ARBORICULTURAL IMPACT ASSESSMENT

Date: 11th December 2024

Site: 125 Rickard Road, North Narrabeen 2101 (Lot 69/-/DP16212)

Commissioned By Client: Liam Webb

Author:

Antony Osborn - AQF5 Diploma in Arboriculture – Sydney Arborist

1 Executive Summary

1.1 The report was commissioned by the Client Liam Webb to assess the impacts on trees affected by the proposed building development at 125 Rickard Road, North Narrabeen 2101 (Lot 69/-/DP16212).

1.2 The property is in the LGA (Local Government Area) of Northern Beaches Council. The property is zoned C4 - Environmental Living: (pub. 14-4-2023) and has Local Provisions - Geotechnical Hazard H1.

1.3 It was determined that there will be two (2) trees directly affected by the proposed development and one (1) tree that won't be directly affected by the proposed development. The two trees affected by the proposed development are located on the subject site. The third tree is located on the fence line and is primarily in the neighbouring property. It has been surveyed as being on the subject site, this location is wrong. However, due to the location of the tree, elevated well above the proposed development, it will not alter the findings in this report.

1.4 The purpose of this report is to assess the impacts of the proposed development on the three (3) trees located at the above address. Recommendations have been made in accordance with AS 4970-2009 Protection of Trees on Development Sites, Pittwater Local Environmental Plan 2014 (pub. 30-5-2014) and Northern Beaches Council DCP (Development Control Plan).

1.5 The trees Landscape significance and Useful Life Expectancy (ULE) were assessed. Tree retention values were awarded using IACA S.T.A.R.S © (tree retention matrix (IACA, 2010 *IACA Significance of a Tree, Assessment Rating System (STARS),* Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au) (see Appendix 1 for further information). They were rated a High, Medium, Low and Removal. Options such as tree retention, tree protection and tree removal will be discussed.

1.6 Two site diagrams have been included with the location of the trees, SRZ (Structural Root Zone) and TPZ (Tree Protection Zone). These diagrams are a separate PDF attachment and are to be used in conjunction with the report.

1.7 The proposed development is building of a retaining wall, home renovations and landscaping. The stages of development will be demolition, site preparation/excavation, building of the new house and landscaping.

1.8 Recommendations have been made for the removal of Tree 1 and the retention of Tree 2 and 3. Tree 1 is an exempt species and can be removed without council approval. There will be major impacts to the SRZ and canopy of Tree 2. Recommendations have been made for root pruning and canopy pruning of Tree 2 to incorporate the build.

1.9 Tree protection measures will need to put in place prior to construction works for Trees 2 and 3.

1.10 A project arborist, with AQF5 accreditation or higher, should be assigned prior to any construction works. The project arborist should monitor the work throughout the construction process to ensure tree protection measures are adhered to. There should be a predetermined number of site inspections.

1.11 The AIA (Arboricultural Impact Assessment) is a supporting document that will be presented to Northern Beaches Council as part of the DA. Northern Beaches Council are the determining authority that will make the final decision on the trees.

Contents

2 Method

2.1 On Monday, 9th December 2024, a site inspection was carried out for the purpose of gathering information to produce this report. During the inspection the tree was assessed from ground level. The application of VTA (Visual Tree Assessment), *methodology produced by Mattheck & Breloer 1994*, was used in this process.

2.2 The trees health, vigour and retention value were assessed. The impact of building works and the trees capability to tolerate disturbances along with species and suitability was taken into consideration.

2.3 Trees are identified from ground level only by a visual assessment of foliage, bark, fruit and other characteristics of the tree.

2.4 Photographs were taken using an iPhone.

2.5 Height measurements were estimated.

2.6 Canopy spread was estimated to the four cardinal points (N, S, E, and W).

2.7 Diameter at breast height (DBH) was measured at 1.4 meters above root buttress where possible. All DBH measurements were multi stem calculations.

2.8 The trees were allocated a Useful Life Expectancy (ULE) categorised as follows:

- Long (40+ years)
- Medium (15-40 years)
- Short (5-15 years)
- Removal (<5 years)

2.9 Tree retention values have been allocated to the trees using the IACA S.T.A.R.S © (tree retention matrix (IACA, 2010 *IACA Significance of a Tree, Assessment Rating System (STARS),* Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au) (see Appendix 1 for further information and matrix).

2.10 No Invasive, underground, root mapping, aerial inspections, tissue/soil analysis or structural integrity (resistograph or tomograph) testing will be carried out. This testing will incur extra costs.

2.11 The following documentation was provided prior to writing this report:

- Architectural DA plans
- Landscape plans
- Site survey

2.12 A site diagram has been provided with tree locations, TPZ (Tree Protection Zone) and SRZ (Structural Root Zone). The SRZ and TPZ overlay has been added as accurately as possible. The original DA plans were used for this purpose.

2.13 Refer to the appropriate appendix for further information:

- Appendix 1 – IACA S.T.A.R.S© retention matrix
- Appendix 2 – Tree Protection (AS4970-2009 Protection of Trees on Development Sites)
- Glossary of Terms

- Site diagram (Separate PDF Attachment)

3 Observations

The Site

3.1 The site is located at 125 Rickard Road, North Narrabeen 2101 (Lot 69/-/DP16212).

3.2 The site is steep sloping facing northeast (Location map with tree location, not to scale):

Legislation

3.3 The site is zoned C4 - Environmental Living: (pub. 14-4-2023) and is in the LGA (Local Government Area) of Northern Beaches Council. The site is covered by Pittwater Local Environmental Plan 2014 (pub. 30-5-2014).

3.4 A tree as prescribed by Northern Beaches Council:

- *a palm or woody perennial plant, single or multi stem greater than 5m in height.*

3.5 State Environmental Planning Policy (Biodiversity and Conservation) 2021 Chapter 2 has been taken into consideration when writing this report. The aims of this Chapter are:

(a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and
(b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.

3.6 The site is not located in a heritage conservation area. There are no heritage items on these trees.

3.7 The site is zoned Geotechnical Hazard H1.

3.8 The subject species are not listed under the Threatened Species Conservation Act (1995).

The Trees

3.9 Retention value Table:

Tree No.	*Genus/Species* Common name	Health/ Vigour	Structure	Age	ULE (Useful Life Expectancy) (Years)	Landscape Significance	Retention Value (IACA S.T.A.R.S)
1	*Chamaecyparis sp.* Cypress	Poor	Poor	Over mature	Short (5-15 years)	Low	Low
2	*Plumeria sp.* Frangipani	Good	Good	Mature	Medium (15-40 years)	Low	Medium
3	*Jacaranda mimosifolia* Jacaranda	Fair	Poor	Mature	Short (5-15 years)	Medium	Low

3.10 TPZ and SRZ Table:

Tree No.	*Genus/Species* Common Name	Height (m)	Canopy Spread (m)				DBH (cm)	DAB (cm)	TPZ (Tree Protection Zone)(m)	SRZ (Structural Root Zone)(m)
			N	S	E	W				
1	*Chamaecyparis sp.* Cypress	6	2	0	2	2	26	40	3.1	2.3
2	*Plumeria sp.* Frangipani	5	1	2	4	3	25	25	3	1.8
3	*Jacaranda mimosifolia* Jacaranda	13	10	2	6	10	57	57	6.9	2.6

3.11 Encroachment Values:

Tree No	*Genus/ Species* Common Name	TPZ	TPZ Incursion %	TPZ Incursion Rating	SRZ	SRZ Incursion
1	*Chamaecyparis sp.* Cypress	3.1	In proposed building footprint	Major	2.3	Yes
2	*Plumeria sp.* Frangipani	3	Approx 20%	Major	1.8	Yes
3	*Jacaranda mimosifolia* Jacaranda	6.9	Nil	Nil	2.6	Nil

4 Discussion

4.1 The proposed development is building of a retaining wall, home renovations and landscaping. The stages of development will be demolition, site preparation, building of the new house and landscaping. The site is in a Geotechnical Hazard H1 area.

4.2 Tree 1 was identified as a mature *Chamaecyparis sp.* (Cypress pine). The tree was exhibiting signs of poor health and vigour. The tree is in the footprint of the proposed development.

4.3 *Chamaecyparis sp.* and *Cupressus sp.* are exempt species in Northern Beaches council and can be removed without council approval.

4.4 Tree 2 was identified as a mature Plumeria sp. (Frangipani). The tree is growing through the existing deck and the DAB (Diameter at buttress) was estimated.

4.5 Part of the development is the building of a retaining wall which will occur in the SRZ (Structural root zone) of Tree 2. *Plumeria* is a species that will tolerate heavy root pruning.

4.6 Tree 3 was identified as a mature *Jacaranda mimosifolia* (Jacaranda). The tree is located on the fence line and is primarily in the neighbouring property. It appears on the site survey as being on the subject site, however this is wrong. Due to the location of the tree, elevated well above the proposed development, it will not alter the findings in this report. The DAB was estimated for this tree due to access.

5 Conclusion and Recommendations

Conclusion

5.1 Tree 1 is in the footprint of the proposed dwelling. The tree has a low ULE (Useful life expectancy) and low retention value. The tree is an exempt species and can be removed without council approval.

5.2 Tree 2 has a major encroachment into the SRZ by the proposed retaining wall. The site is in a Geotechnical Hazard H1 area. Modifications to the retaining wall are not feasible due to space and the importance to adequately retain the site. This species of tree will tolerate heavy root pruning.

5.3 Tree 3 has no encroachment by the proposed dwelling.

Recommendations

5.4 Recommendations have been made for the removal of:

- Tree 1 - *Chamaecyparis sp.* (Cypress pine)

5.5 Tree 1 is an exempt species and does not require council approval. Tree 1 can be removed prior to construction.

5.6 Tree removal should be carried out by a minimum AQF3 level Arborist.

5.7 Recommendations have been made for the retention of:

- Tree 2 - *Plumeria sp.* (Frangipani)
- Tree 3 – *Jacaranda mimosifolia* (Jacaranda)

5.8 Recommendations for Tree 2 are for root pruning and canopy pruning. Pruning of the canopy, back to the deck (red line), should be carried out prior to construction.

5.9 Due to the location of the Tree 2, root investigation prior to development is not recommended. Therefore, care should be taken when excavation for the retaining wall is carried out. The project arborist should supervise the excavation within the TPZ (Tree protection zone) of Tree 2. If roots are exposed they should be cut by the project arborist.

5.10 *Plumeria* will tolerate heavy root pruning and roots will be required to be prune far enough back to allow adequate space for the retaining wall. Once the roots are cut they should be left exposed for 2 weeks to create a seal on the cut surface.

5.11 Roots identified to be pruned by the project arborist should be pruned back with a final cut of undamaged wood. Pruning cuts should be undertaken with a sharp tool such as; secateurs, pruners, handsaws and chainsaws are suitable. Roots should never be cut or damaged with machinery such as excavators or backhoes.

5.12 The deck will act as tree protection for Tree 2 during the construction process. Tree protection fencing should be set up on the deck around Tree 2 to protect the canopy. The TPZ should be well sign posted. Tree protection fencing should be set up prior to any construction and stay in place throughout the entire construction process (see Appendix 2 for further information on tree protection).

5.13 Tree 3 has no encroachment by the proposed development and due to its location, elevated well above the proposed development, should be relatively unaffected by site activities. However, it's recommended that tree protection fencing be set up to protect the trunk and SRZ on the grass landing directly adjacent to the tree. The TPZ should be well sign posted. Tree protection fencing should be set up prior to any construction and stay in place throughout the entire construction process.

5.14 Tree protection fencing should be certified by the project arborist.

5.15 This AIA (Arboricultural Impact Assessment) is a supporting document that will be presented to Northern Beaches Council as part of the DA. Northern Beaches Council are the determining authority that will make the final decision on the trees.

5.16 A project arborist, with AQF5 accreditation or higher, should be assigned prior to any construction work. The project arborist should monitor the work throughout the construction process to ensure tree protection measures are adhered to. There should be a predetermined number of site inspections.

Antony Osborn

Sydney Arborist

(AQF5 Diploma of Arboriculture)

6 Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in & directly attached to that submission, report or presentation.

7 Assumptions

Care has been taken to obtain information from reliable sources. All data has been verified insofar as possible, however, Sydney Arborist or Antony Osborn can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

Information contained in this report covers only the tree/trees that were examined and reflects the condition of trees at the time of inspection.

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

8 Bibliography

- Google Maps
- NSW Government Office of Environment & Heritage, Threatened Species Conservation Act (1995) Online Threatened Species Search http://www.environment.nsw.gov.au/threatenedSpeciesApp
- NSW Government Office of Environment & Heritage, State Heritage Inventory http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2060110
- NSW Government ePlanning portal https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address
- Barrell, J. (1996), Useful Life Expectancy of Trees (ULE.) Barrell Tree Care. UK
- Arboriculture Integrated Management of Landscape Trees, Shrubs and Vines Fourth edition. Richard W. Harris, James R. Clark and Nelda P. Matheny.
- The Body language of Trees, C.Mattheck
- Field Guide for Visual Tree Assessment, C Mattheck
- AS4970-2009 Protection of Trees on Development Sites SAI Global Sydney Australia
- Pittwater Local Environmental Plan 2014 (pub. 30-5-2014)
- Northern Beaches Council DCP (Development Control Plan)

Appendix 1 - IACA S.T.A.R.S ©

Significance of a Tree, Assessment Rating System* (IACA 2010) – S.T.A.R.S. ©

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria

High Significance in landscape

- The tree is in *Good condition* and *Good vigor*;
- 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.

Medium Significance in landscape

- The tree is in *Fair-Good condition* and *Good* or *Low vigor;*
- 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*.

Low Significance in landscape

- The tree is in fair-poor condition and good or low vigor;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as 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 dimension 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 potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline

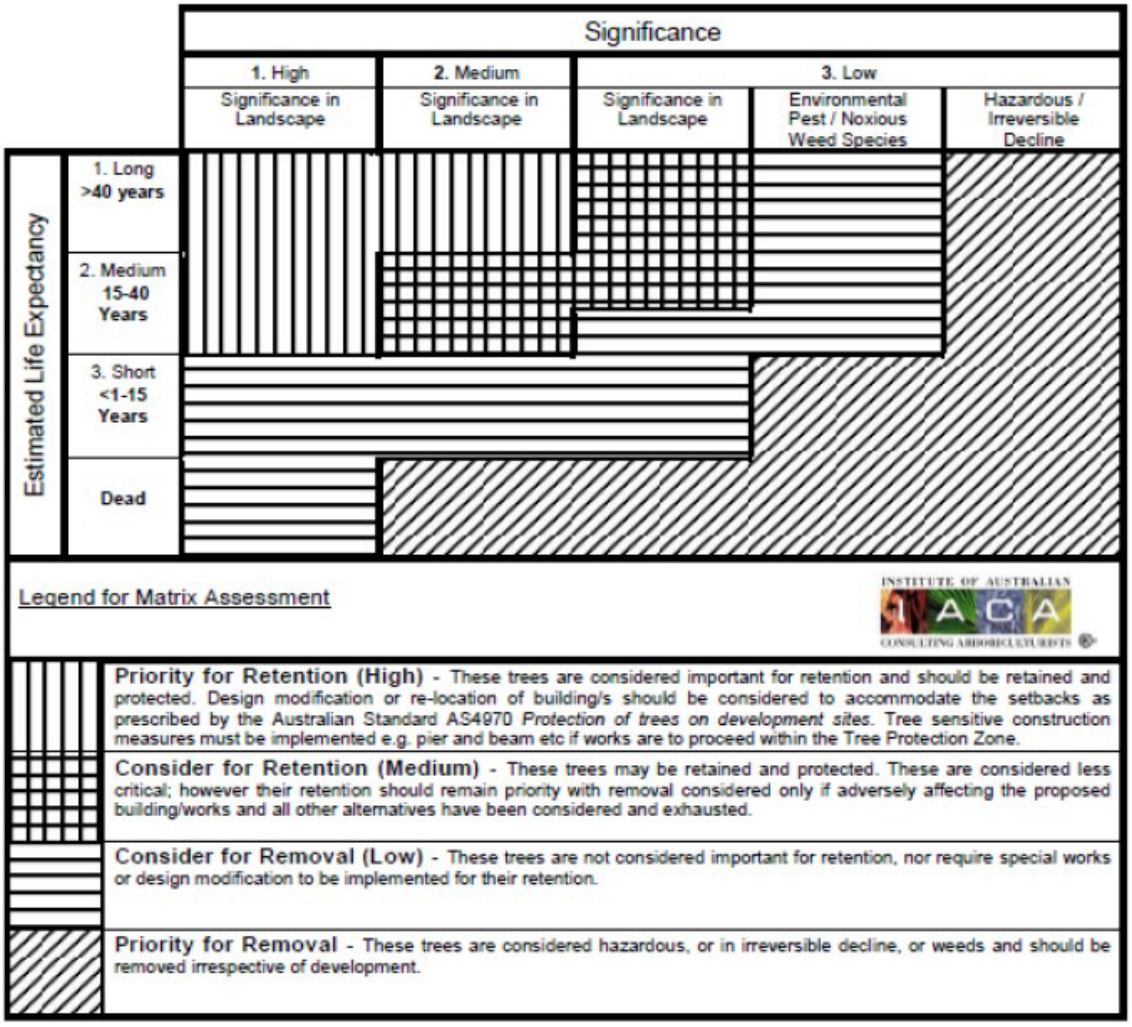
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

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

Table 1.0 Tree Retention Value - Priority Matrix.



USE OF THIS DOCUMENTAND REFERENCING The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

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

REFERENCES Australia ICOMOS Inc. 1999, *The Burra Charter –The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists(IACA), CSIRO Publishing, Collingwood, Victoria, Australia. Footprint Green Pty Ltd2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

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

Appendix 2 - Tree Protection

Excerpt from AS4970-2009 Protection of Trees on Development Sites

SECTION 4 TREE PROTECTION MEASURES

4.1 GENERAL

Tree protection measures include a range of activities and structures. Structures are used to identify and isolate the TPZ (refer to Section 3). These measures are identified in the arboricultural impact assessment and tree protection plan.

The TPZ is a restricted area usually delineated by protective fencing (or use of an existing structure such as an existing fence or wall). It is installed prior to site establishment and retained intact until completion of the works.

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

Approved tree removal and pruning should be carried out before the installation of tree protection measures.

4.2 ACTIVITIES RESTRICTED WITHIN THE TPZ

Activities generally excluded from the TPZ include but are not limited to—

(a) machine excavation including trenching;

(b) excavation for silt fencing;

(c) cultivation;

(d) storage;

(e) preparation of chemicals, including preparation of cement products;

(f) parking of vehicles and plant;

(g) refuelling;

(h) dumping of waste;

(i) wash down and cleaning of equipment;

(j) placement of fill;

(k) lighting of fires;

(l) soil level changes;

(m) temporary or permanent installation of utilities and signs, and

(n) physical damage to the tree.

4.3 PROTECTIVE FENCING

Fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval by the project arborist. The TPZ should be secured to restrict access.

AS 4687 specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area.

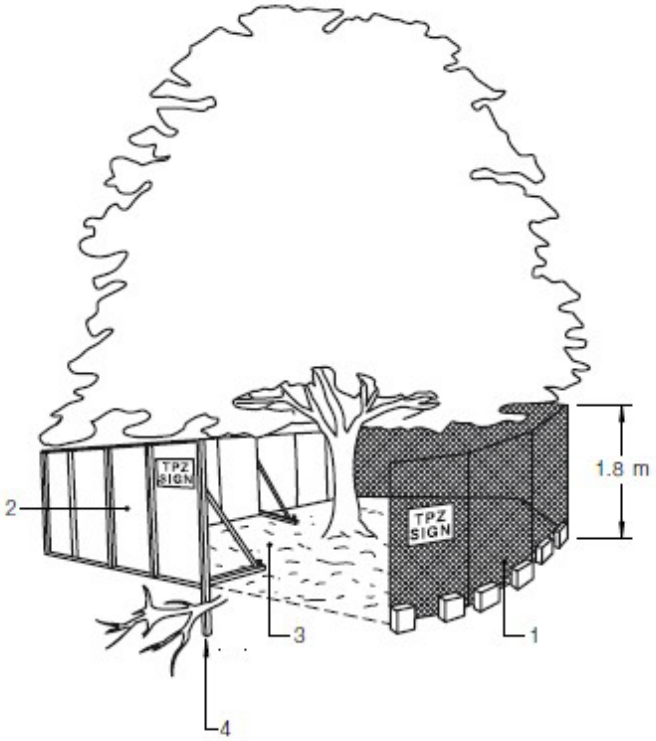
Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots.

Existing perimeter fencing and other structures may be suitable as part of the protective fencing.

Figure 3 indicates an example of protective fencing.

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

4.5 OTHER TREE PROTECTION MEASURES

4.5.1 General

When tree protection fencing cannot be installed or requires temporary removal, other tree protection measures should be used, including those set out below.

4.5.2 Trunk and branch protection

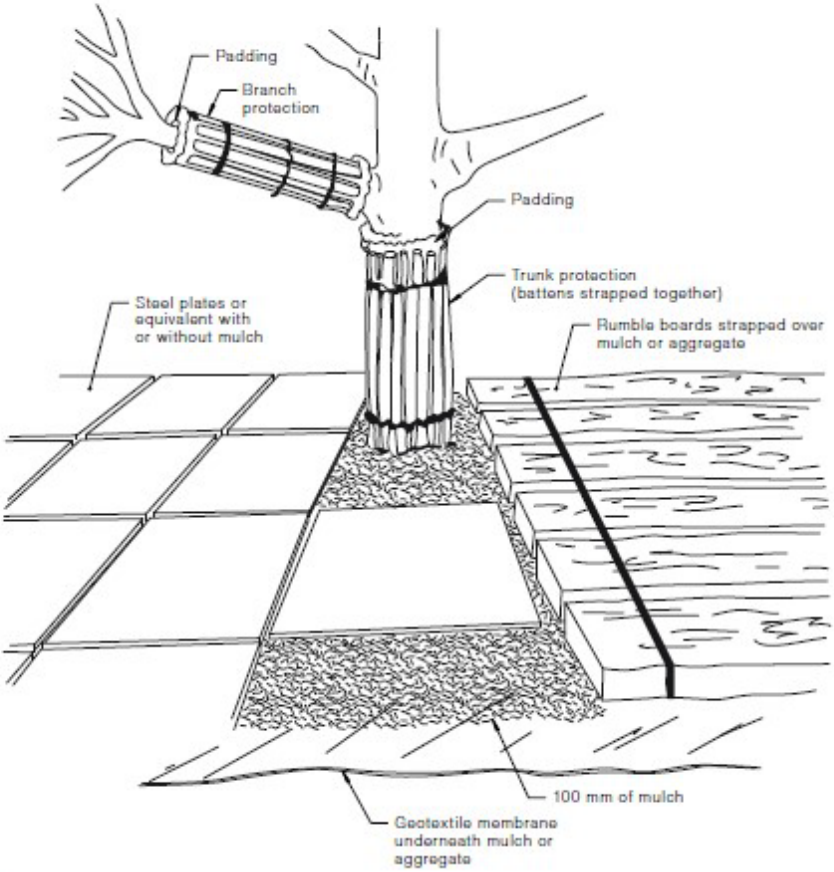
Where necessary, install protection to the trunk and branches of trees as shown in Figure 4. The materials and positioning of protection are to be specified by the project arborist. A minimum height of 2 m is recommended.

Do not attach temporary powerlines, stays, guys and the like to the tree. Do not drive nails into the trunks or branches.

4.5.3 Ground protection

If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards as per Figure 4.

These measures may be applied to root zones beyond the TPZ.



NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.

2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

FIGURE 4 EXAMPLES OF TRUNK, BRANCH AND GROUND PROTECTION

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.

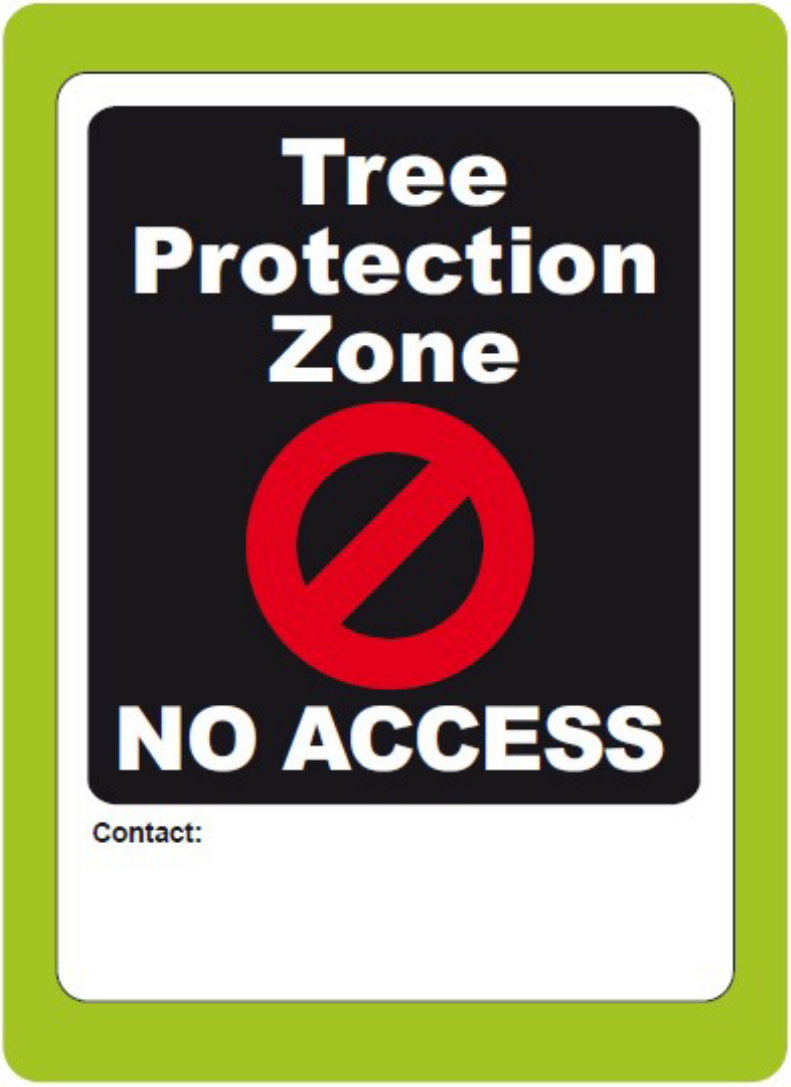


FIGURE C1 TREE PROTECTION ZONE SIGN

Glossary of Terms

Age class - (SM) Semi Mature, (M) Mature, (OM) Over Mature.

Aerial Inspection - Refers to climbing a tree to obtain more accurate information.

AS4970 (2009) Protection of Trees on Development Sites – These are guidelines/ industry standards to minimise negative impacts on trees on building sites.

AS4373 (2007) Pruning of Amenity Trees – These are guidelines/ industry standards to minimise negative impacts on trees.

Classes - (G) Good, (F) Fair, (D) Declining, (P) Poor.

Critical Root Zone (CRZ) - Refers to a radial offset of five (5) times the trunk DBH measured from the centre of the trunk. This zone is often the location of the tree's structural support roots.

Crown lifting – The removal of lower branches.

DBH (Diameter at Breast Height) – This is the diameter of the trunk at breast height (1.4 Metres above ground level).

Dead wood – Refers to any branches that have no living tissue left in them. Some dead wood can be beneficial for the tree.

Decay – Is when healthy wood/tissue breaks down.

Defect – An imperfection or flaw in the trees structure.

Die back – Refers to the dying of the tips or ends of branches. This can mean the tree is stressed and is a factor in assessing tree health.

Electrical service –

- **OHP** Overhead electricity wiring.
- **LVOHP** Low Voltage Overhead Power lines
- **HVOHP** High Voltage Overhead Power lines
- **ABC** Aerial Bundled Cable

Endemic – Restricted to a certain place.

Epicormic growth – Also known as sucker growth, is usually a result of bad pruning/lopping or signs of a stressed tree. They sprout from axillary buds in the bark. They are usually weekly attached.

Form – The visible shape or configuration of a tree.

Health – Refers to the trees ability to grow, modified by aspects of its environment. Signs of good health are; tree vigour, green foliage, crown density and amount of dead wood.

Classes are: Good (G), Fair (F), Declining (D) & Poor (P)

Included bark/Inclusion – Refers to weak branch attachment. This is where bark grows between the join of the branch and stem instead of healthy tissue. Usually a very acute angled branch.

Indigenous – Native to Australia but not to one particular place.

Landscape significance rating – Refers to Species, Landscape Significance, Ecological Significance and Historical Significance.

Classes: Very high, High, Moderate, Low

Lopped – Incorrect pruning method not to AS4373 (2009) Pruning of Amenity Trees.

Point of attachment – Is the part of tree joins another i.e. a branch joins the trunk.

Retention value - The trees contribution to the amenity, landscape quality and visual character of an area that is important from a planning perspective.

Root mapping – Removing/excavating soil from around the roots with hand tools.

SRZ (Structural Root Zone) – Refers to the part of the root zone necessary for the structural integrity of a tree as set out in AS4970-2009 Protection of Trees on Development Sites. The calculation for this measurement is ((D x 50) ^0.42 x 0.64), D = Diameter at the trunk buttress measured in metres. The SRZ for trees with DAB under 0.15 metres is 1.5 metres.

Taper – Reduce or increase in thickness.

Transverse Crack – A crack that extends crossways against the fibres of a tree part. Usually caused by bending of the trunk or branch.

Tree Protection Zone (TPZ) - Is the combination of root and canopy area required to maintain tree stability, health & vitality as set out in AS4970-2009 Protection of Trees on Development Sites. TPZ calculation is twelve (12) times the trunk DBH (Diameter at breast height) measured as a radial offset from the centre of the tree trunk. The TPZ indicates the location where protective fencing should be installed to create an exclusion zone around a protected tree.

Vigour – Refers to the growth rate of the tree. This includes; new growth, reaction wood, ability to compartmentalise at a rapid rate and the ability to fight off pest & disease infection.

Classes are: Good (G), Fair (F), Declining (D), and Poor (P)

Useful Life Expectancy (ULE) – Is a guide to assessing trees longevity. ULE takes into consideration the trees environment, health, vigour, structural integrity and suitability. Adapted from Barrell 1996, (Updated April 2001).

Classes: (Long) 40 years +, (Medium) 15-40 years, (Short) 5-15 years, (Removal) Less than 5 years.

VTA (Visual Tree Assessment) – This refers to techniques developed to evaluate trees by Mattheck & Breloer "The Body Language of Trees".