

Appendix 6 – Arborist Assessment – Let’s Talk About Trees

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SURF COAST PLANNING SCHEME
This Development Plan complies with the requirements of Clause
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**Let's Talk
About Trees**
Managing the Urban Forest

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Arboricultural Assessment for:

**135 Austin Street,
Winchelsea, 3241
Tree Health Assessment
Pre Development**

This report has been commissioned by:
TGM Group Geelong

In reference to:
Tree Health Assessment in view of Planning for
Development of the site.

Date: June 2019



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Managing the Urban Forest

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Member of
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1.0 Key Objectives

This report has been commissioned by TGM Group Pty Ltd, for the undertaking of a visual tree assessment, and determining health and retention value of trees potentially impacted by a proposed development on an allotment referred to as referred to as 153 Austin Street, Winchelsea, Victoria.

It is to determine the health of trees on site, and on neighbouring allotments, and to establish tree protection zones in order that the trees can be managed well during planning and development.

2.0 Methodology

The inspection for this report was performed on site, on the 28th of June 2019, by Matthew Branagh level 5 Consulting Arborist from Let's Talk About Trees.

A ground-based Visual Tree Assessment was performed on the trees, in line with modern Arboricultural Practices and Principles, many years of education, practical experience, AS 4970 – 2009 – Protection of Trees on Development Sites and AS 4373 – 2007 – Pruning of Amenity Trees.

All photographs were taken at the time of the inspection, and shall be used within this report for referencing or identification purposes.

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3.0 Observations / Discussions

The site is currently an urban farming allotment used for the grazing of stock and the planting of crop.

No residence is currently on the allotment and the allotment is vacant of buildings.

The allotment is bounded by other rural properties which contain dwellings and municipal streets.

No municipal roadside trees were noted.

All other trees are established on the allotment.

Trees numbered 1 – 13 were identified as Cupressus macrocarpa, they are planted as a wind break, and are mature senescent, failing and have a short useful life expectancy.

Trees 14 – 17 are remnant indigenous vegetation. These four trees have all been impacted by past farming practices where their root plates have been impacted by soil digging for cropping.

Tree 18 represents a boundary planting of native non indigenous trees. All trees in the plantation have been coppiced to encourage thickening of their canopies.

Whilst trees with significant canopies are noted in this report, just trees numbered 14 and 15 have long useful life expectancies and offer a sound retention value to the site.

All trees within this report with the exception of trees 14, 15, 16 and 17 are planted specimens.

The data of the following table was gathered at the site inspection and should now be used to further calculate impacts to trees so as a full retention and removal list can be established.

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4.0 Table 1 – Field Inspection Data

No.	Identification	Est. Age Yrs	ULE	Health	Structure	Significance	Hazard	Esti. Height (m)	DBH (cm) * = multi stemmed	TPZ Radius (m) SRZ Radius (m)	Comment
1	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	136*	15 SRZ 3.8	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
2	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	96*	11.5 SRZ 3.3	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
3	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	93*	11.2 SRZ 3.2	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
4	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	103*	12.4 SRZ 3.4	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value.

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No.	Identification	Est. Age Yrs	ULE	Health	Structure	Significance	Hazard	Estli. Height (m)	DBH (cm) *=-multi stemmed	TPZ Radius (m) SRZ Radius (m)	Comment
5	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	109*	13.1 SRZ 3.4	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
6	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	95	11.4 SRZ 3.2	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
7	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	153	15.0 SRZ 4.0	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
8	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	136*	15.0 SRZ 3.8	Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value

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No.	Identification	Est. Age Yrs	ULE	Health	Structure	Significance	Hazard	Estli. Height (m)	DBH (cm) *=-multi stemmed	TPZ Radius (m) SRZ Radius (m)	Comment
9	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	98*	11.8 SRZ 3.3	Part of a second grouping separated from others by past failed trees. Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
10	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	99*	11.9 SRZ 3.3	Part of a second grouping separated from others by past failed trees. Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
11	<i>Cupressus macrocarpa</i> – Monterey Cypress	M	L	G	F	L	M	18	104*	12.5 SRZ 3.4	Part of a second grouping separated from others by past failed trees. Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value

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No.	Identification	Est. Age Yrs	ULE	Health	Structure	Significance	Hazard	Estli. Height (m)	DBH (cm) *=-multi stemmed	TPZ Radius (m) SRZ Radius (m)	Comment
12	<i>Cupressus macrocarpa</i> – <i>Monterey Cypress</i>	M	L	G	F	L	M	18	112*	13.4 SRZ 3.5	Part of a second grouping separated from others by past failed trees. Sound tree with any major past limb failings and branch scars. Planted as a plantation specimen. Failing senescent tree Medium Useful Life Expectancy. Multi Stemmed complex structure. Low Retention Value
13	<i>Eucalyptus species</i> – <i>Unknown</i>	D	D	D	D	D	D	D	D	D	Dead Tree requires removal
14	<i>Eucalyptus camaldulensis</i> – River Red Gum	M	L	G	G	H	L	14	76	9.1 SRZ 2.9	Sound tree. Mature and in good health with good form and structure. Minor deadwood evident throughout the canopy.
15	<i>Eucalyptus camaldulensis</i> – River Red Gum	M	L	G	G	H	L	14	108	13.0 SRZ 3.4	Sound tree. Mature and in good health with good form and structure. Minor deadwood evident throughout the canopy. Cultivated on the East side for cropping.
16	<i>Eucalyptus viminalis</i> – Manna Gum	M	M	P	P	M	M	12	63	7.6 SRZ 2.7	Significant past major limb failings. Grows on 45 degree lean with major basal hollow and decay at ground level, on tension wood side of tree. Tree is in decline – Not suitable for long term retention or retention in an open public space.

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No.	Identification	Est. Age Yrs	ULE	Health	Structure	Significance	Hazard	Estli. Height (m)	DBH (cm) * = multi stemmed	TPZ Radius (m) SRZ Radius (m)	Comment
17	Eucalyptus viminalis – Manna Gum	M	M	P	P	M	M	14	65	7.8 SRZ 2.8	Significant past major limb failings. Grows on 45 degree lean with major basal hollow and decay at ground level, on tension wood side of tree. Tree is in decline. Major basal wound and scaring cracking and decay evident. Exposed severed roots undermined by erosion. Short useful life expectancy. Short useful life expectancy. Tree shows all signs of eminent tree failure.
18	<i>Mixed boundary planting Predominate Gums</i>	M	L	G	G	L	L	Av 10	Av 41	4.6 SRZ 2.3	All planted, many coppiced trees, mixed boundary plantation on neighbouring allotment. Approximate off set from boundary of 2m. Average DBH across the plantation 41cm. These trees will not be impacted by development.

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5. Discussion

In general all trees on the allotment are in reasonable health given their long time on site existence. The mature age of the trees and no maintenance across their life span sees the trees in a state where they require maintenance. The trees in the cypress windbreak are predominantly all impacted by high wind limb failures which hang from the trees, many to ground level. If these are removed in an attempt to tidy the plantation the tree canopies would be opened up, and the trees would become subject to high wind failure. Long term management of this plantation is not a sound scenario. Retention of the trees would see them retained as failing assets with declining structures.

In development of this site this wind break plantation is not recommended for retention.

Trees 14 and 15, are remanent indigenous specimens of *Eucalyptus camaldulensis*. Both are sound mature trees of around 70 years of age. Both are in sound health, and have good form, shape and a long life expectancy. If retained in development these trees will require full root plate protection or they will decline.

Trees 16 and 17 are both specimens of *Eucalyptus viminalis*, Manna gum. These trees are in very poor condition post significant structural failings. Neither trees is worthy of long term retention.

Deadwood is present in the canopies of both trees and both trees have epicormic mass foliage.

Both trees have a short useful life expectancy and neither are specimens worth or sound for long term retention in development.

Tree 18 represents a boundary planting consisting of mostly *Eucalyptus cladocalyx* - Sugar Gum. These trees have been managed by copping to in an attempt to retain a thick leafy foliage mass close to ground level. This practice significantly reduces the life expectancy of the trees. An average TPZ was calculated for these trees, so the plantation can be managed as a whole. It is not believed these trees will be impacted by development of the project site.

Once the design has been established, the trees for retention should be plotted onto the design drawings, and where trees are impacted they should be considered for removal, or design should be altered in ways which support tree retention. Further reports may be required to fully facilitate this process.

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6.0 Conclusions

In following AS4970-2009 protection of trees on development sites, the development of a tree impact assessment and management plan, should be commissioned for the site if trees proposed for retention, show they will have their tpz's impacted by the proposed development.

The tree management plan should be commissioned post final site drawings which make consideration for the root plates of trees retained on both the site and on neighbouring allotments.

7.0 Recommendation

1. With the knowledge of this report the final site plans should be now prepared. Final plans should reflect the removal and retention of trees as per this report.
2. Once final design has been approved, and post the removal of trees as outlined by this report, and approved by the responsible authority has taken place, a tree management plan for the management of the trees retained on site and on adjoining allotments should be commissioned for the site and established pre commencement of site works.
3. AS 4970-2009 Protection of Trees on Development Sites should be used to protect and manage the tree if selected for retention.
4. Where further tree issues arise, the sites level 5 arborist should be notified for best practice management of retained vegetation.
5. All works carried out the trees should be undertaken by qualified arborist as per the guideline of Australian Standard AS4970 – 2009 Protection of Trees on Construction Sites, and AS 4373 – Pruning of Amenity Trees.
6. Where this report recommends the removal of vegetation on the site, it DOES NOT give permissions for removal of vegetation.

These permissions must be sought from other authorities.

Heavy penalties for removal of vegetation without the correct permissions may apply in some areas.

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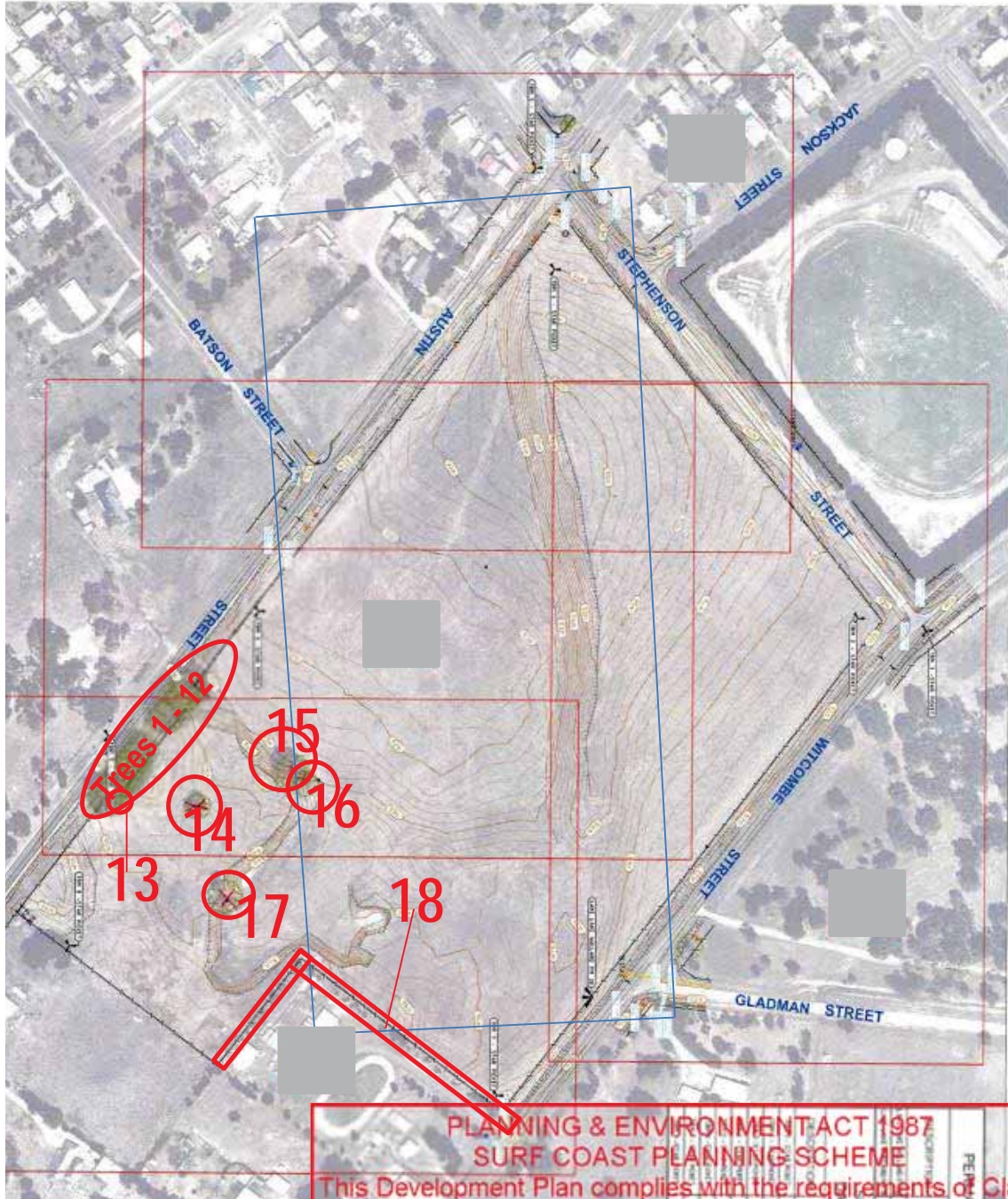
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8.0 Site Plan



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9.0 Appendices

9.1 Photographs – Typical site vegetation



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Tree 14

Tree 15

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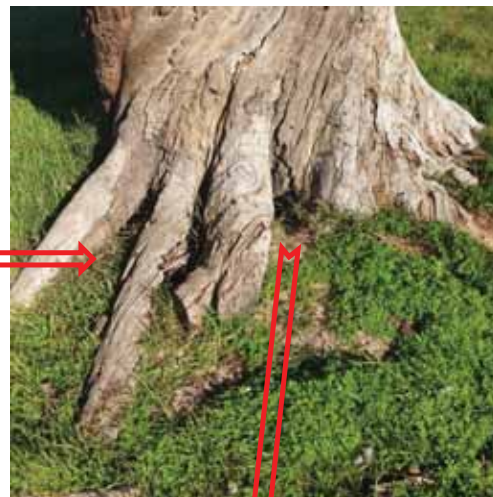
Tree 16



Tree 17



Tree 18



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Tree 19

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9.2 Site Detail



135 Austin Street, Winchelsea

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9.3 Applying the Tree

The diagram below indicates how the dimensions of the Structural Root Zone and the Tree Protection Zone are applied.



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9.4 Descriptor's

Definitions Descriptor's used for throughout this report.

AGE

Category	Description
Young	Juvenile or recently planted approximately 1-7 years.
Semi Mature	Tree actively growing.
Mature	Tree has reached expected size in situation.
Senescent	Tree is over mature and has started to decline.

HEALTH

Good	Foliage of tree is entire, with good colour, very little sign of pathogens and of good density. Growth indicators are good ie. Extension growth of twigs and wound wood development. Minimal or no canopy die back (deadwood).
Fair	Tree is showing one or more of the following symptoms; < 25% dead wood, minor canopy die back, foliage generally with good colour though some imperfections may be present. Minor pathogen damage present, with growth indicators such as leaf size, canopy density and twig extension growth typical for the species in this location.
Poor	Tree is showing one or more of the following symptoms of tree decline; > 25% deadwood, canopy die back is observable, discoloured or distorted leaves. Pathogens present, stress symptoms are observable as reduced leaf size, extension growth and canopy density.
Dead or dying	Tree is in severe decline; > 55% deadwood, very little foliage, possibly epicormic shoots, minimal extension growth.

STRUCTURE

Good	Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of the species with a well-developed form showing no obvious root problems or pests and diseases.
Fair	Tree shows some minor structural defects or minor damage to trunk eg. bark missing, there could be cavities present. Minimal damage to structural roots. Tree could be seen as typical for this species.
Poor	There are major structural defects, damage to trunk or bark missing. Co-dominant stems could be present or poor structure likely poor or limited. Girdling or damaged roots obvious. Tree is structurally unstable.
Hazardous	Tree is an immediate hazard with potential to fail, this should be rectified as soon as possible.

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HAZARD

Hazard is rated into three levels; **LOW**, **MEDIUM**, and **HIGH**.

1. **LOW;** Tree appears to be structurally sound, is healthy with no signs of pests or disease, has good vigour and is clear of any hazards.
2. **MEDIUM;** Tree displays signs of structural problems, evidence of pests or disease, signs of low vigour, deadwood, decay, may be growing into an area that could create a hazard.
3. **HIGH;** Tree is an immediate hazard with the potential to fail, this should be rectified as soon as possible.

USEFUL LIFE EXPEECTANCY – ULE

LONG ULE; Trees that appears to be retainable with an acceptable level of risk for more than 40 years.

1. Structurally sound trees located in positions that can accommodate future growth.
2. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.
3. Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

MEDIUM ULE; Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.

1. Trees that may only live between 15 and 40 years.
2. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 40 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damage or defective trees that can be made suitable for retention in the medium term by remedial work.

SHORT ULE; Trees that appear to be retainable with an acceptable level of risk for 5 to 15 years.

1. Trees that may live for 5 to 15 years.
2. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.
3. Trees that may live for more than 15 years but would be removed during the course of normal management for safety and nuisance reasons.
4. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.

REMOVE; Trees with a high level of risk that would need removal within the next 5 years.

1. Dead trees.
2. Dying or suppressed and declining trees through disease or inhospitable conditions.
3. Dangerous trees through instability or recent loss of adjacent trees.
4. Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form.
5. Damaged trees that are considered unsafe to retain.
6. Trees that will become dangerous if not removed within 5 years.

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SIGNIFICANCE / RETENTION VALUE

Significance is rated into three levels; **LOW, MEDIUM, HIGH.**

- LOW;** Trees that offer little in terms of contributing to the future landscape for the reasons of poor health or structural condition, species suitability in relation to unacceptable growth habit, noxious, poisonous or weed species or ULE, or a combination of these characteristics. Should be considered for removal.
- MODERATE;** Trees with some beneficial attributes that may benefit the site in relation to botanical, horticultural, historical or local significance but may be limited to some degree by their future growth potential at the site by maintenance requirements now or in the future. These trees should be considered for retention if possible within the development design, they may be modified to allow for construction. (eg. pruning, etc:)
- HIGH;** Trees with the potential to positively contribute to the site due to their botanical, horticultural, historical or local significance in combination with good characteristics of structure, health and future development. Should be considered for inclusion within development plans.

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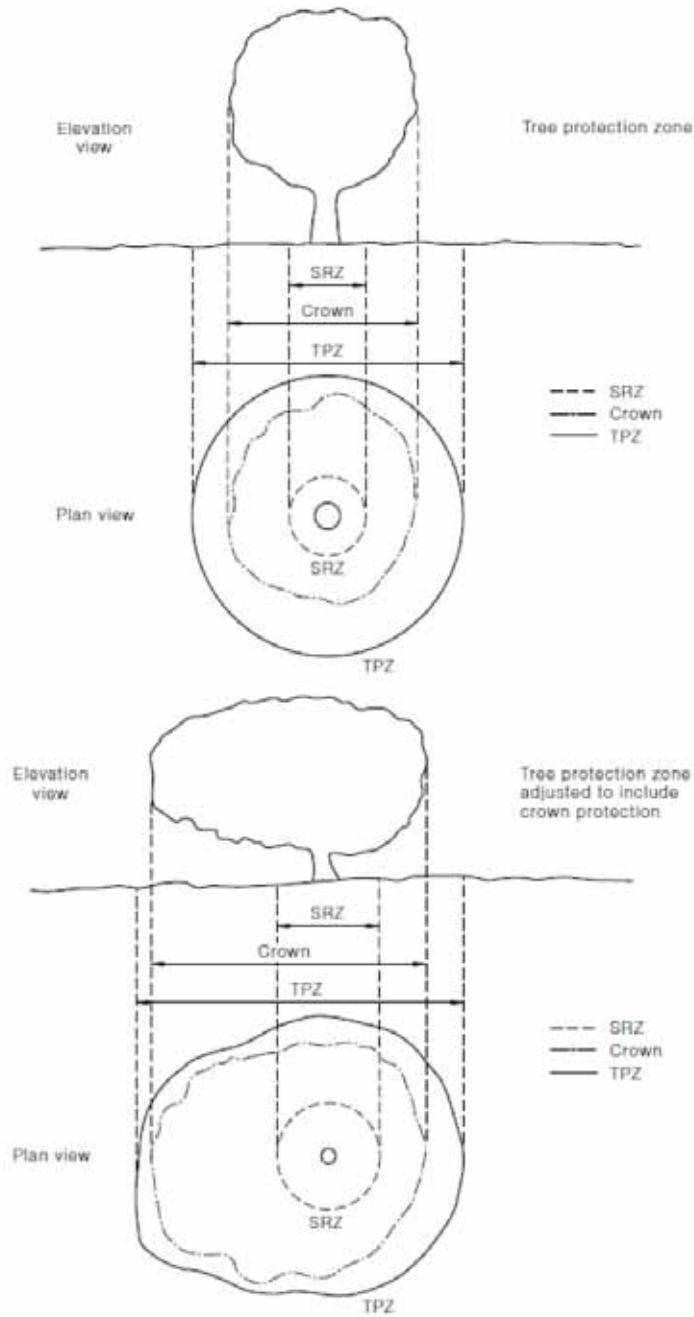
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9.5 Structural Root Zone & Tree Protection Zone.



NOTE: Refer to Clause 13 for calculation of TPZ.
 FIGURE 2 INDICATIVE TREE PROTECTION ZONE

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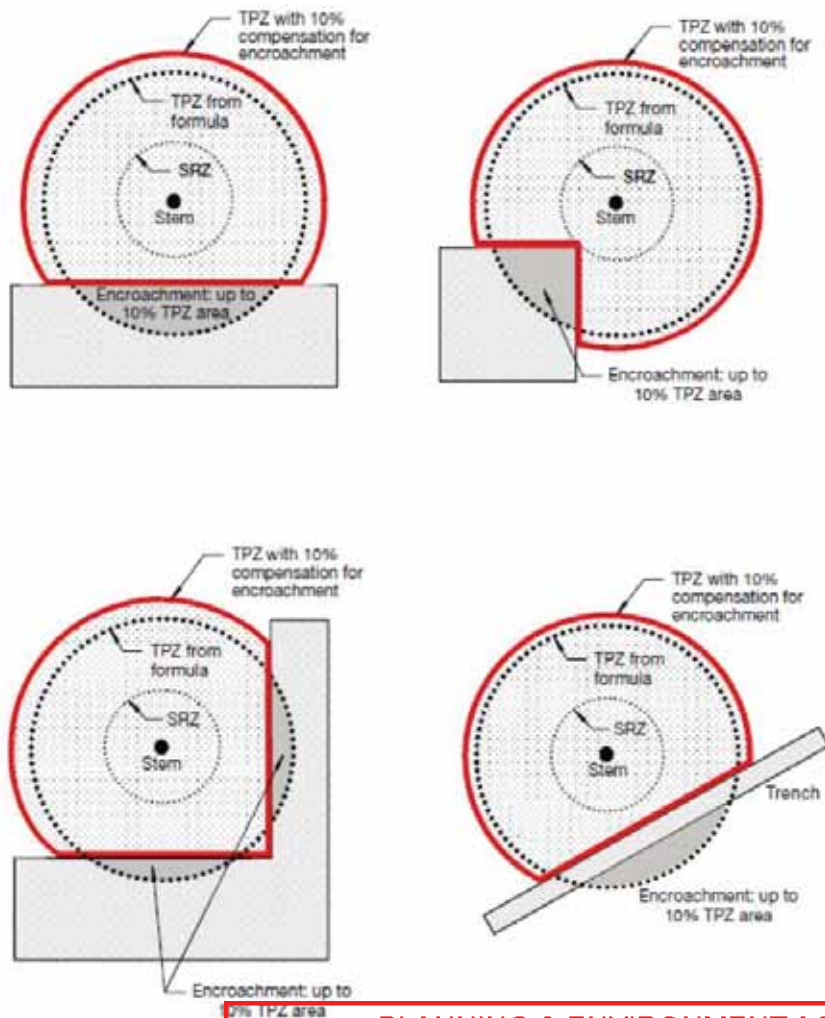
9.6 Tree Protection Zone Encroachment Examples

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AS 4970—2009

APPENDIX D ENCROACHMENT INTO TREE PROTECTION ZONE (Informative)

Encroachment into the tree protection zone (TPZ) is sometimes unavoidable. Figure D1 provides examples of TPZ encroachment by area, to assist in reducing the impact of such incursions.



NOTE: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.

FIGURE D1 EXAMPLES OF MINOR ENCROACHMENT INTO TPZ

www.standards.org.au

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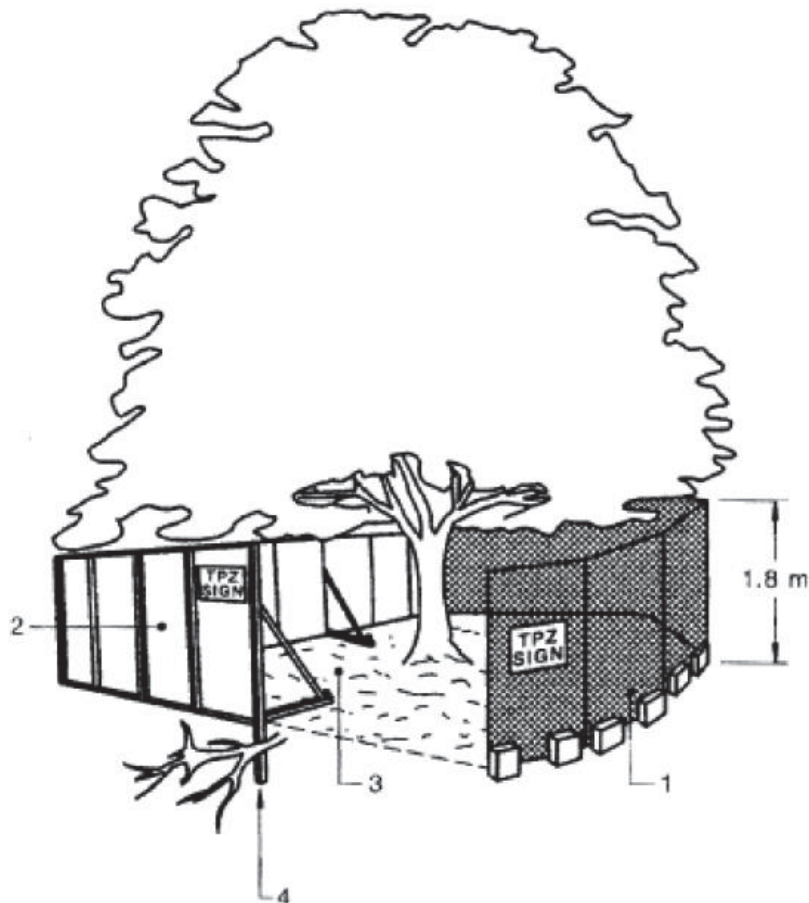
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9.7 Tree Protection Zone (TPZ) Signs

4.4 SIGNS

Signs identifying the TPZ should be placed around the edge of the TPZ and be visible from within the development site (refer Figure 3). The lettering on the sign should comply with AS 1319. Appendix C provides an example of a suitable TPZ sign.



LEGEND:

- 1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
- 2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
- 3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
- 4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

FIGURE 3 PROTECTIVE FENCING

(Extract from AS4970 – 2009 Protection of trees on Development sites)

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9.8 Tree Protection Zone (TPZ) Example

AS 4970—2009

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APPENDIX C TREE PROTECTION ZONE SIGN EXAMPLE (Informative)

A TPZ sign provides clear and readily accessible information to indicate that a TPZ has been established. Figure C1 provides an example of a suitable sign.



FIGURE C1 TREE PROTECTION ZONE SIGN

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9.9 Indicative Stages in Development

Stage in Development	Tree Management Process	
	Matters for Consideration	Actions and Certificates
Planning (Sections 2 and 3)		
Site acquisition	Legal constraints	
Detail surveys	Council plans and policies Planning instruments and controls Heritage Threatened species	Existing trees accurately plotted on survey plan.
Preliminary tree assessment	Hazard/risks Tree retention value	Evaluate trees suitable for retention and mark on plan Provide preliminary arboricultural report and indicative TPZs to guide development layout.
Preliminary development design	Condition of trees Proximity to buildings Location of services Roads Level changes Building operations space Long-term management	Planning selection of trees for retention Design review by proponent Design modifications to minimise impact to trees.
Development submission	Identify trees for retention through comprehensive arboricultural impact assessment of proposed construction. Determine tree protection measures. Landscape design.	Provide arboricultural impact assessment including tree protection plan (drawing) and specification.
Development approval	Development controls Conditions of consent	Review consent conditions relating to trees.
Pre-construction (Sections 4 and 5)		
Initial site preparation	State based OHS requirements for tree work Approved retention/removal Refer to AS 4373 for the requirements on the pruning of amenity trees Specifications for tree protection measures	Compliance with conditions of consent. Tree removal/tree retention/transplanting Tree pruning Certification of tree removal and planting Install protective measures Certification of tree protection measures

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Stage in Development	Tree Management Process	
	Matters for Consideration	Actions and Certificates
Construction (Sections 4 and 5)		
Site establishment	Temporary infrastructure Demolition, bulk earthworks, hydrology	Locate temporary infrastructure to minimise impact on related trees. Maintain protective measures Certification of tree protection measures.
Construction work	Liaison with site manager, compliance Deviation from approved plan	Maintain or amend protective measures Supervision and monitoring
Implement hard and soft landscape works	Installation of irrigation services Control of compaction work Installation of pavement and retaining walls	Remove selected protective measures as necessary Remedial tree works Supervision and monitoring
Practical completion	Tree vigour and structure	Remove all remaining tree protection measures Certification of tree protection
Post Construction (Section 5)		
Defects liability / maintenance period	Tree vigour and structure	Maintenance and monitoring Final remedial tree works Final certification of tree condition

NOTES:

1. Owing to variations in planning legislation, this Table is a general indication of the process only
2. Certification of tree protection and condition should be carried out by the project Arborist.

Extract from Australian Standard 4970 – 2009 – Protection of Trees on Development Sites.

The above Table shows clearly the process of tree protection on development sites as set out in the Australian Standard. It can also serve as a guide to the set up and management of new and replacement plantings.

This Table should be followed in the management of all trees on development sites.

Depending on the stage of the project you are undertaking, the type of project you are undertaking and specific other requirements of various planning departments, in some instances additional reports may be required.

The above Table serves as an indicative guide to the process of managing and protecting trees.

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10.0 References

Australian Standard® *AS4970-2009, Protection of trees on development sites, 2009, Sydney*

Australian Standard® *AS4373-2007, Pruning of Amenity Trees, 2007, Sydney*



Writings within the report are of the author's personal knowledge and belief. The information and knowledge released in the report when referenced should be referenced to

Matt Branagh, Dip.App.Sci – Horticulture Arboriculture – Let's Talk About Trees

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- In no way is this report biased or weighted. The content of the report is written in the full, honest opinion of the Let's Talk About Trees Consulting Arborist.
- No diagrams, pictures, graphs or other reference material in this report is said to be to scale or value unless stipulated. All measurements and values are made to the best of the author's ability at the time of reporting and should be checked before using as final measurements for whatever reason.
- This report is developed around the information provided by our client in the project brief. Only issues covered by the project brief are discussed in this report.
- All details, information and advice contained in this report have been researched and referenced. Where no reference is included, it is the author's learned opinion, experience and observations.

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