



ARBORICULTURAL REPORT – ADDENDUM

ST PAUL'S ANGLICAN GRAMMAR SCHOOL SITE – 540 MCGLONE RD, LONGWARRY NTH

Client: Smith & Tracey Architects

Location: St Pauls Anglican Grammar School Site – 540 McGlone Rd, Longwarry Nth

Previous Report: Drouin Tree Services – Arboricultural Report, *Ref No. 20051, 08/04/2020*

Date of Revision: 22/11/2023

Arborist: Mathew Sorenson (*dip. arb*)

SITE LOCATION MAP



BACKGROUND

- In 2020 Drouin Tree Services carried out an arboricultural assessment on a population of trees, within the subject property, for the purposes of supporting a planning application to develop a new school within the site.
- During the initial assessment 47 trees were assessed and are detailed within the Arboricultural Report, *Ref. No. 20051 – 8/04/2020*, please refer to this report for all previously recorded tree data and recommendations.
- Since the initial arborist assessment and report, a revised layout of the proposed school has been developed. This *Arboricultural Report – Addendum* is based on the updated design.

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CHANGES WITHIN THE TREE POPULATION

During the 3 years since the initial tree assessment significant changes have occurred within the tree population, most notably the loss of trees 6, 7 & 8 (see figures 2 & 3). These 3 trees are likely to have succumb to naturally occurring environmental forces. The condition of many of the trees within the site were recorded as poor during the 2020 assessment and further tree decline, death and failure is expected to be a common occurrence within the site over the coming years (see figures 4 – 7). The risk presented by falling trees and branches will need to be assessed regularly (at intervals no greater than 12 months) as the site is developed and targets occupy the fall zone of the trees more frequently.

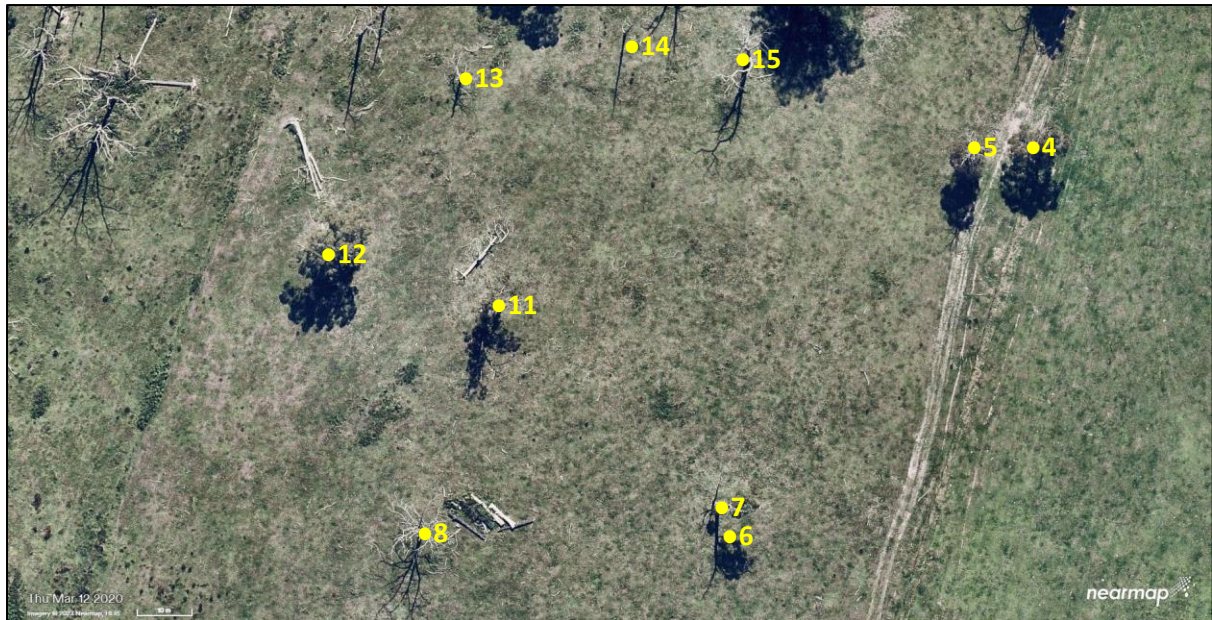


Figure 2. Aerial image 12/03/2020 (Nearmap) – Note the multiple dead/fallen trees at the time of the initial assessment

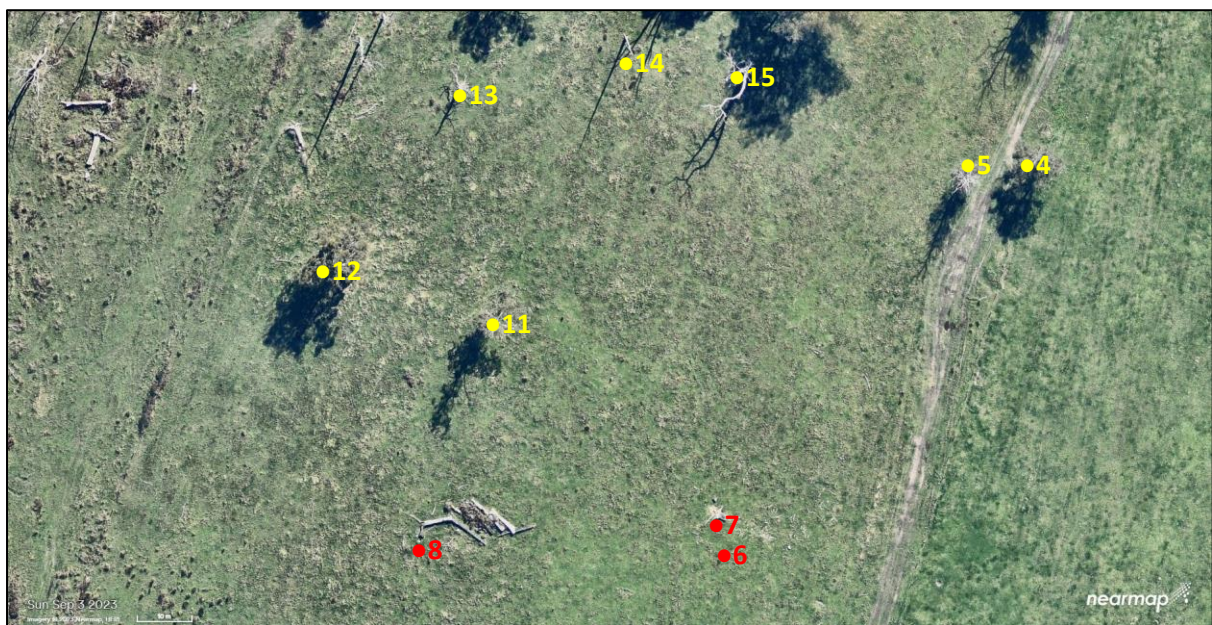


Figure 3. Aerial image 3/09/2023 (Nearmap) Trees 7 – 9 have fallen since the initial assessment

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CHANGES WITHIN THE TREE POPULATION (CONTINUED)



Figure 4. Tree 5 – March 2020



Figure 5. Tree 5 – November 2023, displaying further dieback of mid & lower canopy



Figure 6. Trees 2 & 3 – March 2020



Figure 7. Trees 2 & 3 – November 2023

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REVISED TREE DATA (17/11/2023)

#	Botanical Name	Common Name	Origin	Age	True DBH (cm)	H x S (m)	Health	Structure	ULE (yrs)	Significance	R.V	52.17	Development Status	Risk Rating RoH	Target Isolation	Rem Work	TPZ (m)	SRZ (m)	
1	<i>Eucalyptus obliqua</i>	Messmate	Indigenous	Semi-Mature	54	15x9	Fair	Fair	10-20	Ecological	Medium	Yes	Retain/Protect	Low	Mulch & plant understory plants within dripline**	Prune all deadwood >50mm dia.	6.48	2.74	
2	<i>Eucalyptus globoidea</i>	White Stringybark	Indigenous	Mature	83*	21x12	Poor	Fair-Poor	5-10	Ecological	Medium	Yes	Retain/Protect	Medium	Mulch & plant understory plants within fall zone***	Prune all deadwood >50mm dia.	9.92	3.21	
3	<i>Eucalyptus sp.</i>	Dead Eucalypt	Indigenous	Dead	86	23x8	Dead	Dead	0	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Habitat prune	10.32	3.25	
4	<i>Eucalyptus globoidea</i>	White Stringybark	Indigenous	Mature	69	19x11	Fair	Fair	10-20	Ecological	Medium	Yes	Retain/Protect	Medium	Mulch & plant understory plants within dripline**	Prune all deadwood >50mm dia.	8.28	3.00	
5	<i>Eucalyptus globoidea</i>	White Stringybark	Indigenous	Senescent	63	24x8	Poor	Poor	0-5	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Prune all deadwood >50mm dia.	7.56	2.90	
6	Tree has failed																		
7	Tree has failed																		
8	Tree has failed																		
9	<i>Eucalyptus globoidea</i>	White Stringybark	Indigenous	Mature	88	17x9	Fair	Fair-Poor	5-10	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Prune all deadwood >50mm dia.	10.56	3.28	
10	<i>Eucalyptus sp.</i>	Dead Eucalypt	Indigenous	Dead	50	10x4	Dead	Dead	0	Low	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Habitat prune	6.00	2.67	
11	<i>Eucalyptus obliqua</i>	Messmate	Indigenous	Mature	74	20x9	Fair	Fair-Poor	5-10	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Prune all deadwood >50mm dia.	8.88	3.08	
12	<i>Eucalyptus obliqua</i>	Messmate	Indigenous	Mature	92*	14x13	Fair-Poor	Fair-Poor	5-10	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Prune all deadwood >50mm dia.	11.06	3.34	
13	<i>Acacia melanoxylon</i>	Blackwood	Indigenous	Dead	47	7x2	Dead	Dead	0	Low	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Habitat prune	5.64	2.61	
14	<i>Eucalyptus sp.</i>	Dead Eucalypt	Indigenous	Dead	44	23x12	Dead	Dead	0	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Habitat prune	5.28	2.55	
15	<i>Eucalyptus sp.</i>	Dead Eucalypt	Indigenous	Dead	103	25x8	Dead	Dead	0	Ecological	Poor	Yes	Retain/Protect	High	Mulch & plant understory plants within fall zone***	Habitat prune	12.36	3.48	
Trees 16 – 47G		Not re-assessed (17/11/2023) – Refer to initial report 2020																	

Table 8. Recorded Tree Data *Combined DBH shown for multi-stemmed trees. All dimensions for groups are averages. **Dripline = area directly beneath the tree canopy. *** Fall-zone = area within 1 x tree height

DBH = Diameter at Breast Height

H x S = Height x Spread

ULE = Useful Life Expectancy

R.V = Retention Value

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NEW PROPOSED PLANS (NOVEMBER 2023)

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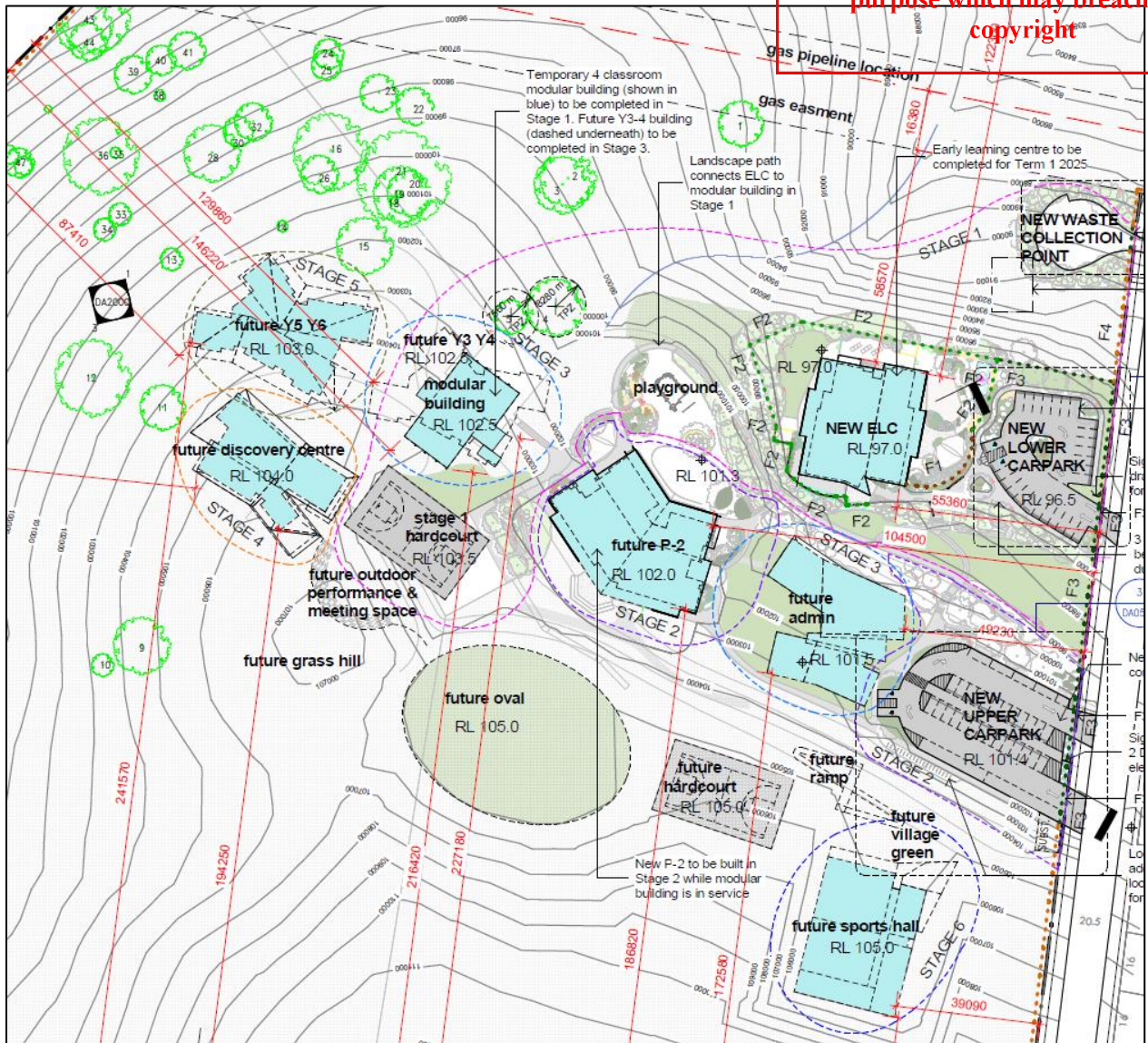


Figure 9. Proposed Site Plan – Smith+Tracey Architects – November 2023

DEVELOPMENT IMPACT SUMMARY

Description	Tree ID	Number of Trees
Trees assessed	1 – 5, 9 – 47G	44
Trees proposed for removal	N/A	0
Trees which have failed since initial assessment	6 – 8	3
Trees with no encroachment of the TPZ	1 – 5, 9 – 47G	44
Trees with a minor encroachment of the TPZ	N/A	0
Trees with a major encroachment of the TPZ	N/A	0

Figure 10. Proposed Site Plan – Smith+Tracey Architects – November 2023

DEVELOPMENT IMPACT SUMMARY (CONTINUED)

- The proposed layout of the future school has utilised the previously cleared area to the south-east of the assessed tree population and as such will avoid directly impacting any of the assessed trees. No trees are proposed to be removed to facilitate the construction of the current design and therefore all trees (ID **1 – 5, 9 – 47G**) are proposed to be retained.
- All retained trees will require protection during the development process in accordance with *AS 4970 2009 – Protection of Trees on Development Sites*. This will include the establishment of Tree Protection Fencing and Signage. See Appendix A – detailed tree protection guidelines.
- It is recommended that a continuous tree protection buffer/no-go zone be established to encompass the minimum TPZ radius of trees **13 – 47G**. Individual TPZ fencing will need to be installed for trees **1 – 5, 9 – 12**.
- During the future construction drawing design phase, all TPZ areas need to be clearly marked on all relevant plans. All construction activities, including but not limited to, all forms of building work, earthwork & vehicle access, must be excluded from all TPZ areas. If construction activities are required within the TPZ of any retained tree, an AQF Level 5 Consulting Arborist must be engaged to assess the proposal, with works only occurring at the discretion of the Consulting Arborist. Prior to the commencement of construction, a detailed Tree Protection Management Plan should be developed.
- The risk of harm presented by falling trees and branches needs to be considered throughout the development process and post development. The exclusion of targets, including built structures, paths and human occupation, from within the fall-zone of an identified tree hazard, is the best management strategy during the detailed design stage.
- In addition to target isolation, remedial tree pruning will be required for many of the trees within the site as the site use changes from that of farming to that of a school. Refer to Table 8. for the recommended target isolation and tree pruning requirements for trees **1 – 5, 9 – 15**. If target occupancy rates increase around trees **16 – 47G** further target isolation measures and remedial tree prune may be required.
- If tree protection measures are implemented throughout the development construction phase, in accordance with AS 4970, the ULE of trees **1 – 5, 9 – 47G** is not expected to be reduced.

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APPENDIX A

TREE PROTECTION ZONES

INTRODUCTION

When carrying out construction activities in the vicinity of trees, it is important to consider the protection requirements of the retained trees. The best principles for protecting trees on development sites are set out within the Australian Standard, AS 4970 – 2009, *Protection of Trees on Development Sites*.

DEFINITIONS

Tree Protection Zone (TPZ)

The TPZ is the area around the tree (both above and below ground) where all forms of construction activities (including excavation, fill and machine use) are excluded. The purpose of the TPZ is to protect the tree during the development process, allowing the tree to access the required resources in which it needs to remain viable.

The basic TPZ without alterations is simply a circle around the tree where the radius is measured from the centre of the stem at ground level. The radius of the TPZ is calculated for each tree by multiplying its DBH by 12 (TPZ = DBH x 12). Note; the minimum size of a TPZ is 2m and the maximum is 15m.

Structural Root Zone (SRZ)

The SRZ is an area calculated to determine the requirements of maintaining a trees stability. The SRZ is an area smaller in size than the TPZ and alone will not fulfil the requirements to maintain the viability of a tree. The true area occupied by the structural roots of a tree are influenced by many factors and may differ from the indicative SRZ. A thorough root investigation will provide much more accurate and detailed information and location on the extent of structural roots.

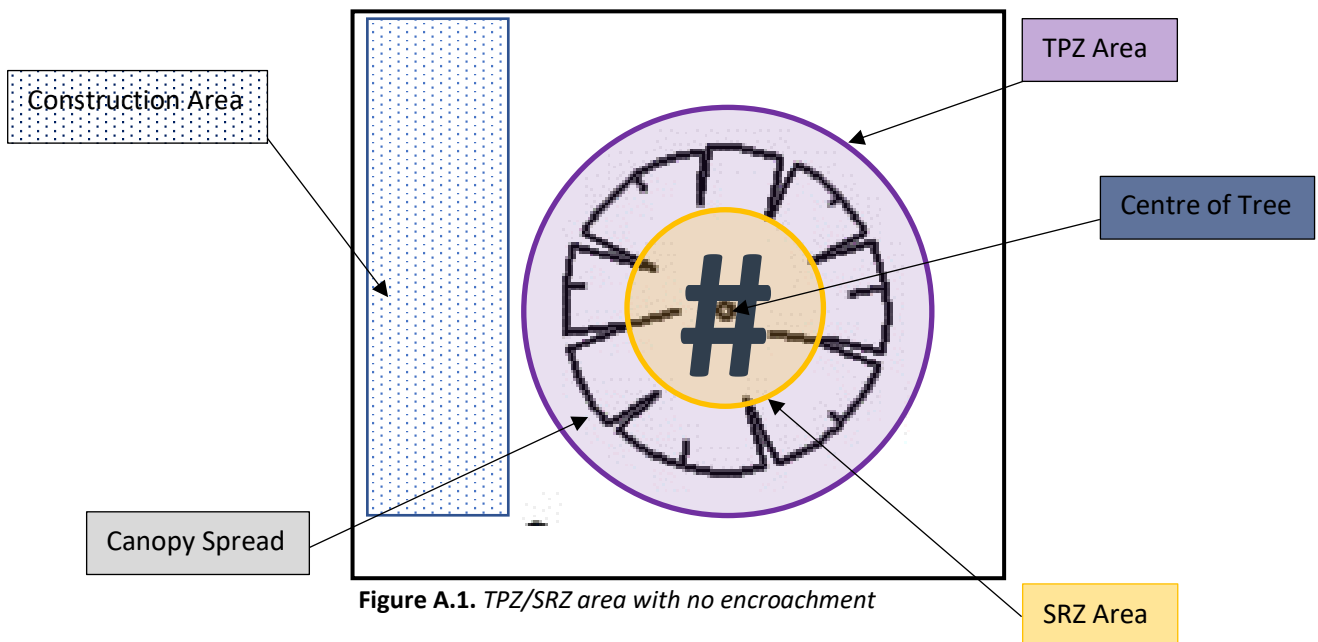


Figure A.1. TPZ/SRZ area with no encroachment

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MINOR ENCROACHMENT

An encroachment of the TPZ is where the calculated TPZ is modified to allow permitted construction activities to occur. If the area proposed to be encroached is less than 10% of the total TPZ area, and is outside of the SRZ, it is considered a minor encroachment. A minor encroachment of the TPZ is generally acceptable, however individual tree requirements and site conditions will need to be considered to determine the overall impact on the tree.

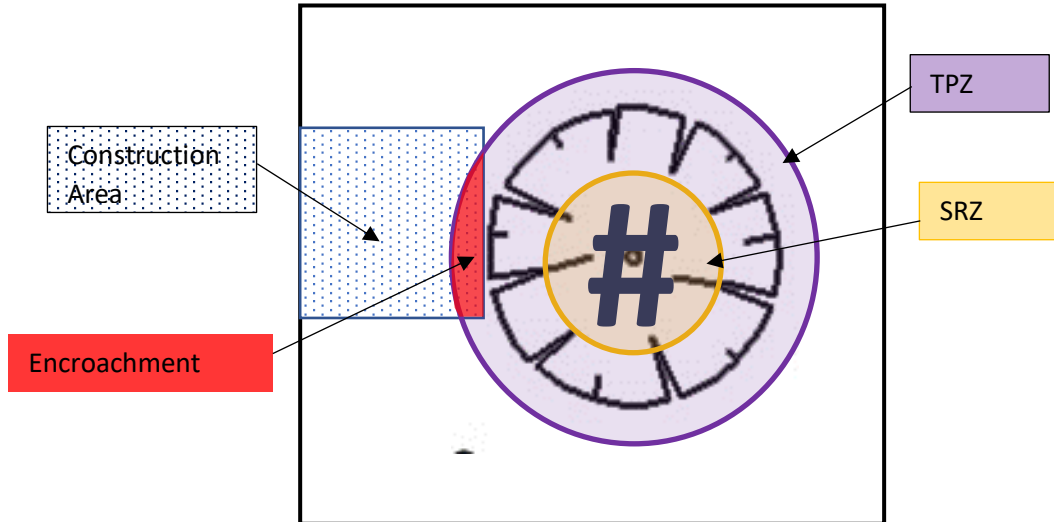


Figure A.2. Minor encroachment (<10% of TPZ area with no encroachment of the SRZ)

MAJOR ENCROACHMENT

When a proposed encroachment is greater than 10% of the TPZ or inside the SRZ, it is considered a major encroachment. When a major encroachment is proposed the consulting arborist must determine if the tree/s will remain viable. Considerations including; species, soil characteristics, age & vitality of the tree along with construction methods, will help determine if a tree/s will be tolerant.

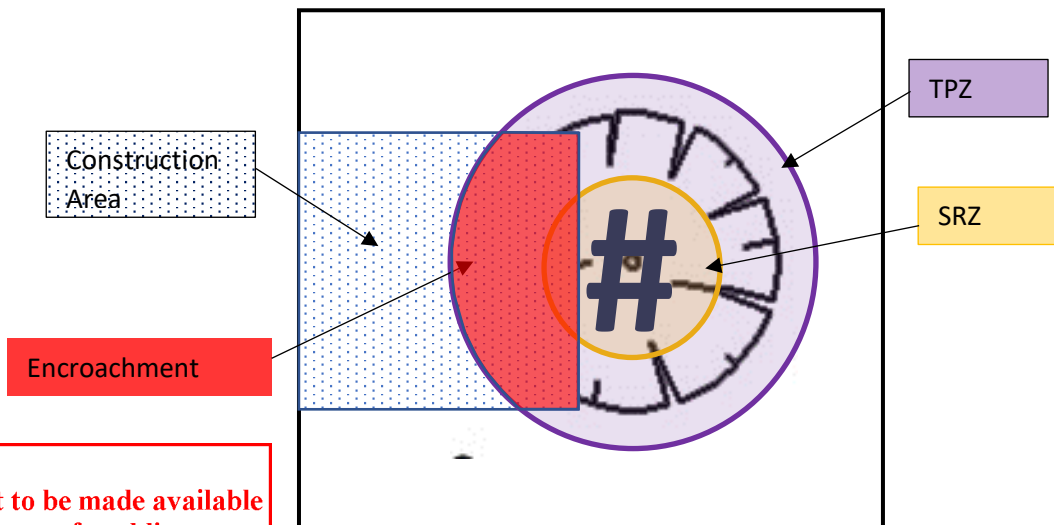


Figure A.3. Major encroachment (>10% of TPZ area with encroachment of the SRZ)

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TREE PROTECTION ZONE FENCING & SIGNS

The perimeter of the calculated TPZ(s) should be clearly marked and identified to all personnel involved throughout the development. Generally, it is not possible to erect tree protection fencing on adjoining properties, however fencing will need to be erected for any portions of TPZ/s that occur within the subject site.

Ideally the tree protection fencing shall be a minimum of 1.5 meters high above ground level and be constructed of prefabricated wire mesh (or similar). However, in some situations less substantial fencing in the form of high visibility flagging, attached to timber/steel pickets, at height of 1.2m may be considered adequate, see figures A.5 & A.6. All TPZ areas need to be clearly identified by suitable signs. Signs should be attached to the TPZ fencing at intervals no less than 5m apart.

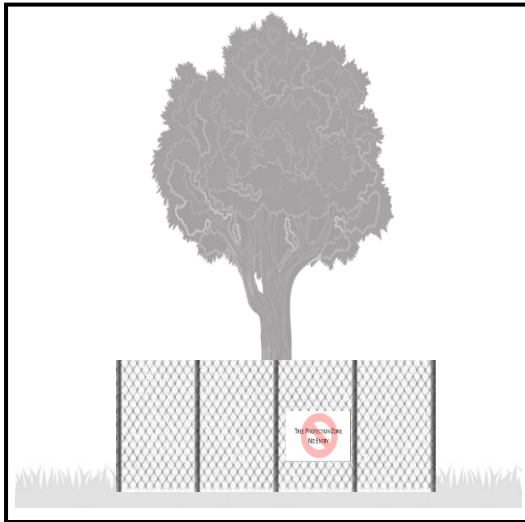


Figure 5.5. Standard TPZ Sign

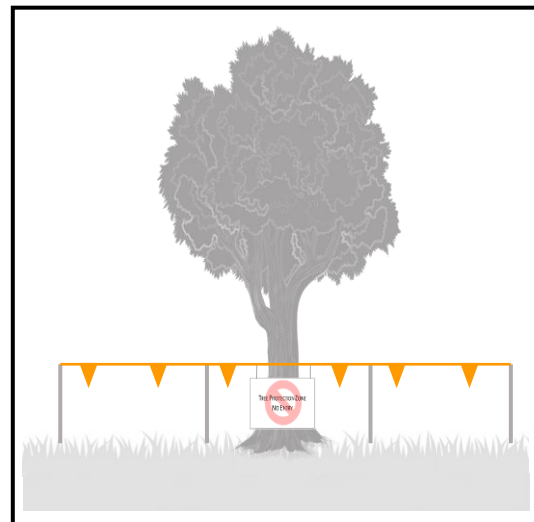


Figure 5.6 Tree Protection Zone

APPROVED WORK WITHIN TPZ(S)

No work may occur within the TPZ of any protected tree unless authorized by the project arborist and detailed within the Development Impact Assessment Report or Tree Protection Management Plan. If any construction personnel are unsure of the permitted work within a TPZ area, they should contact the project arborist prior to the commencement of work.

In areas where TPZ encroachment has been approved the TPZ fencing is permitted to be reduced by the minimum extent necessary to facilitate the approved work. In such situations the TPZ should be marked on the ground with paint and additional protection measures implemented. This may include ground protection, trunk and branch protection and direct supervision by the project arborist.

Any tree roots encountered <30mm dia. that require pruning, need to be done so by a suitably qualified person using sterilized and sharp cutting instruments. Pruning of tree roots >30mm dia. is not permitted unless directly authorized by the project arborist.

All exposed tree roots need to be covered with suitable topsoil within 48 hours of the excavation process. If this is unachievable temporary covering of exposed tree roots with moist material (i.e. hessian or similar) needs to be carried out until the excavation can be permanently backfilled.

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CARE OF PROTECTED TREES

The pruning of trees under protection shall be avoided where possible. The pruning of any tree under protection shall be undertaken by a suitably qualified arborist in accordance with Australian Standards – Pruning of Amenity Trees (AS 4373 - 2007). It is highly important to maintain and promote tree health whilst under protection.

The importance of the Tree Protection Program shall be clearly conveyed to all personnel involved throughout the development. Watering, mulching, weeding, fertilizing and pest treatment of protected trees shall continue for the duration of the project.

Roots discovered outside the TPZ(s) shall be severed cleanly with a disinfected hand saw and shall not be ripped, torn, pulled, or smashed. Any damage to the tree(s) under protection shall be immediately reported to the project arborist. This includes damage to; branches, trunks, roots or a noticeable change in appearance. Any confusion or uncertainty about the tree(s) or the protection program should be referred to the consulting arborist without hesitation.

TEMPORARY ACCESS FOR VEHICLES & MACHINERY

In some situations, a TPZ may restrict the access of vehicles and machinery needed to perform construction activities both outside of the TPZ and approved activities within the TPZ. If temporary access is required additional control measures need to be implemented such as using marker paint to identify the unfenced TPZ and installing ground protection and branch/trunk protection. Ground protection is often achieved by covering the ground surface with a 100mm layer of mulch with timber hoarding or rumble boards placed on top. For branch/trunk protection boards and padding should be attached by means of strapping and avoid damaging the bark.

FOOTING HOLES FOR FENCES

Post holes required to facilitate the construction of fences must be dug using hand tools when within the TPZ, avoiding damage to any roots >30mm. dia. relocation of footing holes may be necessary if such damage cannot be avoided. Any roots <30mm. dia. requiring pruning shall be done in a manner that encourages tree health. All roots cut shall be done using sterilized hand tools by a suitably experienced person.

INSTALLATION OF UNDERGROUND SERVICES

Excavation inside a TPZ poses a significant level of risk to the tree's health and viability. If underground services must be installed inside a TPZ directional drilling at a minimum depth of 800mm (top of bore) is recommended.

If boring is unachievable manually excavated open trenches may also be approved and undertaken under supervision of the project arborist. If manual excavation under the supervision of the project arborist is advised. Roots critical to tree stability need to be identified and protected.

OTHER RESTRICTIONS

The base area of the TPZ(s) shall be unaltered by cut, fill, trenching, fertilizers, or liquid chemical overland flow except under the conditions set out in Construction within TPZs. Building materials or waste shall not be stored within the TPZ(s) An area as far away from the tree(s) as practical shall be selected for all long-term storage. Nothing shall be attached to any retained tree, including service wires, nails, screws, etc.

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