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HOMEWOOD
CONSULTING PTY LTD

Arboricultural Impact Assessment

for

Clarke Hopkins Clarke

Assessment of trees at 27 Peninsula Drive, Drysdale

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2 July 2021

Executive Summary

61 trees were assessed at St Ignatius College, Geelong (27 Peninsula Drive, Drysdale) in relation to demolishing and replacing the Loyola Administration building.

The table below summarises the impact of the proposed works on the assessed trees.

Arboricultural Impact	Tree Retention Value			Total No. of Trees
	High	Medium	Low	
Impact Removal	4	31	24	59
Impact Major - viable	0	1	0	1
Impact Minor	0	1	0	1
No Impact	0	0	0	0
Total	**4**	**33**	**24**	**61**

- 59 trees require removal to facilitate the proposed design. The trunks of these trees are impacted by the proposed design.
  - Four trees have been assigned High retention value and all efforts should be made to retain and protect these trees throughout the proposed works.
    - ◊ A significant design modification would be required to retain Tree 2.
    - ◊ A design modification to reduce the width of the driveway would be required to retain Trees 4, 7 and 8.
  - 31 trees have been assigned Medium retention value:
    - ◊ 12 of these trees (Trees 30, 32, 34, 36, 37, 39, 40, 48-50, 52, 54) would require a significant design modification to allow their retention.
    - ◊ A design modification to reduce the width of the driveway would be required to retain 12 of these trees (Trees 5, 6, 9,11-15,18-21).
    - ◊ Seven of these trees (Trees 25, 26, 28, 29, 41, 44, 46) may be able to be incorporated into the proposed design and retained where changes of grade can be minimised and sensitive construction methods are used.
  - 24 trees (Trees 1, 3, 10, 16, 17, 22, 27, 31, 33, 35, 38, 42, 43, 45, 47, 51, 53, 55-61) have been assigned Low retention value and do not warrant a design modification to allow their retention.
- One tree (Tree 24) has a Major Tree Protection Zone (TPZ) encroachment but **is expected to remain viable** with the establishment of TPZs, and a combination of supervised works within the TPZ and sensitive construction methods.
- Proposed works will have a **minor encroachment** on one tree (Tree 23). This tree is expected to remain viable with the adoption of standard TPZ measures and exclusions.

All retained trees require protection to ensure they remain viable throughout the works.

A Tree Protection Plan (TPP) has been prepared which identifies trees to be removed, and specifies tree protection measures for trees to be retained.

The following is recommended:

1. A Project Arborist is engaged to ensure site supervision is undertaken, and TPZ guidelines, specifications and recommendations are adhered to.

2. Where possible, a design modification is undertaken to retain and protect three High retention value trees (Trees 4, 7 and 8) and 19 Medium retention value trees (Trees 5, 6, 9,11-15,18-21, 25, 26, 28, 29, 41, 44, 46). This may include:
   2.1 redesigning the driveway and associated retaining wall along the western side of the proposed building and;
   2.2 minimising the disturbance to SRZs, and minimising excavation or changes of grade within the TPZs; OR/
   2.3 Alternatively, removal of the trees to facilitate the proposed works where the above design changes and construction modifications are not feasible.
3. All trees to be removed should be clearly marked out and removed prior to construction:
   3.1 Post-construction replacement planting is to be undertaken to compensate for the loss of trees. Any planting within the TPZs of retained trees should be undertaken by hand.
4. A Tree Protection Zone is established for all trees to be retained as shown on the Tree Protection Plan (Appendix 3).
   4.1 Where works are permitted within the TPZ, fencing is to be taken in to only the minimum amount necessary to allow the works to be completed;
   4.2 Avoid heavy vehicle and machinery access within the TPZs of retained trees;
   4.3 There should be no storage of materials, equipment, vehicles or machinery within any of the TPZs of the retained trees;
   4.4 Where machinery will be working adjacent to trees to be retained, protection for the trunk and branches may be required.
5. Removal of existing surfaces and any excavation within the TPZ of Tree 24 should be undertaken with care and under the supervision of the Project Arborist:
   5.1 There should be no use of high impact tools (e.g. pneumatic tools) to remove existing surfaces within the TPZ;
   5.2 Excavation and the use of fill should be minimised (<100mm depth);
   5.3 Replacement surfaces should be porous in nature (e.g. permeable asphalt) and on a non-compacted subgrade.
6. Any pruning required for vehicle/machinery access should be approved by the Project Arborist prior to being undertaken and completed by a qualified arborist in line with AS4373-2007 *Pruning of Amenity Trees*.

Further description of the tree protection measures listed can be seen in Appendix 3.

Contents

Table 1: Table of Revisions

Rev No.	Report Date	Description	Author	Internal Review Date	Reviewed by
2	*02-07-2021*	*Amended report*	*CB & MCF*		
0	*02-06-2021*	*Draft for internal review*	*CB*	*02-06-2021*	*BJN*

1. Introduction

Homewood Consulting Pty Ltd has been engaged to provide an arboricultural impact assessment on trees at 27 Peninsula Drive, Drysdale in relation to demolishing and replacing the Loyola Administration building at St Ignatius College Geelong.

This report has been prepared in accordance with Australian Standard 4970-2009 *Protection of Trees on Development Sites*. It provides an assessment of the trees with regard to their health, structure and retention value in the landscape and identifies the impact of the proposed development on the future longevity of the trees.

The report recommends design and construction methods to minimise impacts on retained trees where there is encroachment into the Tree Protection Zone.

A Tree Protection Plan has been prepared which depicts Tree Protection Zones for trees to be retained and specifies the measures necessary to protect the trees throughout all stages of the proposed works.

2. Method

On Monday, 24 May 2021 Meredith Foster conducted a site inspection.

Data collected for the trees includes:

- Botanical Name
- Canopy Dimensions
- Diameter at Breast Height (DBH)
- Diameter above basal root flare
- Health
- Structure
- Useful Life Expectancy (ULE)
- Landscape Contribution
- Retention Value

A ‘Visual Tree Assessment’ (VTA) was conducted for each tree. A VTA consists of a detailed visual inspection of a tree and its surrounding site, including a complete walk around the tree, looking at the buttress roots, trunk, branches and leaves. The tree is observed from a distance and close up to consider crown shape, landscape context and surroundings.

The assessment was conducted from ground level with no instruments used other than a diameter tape to measure trunk diameter. Any assessments of decay are qualitative only.

All trees within the vicinity of the proposed works were assessed. Small shrubs located within the planted garden beds surrounding the existing building are not included within this report.

Tree location was recorded using differentially corrected GPS (generally +/- 1.0m accuracy). A feature survey plan showing the existing site conditions has been supplied by Clarke Hopkins Clarke (Dwg No. 180159/TP002). Where recorded trees are represented on the survey, there locations have been aligned for greater accuracy. Locations of recorded trees not presented on the feature survey should be verified by a surveyor if decision making requires greater accuracy.

Appendix 4 shows the data collected for the trees (page 26). For definitions and descriptors of the data collected on site see Appendix 1.

3. Protection of Trees on Development Sites

The Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. It is a combination of the root area and crown area which is isolated from construction

disturbance, so that the tree remains viable. The TPZ incorporates the Structural Root Zone (SRZ), the area around the base of a tree required for the tree's stability in the ground; the woody root growth and soil cohesion in this area necessary to hold the tree upright. Further description of the TPZ and SRZ, and methods used for their calculation can be seen in Appendix 2.

3.1 Arboricultural impact

The arboricultural impact of a proposed design is determined based on the level of encroachment into the TPZ of a tree as specified in Australian Standard AS4970-2009. The broad types of impact are described below:

Table 2: Arboricultural Impact categories and descriptors

Category	Description
Impact - Removal	The tree is within the footprint of the proposed design and will require removal to facilitate the design. In order to successfully retain the tree, a design modification would be required.
Impact – Major, not viable	The proposed design has a Tree Protection Zone area encroachment greater than 10%, or it impacts the Structural Root Zone. While the tree does not require outright removal under the design, the proposed works are expected to have a significant impact on the tree such that it is expected to die or fail in the future as a result of the works. In order to successfully retain the tree, a design modification would be required which reduces the impact to an acceptable level, unless a non-destructive root exploration has demonstrated that root distribution is limited in the proposed area of works.
Impact – Major, viable	The proposed design has a Tree Protection Zone area encroachment greater than 10%, or impacts the Structural Root Zone. The tree is expected to remain viable because of one, or a combination of the following: • Alternative construction methods are proposed which reduce the impact on the tree • Site conditions have limited root development within the proposed area of works • The species is known to be particularly tolerant to root disturbance • A non-destructive root exploration was undertaken and demonstrated that root distribution was limited in the proposed area of works. The tree will require the establishment of a Tree Protection Zone prior to the commencement of works, which may require compensation for the area lost to encroachment.
Impact - Minor	The proposed design has a Tree Protection Zone area encroachment of less than 10%, and does not impact the structural root zone. The tree is expected to remain a viable landscape component with the establishment of a Tree Protection Zone prior to the commencement of works, which may require compensation for the area lost to encroachment.
No impact	The proposed design does not enter the Tree Protection Zone. The tree is expected to remain a viable landscape component with the establishment of a Tree Protection Zone prior to the commencement of works.

Remove tree (condition)	The tree is in such poor condition that it is recommended for removal, regardless of the proposed design. The tree does not warrant retention and protection throughout the proposed works.

4. Design Proposal

4.1 Existing Conditions

The subject site, St Ignatius College Geelong, is located in Drysdale, approximately 25km east of the Geelong CBD. The site consists of educational buildings and recreational facilities, such as sporting fields, with vegetation planted in groups and scattered across the site.

The area of interest is the Loyola Administration building (Figure 1), to the west of the site adjacent to one of the sporting fields. Most of the assessed trees are grouped into two rows, east and west of the Loyola Administration building. Trees on the western side of the building are growing alongside a drainage swale. Those on the eastern side of the building are largely growing in raised garden beds, which also contain small shrubs (also see Figure 2, overleaf).

Figure 1: Area of interest and assessed trees (blue)

Figure 2: Looking south at the Loyola Administration building with trees and shrubs growing in raised garden beds

4.2 Tree Details

The majority of the 61 assessed trees are semi-mature or mature Australian Native or Indigenous individuals, with the most common species assessed being *Eucalyptus viminalis* (Manna Gum).

In general, the trees are exhibiting Good or Fair structure (93%) and have been assigned Useful Life Expectancies (ULE) of more than 10 years. ULE is an approximation of how long a tree can be retained safely and usefully in the landscape with an acceptable level of risk.

Only four trees have been assigned High retention value (Trees 2, 4, 7 and 8). These are all large mature *Eucalyptus viminalis* in good condition which stand out as the most significant trees assessed on site. The western row of trees provide screening and amenity, and are a significant component of the local landscape (Figure 3).

Figure 3 - Looking east across the sports field at the western row of trees

4.3 Proposed Works

The proposal involves demolishing and replacing the existing Loyola Administration building at St Ignatius College Geelong. The garden beds and footpaths surrounding the building will be upgraded as part of the proposal. Other works include external upgrades to the façade of the VCE Centre to the south, and the Science and Technology building to the east (Figure 4).

A survey plan showing the existing conditions and site plans showing the proposed works have been prepared by Clarke Hopkins Clarke (No. 180159). These plans have been used to determine the impact of proposed works on the assessed trees.

No information regarding the installation of utilities has been provided.

Appendix 4 displays the assessment data for all trees, as well as the dimensions of the TPZs, SRZs and the arboricultural impact from the proposed design.

Section 5 shows the Arboricultural Impact Assessment Plan. TPZs and SRZs for the assessed trees are depicted to scale and the construction footprint of the proposed works is indicated.

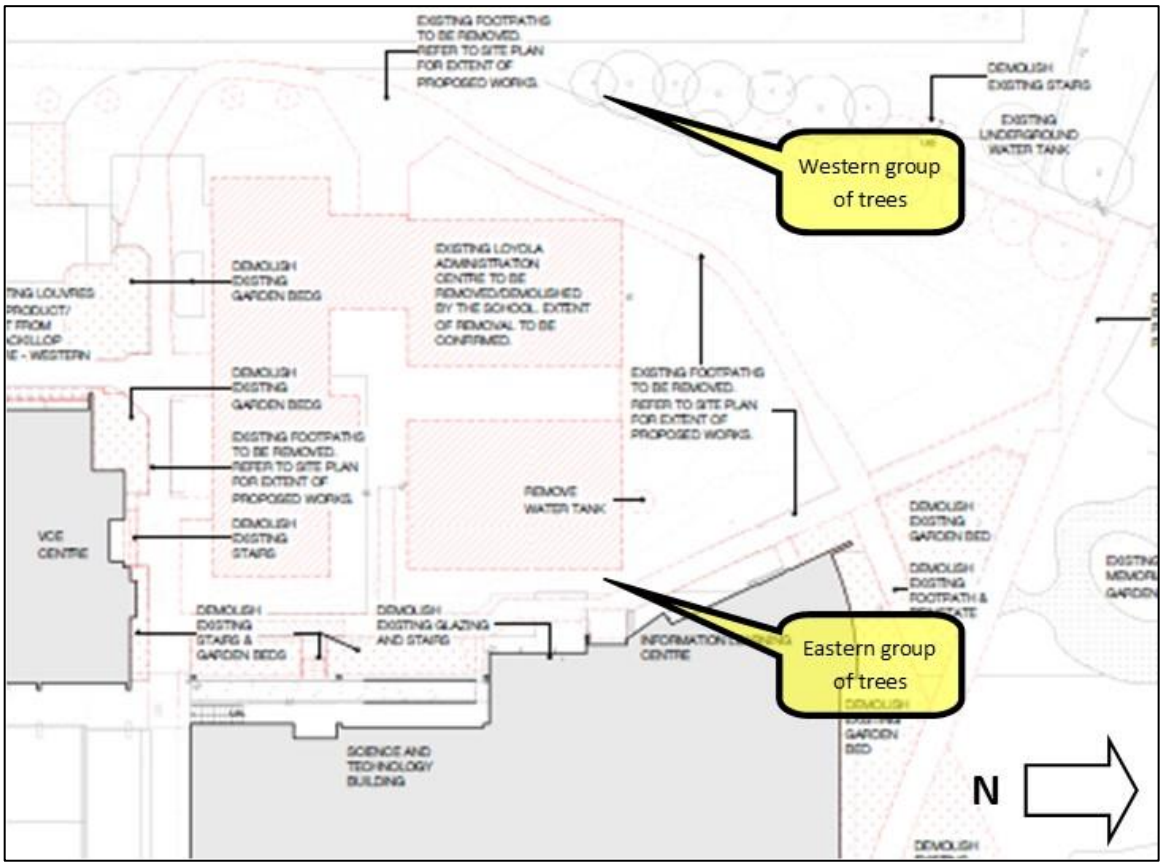


Figure 4: Proposed works at St Ignatius College Geelong (Clarke Hopkins Clarke)

4.4 Planning Overview

This site is located within the City of Greater Geelong within a Special Use Zone (ZU13). A Bushfire Management Overlay applies to some of this land, however is not addressed in this report.

Clause 52.17: Native Vegetation, of the Victorian Planning Scheme aims to ensure 'no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation'. Where native vegetation is defined by the Victorian Planning Authority as plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses. With regard to this report, this applies to four species (50 trees): *Acacia implexa, Acacia melanoxylon, Eucalyptus camaldulensis and Eucalyptus viminalis.*

Clause 52.17 states *'A permit is required to remove, destroy or lop native vegetation, including dead native vegetation'.* Exemptions are outlined in Clause 52.17-7, and within the schedule the clause. The following exemption may apply as the trees have been planted and are not part of remnant Indigenous vegetation:

- *'Native vegetation that is to be removed, destroyed or lopped that was either planted or grown as a result of direct seeding.'*
    - *'This exemption does not apply to native vegetation planted or managed with public funding for the purpose of land protection or enhancing biodiversity unless the removal, destruction or lopping of the native vegetation is in accordance with written permission of the agency (or its successor) that provided the funding'.*

The purpose of Clause 52.17 is in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment, Land, Water and Planning, 2017)(*Guidelines*) to avoid, minimise and offset native vegetation removal. Offsets may apply where the removal of native vegetation cannot be avoided or minimised. Where applicable, all offsets requirements will be detailed in the permit.

Planning permit requirements for this proposal should be confirmed with the City of Greater Geelong, and expert environmental planning and ecological advice may be required.

5. Arboricultural Impact Assessment Plan

HOMEWOOD

Base Info: Clarke Hopkins Clarke
Date:28.05.2021
Plotted: CB
Projection: GDA 94 Zone 55

Assessment of trees at St Ignatius College Geelong (27 Peninsula Drive, Drysdale)

Legend

Trees/SRZ/TPZ (by retention value)

- High
- Medium
- Low

TPZ encroachment

- Major
- Minor

6. Arboricultural Impact Assessment Summary

Table 3: Summary of impact from the proposed design

Arboricultural Impact	Tree Retention Value			Total No. of Trees
	High	Medium	Low	
Impact Removal	4	31	24	59
Impact Major - viable	0	1	0	1
Impact Minor	0	1	0	1
No Impact	0	0	0	0
Total	**4**	**33**	**24**	**61**

Of the 61 trees assessed:

- 59 trees require removal to facilitate the proposed design. All of these trees are located within the proposed construction footprint.
  - Four trees have High retention value and all efforts should be made to retain and protect these trees throughout the proposed works.
    - ◊ Tree 2 is impacted by the building and driveway footprint and a significant design modification would be required to allow its retention.
    - ◊ Trees 4, 7 and 8 are impacted by the edge of the proposed driveway and associated retaining wall and a design modification to reduce the width of the driveway would be required to allow for their retention.
  - 31 trees have Medium retention value:
    - ◊ 12 of these trees (Trees 30, 32, 34, 36, 37, 39, 40, 48-50, 52, 54) are within the building footprint and a significant design modification would be required to allow their retention.
    - ◊ 12 of these trees (Trees 5, 6, 9,11-15,18-21) are within the driveway footprint and a design modification to reduce the width of the driveway would be required to allow for their retention.
    - ◊ Seven of these trees (Trees 25, 26, 28, 29, 41, 44, 46) are impacted by proposed garden bed, courtyard and plaza upgrades surrounding the building. These trees may be able to be incorporated into the proposed design and retained where changes of grade can be minimised and sensitive construction methods are used.
    - ◊ Alternatively, it is recommended these trees are removed and replaced.
  - 24 trees (Trees 1, 3, 10, 16, 17, 22, 27, 31, 33, 35, 38, 42, 43, 45, 47, 51, 53, 55-61) are Low retention value and do not warrant a design modification to allow their retention.
- One tree (Tree 24) has a Major TPZ encroachment (21%) under the proposed design.
  - This tree is impacted by the driveway footprint but **is expected to remain viable** under the proposed design provided works are undertaken with arborist supervision and using sensitive construction methods including:
    - ◊ Replacement surfaces to be porous in nature (e.g. permeable asphalt), with the use of excavation and fill (<100mm) minimised.
    - ◊ No compaction of the subgrade.

- ◊ Any excavation and/or removal of existing surfaces undertaken with care (e.g., no pneumatic tools) to prevent damage to major roots (>40mm diameter) and under direct Project Arborist supervision.

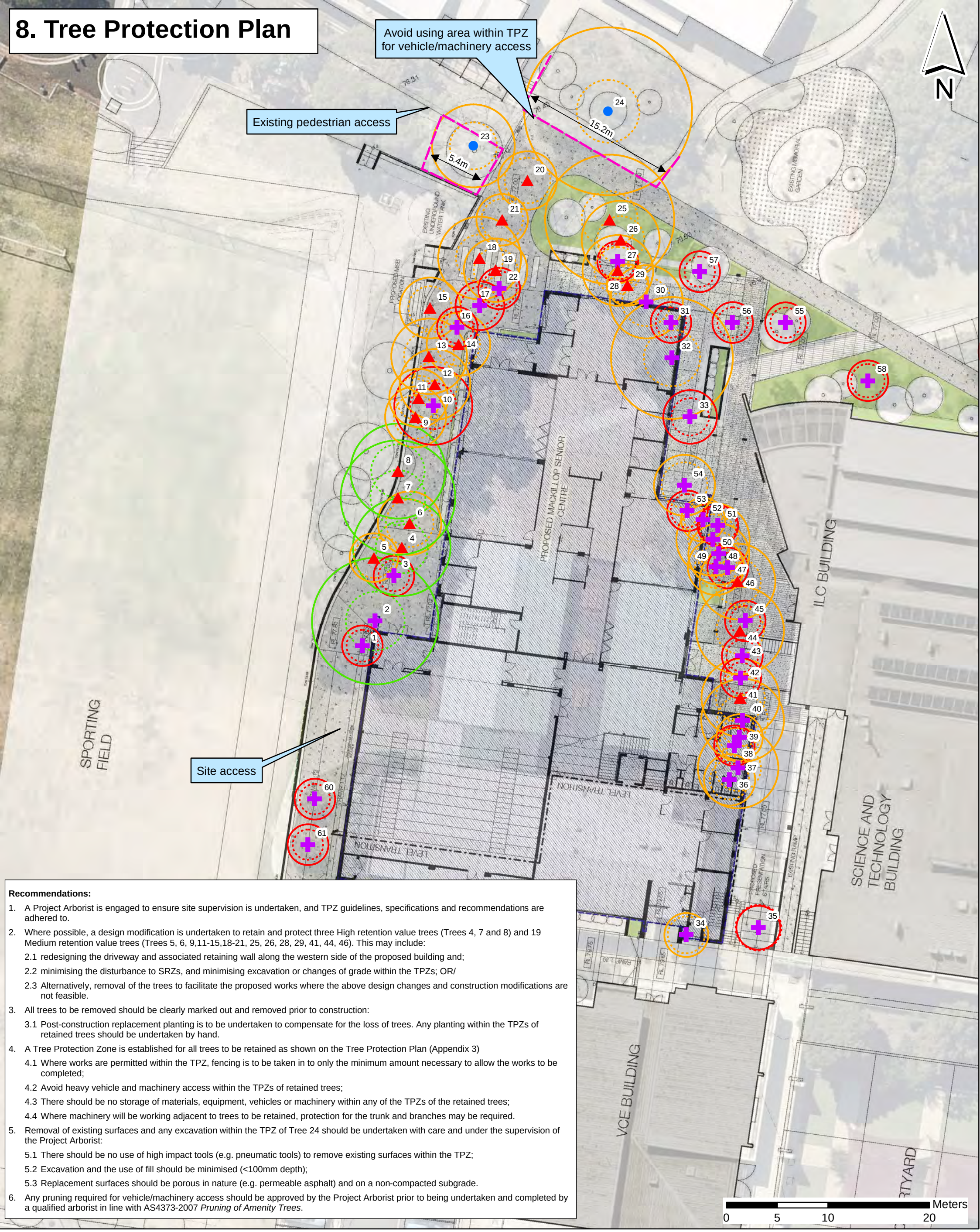
- **One tree (Tree 23) has a minor TPZ encroachment** (less than 10% TPZ area and no SRZ incursion) from the proposed design. This tree is expected to remain viable with standard TPZ provisions and exclusions.

All retained trees require protection to ensure they remain viable throughout demolition and construction.

7. Recommended Tree Protection Measures

Refer to the Executive Summary.

8. Tree Protection Plan



Recommendations:

1. A Project Arborist is engaged to ensure site supervision is undertaken, and TPZ guidelines, specifications and recommendations are adhered to.
2. Where possible, a design modification is undertaken to retain and protect three High retention value trees (Trees 4, 7 and 8) and 19 Medium retention value trees (Trees 5, 6, 9,11-15,18-21, 25, 26, 28, 29, 41, 44, 46). This may include:
   - 2.1 redesigning the driveway and associated retaining wall along the western side of the proposed building and;
   - 2.2 minimising the disturbance to SRZs, and minimising excavation or changes of grade within the TPZs; OR/
   - 2.3 Alternatively, removal of the trees to facilitate the proposed works where the above design changes and construction modifications are not feasible.
3. All trees to be removed should be clearly marked out and removed prior to construction:
   - 3.1 Post-construction replacement planting is to be undertaken to compensate for the loss of trees. Any planting within the TPZs of retained trees should be undertaken by hand.
4. A Tree Protection Zone is established for all trees to be retained as shown on the Tree Protection Plan (Appendix 3)
   - 4.1 Where works are permitted within the TPZ, fencing is to be taken in to only the minimum amount necessary to allow the works to be completed;
   - 4.2 Avoid heavy vehicle and machinery access within the TPZs of retained trees;
   - 4.3 There should be no storage of materials, equipment, vehicles or machinery within any of the TPZs of the retained trees;
   - 4.4 Where machinery will be working adjacent to trees to be retained, protection for the trunk and branches may be required.
5. Removal of existing surfaces and any excavation within the TPZ of Tree 24 should be undertaken with care and under the supervision of the Project Arborist:
   - 5.1 There should be no use of high impact tools (e.g. pneumatic tools) to remove existing surfaces within the TPZ;
   - 5.2 Excavation and the use of fill should be minimised (<100mm depth);
   - 5.3 Replacement surfaces should be porous in nature (e.g. permeable asphalt) and on a non-compacted subgrade.
6. Any pruning required for vehicle/machinery access should be approved by the Project Arborist prior to being undertaken and completed by a qualified arborist in line with AS4373-2007 *Pruning of Amenity Trees*.

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Base Info: Clarke Hopkins Clarke
Plotted: CB
Date: 28.05.2021
Coordinate System: GDA 1994 MGA Z55
Page size: A3

Locations and types of tree protection measures for proposed works at St Ignatius College Geelong

Legend

Trees (Recommendation)
- Retain and protect
- Impact Removal
- Modify design - if feasible

Other features
- TPZ fencing
- TPZ fence dimensions (m)

SRZ/TPZ (By retention value)
- High
- Medium
- Low

9. References

AS 4970 - 2009, *Australian Standard, Protection of Trees on Development Sites*, Standards Australia.

AS 4373 – 2007, *Australian Standard, Pruning of Amenity Trees*, Standards Australia.

Biddle, P.G., 1998, *Tree root damage to buildings, Causes, Diagnosis and Remedy,* Willowmead Publishing Ltd., Wantage,UK.

Mattheck, C. and Breloer, H. 1994, *The body language of trees: a handbook for failure analysis*, London: HMSO.

Appendix 1. Data Collection Definitions & Descriptors

Tree assessments are based on the assessor's experience and opinion of the tree.

1.1 Botanical name

The scientific name identifying the genus and species of the tree. Each species has only one scientific name.

1.2 Common Name

The colloquial name for a tree species, usually in plain English. Common names for a species are often local or regional and each species can have multiple common names.

1.3 Tree dimensions

Tree height and canopy width in metres (estimated unless stated otherwise).

1.4 DBH

Diameter of the trunk at breast height (1.4m above ground level) measured using a diameter tape. Used to calculate the Tree Protection Zone radius.

1.5 Basal diameter

Diameter of the trunk above the root buttress, measured using a diameter tape. Used to calculate the Structural Root Zone radius.

1.6 Health

Category	Description
Very Good	The tree is demonstrating excellent or exceptional growth. The tree exhibits a full canopy of foliage and is free of pest and disease problems.
Good	The tree is demonstrating good or exceptional growth. The tree exhibits a full canopy of foliage and has only minor pest or diseases problems.
Fair	The tree is in reasonable condition and growing well. The tree exhibits an adequate canopy of foliage. There may be some deadwood present in the crown. Some grazing by insects or possums may be evident.
Poor	The tree is not growing to its full capacity; extension growth of the laterals is minimal. The canopy may be thinning or sparse. Large amounts of deadwood may be evident throughout the crown. Significant pest and disease problems may be evident or there may be symptoms of stress indicating tree decline.
Very Poor	The tree appears to be in a state of decline. The tree is not growing to its full capacity. The canopy may be very thin and sparse. A significant volume of deadwood may be present in the canopy or pest and disease problems may be causing a severe decline in tree health.
Dead	The tree is dead.

1.7 Structure

Category	Description
Good	The tree has a well-defined and balanced crown. Branch unions appear to be sound, with no significant defects evident in the trunk or the branches. Major limbs are well defined. The tree is considered a good example of the species.
Fair	The tree has some minor problems in the structure of the crown. The crown may be slightly out of balance, and some branch unions may be exhibiting minor structural faults. If the tree has a single trunk, it may be on a slight lean or exhibiting minor defects.
Poor	The tree may have a poorly structured crown. The crown may be unbalanced or exhibit large gaps. Major limbs may not be well defined. Branches may be rubbing or crossing over. Branch unions may be poor or faulty at the point of attachment. The tree may have suffered root damage.
Very Poor	The tree has a poorly structured crown. The crown is unbalanced or exhibits large gaps with possibly large sections of deadwood. Major limbs may not be well defined. Branches may be rubbing or crossing over. Branch unions may be poor or faulty at the point of attachment. Branches may exhibit large cracks that are likely to fail in the future. The tree may have suffered major root damage.
Has Failed	A section of the tree has failed or is in imminent danger of failure and the tree is no longer a viable specimen.

1.8 Age Class

Category	Description
Mature	Tree has reached the expected size for the species at the site.
Semi-mature	Established tree that has not yet reach the expected size for the species at the site.
Young	Recently planted tree or juvenile self-sown tree (generally less than 5 years old).

1.9 Useful Life Expectancy (ULE)

Category	Description
40+ years	The tree is in excellent condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component in excess of 40 years.
20 - 40 years	The tree is in good condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component for 20-40 years.
10 - 20 years	The tree is in fair condition and under normal conditions and with appropriate management is expected to continue as a viable landscape component for 10-20 years.
5 - 10 years	The tree is in fair to poor condition or it is not a long lived species. Removal and replacement may be required within the next 10 years.
1 - 5 years	The tree is in poor condition due to advanced decline or structural defect. Removal and replacement may be required within the next 5 years.
0 years	The tree is dead or is considered hazardous in the location. Removal may be required.

1.10 Tree Origin

Category	Description
Exotic	The species originates in a country other than Australia.
Australian Native	The species originates within Australia.
Indigenous	The species originates within the local environs.

1.11 Contribution to the Landscape

Category	Description
High	Generally, a large tree which is a significant component of the local landscape and provides canopy cover to the site. May offer shade and other amenities such as screening. The tree may assist with erosion control, offer a windbreak or perform a vital function in the location (e.g.: Habitat, shade, flowers or fruit).
Medium	Generally, a medium sized tree or group of small-medium trees which provide a moderate contribution to the local landscape and canopy cover. The tree may offer screening in the landscape or serve a particular function in the location.
Low	The tree offers little in the way of screening, amenity or canopy cover.
Negligible	The tree offers extremely little to nothing in the way of screening, amenity or canopy cover.

1.12 Tree Retention Value

Term	Description
Very High	Tree of exceptional quality in good condition. A prominent landscape feature and/or of historic, cultural, ecological or other significance. Has the potential to be a long-term landscape component where managed appropriately. All efforts should be made to retain the tree and protect from arboricultural impact.
High	Tree of high quality in good to fair condition. Generally, a prominent landscape feature. Has the potential to be a medium to long-term landscape component where managed appropriately. All efforts should be made to retain the tree and protect from arboricultural impact.
Medium	Tree of moderate quality in fair condition. Generally, a modest landscape feature. May have a health or structural issue that can be resolved with arboricultural input or may refer to a medium to small tree in good condition. Has the potential to be a medium to long-term landscape component where managed appropriately. Where practical, design modifications should be considered in order to retain and protect from arboricultural impact.
Low	Either: Tree of low quality in poor condition. Generally, provides little amenity value. Unlikely to be a long or medium term landscape component. The tree may be considered a weed species, structurally unsound, dead/dying/diseased, nearing the end of its ULE or may not be suitable for the site. Or: small tree of good or fair condition which is easily replaced in the landscape through planting of advanced stock.
Third party ownership	The tree is located outside of the subject site and is owned by a third party. It may be owned by a private entity (residential) or public body (council). Third party owned trees must be retained and protected from arboricultural impact, unless a mutually acceptable outcome is negotiated with the tree owner and relevant authorities.

Appendix 2. Tree Protection Zones & Structural Root Zones

All parts of the tree may be damaged by development and damage to any one part of the tree may affect its functioning as a whole.

Root damage is the most common cause of damage to trees on development sites. Roots may be directly damaged when removed, wounded, crushed or torn during grading, excavation or trenching. Soil compaction from foot traffic and vehicle traffic indirectly damages tree roots, resulting in loss of pore space within the soil which is essential for the exchange of gases between the soil and atmosphere and for soil drainage.

Trunks of trees may be wounded mechanically during demolition and construction work. This not only predisposes a tree to potential decay, but it also interferes with the transport of water, nutrients and sugars throughout the tree. Serious impacts may structurally weaken the tree.

The canopy of trees can be damaged through incorrect pruning techniques or mechanical injury by trucks, cranes, excavators etc. The removal of leaves reduces the level of photosynthesis and reduces the tree's capacity to function normally and to withstand stresses. Incorrect pruning and mechanical damage can produce wounds that are susceptible to infection by wood decay organisms.

For trees to be retained and their requirements met, procedures must be in place to protect trees at every stage of the development process. This needs to be taken into account at the earliest planning stage of any outdoor event or design of a development project where trees are involved.

2.1 Tree Protection Zones

The most common method of protecting trees during construction is by establishing a Tree Protection Zone (TPZ). The TPZ is an area isolated from construction disturbance area, so that the tree remains viable. The TPZ radius has been calculated according to the Australian Standard (AS 4970-2009) for the subject trees. This method calculates the TPZ as 12 times the trunk diameter at 1.4m above ground level (DBH).

A TPZ should not be less than 2m nor greater than 15m, except where additional crown protection is required. The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1m outside of the crown projection.

2.2 Structural Root Zones

The Structural Root Zone (SRZ) is the minimum volume of roots required by the tree to remain stable in the ground. If the SRZ is breached the chances of windthrow are significantly increased. Windthrow is an event where the entire tree fails/falls over.

It is important to note that the SRZ is not related to tree health. It refers to the physical volume of roots required for the tree to remain stable in the ground (Figure 5). It is in no way related to the physiological requirements of the tree but is the minimum volume of roots required for the tree to remain standing (Mattheck and Breloer 1994).

According to AS 4970-2009 the SRZ radius of the trees has been calculated using the equation:

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

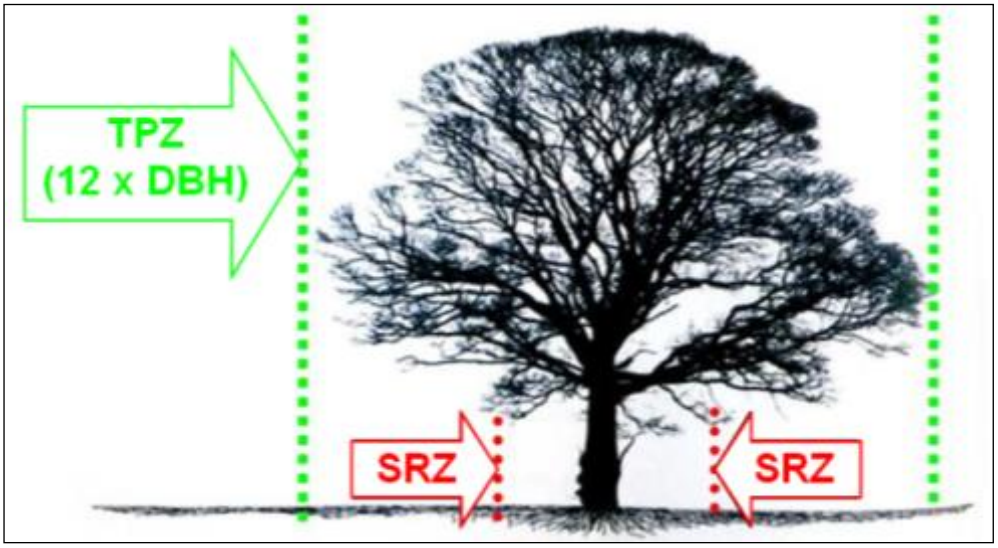

Figure 5: The SRZ = minimum volume of roots required to maintain tree stability (Biddle 1998).

2.3 TPZ and SRZ encroachment

It may be possible to encroach into or make variations to the standard TPZ. Encroachment includes (but is not limited to) excavation, compacted fill and machine trenching.

Table 4: Levels of TPZ encroachment as defined by AS 4970-2009

Level of Encroachment	Description / Definition	Requirements
Minor	Encroachment of less than 10% of the TPZ and outside the SRZ is deemed to be minor encroachment.	Detailed root investigations should not be required but the encroachment must be compensated with an extension to the TPZ elsewhere (Figure 6). Variations must be made by the Project Arborist considering other relevant factors including tree health, vigour, stability, species sensitivity and soil characteristics.
Major	Encroachment of more than 10% of the TPZ or into the Structural Root Zone (SRZ) is deemed to be major encroachment.	The Project Arborist must demonstrate that the trees would remain viable. This may require root investigation by non-destructive methods and/or consideration of relevant factors of tree health, vigour, stability, species sensitivity and soil characteristics. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.

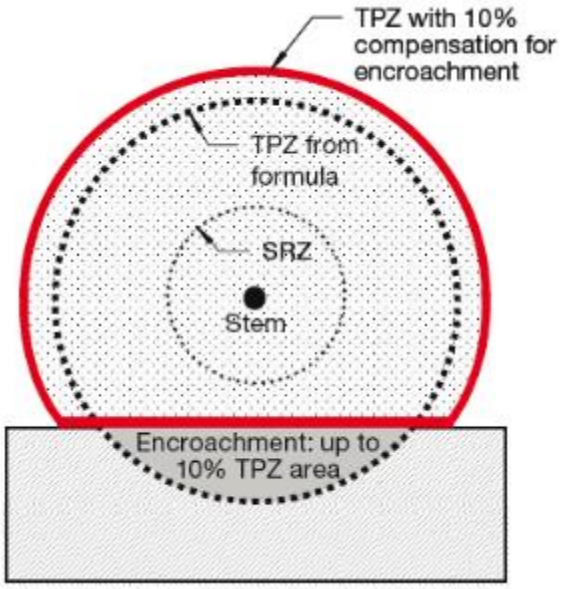

Figure 6: Example of minor TPZ encroachment and compensatory offset (image from AS 4970-2009).

Appendix 3. Tree Protection Measures

3.1 Tree Protection Fencing

The Tree Protection Zone is delineated on site by a physical barrier of protective fencing that is a minimum of 1.8m high. It is installed around retained trees prior to site establishment and retained intact until completion of the works (Figure 7). Once erected, protective fencing must not be removed or altered without approval by the Project Arborist. The TPZ fence should be secured to restrict access.

Where TPZ fencing is impractical - e.g. if site access is required through the TPZ, other tree protection measures should be used, including ground protection and/or trunk and branch protection (see 3.8 and 3.9).

Figure 7: TPZ fencing is erected around retained trees prior to site works.

3.2 Signs

Signs identifying the TPZ should be placed around the edge of the TPZ and be clearly visible from within the development site (Figure 8).

Figure 8: Example of a TPZ warning sign clearly displayed on TPZ fencing.

3.3 Activities restricted within the TPZ

Activities restricted within the TPZ include but are not limited to:

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

3.4 TPZ Maintenance

The fenced TPZ area should be mulched to retain soil moisture throughout the period of works. The mulch must be maintained to a depth of 50-100mm. Where the existing landscape within the TPZ is to remain unaltered (e.g. garden beds or turf) mulch may not be required.

Soil moisture levels should be regularly monitored by the Project Arborist. Temporary irrigation or watering may be required within the TPZ. An above-ground irrigation system should be installed and maintained by a competent individual.

All weeds should be removed by hand without soil disturbance or should be controlled with appropriate use of herbicide.

3.5 Working within the TPZ

Some works and activities within the TPZ may be permitted by the determining authority. These must be directly supervised on site by the Project Arborist. Any additional encroachment that becomes necessary as the site works progress must be reviewed by the Project Arborist and be acceptable to the determining authority before being carried out.

3.6 Landscaping

Soft and hard landscaping within Tree Protection Zones should be assessed by the Project Arborist at the design stage, and prior to the commencement of works. In general:

- There should be no grade changes within the TPZ of trees to be retained. If a level surface is required, no more than 100mm of fill (e.g. topsoil or crushed rock) should be used.
- There should be no soil preparation for landscaping (cultivation, replacement of existing substrate or compaction) within the TPZ of trees to be retained.

- Excavation for planting holes, fence posts, garden edging, etc. should be undertaken manually within the TPZ of trees to be retained. If significant roots (greater than 30mm diameter) are encountered these are to be retained unscathed and the location of the landscape component shifted. Any small roots are to be cleanly pruned by the Project Arborist, at right angles, using sharp, clean tools.

3.7 Underground services

Underground services within Tree Protection Zones should be assessed by the Project Arborist at the design stage, and prior to the commencement of works.

- All underground services (including water, sewage, electricity, gas and communications) should be located outside of the TPZ of trees to be retained.
- If underground services are to be routed within an established TPZ, they should be installed by directional boring with the top of the bore to be a minimum depth of 800mm below the existing grade.
- Bore pits should be located outside of the TPZ or manually excavated under the direct supervision of the Project Arborist.

3.8 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. Examples of ground protection include track mats (Figure 9) and rumble boards strapped over mulch or crushed rock (Figure 10). Depending on weather conditions, geotextile fabric may be required to prevent mulch and crushed rock mixing into the site soils.

Figure 9: Track mats.

Figure 10: Rumble boards over crushed rock.

3.9 Trunk and Branch Protection

Where trees cannot be isolated from vehicles or machinery by TPZ fencing, trunk and branch protection may be required to prevent mechanical damage. Protection may consist of

padding surrounding the trunk or branch, held in place with batons strapped together, or similar (Figure 11). Boards are to be strapped to trees, not nailed or screwed.

Crown protection may also include pruning, tying-back of branches or other measures. If pruning is required, it must be undertaken by a qualified arborist and as per the specifications of AS 4373-2007 *Pruning of Amenity Trees* and should be undertaken before the establishment of the TPZ.

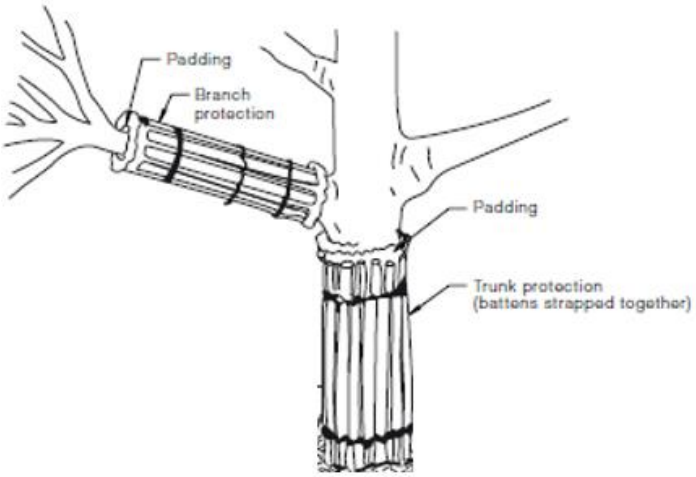

Figure 11: Example of trunk and branch protection (Source: AS 4970-2009).

3.10 Scaffolding

Where scaffolding is required it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimised. The ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting Figure 12). Where access is required, a board walk or other surface material should be installed to minimise soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.

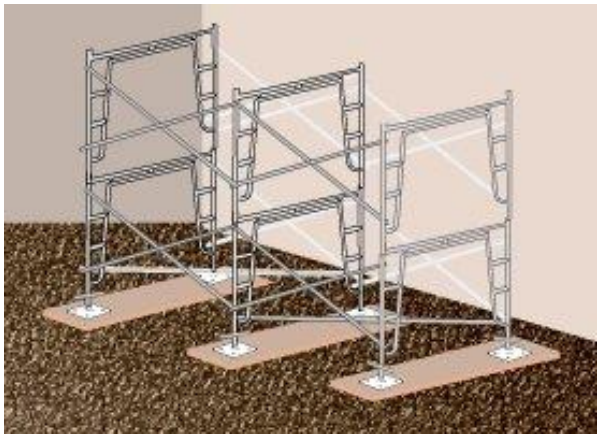

Figure 12: Scaffold on boarding.

Appendix 4. Individual Tree Assessments

Tree ID	Botanical Name	Origin	Height & Width (m)	DBH (cm)	Age Class	Health	Structure	ULE (years)	Retention Value	TPZ Radius (m)	SRZ Radius (m)	TPZ Encroachment (%)	TPZ Impact
1	*Eucalyptus camaldulensis*	Indigenous	5 x 2	13	Semi mature	Good	Good	40+	Low	2	1.57	100	Impact Removal
2	*Eucalyptus viminalis*	Indigenous	8 x 2	52	Mature	Good	Fair	20 - 40	High	6.24	2.9	100	Impact Removal
3	*Acacia implexa*	Indigenous	6 x 2	12	Mature	Good	Fair	20 - 40	Low	2	1.53	100	Impact Removal
4	*Eucalyptus viminalis*	Indigenous	7 x 2	40	Mature	Good	Fair	40+	High	4.8	2.57	100	Impact Removal
5	*Eucalyptus viminalis*	Indigenous	6 x 5	20	Mature	Good	Fair	20 - 40	Medium	2.4	2	100	Impact Removal
6	*Eucalyptus viminalis*	Indigenous	9 x 6	26	Mature	Good	Fair	20 - 40	Medium	3.12	2.34	100	Impact Removal
7	*Eucalyptus viminalis*	Indigenous	9 x 7	47	Mature	Good	Fair	40+	High	5.64	2.71	100	Impact Removal
8	*Eucalyptus viminalis*	Indigenous	10 x 8	39	Mature	Good	Fair	40+	High	4.68	2.63	100	Impact Removal
9	*Eucalyptus viminalis*	Indigenous	11 x 5	25	Mature	Good	Fair	20 - 40	Medium	3	2.15	100	Impact Removal
10	*Eucalyptus viminalis*	Indigenous	10 x 6	32	Mature	Good	Poor	10 - 20	Low	3.84	2.28	100	Impact Removal
11	*Eucalyptus viminalis*	Indigenous	11 x 5	24	Mature	Good	Fair	20 - 40	Medium	2.88	2.2	100	Impact Removal

Tree ID	Botanical Name	Origin	Height & Width (m)	DBH (cm)	Age Class	Health	Structure	ULE (years)	Retention Value	TPZ Radius (m)	SRZ Radius (m)	TPZ Encroachment (%)	TPZ Impact
12	*Eucalyptus viminalis*	Indigenous	10 x 6	29	Mature	Good	Fair	40+	Medium	3.48	2.23	100	Impact Removal
13	*Eucalyptus viminalis*	Indigenous	9 x 6	31	Mature	Good	Fair	10 - 20	Medium	3.72	2.47	100	Impact Removal
14	*Eucalyptus viminalis*	Indigenous	9 x 6	26	Mature	Good	Fair	10 - 20	Medium	3.12	2.13	100	Impact Removal
15	*Eucalyptus viminalis*	Indigenous	8 x 6	25	Mature	Good	Fair	20 - 40	Medium	3	2.13	100	Impact Removal
16	*Eucalyptus viminalis*	Indigenous	4 x 2	9	Semi mature	Good	Fair	20 - 40	Low	2	1.57	100	Impact Removal
17	*Eucalyptus viminalis*	Indigenous	6 x 5	20	Mature	Good	Poor	5 - 10	Low	2.4	1.88	100	Impact Removal
18	*Eucalyptus viminalis*	Indigenous	11 x 7	34	Mature	Fair	Fair	20 - 40	Medium	4.08	2.32	100	Impact Removal
19	*Eucalyptus viminalis*	Indigenous	11 x 7	26	Mature	Good	Fair	40+	Medium	3.12	2.15	100	Impact Removal
20	*Eucalyptus viminalis*	Indigenous	11 x 7	24	Mature	Good	Fair	20 - 40	Medium	2.88	2.25	100	Impact Removal
21	*Eucalyptus viminalis*	Indigenous	9 x 7	21	Mature	Good	Fair	10 - 20	Medium	2.52	2.05	100	Impact Removal
22	*Acacia implexa*	Indigenous	7 x 5	17	Mature	Good	Fair	10 - 20	Low	2.04	1.72	100	Impact Removal
23	*Corymbia citriodora*	Native	12 x 9	34	Mature	Fair	Fair	20 - 40	Medium	4.08	2.32	10	Impact Minor
24	*Eucalyptus mannifera*	Native	12 x 14	69	Mature	Fair	Poor	10 - 20	Medium	8.28	3.09	21	Impact Major - viable

Tree ID	Botanical Name	Origin	Height & Width (m)	DBH (cm)	Age Class	Health	Structure	ULE (years)	Retention Value	TPZ Radius (m)	SRZ Radius (m)	TPZ Encroachment (%)	TPZ Impact
25	*Eucalyptus viminalis*	Indigenous	12 x 14	53	Mature	Good	Fair	10 - 20	Medium	6.36	2.76	100	Impact Removal
26	*Eucalyptus viminalis*	Indigenous	12 x 9	32	Mature	Good	Fair	20 - 40	Medium	3.84	2.32	100	Impact Removal
27	*Acacia melanoxylon*	Indigenous	7 x 4	16	Mature	Good	Fair	10 - 20	Low	2	1.79	100	Impact Removal
28	*Eucalyptus viminalis*	Indigenous	9 x 6	29	Mature	Good	Fair	20 - 40	Medium	3.48	2.3	100	Impact Removal
29	*Eucalyptus viminalis*	Indigenous	11 x 4	17	Mature	Good	Good	40+	Medium	2.04	1.91	100	Impact Removal
30	*Eucalyptus viminalis*	Indigenous	11 x 4	30	Mature	Good	Fair	10 - 20	Medium	3.6	2.39	100	Impact Removal
31	*Acacia melanoxylon*	Indigenous	4 x 2	12	Semi mature	Fair	Fair	10 - 20	Low	2	1.5	100	Impact Removal
32	*Eucalyptus viminalis*	Indigenous	11 x 9	50	Mature	Good	Fair	20 - 40	Medium	6	2.78	100	Impact Removal
33	*Acacia melanoxylon*	Indigenous	7 x 3	22	Mature	Fair	Fair	10 - 20	Low	2.64	1.85	100	Impact Removal
34	*Syzygium australe*	Native	8 x 4	18	Mature	Fair	Fair	20 - 40	Medium	2.16	1.82	100	Impact Removal
35	*Prunus cerasifera*	Exotic	7 x 4	18	Mature	Fair	Fair	10 - 20	Low	2.16	2.25	100	Impact Removal
36	*Acacia implexa*	Indigenous	10 x 5	21	Mature	Fair	Fair	10 - 20	Medium	2.52	1.94	100	Impact Removal
37	*Eucalyptus camaldulensis*	Indigenous	13 x 6	33	Mature	Good	Fair	40+	Medium	3.96	2.25	100	Impact Removal
38	*Acacia melanoxylon*	Indigenous	7 x 3	15	Mature	Fair	Fair	10 - 20	Low	2	1.79	100	Impact Removal

Tree ID	Botanical Name	Origin	Height & Width (m)	DBH (cm)	Age Class	Health	Structure	ULE (years)	Retention Value	TPZ Radius (m)	SRZ Radius (m)	TPZ Encroachment (%)	TPZ Impact
39	*Eucalyptus camaldulensis*	Indigenous	11 x 3	19	Semi mature	Good	Fair	20 - 40	Medium	2.28	1.94	100	Impact Removal
40	*Eucalyptus camaldulensis*	Indigenous	14 x 5	34	Mature	Good	Fair	10 - 20	Medium	4.08	2.49	100	Impact Removal
41	*Eucalyptus camaldulensis*	Indigenous	11 x 7	32	Mature	Good	Fair	10 - 20	Medium	3.84	2.41	100	Impact Removal
42	*Acacia melanoxylon*	Indigenous	7 x 2	12	Mature	Fair	Good	10 - 20	Low	2	1.53	100	Impact Removal
43	*Acacia melanoxylon*	Indigenous	7 x 3	13	Mature	Fair	Fair	10 - 20	Low	2	1.57	100	Impact Removal
44	*Eucalyptus viminalis*	Indigenous	13 x 6	36	Mature	Good	Fair	10 - 20	Medium	4.32	2.34	100	Impact Removal
45	*Eucalyptus camaldulensis*	Indigenous	6 x 2	10	Semi mature	Good	Fair	20 - 40	Low	2	1.5	100	Impact Removal
46	*Eucalyptus camaldulensis*	Indigenous	11 x 6	31	Mature	Good	Fair	20 - 40	Medium	3.72	2.3	100	Impact Removal
47	*Acacia melanoxylon*	Indigenous	6 x 2	11	Mature	Fair	Fair	10 - 20	Low	2	1.5	100	Impact Removal
48	*Eucalyptus camaldulensis*	Indigenous	11 x 2	25	Mature	Good	Fair	40+	Medium	3	2.15	100	Impact Removal
49	*Eucalyptus camaldulensis*	Indigenous	11 x 4	23	Mature	Good	Fair	40+	Medium	2.76	2.08	100	Impact Removal
50	*Eucalyptus camaldulensis*	Indigenous	9 x 6	30	Mature	Good	Fair	10 - 20	Medium	3.6	2.45	100	Impact Removal
51	*Acacia melanoxylon*	Indigenous	8 x 2	14	Mature	Fair	Fair	10 - 20	Low	2	1.85	100	Impact Removal
52	*Eucalyptus camaldulensis*	Indigenous	10 x 4	18	Semi mature	Fair	Fair	20 - 40	Medium	2.16	1.88	100	Impact Removal

Tree ID	Botanical Name	Origin	Height & Width (m)	DBH (cm)	Age Class	Health	Structure	ULE (years)	Retention Value	TPZ Radius (m)	SRZ Radius (m)	TPZ Encroachment (%)	TPZ Impact
53	*Eucalyptus camaldulensis*	Indigenous	5 x 3	13	Semi mature	Poor	Poor	5 - 10	Low	2	1.65	100	Impact Removal
54	*Acacia melanoxylon*	Indigenous	11 x 4	25	Mature	Fair	Fair	10 - 20	Medium	3	2.25	100	Impact Removal
55	*Pyrus calleryana*	Exotic	4 x 3	10	Semi mature	Good	Fair	20 - 40	Low	2	1.5	100	Impact Removal
56	*Gleditsia triacanthos*	Exotic	5 x 4	13	Mature	Good	Fair	20 - 40	Low	2	1.5	100	Impact Removal
57	*Pyrus calleryana*	Exotic	3 x 1	6	Semi mature	Good	Good	20 - 40	Low	2	1.5	100	Impact Removal
58	*Gleditsia triacanthos*	Exotic	5 x 6	15	Mature	Good	Fair	10 - 20	Low	2	1.65	100	Impact Removal
59	*Gleditsia triacanthos*	Exotic	7 x 7	19	Mature	Good	Fair	10 - 20	Low	2.28	1.85	100	Impact Removal
60	*Acer Xfreemanii*	Exotic	4 x 2	8	Semi mature	Good	Good	40+	Low	2	1.5	100	Impact Removal
61	*Acer Xfreemanii*	Exotic	4 x 2	8	Semi mature	Good	Good	40+	Low	2	1.5	100	Impact Removal

Appendix 5. Individual Tree Data

Tree Number: 1

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	5 x 2		
DBH (cm)	13		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Low		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Growing on edge of drainage swale		

Tree Number: 2

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	8 x 2		
DBH (cm)	52		
TPZ Radius (m):	6.24	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**High**		
Comments:	Growing on edge of drainage swale		

Tree Number: 3

Botanical Name: *Acacia implexa*

Common Name:	Lightwood		
Origin:	Indigenous		
Height & Width (m):	6 x 2		
DBH (cm)	12		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Low		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Group of 6, Growing on edge of drainage swale		

Tree Number: 4

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	7 x 2		
DBH (cm)	40		
TPZ Radius (m):	4.8	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**High**		
Comments:	Growing on edge of drainage swale		

Tree Number: 5

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	6 x 5		
DBH (cm)	20		
TPZ Radius (m):	2.4	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 6

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 6		
DBH (cm)	26		
TPZ Radius (m):	3.12	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale, Leaning into existing building		

Tree Number: 7

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 7		
DBH (cm)	47		
TPZ Radius (m):	5.64	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Valuable		
Retention Value:	**High**		
Comments:	Growing on edge of drainage swale		

Tree Number: 8

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	10 x 8		
DBH (cm)	39		
TPZ Radius (m):	4.68	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Valuable		
Retention Value:	**High**		
Comments:	Growing on edge of drainage swale		

Tree Number: 9

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 5		
DBH (cm)	25		
TPZ Radius (m):	3	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Valuable		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale, Group of 2		

Tree Number: 10

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	10 x 6		
DBH (cm)	32		
TPZ Radius (m):	3.84	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Poor	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Growing on edge of drainage swale		

Tree Number: 11

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 5		
DBH (cm)	24		
TPZ Radius (m):	2.88	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 12

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	10 x 6		
DBH (cm)	29		
TPZ Radius (m):	3.48	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 13 **Botanical Name:** *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 6		
DBH (cm)	31		
TPZ Radius (m):	3.72	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 14 **Botanical Name:** *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 6		
DBH (cm)	26		
TPZ Radius (m):	3.12	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 15 **Botanical Name:** *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	8 x 6		
DBH (cm)	25		
TPZ Radius (m):	3	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Leaning towards sports field		

Tree Number: 16

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	4 x 2		
DBH (cm)	9		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Low		
Individual Significance:	Low		
Retention Value:	**Low**		
Comments:			

Tree Number: 17

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	6 x 5		
DBH (cm)	20		
TPZ Radius (m):	2.4	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Poor	**(AS 4970):**	Major
ULE:	5 to 10 years		
Landscape Contribution:	Medium		
Individual Significance:	Low		
Retention Value:	**Low**		
Comments:	Leaning towards sport field		

Tree Number: 18

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 7		
DBH (cm)	34		
TPZ Radius (m):	4.08	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Leaning towards sport field		

Tree Number: 19 — Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 7		
DBH (cm)	26		
TPZ Radius (m):	3.12	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Growing on edge of drainage swale		

Tree Number: 20 — Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 7		
DBH (cm)	24		
TPZ Radius (m):	2.88	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:			

Tree Number: 21 — Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 7		
DBH (cm)	21		
TPZ Radius (m):	2.52	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Leaning towards primary school		

Tree Number: 22 — Botanical Name: *Acacia implexa*

Common Name:	Lightwood		
Origin:	Indigenous		
Height & Width (m):	7 x 5		
DBH (cm)	17		
TPZ Radius (m):	2.04	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Leaning towards primary school		

Tree Number: 23 — Botanical Name: *Corymbia citriodora*

Common Name:	Lemon-scented Gum		
Origin:	Native		
Height & Width (m):	12 x 9		
DBH (cm)	34		
TPZ Radius (m):	4.08	**TPZ Impact:**	10%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Minor
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Services in root zone, Suspected root damage		

Tree Number: 24 — Botanical Name: *Eucalyptus mannifera*

Common Name:	Brittle Gum		
Origin:	Native		
Height & Width (m):	12 x 14		
DBH (cm)	69		
TPZ Radius (m):	8.28	**TPZ Impact:**	21%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Poor	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	High		
Individual Significance:	Low		
Retention Value:	**Medium**		
Comments:	Mechanical damage to trunk - monitor health/structure		

Tree Number: 25

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	12 x 14		
DBH (cm)	53		
TPZ Radius (m):	6.36	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 26

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	12 x 9		
DBH (cm)	32		
TPZ Radius (m):	3.84	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 27

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	7 x 4		
DBH (cm)	16		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall		

Tree Number: 28

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 6		
DBH (cm)	29		
TPZ Radius (m):	3.48	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 29

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 4		
DBH (cm)	17		
TPZ Radius (m):	2.04	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 30

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 4		
DBH (cm)	30		
TPZ Radius (m):	3.6	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 31

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	4 x 2		
DBH (cm)	12		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Low		
Individual Significance:	Low		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall		

Tree Number: 32

Botanical Name: *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 9		
DBH (cm)	50		
TPZ Radius (m):	6	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 33

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	7 x 3		
DBH (cm)	22		
TPZ Radius (m):	2.64	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall		

Tree Number: 34 — Botanical Name: *Syzygium australe*

Common Name:	Brush Cherry		
Origin:	Native		
Height & Width (m):	8 x 4		
DBH (cm)	18		
TPZ Radius (m):	2.16	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 35 — Botanical Name: *Prunus cerasifera*

Common Name:	Cherry Plum		
Origin:	Exotic		
Height & Width (m):	7 x 4		
DBH (cm)	18		
TPZ Radius (m):	2.16	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall		

Tree Number: 36 — Botanical Name: *Acacia implexa*

Common Name:	Lightwood		
Origin:	Indigenous		
Height & Width (m):	10 x 5		
DBH (cm)	21		
TPZ Radius (m):	2.52	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 37

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	13 x 6		
DBH (cm)	33		
TPZ Radius (m):	3.96	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 38

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	7 x 3		
DBH (cm)	15		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed, Group of 2		

Tree Number: 39

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 3		
DBH (cm)	19		
TPZ Radius (m):	2.28	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 40

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	14 x 5		
DBH (cm)	34		
TPZ Radius (m):	4.08	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed, Epicormic shoots from lopping stub		

Tree Number: 41

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 7		
DBH (cm)	32		
TPZ Radius (m):	3.84	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	High		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed, Limbs over building, 2 x Acacia adjacent		

Tree Number: 42

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	7 x 2		
DBH (cm)	12		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 43 **Botanical Name:** *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	7 x 3		
DBH (cm)	13		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 44 **Botanical Name:** *Eucalyptus viminalis*

Common Name:	Manna Gum		
Origin:	Indigenous		
Height & Width (m):	13 x 6		
DBH (cm)	36		
TPZ Radius (m):	4.32	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 45 **Botanical Name:** *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	6 x 2		
DBH (cm)	10		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Low		
Individual Significance:	Low		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 46

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 6		
DBH (cm)	31		
TPZ Radius (m):	3.72	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed, Pruned for building clearance		

Tree Number: 47

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	6 x 2		
DBH (cm)	11		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 48

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 2		
DBH (cm)	25		
TPZ Radius (m):	3	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	Raised garden bed		

Tree Number: 49 **Botanical Name:** *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	11 x 4		
DBH (cm)	23		
TPZ Radius (m):	2.76	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 50 **Botanical Name:** *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	9 x 6		
DBH (cm)	30		
TPZ Radius (m):	3.6	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall, Leaning over existing building		

Tree Number: 51 **Botanical Name:** *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	8 x 2		
DBH (cm)	14		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall, Group of 2 - 0.5 metres apart		

Tree Number: 52

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	10 x 4		
DBH (cm)	18		
TPZ Radius (m):	2.16	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 53

Botanical Name: *Eucalyptus camaldulensis*

Common Name:	River Red Gum		
Origin:	Indigenous		
Height & Width (m):	5 x 3		
DBH (cm)	13		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Poor	**TPZ Enchroachment**	
Structure:	Poor	**(AS 4970):**	Major
ULE:	5 to 10 years		
Landscape Contribution:	Low		
Individual Significance:	Low		
Retention Value:	**Low**		
Comments:	In garden bed with retaining wall		

Tree Number: 54

Botanical Name: *Acacia melanoxylon*

Common Name:	Blackwood		
Origin:	Indigenous		
Height & Width (m):	11 x 4		
DBH (cm)	25		
TPZ Radius (m):	3	**TPZ Impact:**	100%
Health:	Fair	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Medium**		
Comments:	In garden bed with retaining wall		

Tree Number: 55 — Botanical Name: *Pyrus calleryana*

Common Name:	Callery Pear		
Origin:	Exotic		
Height & Width (m):	4 x 3		
DBH (cm)	10		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 56 — Botanical Name: *Gleditsia triacanthos*

Common Name:	Honey Locust		
Origin:	Exotic		
Height & Width (m):	5 x 4		
DBH (cm)	13		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 57 — Botanical Name: *Pyrus calleryana*

Common Name:	Callery Pear		
Origin:	Exotic		
Height & Width (m):	3 x 1		
DBH (cm)	6		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	20 to 40 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 58 **Botanical Name:** *Gleditsia triacanthos*

Common Name:	Honey Locust		
Origin:	Exotic		
Height & Width (m):	5 x 6		
DBH (cm)	15		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 59 **Botanical Name:** *Gleditsia triacanthos*

Common Name:	Honey Locust		
Origin:	Exotic		
Height & Width (m):	7 x 7		
DBH (cm)	19		
TPZ Radius (m):	2.28	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Fair	**(AS 4970):**	Major
ULE:	10 to 20 years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 60 **Botanical Name:** *Acer Xfreemanii*

Common Name:	Freeman Maple		
Origin:	Exotic		
Height & Width (m):	4 x 2		
DBH (cm)	8		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed		

Tree Number: 61 **Botanical Name:** *Acer Xfreemanii*

Common Name:	Freeman Maple		
Origin:	Exotic		
Height & Width (m):	4 x 2		
DBH (cm)	8		
TPZ Radius (m):	2	**TPZ Impact:**	100%
Health:	Good	**TPZ Enchroachment**	
Structure:	Good	**(AS 4970):**	Major
ULE:	40+ years		
Landscape Contribution:	Medium		
Individual Significance:	Moderate		
Retention Value:	**Low**		
Comments:	Raised garden bed