9</b>  <b>Index Value 9</b>                      Retention potential - Long Term.                      Likely to provide minimal contribution to local amenity if height &lt;5 m. High potential for future growth and adaptability. Retain, move or replace.</p>	<p><b>YGVF - 8</b>  <b>Index Value 8</b>                      Retention potential - Short – Medium Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height &lt;5 m. Medium-high potential for future growth and adaptability. Retain, move or replace.</p>	<p><b>YGVP - 5</b>  <b>Index Value 5</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height &lt;5 m. Low-medium potential for future growth and adaptability. Retain, move or replace.</p>	<p><b>YLVG - 4</b>  <b>Index Value 4</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height &lt;5 m. Medium potential for future growth and adaptability. Retain, move or replace.</p>	<p><b>YLVF - 3</b>  <b>Index Value 3</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height &lt;5m. Low-medium potential for future growth and adaptability. Retain, move or replace.</p>	<p><b>YLVP - 1</b>  <b>Index Value 1</b>                      Retention potential - Likely to be removed immediately or retained for Short Term. Likely to provide minimal contribution to local amenity if height &lt;5 m. Low potential for future growth and adaptability.</p>
(M) Mature	<p><b>MGVG - 10</b>  <b>Index Value 10</b>                      Retention potential - Medium - Long Term.</p>	<p><b>MGVF - 9</b>  <b>Index Value 9</b>                      Retention potential - Medium Term. Potential for longer with improved growing conditions.</p>	<p><b>MGVP - 6</b>  <b>Index Value 6</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions.</p>	<p><b>MLVG - 5</b>  <b>Index Value 5</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions.</p>	<p><b>MLVF - 4</b>  <b>Index Value 4</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions.</p>	<p><b>MLVP - 2</b>  <b>Index Value 2</b>                      Retention potential - Likely to be removed immediately or retained for Short Term.</p>
(O) Over-mature	<p><b>OGVG - 6</b>  <b>Index Value 6</b>                      Retention potential - Medium - Long Term.</p>	<p><b>OGVF - 5</b>  <b>Index Value 5</b>                      Retention potential - Medium Term.</p>	<p><b>OGVP - 4</b>  <b>Index Value 4</b>                      Retention potential - Short Term.</p>	<p><b>OLVG - 3</b>  <b>Index Value 3</b>                      Retention potential - Short Term. Potential for longer with improved growing conditions.</p>	<p><b>OLVF - 2</b>  <b>Index Value 2</b>                      Retention potential - Short Term.</p>	<p><b>OLVP - 0</b>  <b>Index Value 0</b>                      Retention potential - Likely to be removed immediately or retained for Short Term.</p>

## Appendix B

### Definitions & Terminology

From  
*Dictionary for Managing Trees in Urban Environments*  
Institute of Australian Consulting Arboriculturists (IACA) 2009.

#### Condition of trees

**Condition** A tree's *crown form* and growth habit, as modified by its *environment* (aspect, suppression by other trees, soils), the *stability* and *viability* of the *root plate*, trunk and structural branches (first (1<sup>st</sup>) and possibly second (2<sup>nd</sup>) order branches), including structural defects such as wounds, cavities or hollows, *crooked* trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with *vigour* and it is possible for a tree to be of *normal vigour* but in *poor condition*. Condition can be categorized as *Good Condition*, *Fair Condition*, *Poor Condition* and *Dead*.

**Good Condition** Tree is of good habit, with *crown form* not severely restricted for space and light, physically free from the adverse effects of *predation* by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from, or contributed to by *vigour*.

**Fair Condition** Tree is of good habit or *misshapen*, a form not severely restricted for space and light, has some physical indication of *decline* due to the early effects of *predation* by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the *environment* essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from, or contributed to by *vigour*.

**Poor Condition** Tree is of good habit or *misshapen*, a form that may be severely restricted for space and light, exhibits symptoms of advanced and *irreversible decline* such as fungal, or bacterial infestation, major die-back in the branch and *foliage crown*, *structural deterioration* from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local *environment* that would normally be sufficient to provide for its basic survival if in *good* to *fair* condition. Deterioration physically, often characterised by a gradual and continuous reduction in *vigour* but may be independent of a change in *vigour*, but characterised by a proportionate increase in susceptibility to, and *predation* by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from, or contributed to by *vigour*.

**Dead** Tree is no longer capable of performing any of the following processes or is exhibiting any of the following symptoms;

##### *Processes*

Photosynthesis via its foliage crown (as indicated by the presence of moist, green or other coloured leaves);

Osmosis (the ability of the root system to take up water);

Turgidity (the ability of the plant to sustain moisture pressure in its cells);

Epicormic shoots or *epicormic strands* in Eucalypts (the production of new shoots as a response to stress, generated from latent or adventitious buds or from a *lignotuber*);

##### *Symptoms*

Permanent leaf loss;

Permanent wilting (the loss of turgidity which is marked by desiccation of stems leaves and roots);

Abscission of the *epidermis* (bark desiccates and peels off to the beginning of the sapwood).

**Removed** No longer present, or tree not able to be located or having been cut down and retained on a site, or having been taken away from a site prior to site inspection.

#### Description of Tree Dimensions

**Height** The distance measured vertically between the horizontal plane at the lowest point at the base of a tree, which is immediately above ground, and the horizontal plane immediately above the uppermost point of a tree.

**Spread** The furthest expanse of the crown when measured horizontally from one side of the tree to the other, generally through the centre of the trunk. Where the crown is not circular a measurement should be an average of the narrowest and widest diameters and this is dependent upon crown form and to a lesser extent its symmetry.

**Crown Cover** Percent of the homogenous distribution of foliage across the entire crown based upon that expected for a specimen of that species in good condition and of normal *vigour*, depending on form in situ, e.g. this may be influenced by crown die-back, proximity to other trees or structures, moisture stress, or overshadowing.

#### Vigour

**Vigour** Ability of a tree to sustain its life processes. This is independent of the *condition* of a tree but may impact upon it. *Vigour* can appear to alter rapidly with change of seasons (seasonality) e.g. *dormant*, deciduous or semi-deciduous trees. *Vigour* can be categorized as *Normal Vigour*, *High Vigour*, *Low Vigour* and *Dormant Tree Vigour*.

**Normal Vigour** Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

**High Vigour** *Accelerated growth* of a tree due to incidental or deliberate artificial changes to its growing *environment* that are seemingly beneficial, but may result in *premature aging* or failure if the favourable conditions cease, or promote *prolonged senescence* if the favourable conditions remain, e.g. water from a leaking pipe; water and nutrients from a leaking or disrupted sewer pipe; nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard; a tree subject to a stringent watering and fertilising program; or some trees may achieve an extended lifespan from continuous *pollarding* practices over the life of the tree.

**Low Vigour** Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

**Dormant Tree Vigour** Determined by existing turgidity in lowest order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Normal vigour during dormancy is achieved when such growth is evident on a majority of branches throughout the crown.

**Poor Vigour** See low vigour

**Good Vigour** See Normal Vigour

## Age of Trees

**Age of Trees** Most trees have a stable biomass for the major proportion of their life. The estimation of the age of a tree is based on the knowledge of the expected lifespan of the taxa in situ divided into three distinct stages of measurable biomass, when the exact age of the tree from its date of cultivation or planting is unknown. These increments are Young, Mature and Overmature.

**Young** Tree aged less than 20% of life expectancy.

**Mature** Tree aged 20-80% of life expectancy.

**Over-mature** Tree aged greater than 80% of life expectancy tending to senescent with or without reduced vigour, and declining gradually or rapidly but irreversibly to death.

**Sapling** A young tree, early in its development with small dimensions.

**Senescent** Advanced old age, over-mature.

## General Terms

**Significant** Important, weighty or more than ordinary.

**Significant Tree** A tree considered important, weighty or more than ordinary. Example: due to prominence of location, or in situ, or contribution as a component of the overall landscape for *amenity* or aesthetic qualities, or *curtilage* to structures, or importance due to uniqueness of taxa for species, subspecies, variety, form, or as an historical or cultural planting, or for age, or substantial dimensions, or habit, or as remnant vegetation, or habitat potential, or a rare or threatened species, or uncommon in cultivation, or of aboriginal cultural importance, or is a commemorative planting.

**Substantial** A tree with large dimensions or proportions in relation to its place in the landscape.

**Excurrent** Tree where the crown is comprised of one (1) dominant first order structural branch which is usually an extension of the trunk, erect, straight and continuous, tapering gradually, with the main *axis* clear from base to apex, e.g. *Araucaria heterophylla* - Norfolk Island Pine. Note: some tree species of *typical* excurrent habit may be altered to deliquescent by physical damage of the *apical meristem*, or from top lopping, or from the propagation of inferior quality stock. However, *formative pruning* may be able to correct a *crown* to excurrent if undertaken when a tree is *young*.

**Sustainable Retention Index Value (SRIV)** A visual method of rating the viability of urban trees for development sites and management, based on general tree and landscape assessment criteria. SRIV© is for the professional manager of urban trees to consider the tree in situ with an assumed knowledge of the taxa and its growing environment and is based on the physical attributes of the tree and its response to its environment considering its age class, vigour class, condition class and its sustainable retention with regard to the safety of people or damage to property and the ability to retain the tree with remedial work or beneficial modifications to its growing environment or removal and replacement. (IACA 2005)

**Crown Spread Orientation** Direction of the *axis* of *crown spread* which can be categorized as *Orientation Radial* and *Orientation Non-radial*.

**Diameter at Breast Height (DBH)** Measurement of trunk width calculated at a given distance above ground from the base of the tree often measured at 1.4 m. The trunk of a tree is usually not a circle when viewed in cross section, due to the presence of *reaction wood* or *adaptive wood*, therefore an average diameter is determined with a *diameter tape* or by recording the trunk along its narrowest and widest axes, adding the two dimensions together and dividing them by 2 to record an average and allowing the orientation of the longest axis of the trunk to also be recorded. Where a tree is growing on a lean the distance along the top of the trunk is measured to 1.4m and the diameter then recorded from that point perpendicular to the edge of the trunk. Where a *leaning* trunk is *crooked* a vertical distance of 1.4m is measured from the ground. Where a tree branches from a trunk that is less than 1.4m above ground, the trunk diameter is recorded perpendicular to the length of the *trunk* from the point immediately below the base of the flange of the *branch collar* extending the furthest down the trunk, and the distance of this point above ground recorded as *trunk* length. Where a tree is located on sloping ground the DBH should be measured at half way along the side of the tree to average out the angle of slope. Where a tree is *acaulescent* or *trunkless* branching at or near ground an average diameter is determined by recording the radial extent of the trunk at or near ground and noting where the measurement was recorded e.g. at ground.

**Structural Root Zone (SRZ)** The minimal area around the base of a tree, generally circular, required for its *stability* in the ground. The section of *root plate* within this area and subsequent soil cohesion necessary to hold the tree upright against *wind throw*, therefore the entire depth of the *root zone* must be included.

## Appendix C

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

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

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

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

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



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

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

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

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


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

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.
- **Environmental Pest / Noxious Weed Species**
- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.
- **Hazardous/Irreversible Decline**
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

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

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

## Tree Retention Value - Priority Matrix.

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

## REFERENCES

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

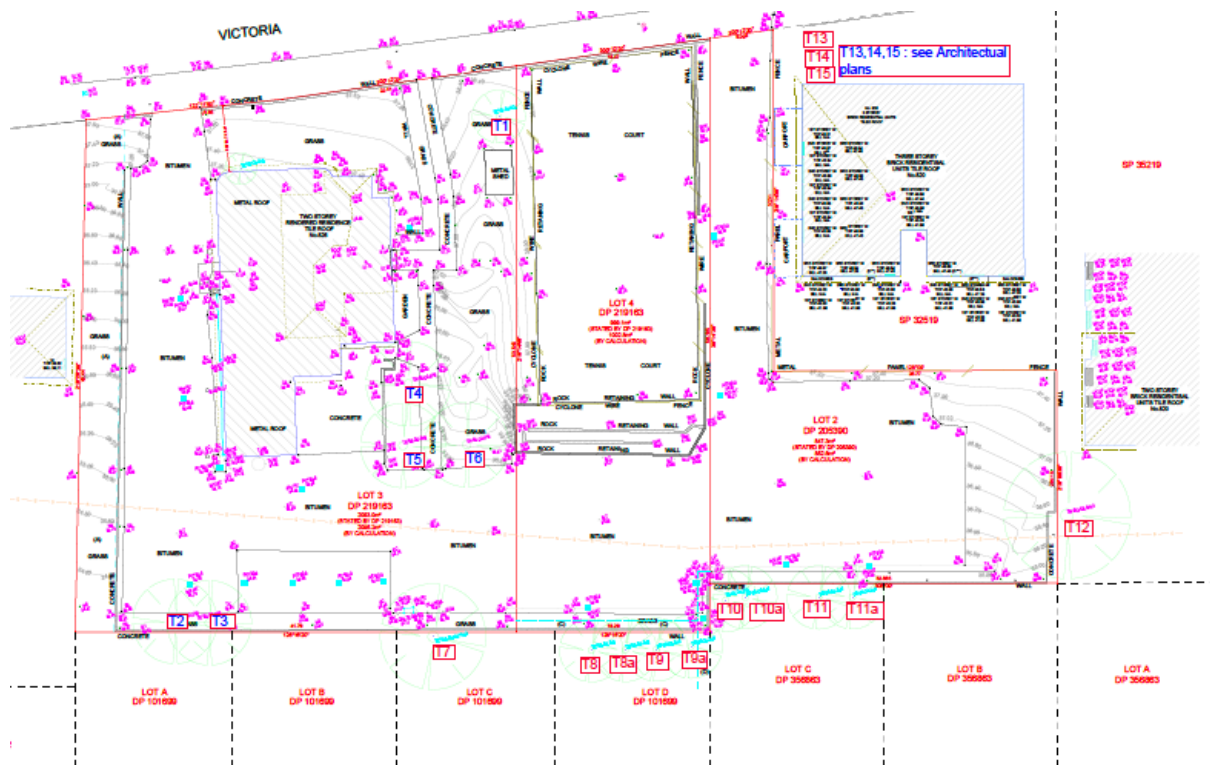
Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

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



## Appendix D

Tree Location /Tree Removal/TPZ (Tree Protection Zone)/SRZ (Structural Root Zone)/  
Photos



**Tree Numbers:** Red- Neighbouring Properties  
Blue- 826 Victoria Road, Ryde

**Fig 1:** Tree locations

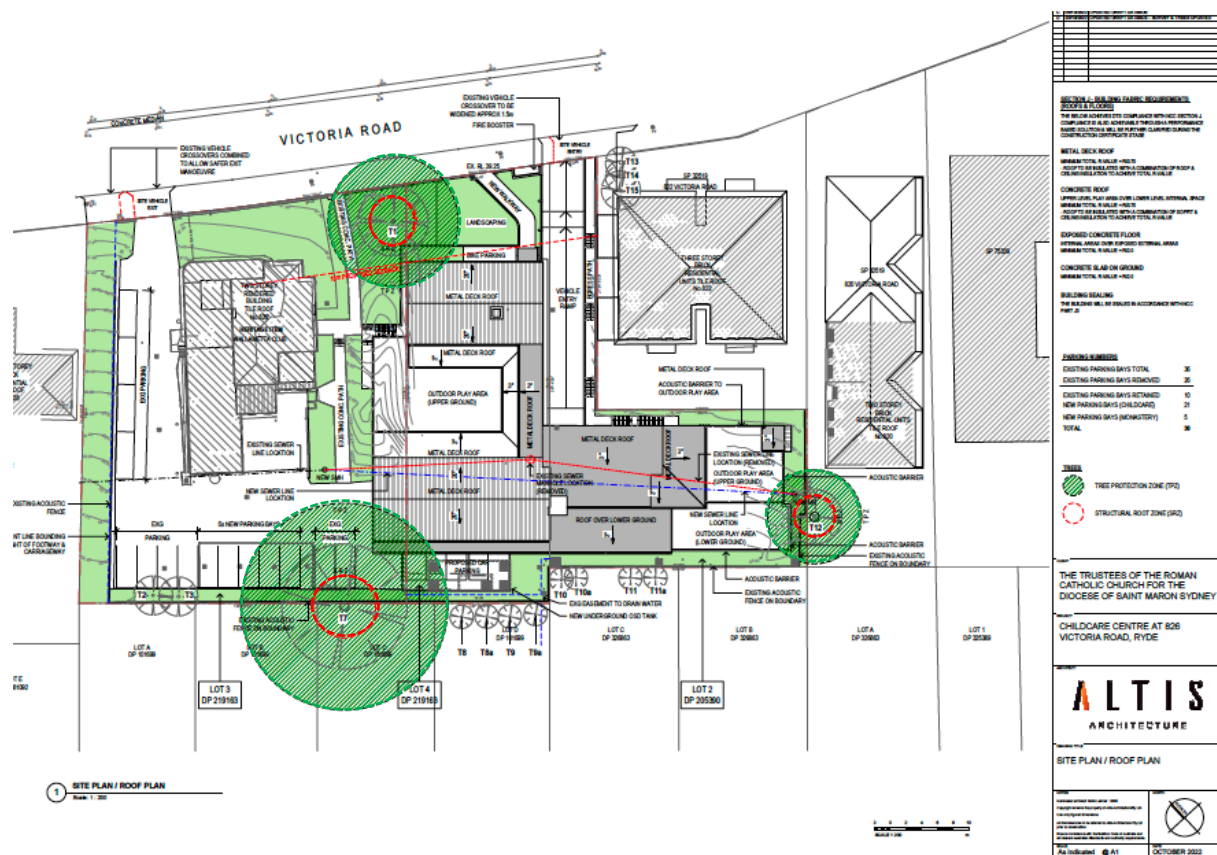


Fig 2: Tree 1,7,12





**Fig 3: Tree 1**



**Fig 4: Tree 1**



**Fig 5: Tree 1**



**Fig 6: Tree 2 & 3**



**Fig 7: Tree 4,5 & 6 (Cocos Palms)**

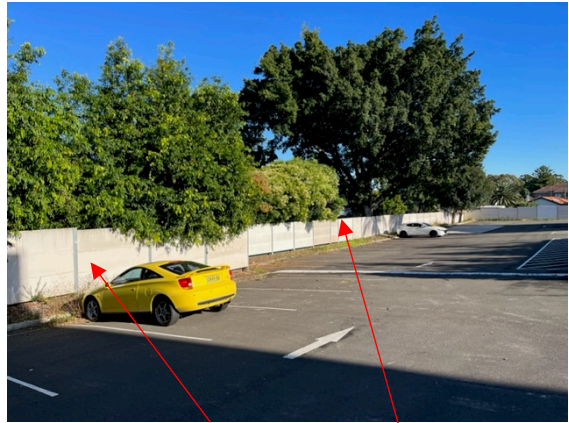


**Fig 8: Tree 7**





**Fig 9: Tree 7**



**Fig 10: Existing boundary fence to remain**



**Fig 11: Tree 10 /10a& 11/11a**



**Fig 12: Tree 10,10a,11**



**Fig 13: Tree 12 (Photo taken 4/6/2022)**



**Fig14: Tree 12 (Photo taken 1/10/2022)**



**Fig 15: Tree 12**



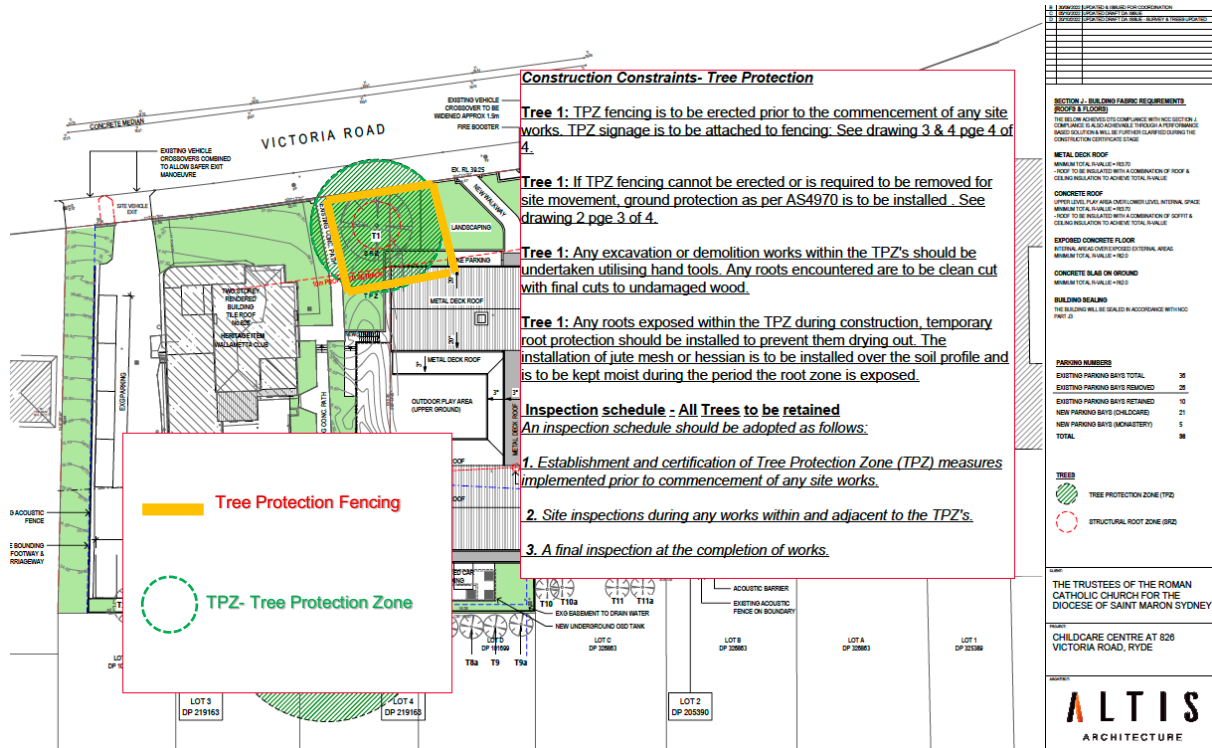
**Fig 16: Tree 12**



**Fig 17: Tree 13,14 & 15**



### Tree Protection Plan (Tree 1)



**Tree Protection: Tree 1**

Tree No	Tree Protection
1	TPZ fencing is to be erected prior to commencement of any site works. TPZ signage is to be attached to fencing. See drawing 3 & 4 page 3 of 3
1	If TPZ fencing cannot be erected or is required to be removed for site movement, ground protection as per AS 4970 is to be installed. See drawing 2 pge 2 of 3
1	All excavation works within the TPZ are to be supervised by the project arborist. All works should be undertaken utilizing hand tools. Any roots encountered are to be clean cut with all final cuts to undamaged woody tissue.
1	Any roots exposed within the TPZ during excavations, temporary root protection should be installed to prevent them from drying out. The installation of jute mesh or hessian is to be installed over the soil profile and is to be kept moist during the period the root zone is exposed.

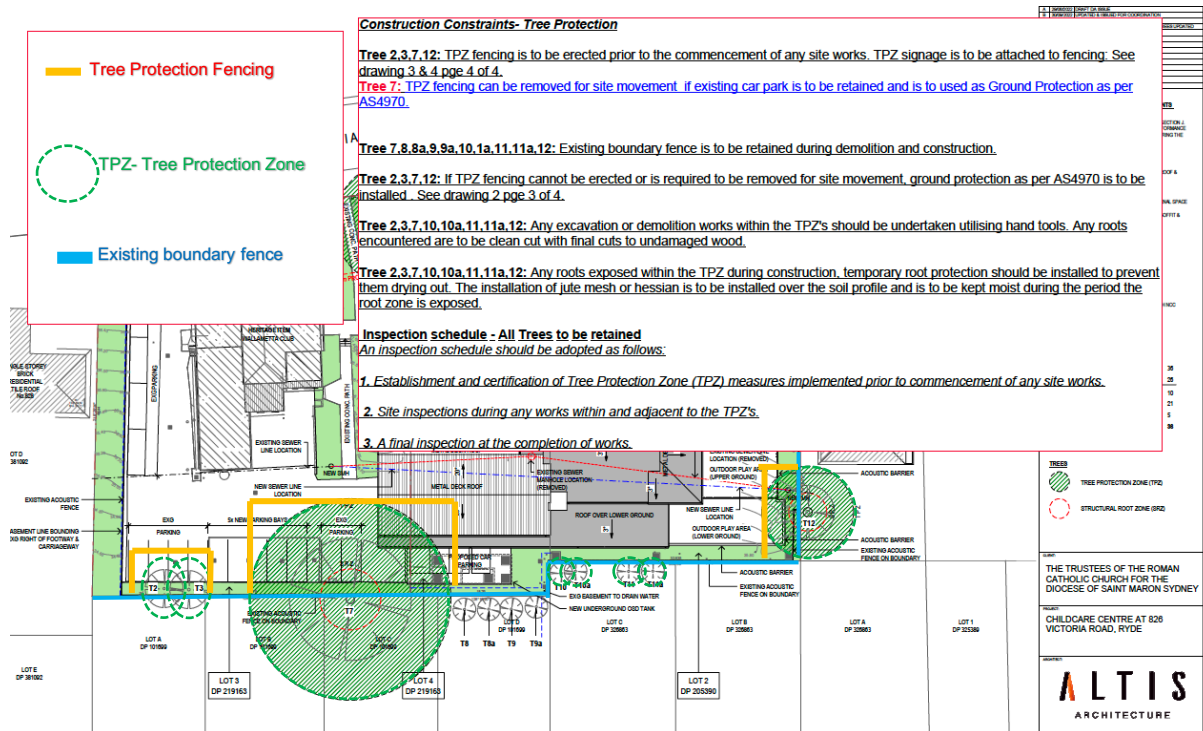
**Inspection Schedule for Tree 1– to be retained.**

An inspection schedule is to be adopted as follows.

1. Engagement of an AQF5 Project Arborist for the site.
2. Establishment and certification of Tree Protection Zone (TPZ) measures implemented prior to commencement for any site works.
3. Site inspections during excavations or within and adjacent to the TPZ
4. A final inspection at the completion of works

# Appendix E

## Tree Protection Plan (Tree 2,3,7,8,8a,9,9a,10,10a,11,11a,12)



### Tree Protection for Trees 2,3,7,8,8a,9,9a,10,10a,11,11a,12

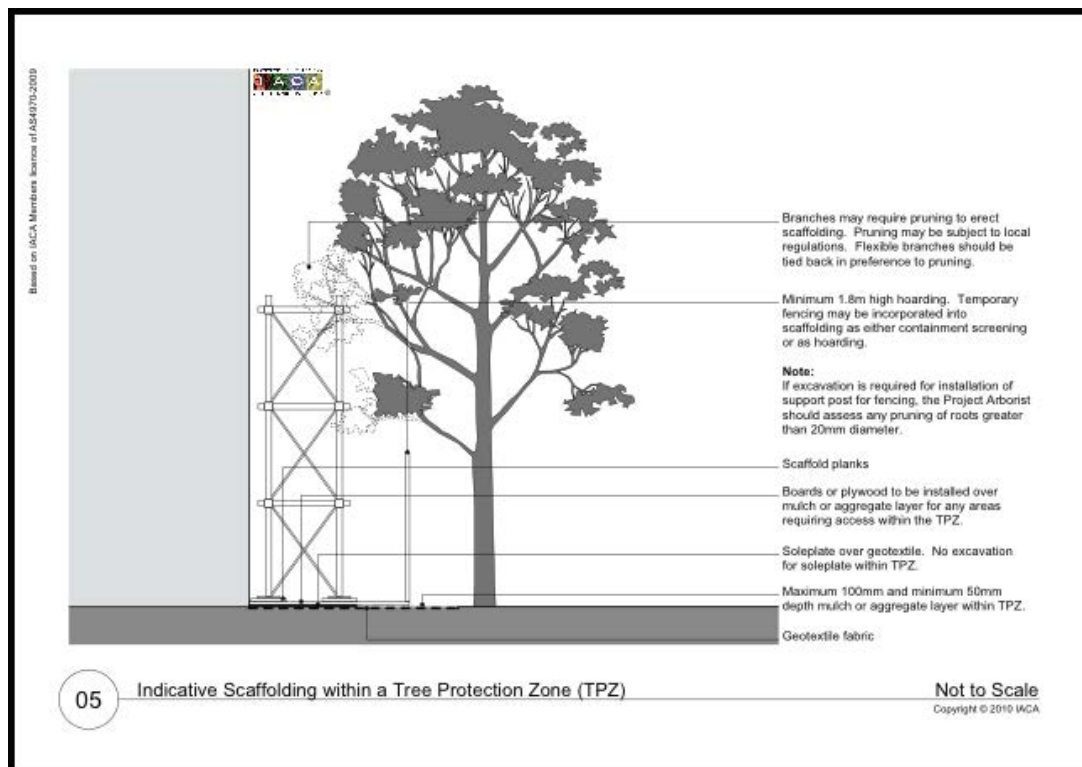
Tree No	Tree Protection
2,3,7	TPZ fencing is to be erected prior to commencement of any site works. TPZ signage is to be attached to fencing. See drawing 3 & 4 page 3 of 3
7	TPZ fencing can be removed for site movement if existing carpark is retained and used as ground protection as per AS 4970
7,8,8a,9,9a,10,10a,11,11a,12	Existing boundary fence is to be retained during site works
2,3,7,12	If TPZ fencing cannot be erected or is required to be removed for site movement, ground protection as per AS 4970 is to be installed. See drawing 2 page 2 of 3
2,3,7,10,10a,11,11a,12	All excavation works within or adjacent the TPZ are to be supervised by the project arborist. All works should be undertaken utilizing hand tools. Any roots encountered are to be clean cut with all final cuts to undamaged woody tissue.
2,3,7,10,10a,11,11a,12	Any roots exposed within the TPZ during excavations, temporary root protection should be installed to prevent them from drying out. The installation of jute mesh or hessian is to be installed over the soil profile and is to be kept moist during the period the root zone is exposed.

### Inspection Schedule for Trees 2,3,7,8,8a,9,9a,10,10a,11,11a,12- to be retained.

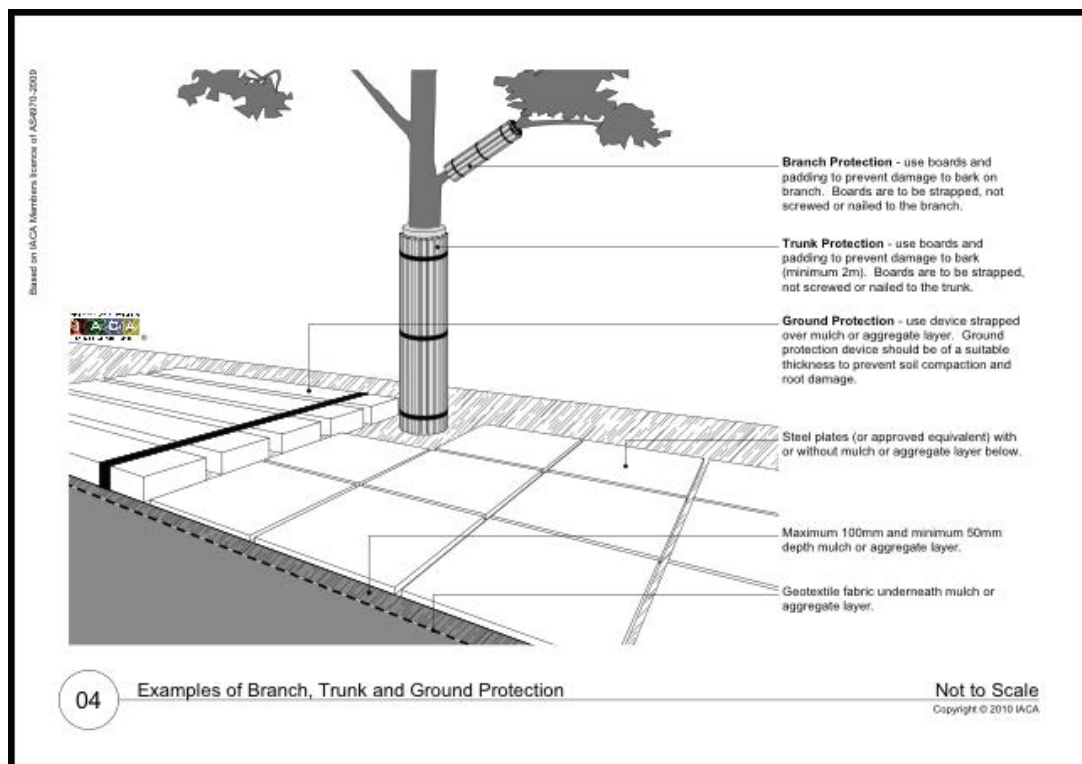
An inspection schedule is to be adopted as follows.

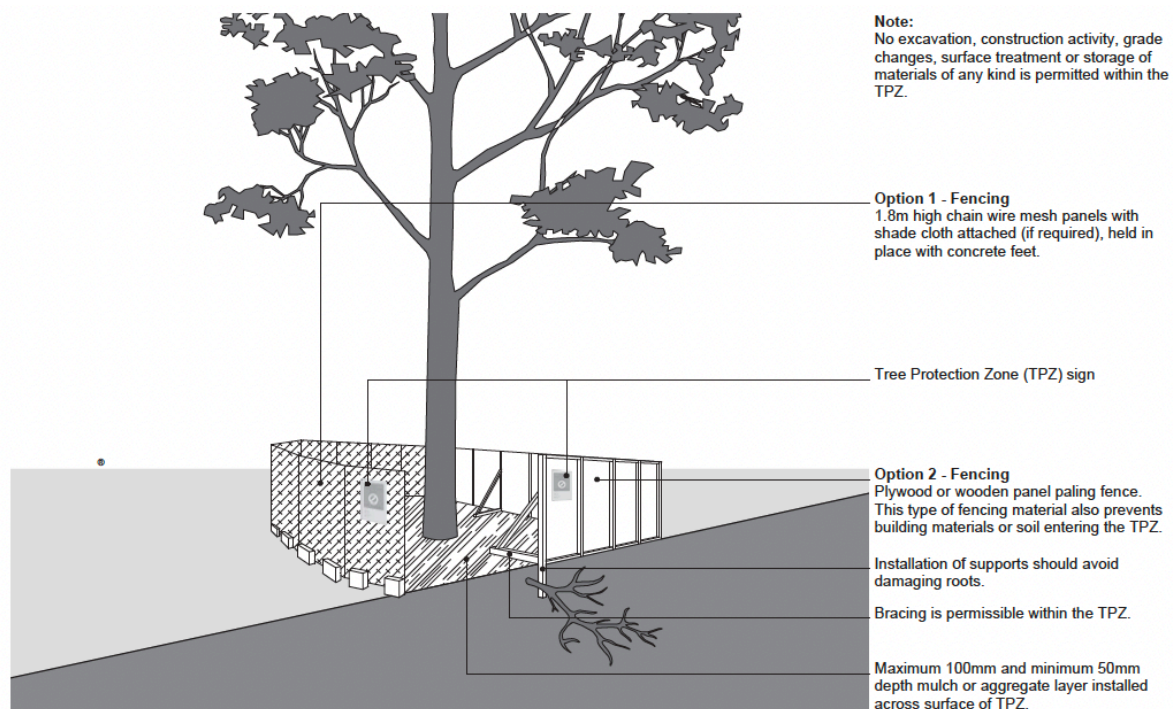
1. Engagement of an AQF5 Project Arborist for the site.
2. Establishment and certification of Tree Protection Zone (TPZ) measures implemented prior to commencement for any site works.
3. Site inspections during excavations or within and adjacent to the TPZ
4. A final inspection at the completion of works

Pge 3 of 4- Tree Protection Plan  
Drawing #1 - Scaffolding Within a TPZ



Drawing #2 - Branch, Trunk and Ground Protection





Drawing #4 - Example of TPZ Signage



## Appendix E

### Extract from Australian Standard 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.

$$\text{TPZ} = \text{DBH} \times 12$$

where

DBH = trunk diameter measured at 1.4 m above ground

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



# Appendix E

## Extract from Australian Standard AS4970 2009 Protection of trees on development sites

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

#### 3.3.5 Structural root zone (SRZ)

*"The SRZ is the area required for tree 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** expressed by the curve is calculated by the following formula,

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

where

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

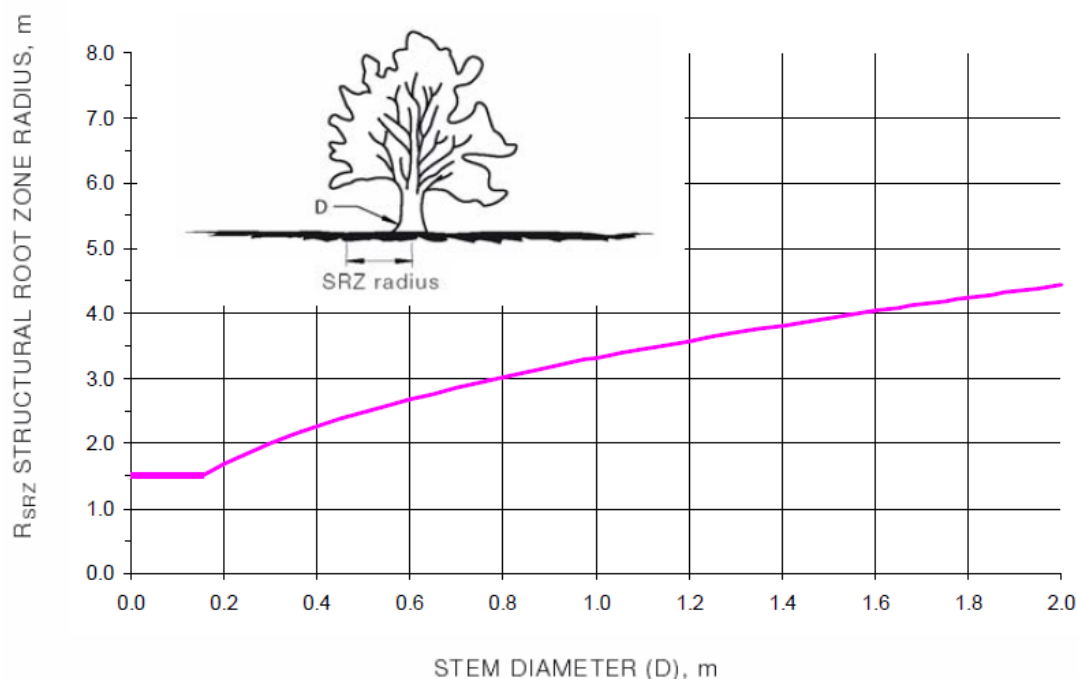
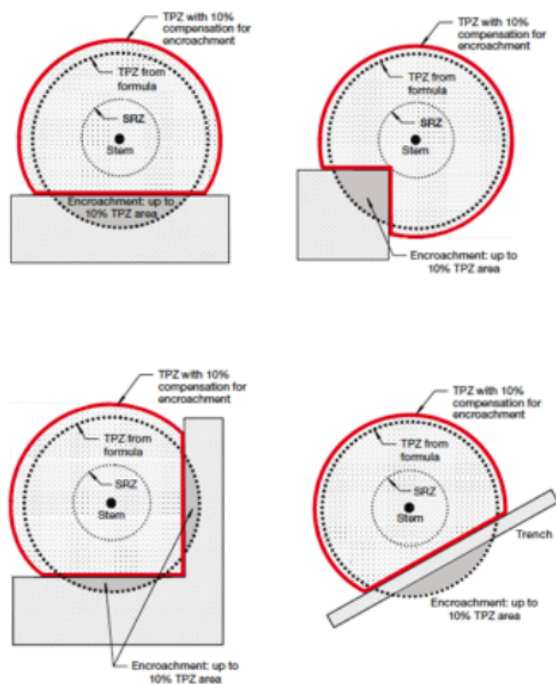


FIGURE 1 STRUCTURAL ROOT ZONE CALCULATION  
(AS 4970 – 2009, Amendment No. 1 March 2010)

#### NOTES:

- 1  $R_{SRZ}$  is the calculated structural root zone radius (SRZ radius).
- 2  $D$  is the stem diameter measured immediately above root buttress.
- 3 The  $R_{SRZ}$  for trees less than 0.15 m diameter is 1.5 m.
- 4 The  $R_{SRZ}$  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

**Appendix E**  
**Extract from Australian Standard**  
**AS4970 2009 Protection of trees on development sites**  
**Encroachment into TPZ (Tree Protection Zone)**



## Appendix F

### References

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