treeREPORT.

ARBORICULTURAL CONSULTING

Arboricultural Impact Assessment

3 Golf Avenue,
Mona Vale NSW 2103

Version 1

Prepared for:

Mona Vale Golf Club

October 2019

All trees have been assessed based on the observations from the site inspection and information presented by the client or relevant parties at the time of inspection. No responsibility can be taken for incorrect or misleading information provided by the client or other parties.

Trees are living organisms. As such, their health and structure may alter, they will grow and their environmental circumstances may change from the time of the site inspection upon which this assessment is based. Trees, as with all living things, pose some level of risk.

Trees fail in ways that the arboricultural community are yet to fully understand. There is no guarantee expressed or implied that failure or deficiencies may not arise of the subject trees in the future. No responsibility is accepted for damage to property or injury/death caused by the nominated trees.
Tree reports are valid for 12 months after the date of inspection, unless otherwise stated. Any significant change to the subject tree(s) or surrounding environment, including significant or catastrophic storm/wind events will require the immediate re-inspection and assessment of the tree(s).

Document information

Title:	3 Golf Avenue, Mona Vale
Report type:	Arboricultural Impact Assessment
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Document status

Document status	Date	Revision description
Version 1	01/10/19	FINAL

Abbreviations

Abbreviation	Description
Ø	Diameter
R	Radius
AQF	Australian Qualifications Framework
AS	Australian Standards
DBH	Diameter at Breast Height
DBR	Diameter at Root Flare
Id	Identification
m	Metre
mm	Millimetre
NDE	Non-Destructive Excavation
NO	Number
NSW	New South Wales
SP	Species
SRZ	Structural Root Zone
TPZ	Tree Protection Zone
VTA	Visual Tree Assessment

Contents

1 Background

1.1 Introduction

Tree Report was commissioned by Mona Vale Golf Club (MVGC) to prepare an Arboricultural Impact Assessment (AIA) for a proposed development located at number 3 Golf Avenue, Mona Vale (the site). The site falls within the Northern Beaches Council Local Government Area (LGA).

The purpose of this report is to:

- Identify nominated trees within the study area that are likely to be affected by the proposed works.
- Assess the current overall health and condition of the subject trees.
- Assess and discuss the impacts to the subject trees as a result of the proposed development.
- Evaluate the significance of the subject trees and assess suitability for retention.

1.2 The proposal

Key features of the proposal likely to affect the subject trees are summarised as follows:

- Demolition of existing shed structure.
- Site preparation activities.
- Construction of new attached shed structure.
- Installation of above and below ground services.
- Associated landscaping works.

1.3 The subject trees

Inspection of the site was undertaken on the 2nd September 2019. **14** of the **15** subject trees were identified as satisfying the conditions, to be protected, as prescribed within the *Northern Beaches Council (formally Pittwater): DCP 2014*. Further information, observations and measurements specific to the subject tree can be found in **Chapter 3** and **Appendix II**.

1.4 Documents and plans referenced

The conclusions and recommendations of this report are based on the *Australian Standard, AS 4970-2009, Protection of Trees on Development Sites*, the findings from the site inspections and analysis of the following documents/plans:

- *Northern Beaches Designs: DA Shed – Mona Vale Golf Club; Project No: 104/2017; dated 2.11.2018.*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.*
- *Northern Beaches (formally Pittwater) Council: Local Environmental Plan (LEP) 2014.*
- *Northern Beaches (formally Pittwater) Council: Development Control Plan (DCP) 2014.*
- *Northern Beaches Council (Pittwater): Native Plant List.*

Northern Beaches Designs: Site Plan (Drawing No: DA03) has been used as a base map for **Appendix I.**

2 Method

2.1 Visual tree assessment

The subject trees were assessed in accordance with a stage one visual tree assessment (VTA) as formulated by Mattheck & Breloer (1994)[1], and practices consistent with modern arboriculture.

The following limitations apply to this methodology:

- Trees were inspected from ground level, without the use of any invasive or diagnostic tools and testing.
- Trees within adjacent properties or restricted areas were not subject to a complete visual inspection (i.e. defects and abnormalities may be present but not recorded).
- Tree heights, canopy spread and diameter at breast height (DBH) was estimated, unless otherwise stated.
- Tree identification was based on broad taxonomical features present and visible from ground level at the time of inspection.

2.2 Retention value

The retention value of a tree or group of trees is determined using a combination of environmental, cultural, physical and social values.

- **Low:** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
- **Medium:** These trees are moderately important for retention. Their removal should only be considered if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
- **High:** 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 *Australian Standard AS4970 Protection of trees on development sites*.

This tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Aboriculturalists (IACA) Significance of a Tree, Assessment Rating System (STARS). The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of a tree has been defined, the retention value can be determined. Each tree must meet a minimum of three (3) assessment criteria to be classified within a category. Further details and the assessment criteria are in **Appendix VI.**

[1] VTA is an internationally recognised practice in the visual assessment of trees as formulated by Mattheck & Breloer (1994). Principle explanations and illustrations are contained within the publication, Field Guide for Visual Tree Assessment by Mattheck, C., and Breloer, H. Arboricultural Journa1, Vol 18 pp 1-23 (1994).

2.3 Encroachment assessment

- **Tree protection zone (TPZ):** The TPZ is the optimal combination of crown and root area (as defined by AS 4970-2009) that requires protection during the construction process so that the tree can remain viable. The TPZ is an area that is isolated from the work zone to ensure no disturbance or encroachment occurs into this zone. Tree sensitive construction measures must be implemented if work is to proceed within the Tree Protection Zone.
- **Structural root zone (SRZ):** The SRZ is the area of the root system (as defined by AS 4970-2009) used for stability, mechanical support and anchorage of the tree. Severance of structural roots (>50 mm in diameter) within the SRZ is not recommended as it may lead to the destabilisation and/or decline of the tree.
- **Root investigation:** When assessing the potential impacts of encroachment within the TPZ, consideration will need to be given to the location and distribution of the roots, including above or below ground restrictions affecting root growth. Location and distribution of roots may be determined through non-destructive excavation (NDE) methods such as hydro-vacuum excavation (sucker truck), air spade and manual excavation. Root investigation is used to determine the extent and location of roots within the zone of conflict. Root investigation does not guarantee the retention of the tree.

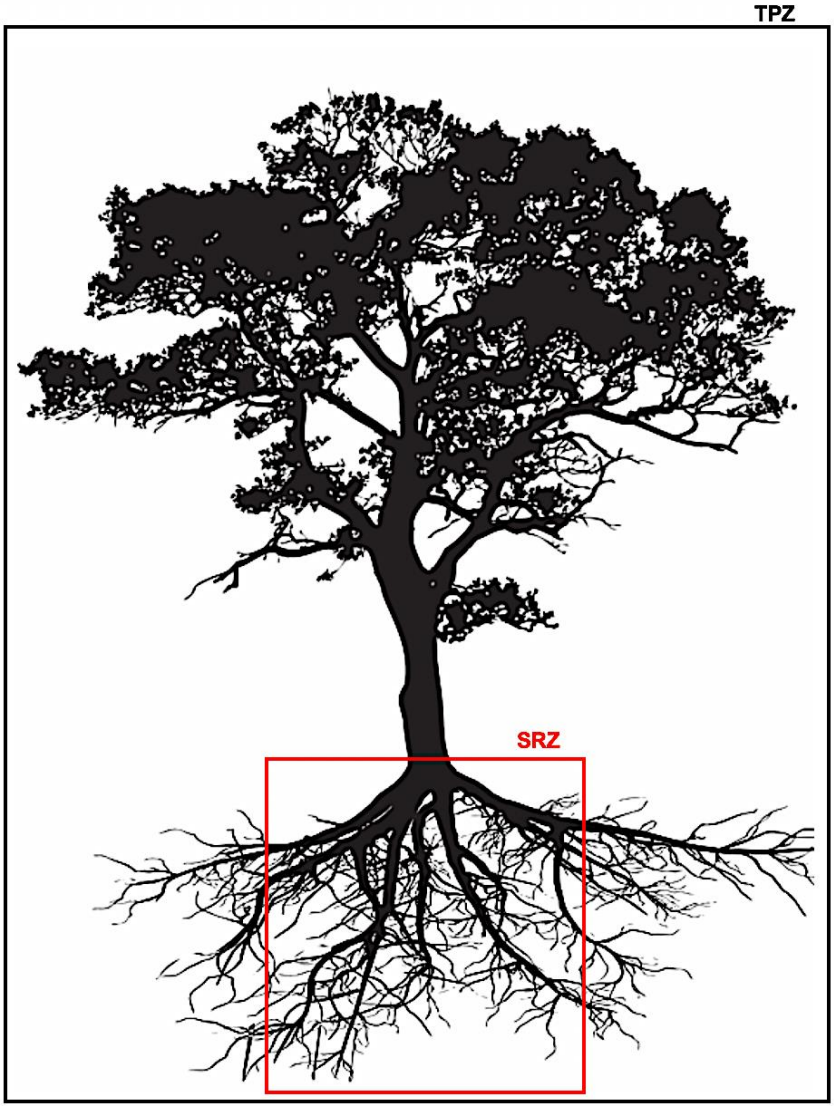


Figure 1: Indicative TPZ and SRZ

2.4 Encroachments within the TPZ

- **No encroachment (0%):** No likely or foreseeable encroachment within the TPZ.
- **Minor encroachment (<10%):** If the proposed encroachment is less than 10% (total area) of the TPZ, and outside of the SRZ, detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and be contiguous with the TPZ.
- **Major encroachment (>10%):** If the proposed encroachment is greater than 10% (total area) of the TPZ, the project arborist must demonstrate that the tree(s) remain viable. The area lost to this encroachment should be compensated for elsewhere and be contiguous with the TPZ. Tree sensitive construction techniques may be used for minor works within this area providing no structural roots are likely to be impacted, and the project arborist can demonstrate that the tree(s) remain viable. Root investigation by non-destructive methods may be required for proposed works within this area. All work within the TPZ must be carried out under the supervision of the project arborist.
- **Total encroachment:** Subject trees located wholly within the construction footprint cannot be successfully retained.

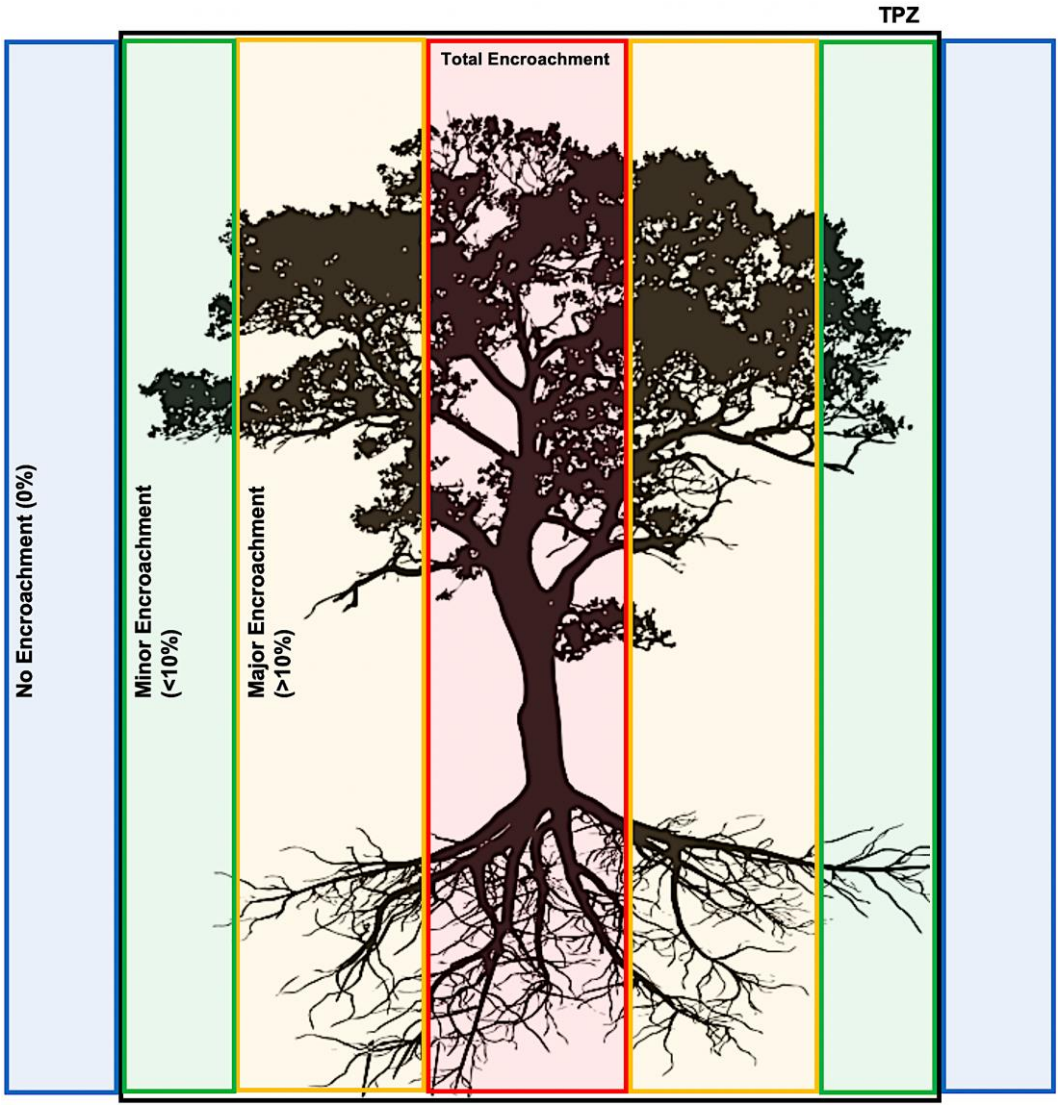


Figure 2: Indicative levels of encroachment

2.5 Mitigation measures

Encroachment within the TPZ must be compensated with a range of mitigation measures to ensure that impacts to the subject tree(s) are reduced or restricted wherever possible. Mitigation must be increased relative to the level of encroachment within the TPZ to ensure the subject tree remain viable. The table below outlines requirements under AS 4970-2009, and mitigation measures required within each category of encroachment. These mitigation measures will only apply if trees are proposed to be retained.

Table 1: Mitigation measures

AS 4970-2009	Requirements Under AS 4970-2009	Encroachment	Mitigation Measures
No encroachment (0%)	• N/A	**No encroachment** (0%)	• N/A
Minor encroachment (<10%)	• The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ. • Detailed root investigations should not be required.	**Minor encroachment** (<10%)	• The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ. • Tree protection must be installed.
Major encroachment (>10%)	• The project arborist must demonstrate the tree(s) would remain viable. • Root investigation by non-destructive methods may be required. • Consideration of relevant factors including: Root location and distribution, tree species, condition, site constraints and design factors. • The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ.	**Major encroachment** (>10%)	• The project arborist must demonstrate the tree(s) would remain viable. • The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ. • Non-destructive root investigation may be required for any trees proposed for retention. • The project arborist will be required to supervise any works within the TPZ. • Tree protection must be installed.
		Total encroachment	• Subject tree(s) cannot be successfully retained.

3 Discussion

3.1 General

Construction and development can change the way an area is utilised by adding buildings, infrastructure and pedestrians to the location. This can result in an increased potential of damage and harm to property and people. Therefore, trees that are contain significant defects, are structurally poor or have a short useful life expectancy should be considered for removal.

Furthermore, it is not always possible or reasonably practicable to retain all trees within a proposed development. It can be better to select the higher retention value trees and protect these well, rather than trying to retain all trees and decreasing the quality of tree protection (Matheny & Clark, 1998).
Trees can be negatively affected in a number of ways during construction. These include root loss, lack of water and oxygen to the root zone, damage to the trunk or canopy and/or poisoning. Failure to protect trees, particularly root zones, during development can lead to an increased risk of tree death and/or failure post construction.

Most tree roots will usually be found in the top 600mm of soil (Harris, Clark &Matheny, 1999). Radiating outwards from the base of the trunk are several large woody roots. These structural roots anchor the tree in the ground. Cutting or affecting those roots is likely to undermine the stability of the tree. The spread of a tree's structural roots, herein termed its Structural Root Zone (SRZ), is generally proportioned to the diameter of its trunk (Matthek & Breloer, 1994).

Beyond this zone extends the network of woody transport roots and fine absorbing roots, which absorb and transport water and nutrients. Most of these roots are found in the top 150mm of soil (Harris, Clark & Matheny, 1999). Trees can lose a portion of their absorbing roots without being significantly affected in the long term. Different species tolerate different amounts of root loss, with most healthy trees able to tolerate losing up to a third of their absorbing roots (Matheny & Clark, 1998).

3.2 Exempt tree(s)

Subject tree **7** (*Schefflera actinophylla*) is listed as an exempt species from the conditions prescribed within the *NBC (formally Pittwater): DCP 2014.*

3.3 Major encroachment (>10%)

Tree 5 (*Eucalyptus robusta*) Is located within a raised garden area, adjacent to the proposed shed structure. The tree is in fair condition and vigour and displays form typical of the species. The tree is visible from surrounding areas, although not visually prominent as partially obstructed by other vegetation when viewed from the street, providing a minor contribution to the visual character and amenity of the local area.

The subject tree is located within a raised garden area and as such, the anticipated impact to the root system of the tree should be negligible and is unlikely to have a significant impact on the subject tree's ability to store carbohydrates, use stored carbohydrates in times of stress and are unlikely to have a significant impact on the health, condition and/or stability of the tree long term.

Under the current proposal, this tree can be successfully retained.

Tree 6 (*Casuarina glauca*) Is located within a raised garden area, adjacent to the proposed shed structure. The tree is in fair condition and vigour and displays form typical of the species. The tree is visible from surrounding areas, although not visually prominent as partially obstructed by other vegetation when viewed from the street, providing a minor contribution to the visual character and amenity of the local area.

The subject tree is located within a raised garden area and as such, the anticipated impact to the root system of the tree should be negligible and is unlikely to have a significant impact on the subject tree's ability to store carbohydrates, use stored carbohydrates in times of stress and are unlikely to have a significant impact on the health, condition and/or stability of the tree long term.

Under the current proposal, this tree can be successfully retained.

3.4 No encroachment (0%)

Trees 1, 2, 3 & 4 are located outside of the proposed area of disturbance and there are no foreseeable impacts to these trees as a result of the proposed development.

Under the current proposal, these trees can be successfully retained.

4 Conclusion

4.1 Trees proposed for removal

- **1** tree is **exempt** from the conditions prescribed within the *NBC (formally Pittwater): DCP 2014* and is proposed for removal as part of this development.

4.2 Trees proposed for retention

- Subject trees **5 & 6** will be subject to a major encroachment of the TPZ. However, due to their location in a raised garden area, the anticipated impacts to the trees are anticipated to be negligible.
- Trees **1, 2, 3 & 4** are located outside of the proposed construction footprint. There are no foreseeable impacts to these trees as a result of this development

5 Recommendations

5.1 Trees proposed for retention

Major encroachment (>10%): Subject trees 5 & 6 will be subject to a minor (<10%) of the TPZ. Under the current proposal, this tree can be successfully retained. The following mitigation measures will be required:

- The tree protection plan (**Appendix III**) and tree protection specifications (**Appendix IV**) must be implemented.
- The area lost to encroachment should be compensated for elsewhere, contiguous with the TPZ (see **Appendix V**)
- All approved works within the TPZ must be carried out using tree sensitive methods under supervision of the project arborist.

No encroachment (0%): Subject trees 1, 2, 3 & 4 will not be subject to an encroachment of the TPZ. Under the current proposal, these trees can be successfully retained. The following mitigation measure will be required:

- The tree protection plan (**Appendix III**) and tree protection specifications (**Appendix IV**) must be implemented.

5.2 Offsetting

Offset replacement planting to compensate for the loss of the tree as part of this development should be such, that a net increase of canopy cover is ascertained within a 5-year time period. Species selection should be in co-ordination with Blacktown City Council and consist of tree species which are endemic to the local area and suited to the size of the area of which they are planted.

5.3 Tree work

- All pruning and/or tree removal work is to be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture.
- All pruning must be in accordance with AS 4373-2007, Pruning of Amenity Trees.
- All pruning and/or tree removal work is to be carried out in accordance with the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998).
- Permission must be granted from the relevant consent authority, prior to removing or pruning of any of the subject trees.

5.4 Hold points, inspections and certification

The approved tree protection plan must be available onsite prior to the commencement of works, and throughout the entirety of the project. To ensure the tree protection plan is implemented, hold points have been specified in the schedule of works (**Table 2**). It is the responsibility of the principle contractor to complete each of the tasks.

Once each stage is reached, the work will be inspected and certified by the project arborist and the next stage may commence. Alterations to this schedule may be required due to necessity, however, this shall be through consultation with the project arborist only.

Table 2: Schedule of works

Pre-construction	Prior to demolition and site establishment indicate clearly (with spray paint on trunks trees marked for removal only (if applicable).
	Tree protection (for trees that will be retained) shall be installed prior to demolition and site establishment, this will include mulching of areas within the TPZ.
During Construction	Inspection of trees by the project arborist should be undertaken monthly during the construction period.
	Inspection of trees by project arborist after all major external construction has ceased, following the removal of tree protection measures.
Post Construction	Final inspection of trees by project arborist.

6 References

Australian Standard, AS 4373-2007, Pruning of Amenity Trees.

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

Harris, R., Clark, J., Matheny, N. and Harris, V. 2004. Arboriculture. Upper Saddle River, N.J.: Prentice Hall.

Lonsdale, D. 1999. Principles of tree hazard assessment and management. London: Stationery Office.

Loughran, A. 2007. Native plant or weed. Paterson, N.S.W.: Tocal College, NSW Dept. of Primary Industries.

Mattheck, C. 2007. Updated field guide for visual tree assessment. Karlsruhe: Forschungszentrum Karlsruhe.

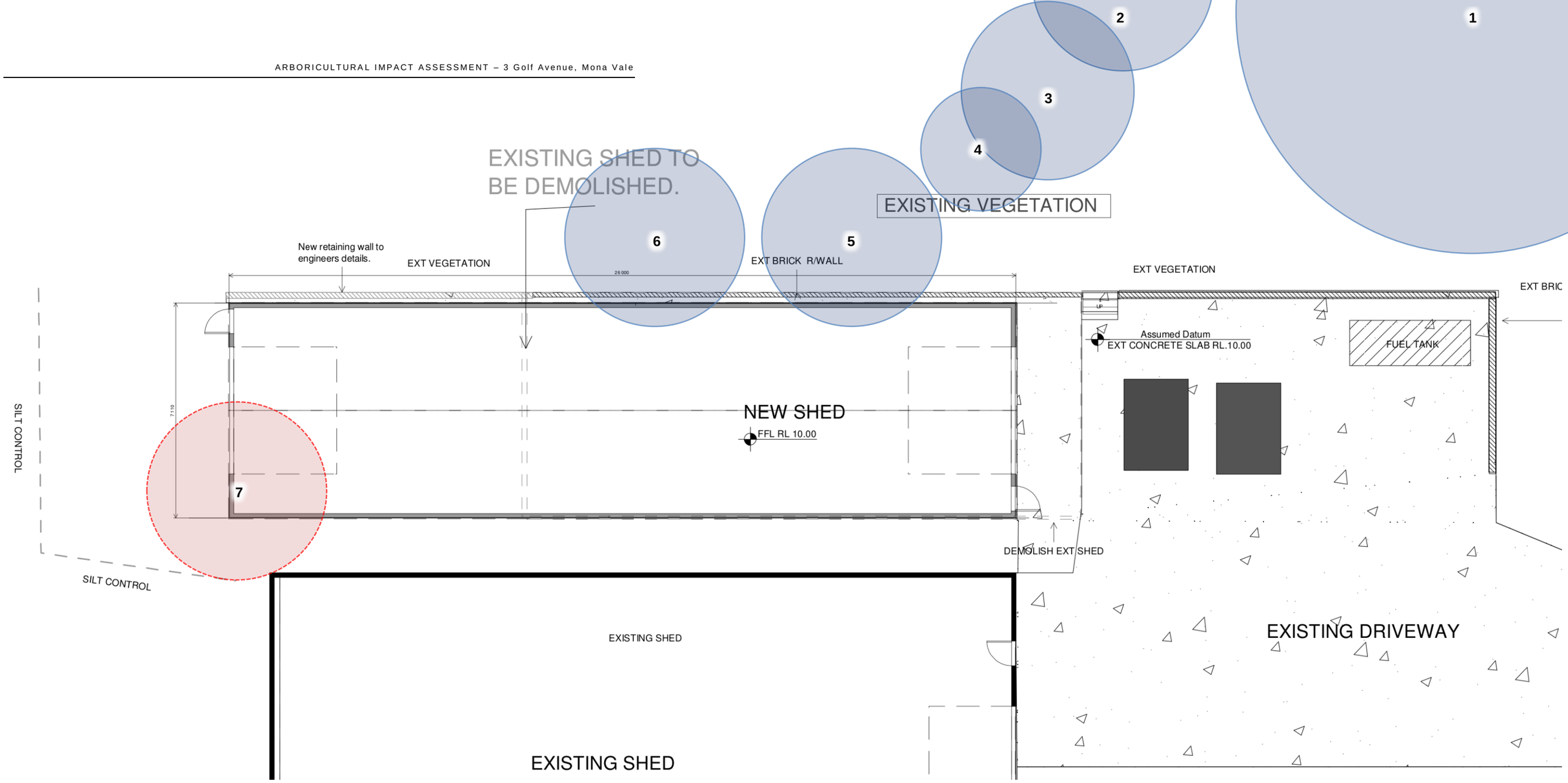
Mattheck, C., Bethge, K. and Weber, K. 2015. The body language of trees. Karlsruhe: Karlsruher Inst. fuÌˆr Technologie.

Mattheck, C., Lonsdale, D. and Breloer, H. 1994. The body language of trees. London: H.M.S.O.

MacLeod, R D. and Cram, W J. 1996. Forces Exerted by Tree Roots, Arboriculture Research Information Note, 134/96/EXT.

Smiley, T. and Fite, K. 2008. Managing Trees During Construction. Arborist News. WorkCover NSW. 1998. Code of Practice: Amenity Tree Industry.

Appendix I - Impact Assessment



Legend:

- - - - **Tree proposed for removal**

Trees proposed for retention

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Appendix II - Results of Arboricultural Assessment

Id.	Botanical name	Height (m)	Spread (m)	Health	Structure	Age class	Tree significance	Useful life expectancy	Priority for retention	DBH (Ømm)	SRZ (*R*m)	TPZ (*R*m)	Encroachment	Other notes	Proposal
1	*Ficus hillii*	15	12	Good	Fair	Mature	High	Long	High	1000	3.3	12	**None (0%)**	• -	**RETAIN**
2	*Araucaria columnaris*	16	3	Good	Good	Mature	High	Long	High	300	2	3.6	**None (0%)**	• -	**RETAIN**
3	*Casuarina glauca*	13	5	Fair	Fair	Mature	Medium	Long	High	300	2	3.6	**None (0%)**	• Co-dominant stems	**RETAIN**
4	*Casuarina glauca*	13	4	Fair	Fair	Mature	Medium	Long	High	300	2	3.6	**None (0%)**	• Stem wound	**RETAIN**
5	*Eucalyptus robusta*	13	7	Fair	Fair	Mature	Medium	Medium	High	400	2.3	4.8	**Major (>10%)**	• -	**RETAIN**
6	*Casuarina glauca*	13	6	Good	Fair	Mature	Medium	Long	High	350	2.1	4.2	**Major (>10%)**	• -	**RETAIN**

Id.	Botanical name	Height (m)	Spread (m)	Health	Structure	Age class	Tree significance	Useful life expectancy	Priority for retention	DBH (Ømm)	SRZ (*R*m)	TPZ (*R*m)	Encroachment	Other notes	Proposal
7	*Schefflera actinophylla*	9	7	Good	Fair	Mature	Low	Short	Low	300	2	3.6	**Total (100%)**	• Exempt under the conditions prescribed within the *NBC: DCP 2014.*	**REMOVE**

Appendix III – Tree Protection Plan

Legend:

- **Subject tree**
- **Trunk protection**
- **Tree protection fencing**

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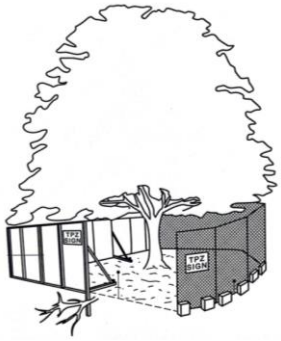
Appendix IV - Tree Protection Specifications

Tree protection fencing

Tree protection fencing must be established in the locations shown in **Appendix III**. Existing fencing, site hoarding or structures (such as a wall or building) may be used as tree protection fencing, providing the TPZ remains isolated from construction footprint.

Tree protection fencing must be installed prior to site establishment and remain intact until completion of works. Once erected, protective fencing must not be removed or altered without the approval of the project arborist.



Tree protection fencing shall be:

- Enclosed to the full extent of the TPZ (or as specified in the Recommendations and Tree Protection Plan).
- Temporary mesh panel fencing (minimum height 1.8m).
- Certified and inspected by the project arborist.
- Installed prior to the commencement of works.
- Prominently signposted with 300mm x 450mm boards stating, “NO ACCESS - TREE PROTECTION ZONE”.

If tree protection fencing cannot be installed due to sloping or uneven ground, tree protection barriers must be installed as an alternative.

Specifications for tree protection barriers are as follows:

- Star pickets spaced at 2m intervals,
- Connected by a continuous high-visibility barrier/hazard mesh.
- Maintained at a minimum height of 1m.

Where approved works are required within the TPZ, fencing may be setback to provide construction access. Trunk, branch and ground protection shall be installed and must comply with *AS 4970-2009, Protection of Trees on Development Sites*. Any additional construction activities within the TPZ of the subject trees must be assessed and approved by the project arborist.

Trunk protection

Where provision of tree protection fencing is impractical or must be temporarily removed, trunk protection shall be installed to avoid accidental mechanical damage.

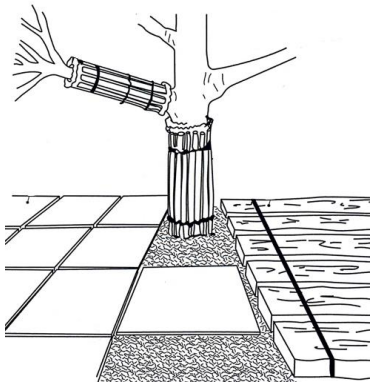
Specifications for trunk protection are as follows:

- A thick layer of carpet underfelt, geotextile fabric or similar wrapped around the trunk to a minimum height of 2m.
- 1.8m lengths of softwood timbers aligned vertically and spaced evenly around the trunk (with a small gap of approximately 50mm between the timbers).
- The timbers must be secured using galvanised hoop strap (aluminium strapping).

The timbers shall be wrapped around the trunk but not fixed to the tree, as this will cause injury/damage to the tree.

Ground protection

If temporary access for vehicle, plant or machinery is required within the TPZ ground protection shall be installed. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Where possible, areas of existing pavement shall be used as ground protection.



Specifications for light traffic access (<3.5 tonne) are as follows:

- Permeable membrane such as geotextile fabric.
- Layer of mulch or crushed rock (at minimum depth of 100mm)

Specifications for heavy traffic access (>3.5 tonne) are as follows:

- Permeable membrane such as geotextile fabric.
- Layer of lightly compacted road base (at minimum depth of 200mm)
- Geotextile fabric shall extend a minimum 300mm beyond the edge of the road base.

Pedestrian, vehicular and machinery access within the TPZ shall be restricted solely to areas where ground protection has been installed.

Excavations

All approved excavations (including root investigations) within the TPZ must be carried out using tree sensitive methods under supervision of the project arborist. These methods may include:

- Manual excavation (hand tools).
- Air spade.
- Hydro-vacuum excavations (sucker-truck).

Where approved by the project arborist, excavations using compact machinery fitted with a flat bladed bucket is permissible. Excavations using compact machinery shall be undertaking in small increments and guided by the Project Arborist who is to look for and prevent root damage to roots (>50mm in diameter).

Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with geotextile fabric, and plastic membrane or glad wrap (where practical). Coverings shall be weighted to secure them in place. The geotextile fabric shall be kept damp at all times.

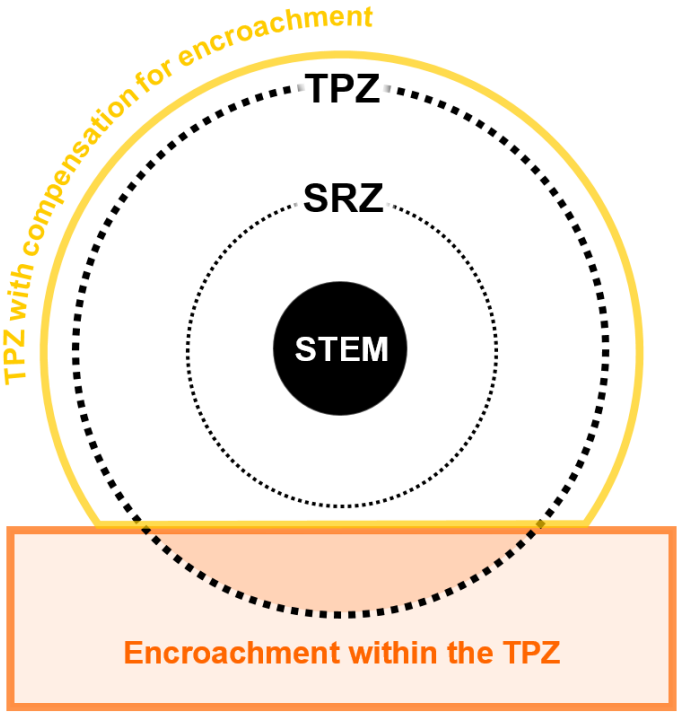
No over-excavation, battering or benching shall be undertaken beyond the footprint of any structure unless approved by the project arborist. Hand excavation and root mapping shall be undertaken along excavation lines within the TPZ prior to the commencement of mechanical excavation (to prevent tearing and shattering of roots from excavation equipment). Any conflicting roots (>50mm in diameter) shall be pruned using clean, sharp secateurs or a pruning saw to ensure a clean cut, free from tears. All root pruning must be documented and carried out by the project arborist.

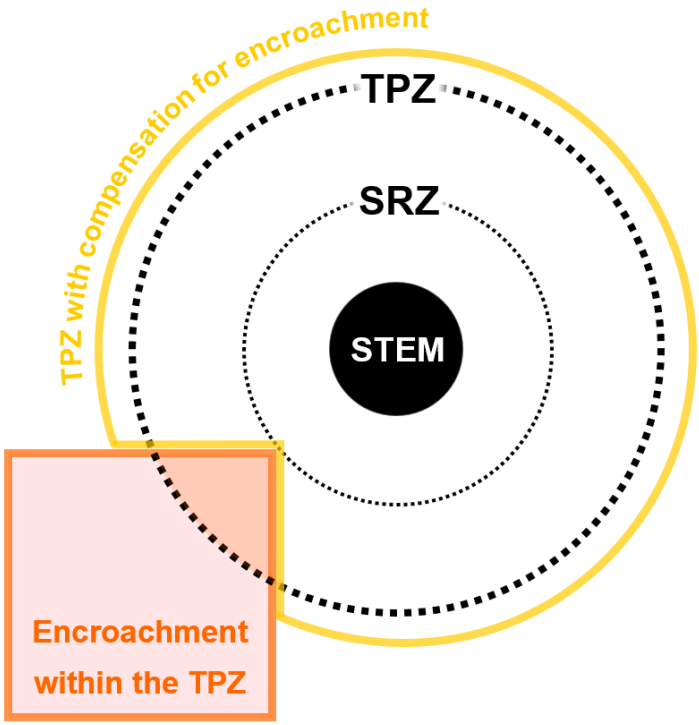
Underground services

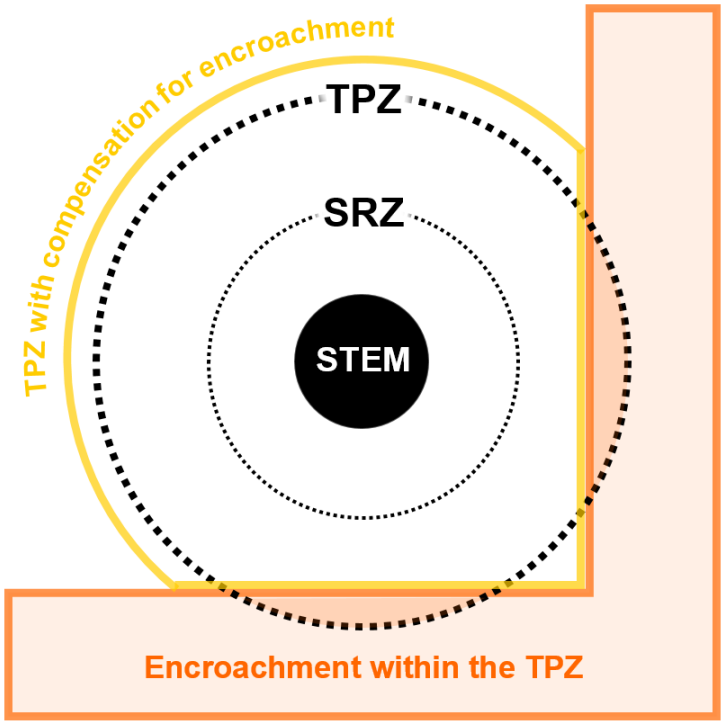
All underground services should be routed outside of the TPZ. If underground services need to be installed within the TPZ, they must be installed using tree sensitive excavation methods under supervision of the project arborist. Alternatively, boring methods such as horizontal directional drilling (HDD) may be used for underground service installation, providing the installation is at minimum depth of 800mm below grade. Excavations for entry/exit pits must be located outside the TPZ

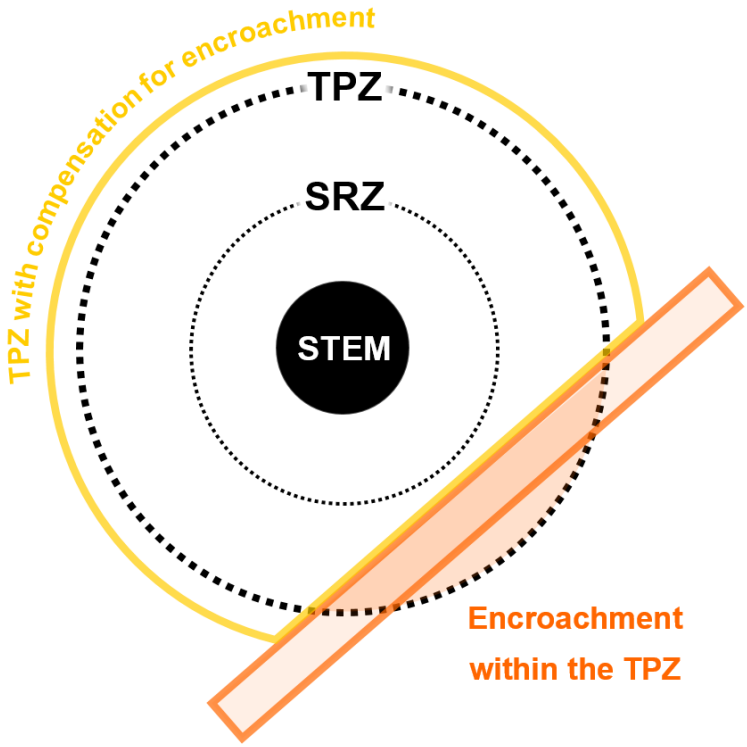
Appendix V - Encroachment within the TPZ

The images below show how encroachment within the tree protection zone can be compensated for elsewhere.









Reference

Council of Standards Australia (August 2009)
AS 4970-2009 Protection of Trees on Development Sites
Standards Australia, Sydney.

Appendix VI - STARS© assessment matrix

Tree Significance - Assessment Criteria - STARS©		
Low	**Medium**	**High**
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 the surrounding properties or 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 dimensions 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 the potential to become structurally unsound. The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties. The tree is a declared noxious weed by legislation	The tree is in fair to good condition 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	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.

Useful Life Expectancy - Assessment Criteria			
Dead	**Short**	**Medium**	**Long**
Trees with a high level of risk that would need removing within the next 5 years. Dead trees. Trees that should be removed within the next 5 years. Dying or suppressed or declining trees through disease or inhospitable conditions. Dangerous trees through instability or recent loss of adjacent trees. Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form. Damaged trees that considered unsafe to retain. Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. Trees that will become dangerous after removal of other trees for the reasons.	Trees that appear to be retainable with an acceptable level of risk for 5-15 years. Trees that may only live between 5 and 15 more years. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe, and are only suitable for retention in the short term.	Trees that appear to be retainable with an acceptable level of risk for 15-40 years. Trees that may only live between 15 and 40 more years. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe, and are only suitable for retention in the short term.	Trees that appear to be retainable with an acceptable level of risk for more than 40 years. Structurally sound trees located in positions that can accommodate future growth. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery. Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

Tree Significance

Useful Life Expectancy	High	Medium	Low		
Long >40 years					
Medium 15-40 years					
Short <1-15 years					
Dead					

Legend for Matrix Assessment

	Priority for retention (High): These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.
	Consider for retention (Medium): These trees may be retained and protected. These are considered less critical; however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
	Consider for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Consider for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

treeREPORT.

ARBORICULTURAL CONSULTING