Arboricultural Assessment

Prepared for Winten No52 Pty Ltd
Site Address: 177-183 Greenwich Road Greenwich
6th December 2024

Date	Revision	Change	Stage
13/4/24	1	-	Planning Proposal
6/12/24	2	Plans	Planning Proposal

Member of Arboriculture Australia, Registered Consulting Arborist No. 1286

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 are no conflicts of interests 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 Winten No52 Pty Ltd for the property 177-183 Greenwich Road Greenwich. The report request was to inspect 42 trees throughout the property and surrounding properties.

The trees' characteristics have been listed in Table 1 page 6. The inspection of the site was undertaken on 4th April 2024.

The report was completed on 13th April 2024 and revision 2 on 6th December 2024.

See appendix B Section 8 for tree locations.

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

1.1 Scope

This is not an Arboricultural Impact Assessment; this report is designed to provide preliminary advice for the development of the property. Works undertaken include:

- Site inspection and place a metal tag on each tree allocating a number.
- Record species, trunk diameter, tree size, Health, condition, SULE, landscape value, retention value, SRZ, TPZ.
- Provide an impact assessment of the building footprint only.

1.2 The Site

The site is the combination of properties 177, 179, 181 and 183 Greenwich Road Greenwich. The majority of the trees are downslope of the buildings to the foreshore.

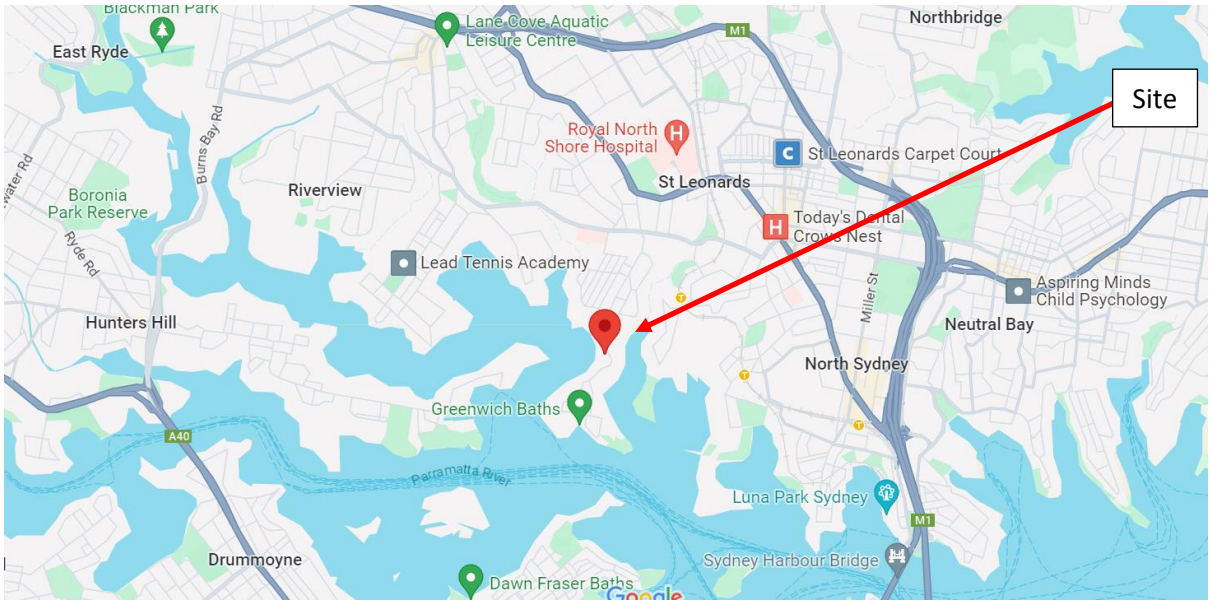

Figure 1 Site location (Google Maps 2024)

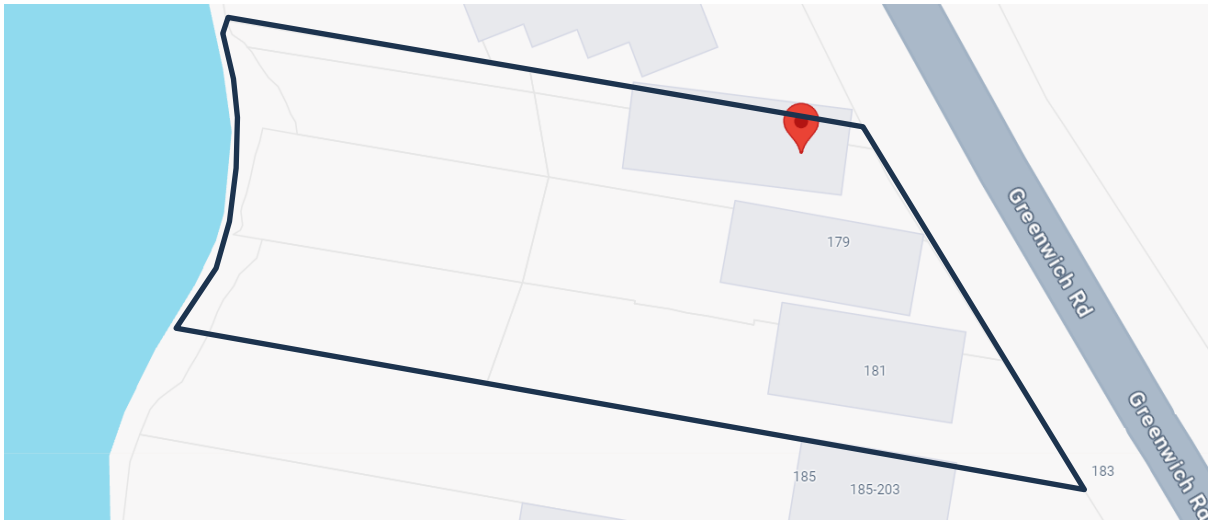

Figure 2 Tree assessment boundaries

1.3 Bushfire Constraints

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

1.4 Heritage Constraints

The property is not heritage listed or within a heritage conservation area.

1.5 Significant Tree Register

No trees are listed on a significant tree register.

1.6 Vegetation Type classifications and Biodiversity

The property is not mapped on the biodiversity values mapping See figure 1 below. The mapping is within the foreshore region.

Figure 3 Biodiversity Values Mapping

1.7 Plans used in this Assessment

Consultant	Company	Date	Revision
Survey	Norton Survey Partners	8/11/2023	
Planner	Kelyan Consulting	28/11/2024	

1.8 Method

The inspection of the site was undertaken on 4th April 2024.

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. Where access was restricted or prevented to a tree the DBH was estimated.

The height of the tree was estimated.

The canopy spread of the tree was estimated.

The positions of trees are based on a survey by a registered surveyor. The position of trees not included in the survey have been estimated and any impacts have been based of this estimated position.

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* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
1	*Juniperus* sp. (Juniper)	290	290	3	3	3	3	37	P	O M	P	5-15	No	Moderate	Low	2.0	3.5	Remove, poor health
2	*Melaleuca quinquenervia* (Broad Leafed Paperbark)	850	1000	4	4	4	4	11	G	O M	G	>40	No	High	High	3.3	10.2	Retain
3	*Plumeria rubra* (Frangipani)	300	300	3	3	3	3	7	G	M	G	>40	No	Moderate	Moderate	2.0	3.6	Remove
4	*Melaleuca quinquenervia* (Broad Leafed Paperbark)	770	1000	4	4	4	4	12	G	M	G	>40	No	High	High	3.3	9.2	Retain
5	*Callistemon viminalis* (Bottlebrush)	260	260	4	1	2	2	4	F	O M	F	<5	No	Moderate	Very Low	1.9	3.1	Retain
6	*Callistemon viminalis* (Bottlebrush)	200	200	2	2	2	2	4	G	S M	G	>40	No	Moderate	Moderate	1.7	2.4	Retain
7	*Cupressus torulosa* (Bhutan Cypress)	370	370	3	3	3	3	13	G	M	G	>40	No	Moderate	Moderate	2.2	4.4	Retain

Tree Number	*Botanical Name* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
8	*Celtis australis* (Hackberry)	600	600	10	10	10	10	16	G	M	G	>40	No	High	High	2.7	7.2	Retain and prune. Remove with neighbours consent
9	*Casuarina torulosa* (She Oak)	430	430	0	4	0	7	16	G	M	G	>40	No	Moderate	Moderate	2.3	5.2	Retain
10	*Largerstroemia indica* (Crepe Myrtle)	430	430	5	5	5	5	12	G	M	G	>40	No	Moderate	Moderate	2.3	5.2	Retain
11	*Celtis australis* (Hackberry)	424	600	5	3	5	5	14	G	M	G	>40	No	Moderate	Moderate	2.7	5.1	Remove, weed species
12	*Plumeria rubra* (Frangipani)	250	250	2	2	2	2	9	P	O M	P	<5	No	Moderate	Very Low	1.8	3.0	Remove
13	*Plumeria rubra* (Frangipani)	290	400	3	3	3	4	6	G	M	G	>40	No	Moderate	Moderate	2.3	3.5	Remove
14	*Brachychiton acerifolius* (Illawarra Flame Tree)	280	280	3	3	3	3	7	G	M	G	>40	No	Moderate	Moderate	1.9	3.4	Remove
15	*Juniperous chinensis* (Chinese Junipera)	700	700	5	5	5	5	7	P	O M	P	<5	No	Moderate	Very Low	2.8	8.4	Remove, poor health

Tree Number	*Botanical Name* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
16	*Glochidion ferdinandi* (Cheese Tree)	480	500	3	6	0	9	11	G	M	O	>40	No	Very High	High	2.5	5.8	Retain
17	*Glochidion ferdinandi* (Cheese Tree)	700	740	9	8	8	8	13	G	M	G	>40	No	Significant	High	2.9	8.4	Retain and prune
18	*Glochidion ferdinandi* (Cheese Tree)	440	460	6	0	0	8	11	G	M	F	>40	No	Very High	High	2.4	5.3	Retain
19	*Ligustrum lucidum* (Large Leafed Privet)	370	400	4	4	4	4	8	G	M	G	>40	No	Very Low	Low	2.3	4.4	Remove, weed species
20	*Persea americana* (Avocado)	300	300	5	5	5	5	6	G	M	G	>40	No	Moderate	Moderate	2.0	3.6	Remove
21	*Eriobotrya japonica* (Loquat)	250	260	3	3	3	3	7	G	M	G	>40	No	Low	Low	1.9	3.0	Remove, weed species
22	*Glochidion ferdinandi* (Cheese Tree)	650	670	5	5	4	5	13	G	M	G	>40	No	Very High	High	2.8	7.8	Retain
23	*Ligustrum lucidum* (Large Leafed Privet)	500	500	5	5	5	5	13	F	M	G	5-15	No	Very Low	Very Low	2.5	6.0	Remove, weed species

Tree Number	*Botanical Name* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
24	*Musa* sp. (Banana)	Multi	Multi	10	10	10	10	6	G	M	G	>40	No	Very Low	Low	-	-	Remove, weed species
25	*Jacaranda mimosifolia* (Jacaranda)	580	600	14	0	0	13	16	G	M	F	>15-40	No	High	High	2.7	7.0	Retain
26	*Brachychiton acerifolius* (Illawarra Flame Tree)	350	350	4	4	4	4	13	G	M	G	>40	No	Moderate	Moderate	2.1	4.2	Retain
27	*Glochidion ferdinandi* (Cheese Tree)	800	850	5	5	5	5	10	G	M	G	>40	No	Very High	High	3.1	9.6	Retain
28	*Glochidion ferdinandi* (Cheese Tree)	350	350	3	3	3	3	6	G	M	F	>40	No	Very High	High	2.1	4.2	Retain
29	*Angophora costata* (Smooth Barked Apple)	1050	1100	8	0	0	14	14	F	OM	F	>40	No	Significant	High	3.4	12.6	Retain
30	*Casuarina torulosa* (She Oak)	380	380	4	4	4	4	17	G	M	G	>40	No	Moderate	Moderate	2.2	4.6	Retain
31	*Ligustrum lucidum* (Large Leafed Privet)	350	350	4	4	4	4	9	G	M	G	>40	No	Very Low	Moderate	2.1	4.2	Remove, weed species

Tree Number	*Botanical Name* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
32	*Ligustrum lucidum* (Large Leafed Privet)	400	400	5	5	5	5	10	G	M	G	>40	No	Very Low	Low	2.3	4.8	Remove, weed species
33	*Jacaranda mimosifolia* (Jacaranda)	430	430	5	5	5	5	13	G	M	G	>40	No	Moderate	Moderate	2.3	5.2	Retain
34	*Glochidion ferdinandi* (Cheese Tree)	450	450	5	5	5	5	13	G	M	G	>40	No	Very High	High	2.4	5.4	Retain
35	*Ligustrum lucidum* (Large Leafed Privet)	400	400	5	5	5	5	12	G	M	G	>40	No	Very Low	Low	2.3	4.8	Remove, weed species
36	*Allocasuarina torulosa* (She Oak)	400	400	6	0	6	6	12	F	M	G	5-15	No	Moderate	Low	2.3	4.8	Retain
37	*Angophora costata* (Smooth Barked Apple)	480	480	5	0	0	5	12	G	M	P	5-15	No	Very High	High	2.4	5.8	Retain
38	*Brachyciton acerifolius* (Illawarra Flame Tree)	550	550	5	5	5	5	15	G	M	G	>40	No	Moderate	Moderate	2.6	6.6	Retain
39	*Jacaranda mimosifolia* (Jacaranda)	500	500	5	5	5	5	12	G	M	G	>40	No	Moderate	Moderate	2.5	6.0	Retain

Tree Number	*Botanical Name* (Common 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 metres)	Tree Protection Zone (TPZ metres)	Retain or Remove notes
40	*Lophostemon confertus* (Brush Box)	866	1200	6	6	6	6	15	G	M	G	>40	No	High	High	3.6	10.4	Retain
41	*Eucalyptus saligna* (Sydney Blue Gum)	480	480	5	5	5	5	18	E	M	G	>40	No	High	High	2.4	5.8	Retain
42	*Ficus macrocarpa* (Morton Bay Fig)	750	1000	10	10	10	10	13	E	M	E	>40	No	High	High	3.3	9.0	Retain

3 Discussion

42 trees have been included in this assessment.

Of the 42 trees assessed, trees 2, 4, 5 and 6 are located in the front road reserve. Trees 7, 9, 38, 39, 40, 41 and 42 are located on neighbouring properties and trees 1, 3, 10-37 are located on the property. Tree 8 has joint ownership with the owners of SP9361 at 175 Greenwich Road Greenwich.

Trees 2, 4, 5 and 6

These trees are located along the front road reserve. They will likely be retained due to setbacks providing adequate soil volume to maintain the current size and future growth of the trees. It is proposed these trees will be retained.

Trees 7, 9, 38, 39, 40, 41 and 42

These trees are located within the neighbouring adjoining properties. Proposed works are outside the TPZ of these trees. It is anticipated they will be unaffected by the proposed works and will be retained.

Tree 8

The tree has joint ownership because the trunk of the tree is located on the dividing boundary. This tree is an exempt tree species because of its undesirable as a weed. The species freely self-seeds throughout bushland and residential properties. A tree as large as this produces copious amounts of seed and its retention is not recommended as it would compromise the surrounding bushland and compromise efforts to return part of the block back to a revegetated forest. Should the neighbour not provide consent to remove the tree it can be retained and pruned when assessed against this design.

Trees 1, 3, 10-37

Trees 1 and 15 are in poor health they are proposed to be removed and replaced.

Trees 8, 11, 19, 21, 23, 24, 31, 32 and 35 are all exempt species. Although these trees are exempt species a Private Works tree application (Lane Cove Council) must be submitted for council to approve and confirm the removal of these trees.

Trees 3, 12 and 13 have been identified as *Plumeria rubra* (Frangipani). Tree 13 is within the building footprint and will have to be removed. Trees 3 and 12 are outside the building footprint but will likely be compromised by services and the requirement for access during the build. This species can be readily transplanted and incorporated back into the landscape during final works. It is however recommended that these trees are removed, and native trees and shrubs be chosen to replace it.

Tree 14 is outside the building footprint but will likely be compromised by services, retaining walls and the requirement for scaffolding and access. This tree is semi mature and should be replaced with native endemic trees and shrubs to compliment the revegetation works.

Trees 16, 17 and 18 have been identified as *Glochidion ferdinandi* (Cheese Tree) and are native endemic and likely remnant trees. They are of considerable value environmentally.

A deck and excavation is proposed within the TPZ of these trees. The deck is a raised structure, and the amount of excavation required is not clear to install the deck. A large portion of the canopy of tree 17 will require pruning and may involve lopping of part of the tree. While lopping is not compliant with AS4373-2007, it is recommended to retain tree 17. The group of trees can likely be retained provided there is no excavation within 6 metres of the trees. It is recommended the trees are retained.

Tree 20 is a small avocado of low retention value. It is recommended this tree be removed.

Trees 10 is unaffected by the proposal and will be retained.

There are many small trees mainly throughout the lower half of the property, these comprise of numerous exempt species such as Camphor Laurel <10 metres, Box Elder <6m, Silky Oak , 6m, Liquidambar <6 m, Hackberry, Loquat, Privet, Mulberry, Bananas and Oleander.

Any trees that are less than 4 metres in height, have a canopy spread of less than 5 metres or a trunk diameter less than 150mm do not require a permit from the council to remove. Should any tree be larger than this or listed as an exempt tree species, a private works application must be submitted.

4 Recommendations

1. Trees to be removed are 1, 3, 11, 12, 13, 14, 15, 19, 20, 21, 23, 24, 31, 32 and 35.
2. Trees to be retained 2, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 22, 25, 26, 27, 28, 29, 30, 33, 34, 36, 37, 38, 39, 40, 41 and 42.
3. Trees 8, 11, 19, 21, 23, 24, 31, 32 and 35 are exempt species but still require approval prior to removal by council. Tree 8 will need joint owners' permission to remove.
4. Silt fencing should be installed as soil runoff will occur after tree removal has been undertaken.
5. A bush regeneration consultant should be contacted to develop a management plan for the lower half of the property. This will limit soil runoff and the re-establishment of weed species.
6. Tree removal should be conducted by an Arborist with a minimum (Australian Qualification Framework) AQF level 3.
7. Work must be undertaken as per the Code of Practice Amenity Tree Industry 1998 and AS4373-Pruning of Amenity trees.
8. The tree removal/pruning process and staff should be skilled and undertake the removal of the tree as per the minimum industry standards.

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.
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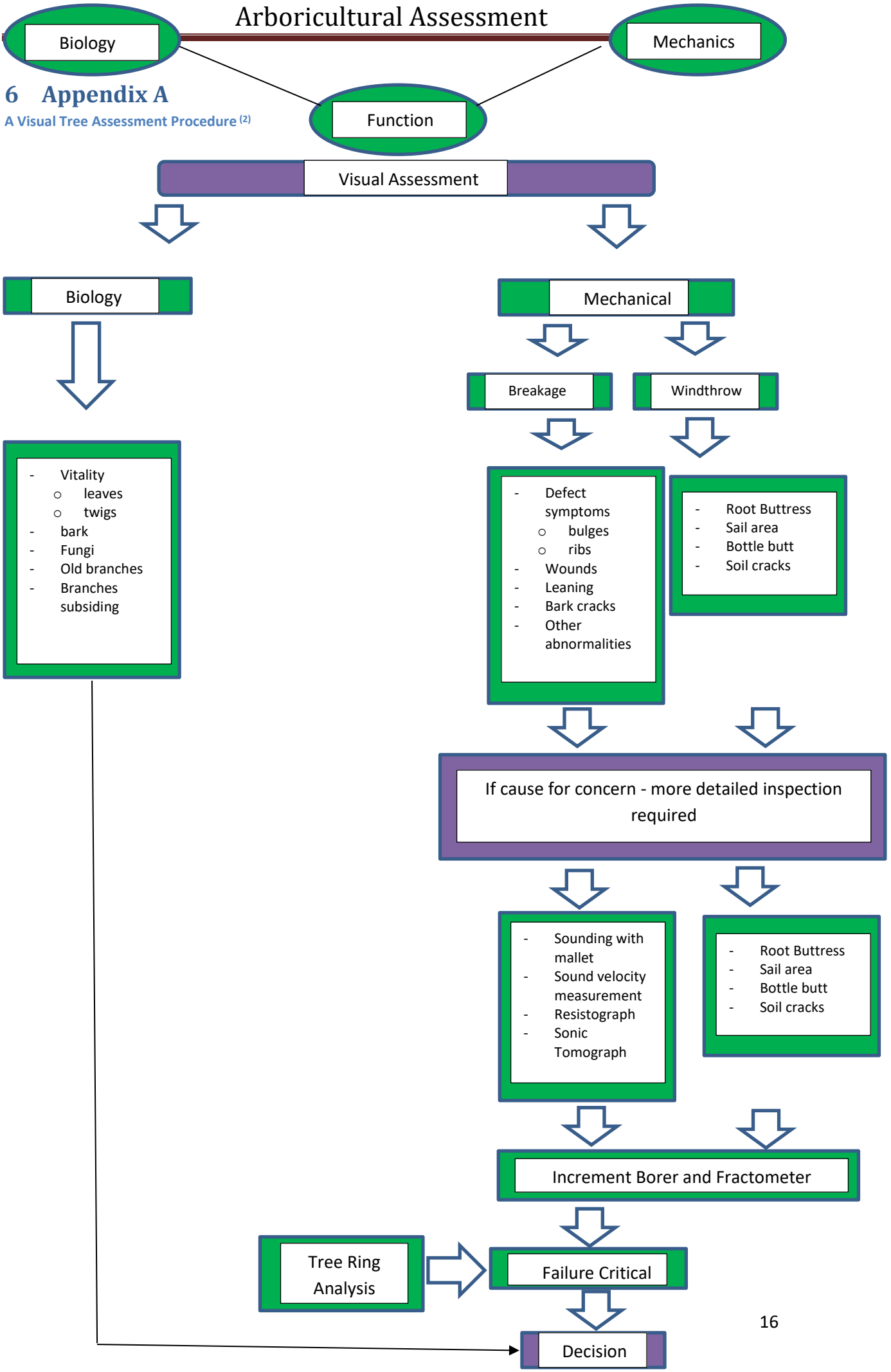
8. RFS 10/50. https://www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing/tool. Viewed 12th April 2024.

6 Appendix A

A Visual Tree Assessment Procedure [2]



7 Appendix B Tree locations (Not to scale)

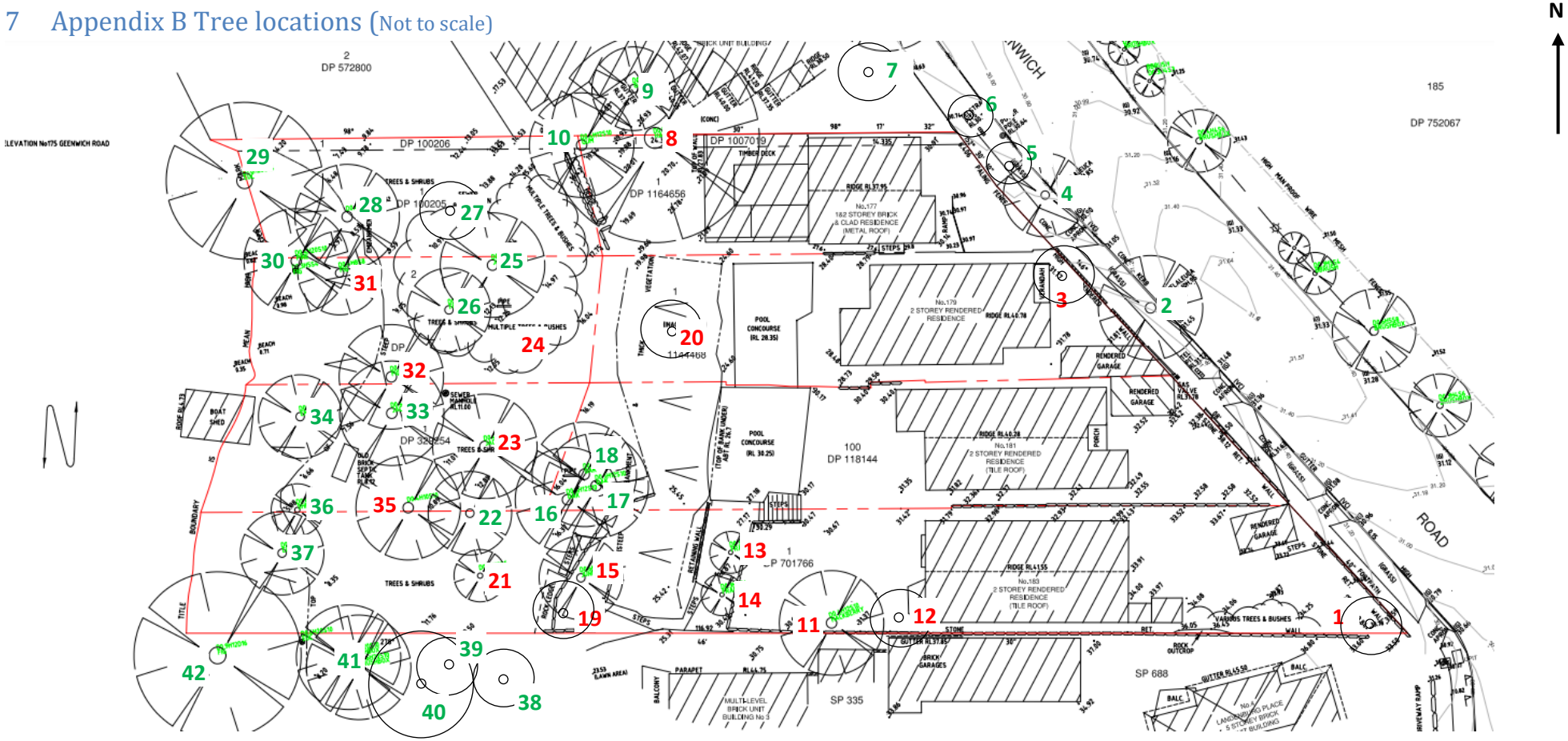


Table 1 Plan Legend

Requirement	Total	Tree Number	Legend
Trees to be removed	15	1, 3, 11, 12, 13, 14, 15, 19, 20, 21, 23, 24, 31, 32 and 35	Red
Trees to be retained	27	2, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 22, 25, 26, 27, 28, 29, 30, 33, 34, 36, 37, 38, 39, 40, 41 and 42	Green
Estimate tree positions	12	1,3,5,6,7,12,19,20,27,38,39,40	

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 Glossary of Terms

AGL: above ground level

Basal flare: the rapid increase in diameter that occurs at the confluence of trunk and root crown, associated with both stem and root tissue.

Canopy Spread: measure from one side of the tree to the other, the canopy spread of the tree was estimated.

Condition: refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. trunk and major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition.

Decay: is the result of invasion by fungal diseases through a wound.

Decline: is the response of the tree to a reduction of energy levels resulting from stress. Recovery from a decline is difficult and slow; is usually irreversible.

Diameter at Base (DAB): A measurement at the base of the tree above any significant swelling.

Diameter at Breast Height (DBH)[(4)]: refers to the tree trunk diameter at breast height (1.4 metres above ground level) Estimated

Dieback: refers to the withdrawal of energy by the tree from some areas of the crown. Symptoms are leaf drop, bare twigs, dead branches and tree death, in order of progression. This can be caused by root damage, root disease, severe bark damage, intensive grazing by insects, abrupt changes in growth conditions, drought, water logging or over maturity. Dieback often implies stress or decline.

Epicormic shoots: are sprouts produced from dormant buds in the bark. Production can be triggered by fire, pruning or root damage but may also be as a result of stress or decline.

Future: A time period of 12 months from the date of report. As described by the Land and Environment Court.

Hazard: refers to anything with the potential to harm health, life or property.

Height of tree: refers to the height of the tree from ground level to the highest point of the tree. This is estimated with the use of a clinometer.

Health: refers to the tree's vigour as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion, and the degree of dieback. Listed as Excellent, Good, Fair or Poor.

Inclusion: See weak junctions

Sparse crown: refers to reduced leaf density, often a precursor to dieback and may imply stress or decline. Also, possibly a response to drought or root damage.

Topping: or heading is a pruning practice that results in removal of terminal growth leaving a cut stub end. Topping causes serious damage to the tree.

Weak junctions: are points of possible failure in the scaffold. They are usually caused by the trunk or branch bark being squeezed within the junction so that the necessary interlocking of the wood fibres does not occur, and the junction is forced open by the annual increments in growth. This is often a genetic problem.

Weed species: are plants that are known to invade native remnant bushland. The species concerned may be exotic or may be native species from other parts of Australia.

Wounds: are areas where the bark has been damaged by branch breakage, impact or insect attack. Some wounds decay and cause structural defects or weakness. Healthy trees are able to resist and contain infection by walling off areas within the wood. Tree wounds are often eventually covered over by new bark but the walled off or infected areas still remain internally and may lead to weakness of the heartwood.

10 Qualifications and Experience

TRISTAN BRADSHAW

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Professional Memberships

Member of the International Society of Arboriculture. No: 157768

Member of Arboriculture Australia No. 1286 (Certified Practicing Consulting Arborist)

Qualifications

2022 Tree Risk Assessment Qualification renewal (TRAQ) held since 2015.

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

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