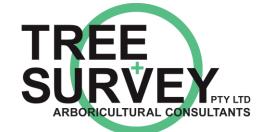
Ref: DA 2018/1472 25 Palm Road Newport NSW 2106

18th December 2018



Dear Mr Edmonds,

I have been made aware by the applicant for this DA that it has been refused, and that one of the reasons for its refusal is that, quote:

"Furthermore, the proposed fence will likely compromise the retention of an existing mature street tree within the public road reserve, as retention/mitigation measures stipulated within the Arboricultural Impact Assessment report have not been adhered to in the proposed design."

I am responsible for the Arboricultural Report quoted, and I would like to clarify that I am in full support of the proposal providing the recommendations contained in para 4.1 (see below) are implemented:

- The tree protection plan (Appendix II) must be implemented. (NOTE: Tree protection fencing, and trunk protection are not applicable due to the nature of the proposed works).
- The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ (see Appendix IV).
- Excavation for the proposed footings must be limited to 150mm below grade.
- Excavation for the proposed footings must be carried out under supervision of the project arborist using tree sensitive techniques (manual or non-destructive excavation).

There are no extra retention/mitigation measures required for this proposed development as compensation is already more than adequate around the subject tree for what little encroachment will take place for this fence. This compensation is enabled by the ample space surrounding the tree on all sides as depicted in diagram 1 of Appendix IV (no encroachment will be occurring within this area):

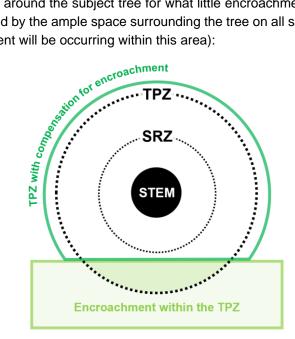


Figure 1: Diagram 1 of Appendix IV

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I have also stated on page 6 of my report headed "Results":

• "The encroachment will not impact upon the SRZ and is unlikely to impact the overall health or condition of the tree. Under the current proposal, this tree can be successfully retained".

As I have previously stated, I have no objection to the proposed fence in regard to this tree and I am in full support of the proposal providing the recommendations contained in para 4.1 are implemented:

I apologise for any confusion that I have caused. Please feel free to contact me on 0425536670 if you have any questions or require any further information.

Kindest regards,

Phil Witten

Principle Arboricultural Consultant AQF 5 | ISA | SRA-ANZ | AA | ESA | QTRA

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ARBORICULTURAL IMPACT ASSESSMENT

25 Palm Road, Newport

Version 1

Prepared for:

David Hall

19 October 2018



Document information

Title:	25 Palm Road, Newport	
Report type:	Arboricultural Impact Assessment (AIA)	
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Document status

Document status	Date	Revision description
Version 1	19/10/18	Final version

Abbreviations

Abbreviation	Description
AQF	Australian Qualifications Framework
AS	Australian Standards
DBH	Diameter at Breast Height
ld	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

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1 Background

1.1 Introduction

Tree Survey was commissioned by David Hall to prepare an Arboricultural Impact Assessment (AIA) for a proposed development located at 25 Palm Road, Newport.

The purpose of this report is to:

- Identify the trees adjacent to the proposed works.
- Assess the current health and condition of the subject trees.
- Evaluate the significance of the subject trees and assess their suitability for retention.

1.2 The proposal

The key features of the proposal are summarised as follows:

- Construction of a new front boundary fence using Besser block piers and Scyon panels.
- Consutruction of the fence will include minor excavations for footings of the fence. The proposed excavation will not exceed 150mm below grade.
- Associated landscape planting.

1.3 The subject trees

The subject tree was inspected on 18th October 2018. A total of 1 tree was assessed and included within this report. Further information, observations and measurements specific to the subject tree can be found in **Chapter 3**.

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 Council (Pittwater) Guidelines for Arborist Reports.
- Pittwater Council Local Environmental Plan (LEP) 2014.
- Pittwater Council Development Control Plan (DCP) 2014.
- Blue Sky Building Designs Architectural Plans, Issue 3, 07/08/18.

Blue Sky Building Designs - Architectural Plans (Site Plan) has been used as a base map for **Appendix** I and III.

1.5 Council tree preservation

The subject tree is located on the council nature strip and is therefore protected under the conditions prescribed within the *Pittwater Council - Development Control Plan (DCP) 2014*.

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.
- Tree heights, canopy spread and diameter at breast height (DBH) was estimated, unless
 otherwise stated.
- 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 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 can be found in the **Appendices**.

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 Tree protection zones

- 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 TPZ.
- **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.

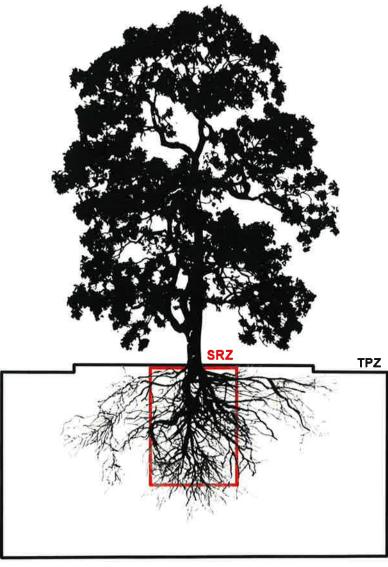


Figure 1: Indicative TPZ and SRZ

2.4 Impact assessment

- 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% 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. Root investigation by non-destructive methods may be required for any proposed works within this area.

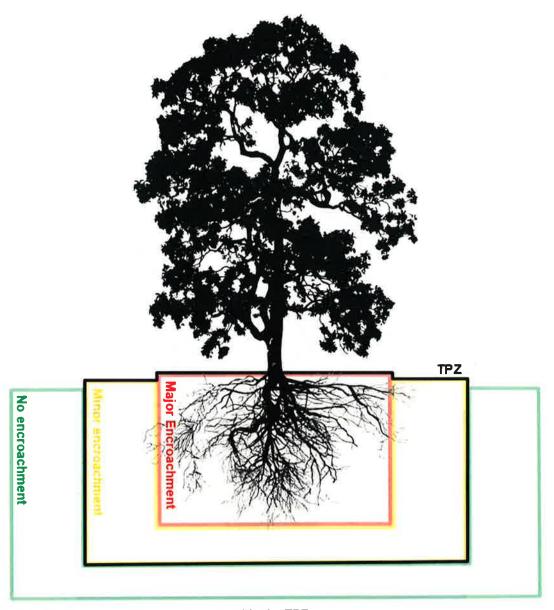


Figure 2: Indicative zones of encroachment within the TPZ

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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(s) 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

Encroachment	Mitigation Measures				
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. 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 for any trees proposed for retention. 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. The project arborist will be required to supervise any works within the TPZ. Tree protection must be installed. 				

3 Results

Table 2 shows the results of the arboricultural assessment. Key points are:

• Major encroachment (>10%): Tree 1 will be subject to a major encroachment of 23% within the TPZ. The proposed encroachment is 3.6m from the subject tree and will be caused by minor excavations for the footings of the front fence. The encroachment will not impact upon the SRZ and is unlikely to impact the overall health or condition of the tree. Under the current proposal, this tree can be successfully retained.

Table 2: Results of the arboricultural assessment

Īd.	Botanical name	Height (metres)	Spread (metres diameter)	Health	Structure	Age class	Tree significance	Useful life expectancy	Priority for retention	DBH (millimetres diameter)	TPZ (metres radius)	SRZ (metres radius)	Encroachment	Other notes	Proposal
1	Corymbia maculata	18	12	Fair	Fair	Mature	Medium	Medium	High	700	8.4	2.9	1	The subject tree is located 3.6m from the footings of the proposed fence. Total area of ecnroachment will not exceed 23 % of the TPZ. The encroachment will not impact upon the structural root zone.	Retain

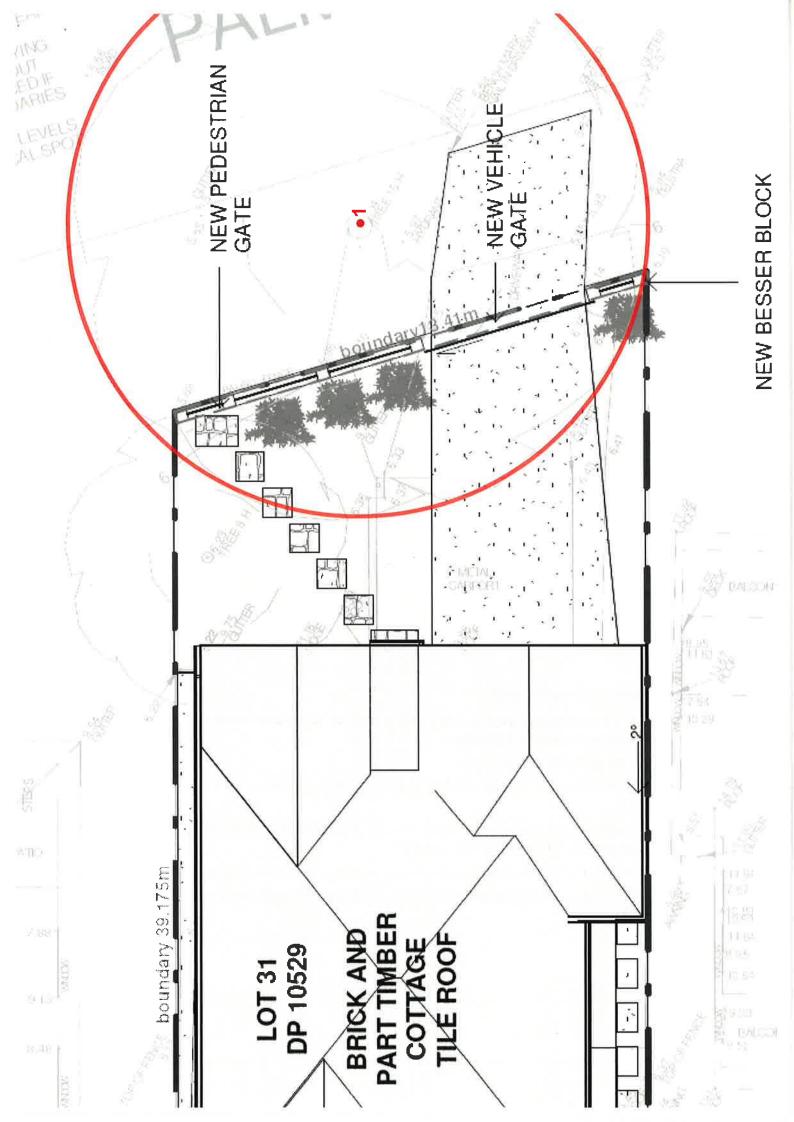
ner notes	The subject tree is located 3.6m from the footings of the proposed fence. Total area of ecnroachment will not exceed 23% of the TPZ. The encroachment will not impact upon the structural root zone.	
oachment	Major	
sRZ res radius)	2.9	
TPZ res radius)	8.4	
DBH tres diameter)	700	
for retention	High	
fe expectancy	Medium	
ignificance	Medium	
je class	Mature	
ructure	Fair	
-lealth	Fair	
ipread es diameter)	12	
-leight netres)	8	
	ļ	

4 Recommendations

4.1 Trees proposed for retention

Major encroachment (>10%): Tree **1** will be subject to a major encroachment (>10%). The following mitigation measures will be required:

- The tree protection plan (**Appendix II**) must be implemented. (NOTE: Tree protection fencing and trunk protection are not applicable due to the nature of the proposed works).
- The area lost to this encroachment should be compensated for elsewhere, contiguous with the TPZ (see Appendix IV).
- Excavation for the proposed footings must be limited to 150mm below grade.
- Excavation for the proposed footings must be carried out under supervision of the project arborist using tree sensitive techniques (manual or non-destructive excavation).



Appendix II - Tree protection plan

Tree protection fencing (not applicable)

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 (not applicable)

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.

Site Inspections

In accordance with the *Australian Standard, AS 4970-2009, Protection of Trees on Development Sites*, inspections must be conducted by the project arborist at the following key project stages:

- Prior to any work commencing on-site (including demolition, earthworks or site clearing) and following installation of tree protection.
- During any excavations, building works and any other activities carried out within the TPZ of any tree to be retained & protected.
- A minimum of every month during the construction phase from commencement to issue of the occupation certificate.
- Following completion of the building works.

It shall be the responsibility of the project manager to notify the project arborist prior to any works within the TPZ of any protected tree at a minimum of 48 hours' notice. To ensure the tree protection plan is implemented, hold points have been specified in the schedule of work (**Table 1**).

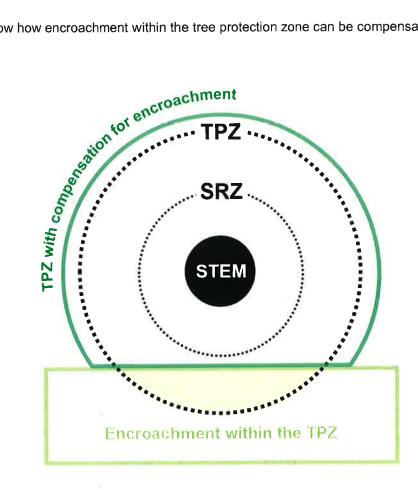
Table 1: Schedule of work

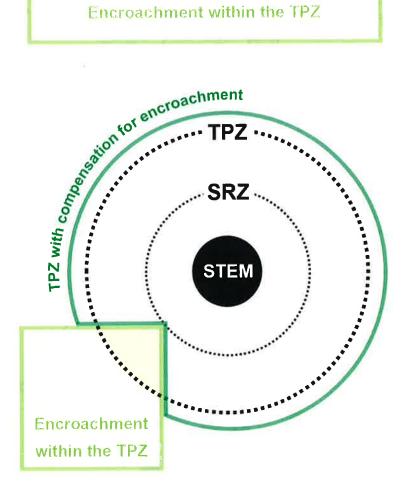
Construction stage	Hold point	Description
Pre-	1	Prior to demolition and/or site establishment indicate clearly (with spray paint on trunks) trees marked for removal only.
construction	2	Tree protection (for trees that will be retained) shall be installed prior to demolition and site establishment, this may include mulching of areas within the TPZ. Project arborist shall inspect and certify tree protection.
During Construction	3	Scheduled inspection of trees by the project arborist should be undertaken monthly during the construction period.
	4	Project arborist to supervise and document all works carried out within the TPZ of trees to be retained.
	5	Inspection of trees by project arborist after all major construction has ceased, following the removal of tree protection measures.
Post Construction	6	Final inspection of trees by project arborist.

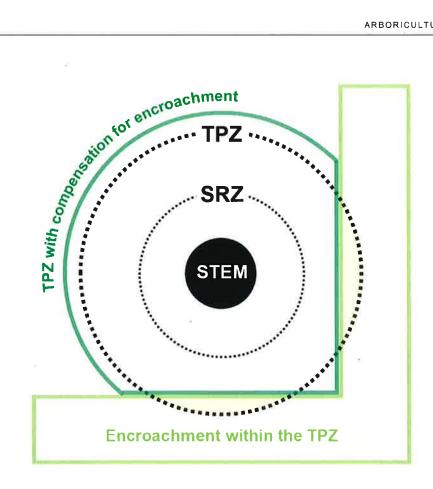


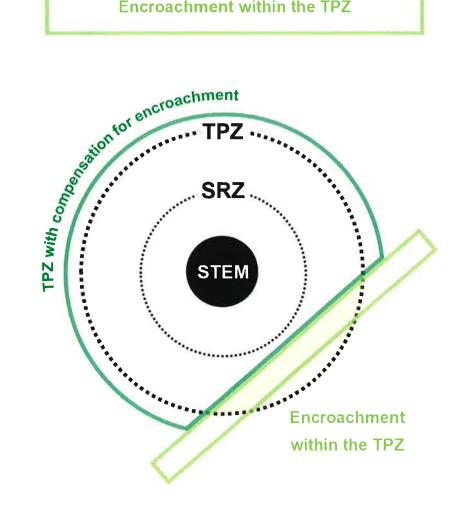
Appendix IV - Encroachment within the TPZ

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 V - STARS© assessment matrix

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

	Tree Significance						
	8	High	Medium		Low		
ctancy	Long >40 years	A pergin form state	And an and an	The internal published at a			
Useful Life Expectancy	Medium 15-40 years	aren et de com lant trace de la com est de	Score of our	trin vign is ill discri ISP late 2 control			
Useful L	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.					

Reference

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

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