Arboricultural Impact Assessment

Prepared for the Daniel Cheang
Site Address: 8 Deborah Place Eastwood
23rd February 2022

Date	Revision	Change	Stage
9/9/2022	A	Tree Retention	DA

Member of Arboriculture Australia, Registered Consulting Arborist No. 1286

Member of International Society of Arboriculture No. 157768

Bachelor of Horticultural Science, University Sydney.

AQF Level 2, 3 & 5 Diploma in Arboriculture

Graduate Certificate AQF Level 8 University Melbourne

Tree Risk Assessment Qualification (TRAQ)

Statement

Bradshaw Consulting Arborists is a company that exclusively provides tree consultancy within the tree industry. There is no conflict of interest concerning the recommendations outlined in this report.

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Contents

1 Introduction

This report has been prepared by Tristan Bradshaw of Bradshaw Consulting Arborists for Daniel Cheang at the property 8 Deborah Place Eastwood. The report request was to inspect twenty-four trees throughout the property and surrounding properties.

The trees' characteristics have been listed in Table 1 page 6. The aim is to determine the health and condition of the trees and the impact of constructing a new house. The inspection of the site was undertaken on 9th February 2022.

The report was completed on 23rd February 2022 and updated on the 9/9/2022.

See appendix B Section 8 for tree locations and tree protection plan.

The site's trees are managed under Ryde Council's Urban Tree Management Policy.

The property is not bushfire prone and not within the RFS 10/50 vegetation entitlement clearing area.

No trees are listed on council's significant tree register.

The property is not mapped as having Terrestrial Biodiversity.

1.1 Plans used in this assessment

Consultant	Company	Date	Revision
Survey	Donovan Associates	1/2/2021	
Architectural	Envirotecture	8/9/2022	-

Stormwater is yet to be assessed.

1.2 The Site

The site is composed of a dwelling and surrounding garden.

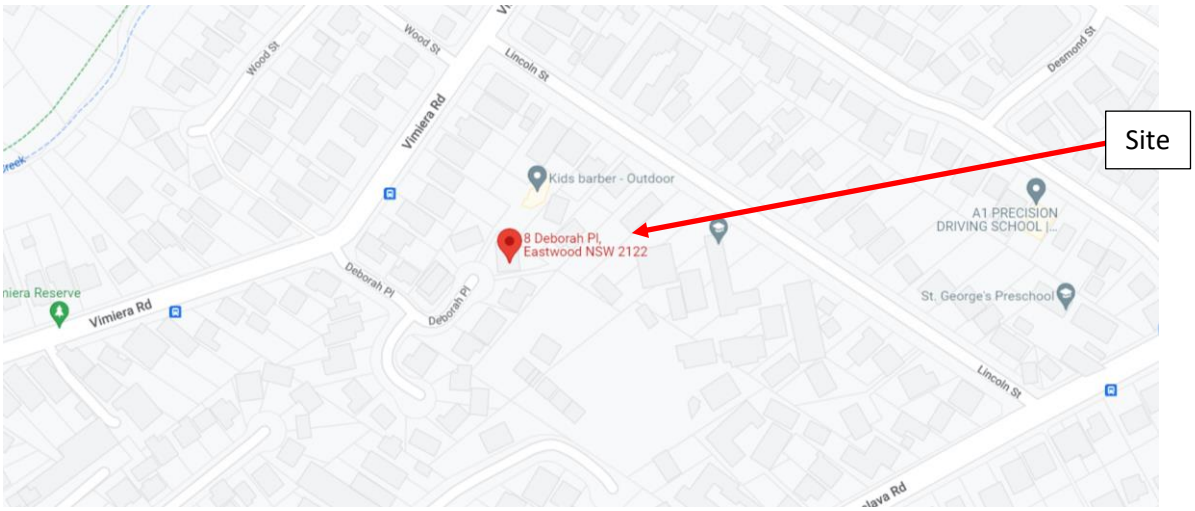

Figure 1 Site location (Google Maps 2022)

1.3 Method

The inspection of the site was undertaken on 9th February 2022.

The inspection method used was the Visual Tree Assessment (VTA) method (Mattheck & Breloer 2010). This method involves inspecting the trees from ground level, using binoculars to aid in identification of any external's signs of decay, physical damage, growth related structural defects and the site conditions where the tree is growing. This method will ascertain whether there is need for a more detailed inspection of any part of the tree. No aerial or subterranean inspections were carried out. See appendix A for the complete flow chart.

The Diameter at Breast Height (DBH) was measured with a diameter tape measure. The height of the measurement was at 140 cm above the ground unless stated.

The height of the tree was estimated.

The canopy spread of the tree was estimated.

Health: Based on vigour, callus development, % of deadwood, dieback, fruiting levels, internode lengths

(E) Excellent

(G) Good

(F) Fair

(P) Poor

(D) Dead

Age Class: (Y) Young=Recently Planted

(S) Semi mature <20% of life expectancy

(M) Mature 20-80% of life expectancy

(O) Over Mature >80% of life expectancy

Condition: Based on the structural integrity of the tree, cavities, fungal decay, branch failure, branch taper, sap or Kino exudate, fruiting bodies, root condition.

(E) Excellent

(G) Good

(F) Fair

(P) Poor

(D) Dead

Landscape Significance and Retention Value see sections 6.2 and 6.3.

Safe Useful Life Expectancy (SULE)

In a planning context, the time a tree can expect to be usefully retained is the most important long-term consideration. SULE is a system designed to classify trees into a number of defined categories so that information regarding tree retention can be concisely communicated in a non-technical manner. SULE categories are easily verifiable by experienced personnel without great disparity.

A tree's SULE category is the life expectancy of the tree modified by its age, health, condition, safety and location (to give safe life expectancy), then by economics (i.e. cost of maintenance; retaining trees at an excessive management cost is not normally acceptable), effects on better trees, and sustained amenity (i.e. establishing range of age classes in a local population).

SULE assessments are not static but may be modified as dictated by changes in tree health and environment. Trees with short SULE may at present be making a contribution to the landscape but their value to the local community will decrease rapidly towards the end of this period, prior to their being removed for safety or aesthetic reasons. For details of SULE categories see Appendix A, adapted from Barrell (1993 and 1996).

Visual Habitat

This assessment is based on a visual observation of the tree, included in the VTA method.

Habitat trees are trees that provide microhabitats, these can include hollows, deeply fissured bark, cracks, epiphytes or forms of decay (Bütler, R., Lachat, T., Larrieu, L., & Paillet, Y., 2013).

Tree Protection Zone (TPZ) – A specified area above and below ground and at a given distance from the trunk, set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree that is to be retained where it is potentially subject to damage by development.

Structural Root Zone (SRZ) - The area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres. This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be a much larger area.

2 Body Observations Results

Table 1 Individual tree characteristics

Tree Number	Botanical Name	DBH (mm)	DAB (mm)	Canopy N	Canopy S	Canopy E	Canopy W	Height	Health	Age	Condition/ Structure	SULE	Visual Habitat	Landscape significance	Retention Value	Structural Root Zone (SRZ)	Tree Protection Zone (TPZ)	Percentage TPZ Incursion	Retain or Remove notes
1	*Photinia glabra* 'Rubens' (Photinia)	180	180	2	2	2	2	4.5	G	M	G	>40	No	Low	Low	1.6	2.2	23%	Remove
2	*Photinia glabra* 'Rubens' (Photinia)	220	240	2	2	2	2	4.5	G	M	G	>40	No	Low	Low	1.8	2.6	22%	Remove
3	*Callistemon viminalis* (Weeping Bottlebrush)	330	330	3	3	3	3	6	G	M	G	>40	No	Moderate	Moderate	2.1	4.0	25.6%	Remove
4	*Prunus sp* (Ornamental Peach)	200	200	1	1	1	1	3	P	O M	P	<5	No	Low	Very Low	1.7	2.4	5.2%	Remove
5	*Magnolia soulangeana* (Saucer Magnolia)	240	240	2	2	2	2	4	F	M	F	15-40	No	Low	Low	1.8	2.9	0%	Retain
6	*Eucalyptus ficifolia* (WA Flowering Gum)	220	260	2	2	2	2	5	G	M	F	15-40	No	Moderate	Moderate	1.9	2.6	0%	Retain
7	*Cupressus sempervirens* (Swanes Golden)	320	320	1	1	1	1	8	G	M	G	>40	No	Moderate	Moderate	2.1	3.8	0%	Remove

Tree Number	Botanical Name	DBH (mm)	DAB (mm)	Canopy N	Canopy S	Canopy E	Canopy W	Height	Health	Age	Condition/ Structure	SULE	Visual Habitat	Landscape significance	Retention Value	Structural Root Zone (SRZ)	Tree Protection Zone (TPZ)	Percentage TPZ Incursion	Retain or Remove notes
8	*Cordyline australis* (Cabbage Tree)	50	50	1	1	1	1	0.5	G	S M	G	>40	No	Low	Low	1.5	2	0%	Remove
9	*Prunus sp* (Ornamental Peach)	50	50	1	1	1	1	2	P	S M	P	<5	No	Low	Very low	1.5	2	0%	Remove
10	*Prunus sp* (Ornamental Peach)	100	100	2	2	2	2	3	F	M	G	5-15	No	Low	Very Low	1.5	2	0%	Remove
11	*Picea pungens* (Blue Spruce)	350	350	3	3	3	3	10	P	O M	P	<5	No	Moderate	Low	2.1	4.2	43%	Remove
12	*Murraya paniculata* (Orange Jessamine)	50	50	1	1	1	1	2	G	M	G	>40	No	Low	Low	1.5	2	0%	Remove
13	*Laurus nobilis* (Bay tree)	70	70	1	1	1	1	3	G	M	G	>40	No	Low	Low	1.5	2	0%	Remove
14	*Cupressus sempervirens* (Swanes Golden)	240	240	1	1	1	1	8	G	M	G	>40	No	Moderate	Moderate	1.8	2.9	0%	Remove
15	*Viburnum tinus* (Laurustinus)	50	50	1	1	1	1	3	G	M	G	>40	No	Low	Low	1.5	2	0%	Remove

Tree Number	Botanical Name	DBH (mm)	DAB (mm)	Canopy N	Canopy S	Canopy E	Canopy W	Height	Health	Age	Condition/ Structure	SULE	Visual Habitat	Landscape significance	Retention Value	Structural Root Zone (SRZ)	Tree Protection Zone (TPZ)	Percentage TPZ Incursion	Retain or Remove notes
16	*Viburnum tinus* (Laurustinus)	50	50	1	1	1	1	3	G	M	G	>40	No	Low	Low	1.5	2	50%	Remove
17	*Photinia glabra* 'Rubens' (Photinia)	250	250	2	2	2	2	4.5	G	M	G	>40	No	Low	Low	1.8	3.0	8%	Remove
18	*Syagrus romanzoffiana* (Cocos Palm)	200	200	1	1	1	1	3	G	S M	G	>40	No	Low	Low	1.7	2.4	0%	Remove
19	Stump	NA	-	-	-	-	-	-	-	-	-	-	No	-	-	-	-	-	Remove
20	*Angophora costata* (Smooth Barked Apple)	700	740	4	6	4	6	16	G	M	G	>40	No	Very High	High	2.9	8.4	3%	Retain
21	*Stenocarpus sinuartus* (QLD Fire Wheel Tree)	280	300	3	3	3	3	10	G	M	G	>40	No	Moderate	Moderate	2.0	3.4	0%	Retain
22	*Angophora costata* (Smooth Barked Apple)	530	540	0	8	6	6	16	G	M	G	>40	No	Very High	High	2.6	6.4	0%	Retain
23	*Cupressus leylandii* (Leighton Green)	400	400	2	2	2	2	13	G	M	G	>40	No	Moderate	Moderate	2.3	4.8	0%	Retain

Tree Number	Botanical Name	DBH (mm)	DAB (mm)	Canopy N	Canopy S	Canopy E	Canopy W	Height	Health	Age	Condition/ Structure	SULE	Visual Habitat	Landscape significance	Retention Value	Structural Root Zone (SRZ)	Tree Protection Zone (TPZ)	Percentage TPZ Incursion	Retain or Remove notes
24	*Angophora costata* (Smooth Barked Apple)	650	700	6	6	6	6	19	G	M	G	>40	No	Very High	High	2.8	7.8	4%	Retain

Discussion

Twenty-four trees have been included in this assessment.

Of the twenty-four trees assessed trees many are not considered a tree as defined in Ryde Council's DCP 2014, part 9.5. Trees are defined as being taller than 5 metres or have a DBH greater than 450mm.

Of the twenty-four assessed "trees"; numbers 4, 8, 9, 10, 12, 13, 15, 18 and a tree stump 19 are less than 5 metres in height. These exempt trees can be removed without approval. It is proposed they are removed.

Of the remaining 15 trees, numbers 1, 2, 3, 11, 16 and 17 are within 4 metres of the existing house and are therefore exempt. The proposed house occupies a larger footprint at the front of the property; it is proposed these trees are removed.

It is recommended trees 7 and 14 are removed as they are causing structural damage to retaining walls and are likely lifting a neighbouring driveway. These trees are not significant in the landscape and will continue to damage the surrounding structures. It is recommended these trees are removed and replaced with suitable native trees and shrubs.

Figure 3 Tree 7 cracking side wall

Figure 2Tree 7 pushing front wall out of allignment

Figure 4 Tree 14 possibly causing cracking of neighbours driveway

Tree 6 is located at the front of the property within the road reserve. This tree will be unaffected as the existing driveway will be reused.

Trees 20-24 are located in the rear neighbouring property. Trees 21, 22 and 23 are unaffected by the building due to the 4-metre building setback. The proposed cabana occupies a small percentage of the TPZ of trees 20 and 24, this impact is within the guidelines of AS4970-2009. The cabana paving or concrete floor should be laid above grade to retain any root structure that may be below it. It is proposed these trees be retained and protected.

Tree 5 is located in the front of the property. It is proposed this tree is retained.

3 Recommendations

1. Removal of trees 1-4, 7-19.
2. Retain trees 5,6, 20-24.
3. Tree removal should be conducted by an Arborist with a minimum (Australian Qualification Framework) AQF level 3.
4. Work must be undertaken as per the Code of Practice Amenity Tree Industry 1998.
5. The tree removal process and staff should be skilled and undertake the removal of the tree as per the minimum industry standards.
6. Appoint project arborist. Minimum AQF Level 5 with 5 years' experience.
7. All trees must be retained and protected in accordance with Australian Standard 4970-2009. A tree protection plan has been provided as a guide in section 8. Tree protection fencing and

trunk protection is required. See Section 10 Appendix G for generic specifications for these tree protection measures.

8. Services such as electrical/stormwater/sewer/telecommunications have not been assessed at this stage. All services should be routed outside of the TPZ as indicated in Table 1, if this is unavoidable, we must be notified to re-assess this proposed development.

4 Project Arborist Monitoring Stages

The list of monitoring stages are imperative to the long term health of those trees to be retained. The principal contractor (Site Builder) should be informed of these requirements as they often form the basis of the conditions of consent for the project. The stages set out below are a minimum requirement to aid in ensuring the long-term health of any tree recommended for retention on the site.

Stage	Type of Monitoring	What is required
1	Ensure tree protection has been installed as per tree protection plan section 8	Tree Protection Certification
5	Final certification summarises the attendance to the site and reason for attendance. Comment on the likely long-term health of the retained trees. Provide any ongoing recommendations.	Final certificate supplied for occupation certificate

5 References

1. Bütler, R., Lachat, T., Larrieu, L. and Paillet, Y., 2013. 2.1 Habitat trees: key elements for forest biodiversity. *Integrative approaches as an opportunity for the conservation of forest biodiversity*, p.84.
2. Australian Standard, A.S., 4970, 2009. *Protection of trees on development sites,* Sydney.
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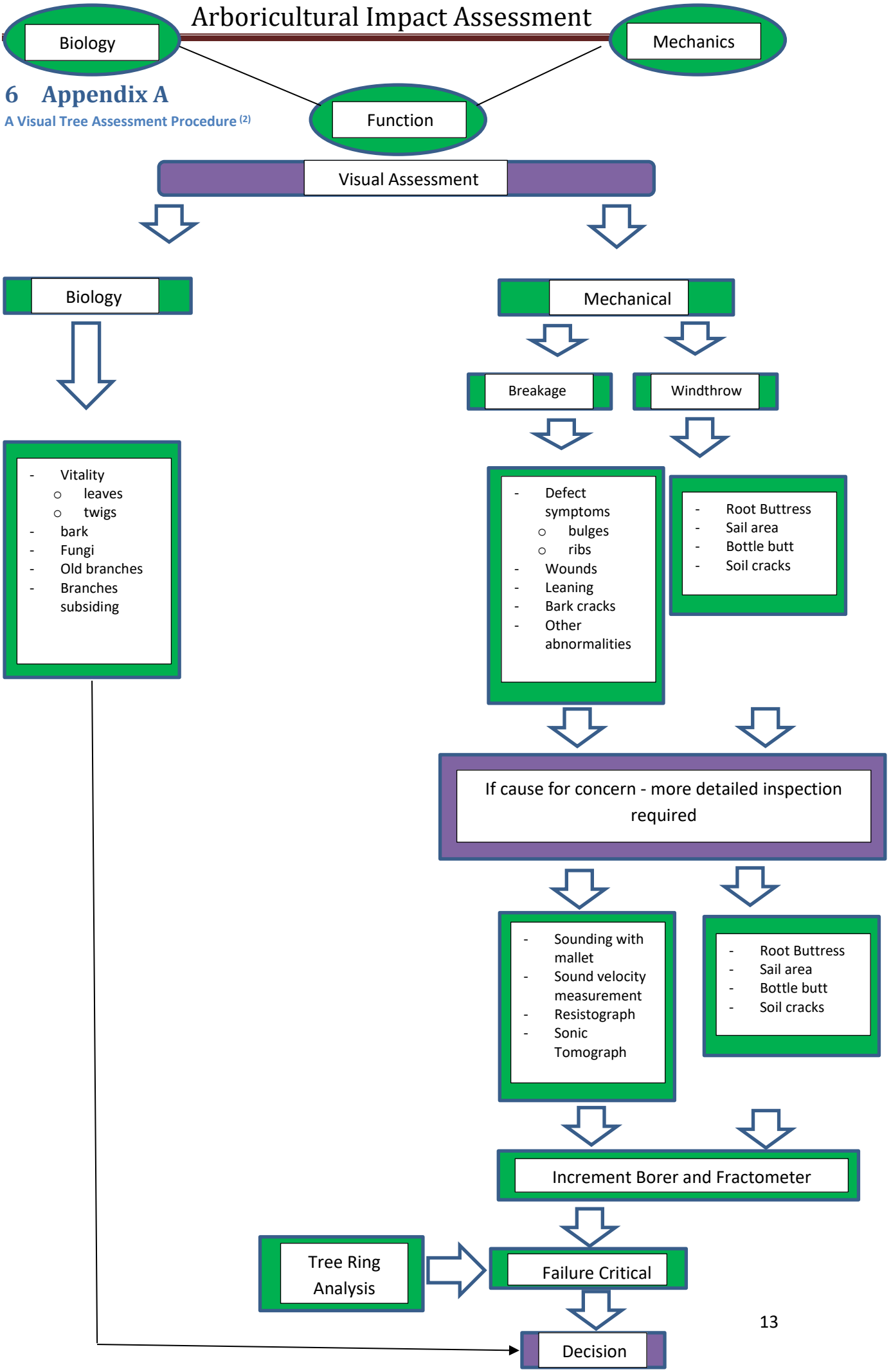
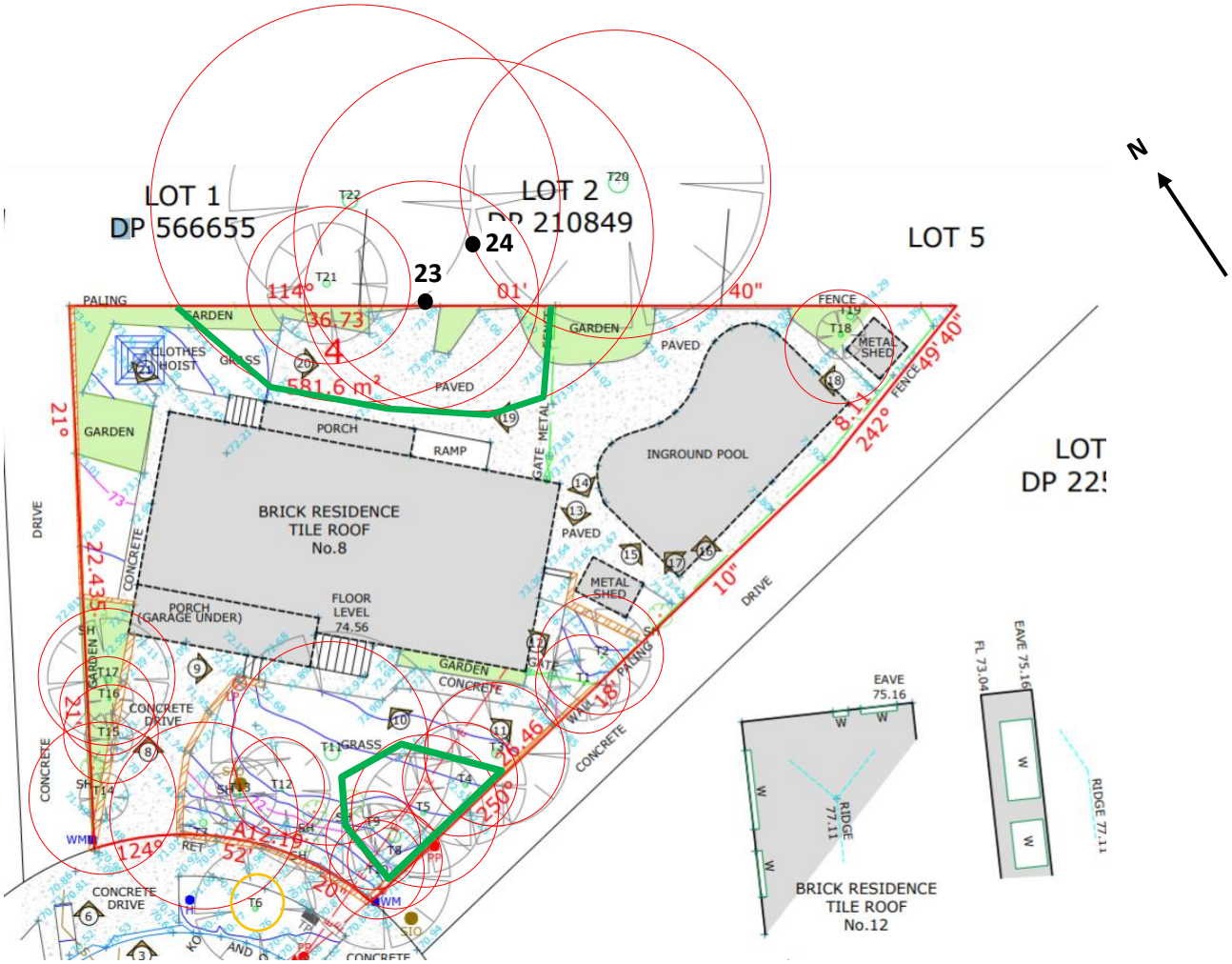
4. https://www.google.com/maps/place/8+Deborah+Pl,+Eastwood+NSW+2122/@-33.7810445,151.0950032,21z/data=!4m5!3m4!1s0x6b12a5d4cf76d991:0xe7200a7b9aca350a!8m2!3d-33.7815229!4d151.0944031. Viewed 23rd February 2022.
5. Mattheck & Breloer 2010. *The Body Language of Trees – a handbook for failure analysis*. Research for Amenity Trees series published by The Stationery Office, Norwich, United Kingdom.
6. NSW Government e planning spatial viewer, 2020. https://www.planningportal.nsw.gov.au/propertyreports/9de60642-47ca-4f2d-a485-19a7c1d9cbe8.pdf. Viewed 23rd February 2022.
7. Ryde Council DCP 2014 Part 9.5. http://www.kmc.nsw.gov.au/Plans_regulations/Building_and_development/Town_Planning_Documents/Ku-ring-gai_Development_Control_Plan. Viewed 23rd February 2022.
8. RFS 10/50. https://www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing/tool. Viewed 23rd February 2022.

6 Appendix A

A Visual Tree Assessment Procedure [2]



7 Appendix B Tree locations and Tree Protection Plan Scale 1:200



Requirement	Total	Tree Number	Legend
Trees Removed	17	1-4,7-19	
Trees Retained	7	5,6, 20-24	
TPZ	24	1-24	
Trunk Protection	1	6	
Tree protection fencing	1	2	

8 Appendix C Methodology for Determining Tree Retention Value

The aim of this process is to determine the relative value of each tree for retention (i.e. its Retention Value) in the context of development. This methodology assists in the decision-making process by using a systematic approach. The key objective of process is to ensure the retention of good quality trees that make a positive contribution to these values and ensure that adequate space is provided for their long term preservation. The Retention Value of a tree is a balance between its sustainability in the setting in which it is located (the 'landscape') and its significance within that setting (landscape significance).

Step 1: Determining the Landscape Significance Rating

The 'landscape significance' of a tree is a measure of its contribution to amenity, heritage, and ecological values. While these values are fairly subjective and difficult to assess consistently, some measure is necessary to assist in determining the Retention Value of each tree. To ensure in a consistent approach, the assessment criterion shown in Table 2 should be used. A Tree may be considered 'significant' for one or more reasons. A tree may meet one or more of the criteria in any value category (heritage, ecology or amenity) shown in Table 2 to achieve the specified rating. For example, a tree may be considered 'significant' and given a rating of 1, even if it is only significant based on the amenity criteria.

Based in the criterion in this table, each tree should be assigned a landscape significance rating as follows:

1. Significant
2. Very High
3. High
4. Moderate
5. Low
6. Very Low
7. Insignificant

Step 2: Determining Safe Useful Life Expectancy (SULE)

The sustainability of a tree in the landscape is a measure of its remaining lifespan in consideration of its current health, condition and suitability to the locality and site conditions. The assessment of the remaining lifespan of a tree is a fairly objective assessment when carried out by a qualified Consulting Arborist. Once a visual assessment of each tree is completed (using the Visual Tree Assessment criteria), the arborist can make an informed judgement about the quality and remaining lifespan of each tree. The Safe Useful Life Expectancy (SULE) methodology (refer to Table 3) can be used to categorise trees as follows:

- Long (Greater than 40 years)
- Medium (Between 15 and 40 years)
- Short (Between 5 and 15 years)
- Transient (less than 5 years)
- **Dead or Hazardous (no remaining SULE)**

The SULE of a tree is calculated based on an estimate of the average lifespan of the species in an urban area, less its estimated current age and then further modified where necessary in consideration of its current health, condition (structural integrity) and suitability to the site.

8.1 Appendix D Table 2 Step 1 Landscape Significance Rating

RATINGS	HERITAGE VALUE	ECOLOGICAL VALUE	AMENITY VALUE
1. SIGNIFICANT	The subject tree is listed as a Heritage item under the Local Environment Plan (LEP) with a local, state, or national level of significance or is listed on Council's Significant Tree Register.	The subject tree is scheduled as a Threatened Species as defined under the Threatened Species Conversation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999.	The subject tree has a very large live crown size exceeding 100m2 with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species.
	The subject tree forms part of the curtilage of a Heritage Item (building/structure/artefact as defined under the LEP) and has a known or documented association with that item.	The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species.	The Subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity.
	The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event.	The subject tree is a Remnant Tree, being a tree in existence prior to development of the area.	The tree is visually prominent in view form surrounding areas, being a landmark or visible from a considerable distance.
2. VERY HIGH	The tree has a strong historical association with a heritage item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site.	The tree is a locally indigenous species representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site.	The subject tree has a very large live crown size exceeding 60m2, a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area.
3. HIGH	The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence.	The tree is a locally indigenous and representative of the original vegetation of the area and the tree is located within a defined vegetation link/wildlife corridor or has known wildlife habitat value.	The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); The subject tree is visible form the street and/or surrounding properties and makes a positive contribution to the visual character and the amenity of the area.
4. MODERATE	The tree has no known or suspected historical association but does not detract or diminish the value the value of the item and is sympathetic to the original era of planting.	The subject tree is a non-local native or exotic species that is protected under the provisions of the DCP.	The subject tree has a medium live crown size exceeding 25m^2; The tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal).
			The tree is visible from surrounding properties but is not visually prominent- view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area.
5. LOW	The subject tree detracts from heritage values and diminishes the value of the heritage item.	The subject tree is scheduled as exempt (not protected) under the provisions of this DCP due to its species, nuisance or position relative to buildings or other structures.	The subject tree has a small live crown of less than 25m^2 and can be replaced within the short term (5-10 years) with new tree planting.
6. VERY LOW	The subject tree is causing significant damage to a heritage item.	The subject tree is listed as an Environment Weed Species in the Local Government Area, being invasive, or is a nuisance species.	The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50%.

8.2 Appendix E Table 3 Estimating Safe Useful Life Expectancy (SULE) Step 2

1	Estimate the age of the tree
2	Establish the average life span of the species
3	Determine whether the average life span needs to be modified due to local environmental situation
4	Estimate remaining life expectancy

Life Expectancy	=	average modified life span of species - age of tree

5	Consider how health may affect safety (& longevity)
6	Consider how tree structure may affect safety
7	Consider how location will affect safety
8	Determine safe life expectancy

Safe Life Expectancy	=	life expectancy modified by health, structure and location

9	Consider economics of management (cost vs benefit of retention)
10	Consider adverse impacts on better trees
11	Consider sustaining amenity - making space for new trees
12	Determine SULE

Safe Useful Life Expectancy	=	safe life expectancy modified by economics, effects on better trees and sustaining amenity

Ref: Barrell, Jeremy (1996)
Pre-development Tree Assessment
Proceedings of the International Conference on Trees and Building Sites (Chicago)
International Society of arboriculture, Illinois, USA

8.3 Appendix F Table 4 Determining Tree Retention Values

The Retention Value of a tree is increased or diminished based on its sustainability in the landscape, which is expressed as its SULE. A tree that has a high Landscape Significance Rating, but low remaining SULE, has a diminished value for retention and therefore has an appropriate Retention Value assigned. Conversely a tree with a low Landscape Significance Rating even with a long remaining SULE, is also considered of low Retention Value. This logic is reflected in the matrix shown in Table 1.

Once the landscape Significance Rating and SULE category have been determined, the following matrix can be used to determine a relative value (or priority) for retention:

TABLE 1 – DETERMINING TREE RETENTION VALUES

	Landscape Significance Rating						
SULE	1	2	3	4	5	6	7
Long - greater than 40 years	High Retention Value						
Medium - 15 to 40 years			Moderate Retention Value				
Short - 5 to 15 years				Low Retention Value			
Transient - less than 5 years				Very Low Retention Value			
Dead or Hazardous							

9 Appendix G Tree Protection specifications

Tree Protection Fencing (See Figure 5 below)

Tree protection is to be carried out on all trees to be retained on site.

All fencing should be at the perimeter of the Tree Protection Zone (TPZ).

The TPZ must be enclosed with a fully supporting chainmesh protective fencing. The fencing shall be secure and fastened to prevent movement. The fencing shall have a lockable opening for access. Roots greater than 30mm diameter are not to be damaged/severed during the construction of the fence. See Figure 5 Drawing taken from AS 4970-2009below.

The enclosed area must be free of weeds and grass, the application of a 75mm layer of leaf mulch to the tree protection zone (TPZ) must be maintained for the duration of works.

Two signs on either side of the fencing are to be erected showing the name and contact details of the site Arborist and the words NO ENTRY clearly written.

No work is to be undertaken within this Tree Protection Zone; this includes:

-No removal or pruning of trees

-No construction, stockpiling or storage of chemicals, soil, and cement. Or the movement of machinery, parking and personnel is to occur within the TPZ.

-No refuelling, dumping of waste, placement of fill or Soil level changes.

-No lighting of fires or physical damage to protected trees.

-No temporary or permanent installation of utilities or signs.

-No service trenches should pass through the TPZ, unless approved and supervised by the project arborist.

Example of tree protection fencing

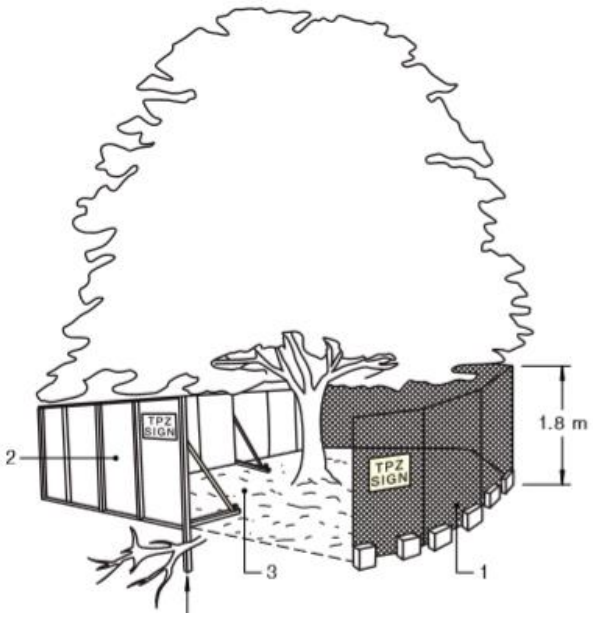


Figure 5 Drawing taken from AS 4970-2009

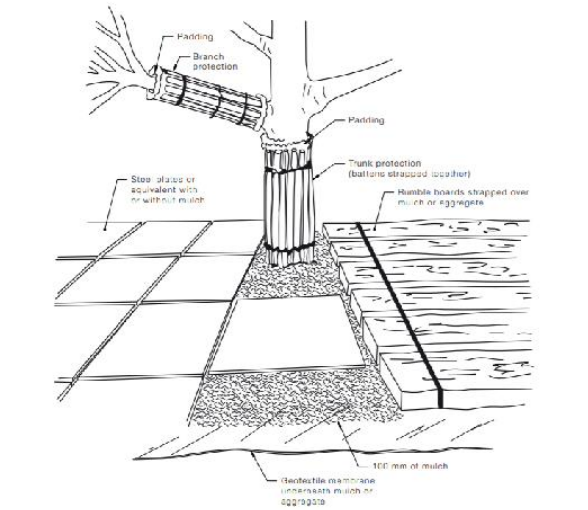


Figure 7 Trunk and branch Protection (AS 4970-2009)

Figure 6 Trunk Protection

Trunk/Branch Protection

Hessian or similar material is used as a wrap around the trunk/branch to a height of 2.6 metres from the base of the tree. Covering the hessian are timbers 100x50x2500mm These are to be spaced around the trunk with gaps of approximately 100mm. The timbers are to be secured with metal strapping. These materials are not to be directly fastened to the tree. See Figure 6 and Figure 7 above.

Ground protection

This is used to protect the Tree Protection Zone (TPZ) from soil compaction. Soil compaction reduces the available pore spaces within the soil, this reduces water holding capacity, oxygen and carbon dioxide diffusion. It can cause water to runoff the soil surface reducing infiltration. Over time the root system in a soil that is compacted (High Bulk Density) reduces in size. As the root system of a tree declines so does its canopy. When soil compaction is severe the entire tree can die.

Where scaffolding, foot traffic or wheelbarrow access is required. The soil surface should be covered by Geotextile fabric followed by plywood sheets 1.2 x 2.4 metres x 18mm thick and then covered by 100mm of mulch to provide a trafficable surface. Driveways or areas that will have heavy vehicles over the soil surface should have geotextile fabric, 100mm of mulch or gravel followed by sleepers 100x 200 x 3000mm. The sleepers are spaced 150mm apart and the gaps filled with gravel or mulch. The sleepers are then strapped together with hoop pine to prevent movement.

9.1 Installation of underground services

All underground services must be routed outside the TPZ of any protected tree. The project arborist must be consulted (or council if required in DA conditions) if works pass through the TPZ of any tree. Methods such as thrust boring/directional drilling or hand excavation, during supervision by the project arborist are methods that reduce impact to surrounding trees. These are acceptable methods under AS 4970-2009.

10 Qualifications and Experience

TRISTAN BRADSHAW

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Industry Licence AL1286-1

Professional Memberships

Member of the International Society of Arboriculture. No: 157768

Member of Arboriculture Australia No. 1286

Qualifications

2016-2018 Graduate Certificate in Arboriculture AQF8 at Melbourne University.

2015 Tree Risk Assessment Qualification (TRAQ)

2013-2014 Diploma of Arboriculture AQF5 at Ryde TAFE. Distinction

2012 Certificate III in Arboriculture at Ryde TAFE

2011 Certificate IV in Occupational Health and Safety

2010 Aboriginal Sites Awareness Course by Aboriginal Heritage Office

1996-1999 Bachelor of Horticultural Science at University of Sydney. Honours+

Tristan Bradshaw has been involved in the Horticultural and Arboricultural Industry since 1995. The business Bradshaw Horticultural Services was formed and incorporated Horticultural consulting work and landscaping. In 2000 Tristan undertook the Level 2 Arboriculture course at Ryde TAFE. The business progressively specialised in consulting, tree removal, pruning and stump grinding works. Extensive hands-on knowledge was developed during the climbing of trees undertaking pruning or removal and during storm events understanding the tolerances of trees.

In 2009 the new business name Bradshaw Tree Services was registered to reflect works only being undertaken in the tree industry. The business operated throughout Sydney employing up to 25 people. Tristan Bradshaw's main role was as a consultant advising clients and writing reports. In 2019 Bradshaw Tree Services ceased operations and Tristan Bradshaw began Bradshaw Consulting Arborists exclusively undertaking tree consultancy.

Tristan Bradshaw with continued education has attained a Level 8 qualification, attends the annual Arboriculture conferences taking part in the seminars to broaden his knowledge.

This assessment was carried out from the ground and covers what was reasonably able to be assessed and available to this assessor at the time of inspection. No subterranean inspections were carried out. The preservation methods recommended where applicable are not a guarantee of the tree survival but are designed to reduce impacts and give the trees the best possible chance of adapting to new surroundings.

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 or the original report is referenced in, and directly attached to that submission, report or presentation.

Assumptions:

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible: however, Bradshaw Consulting Arborists 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/s that was/were examined and reflects the condition of the tree at the time of the assessment: and
-The inspection was limited to visual examination of the subject tree without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree may not arise in the future.
-The assessment does not identify hazards and associated risk; this report is not a risk assessment.

Yours sincerely,

Tristan Bradshaw (BHort Sci (USYD), Dip Arb AQF 5 (TAFE), Grad Cert AQF 8 (UMELB), TRAQ