Travers

bushfire & ecology

Arboricultural Impact Assessment Report

Chatswood Golf Leisure Resort
128 Beaconsfield Rd, Chatswood

November 2020
REF: (19WRL02T)

Arboricultural Impact Assessment Report

Chatswood Golf Leisure Resort
Part Lot 163 DP 752067, Part Lot 1 DP 651667, Part Lot 1 DP 1124646
& Part Lot 22 DP 626634
128 Beaconsfield Road, Chatswood

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Disclaimer:

This report has been prepared to provide advice to the client on matters pertaining to the particular and specific development proposal as advised by the client and / or their authorised representatives. This report can be used by the client only for its intended purpose and for that purpose only. Should any other use of the advice be made by any person, including the client, then this firm advises that the advice should not be relied upon. The report and its attachments should be read as a whole and no individual part of the report or its attachments should be interpreted without reference to the entire report.

The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

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Executive Summary

This arboricultural impact assessment report has been prepared by *Travers bushfire & ecology* to assess the condition and significance of trees and to determine the effect that the proposed development (as provided in the masterplan issued by *Marchese Partners* on 12th February 2020) will have on existing trees within the proposed Chatswood Golf Leisure Resort within Part Lot 163 DP 752067, Part Lot 1 DP 651667, Part Lot 1 DP 1124646 & Part Lot 22 DP 626634, at 128 Beaconsfield Road, Chatswood in the Willoughby local government area (LGA).

The proposal involves the construction of a seniors living development consisting of one hundred and six (106) Independent Living Units (ILU's), new clubhouse facility and associated parking to replace the existing club house and parking facilities.

This tree assessment report has been prepared in accordance with Australian Standard *AS4970 (2009) – Amendment No. 1 2010*. A safe useful life expectancy (SULE) was conducted to assess condition of each tree on 14 February, 2019.

Health of trees

An assessment of all trees equal to or greater than 15cm diameter at breast height (DBH) was undertaken. Three-hundred and nine (309) trees were assessed within the site.

It is noted that the SULE assessment identifies that two-hundred and twelve (212) of the observed trees (68.61%) had a SULE condition rating of 1 or 2 (good condition). Twenty-two (22) trees assessed (7.12%) had a SULE rating of 3a or 3c indicating that for 3a that it is a tree predicted to only live between 5–15 years, and for 3c that it is a tree that may live for more than fifteen (15) years but should be removed to prevent competition with more suitable individuals. The remaining seventy-five (75) of the assessed trees (24.27%) had a SULE rating of 3b or 4, that is, in poor condition.

The breakdown is as follows:

- trees with very poor SULE rating (3b, 4a-4f) – 75/309 trees = 24.27%,
- trees with a mediocre SULE rating (3a or 3c) – 22/309 trees = 7.12%
- trees with a good SULE rating (1-2) – 212/309 = 68.61%

These results indicate that the trees within the study area are in a generally fair to good condition.

It is considered that the current low-rainfall climatic conditions are placing the trees under a high level of water stress and this is likely to have a negative impact on their appearance and condition. A poorer SULE rating than would otherwise be the case may have been allocated to each tree. A year of good rainfall may improve overall tree health.

Tree protection zones (TPZ) are to be implemented for any retained tree in accordance with Australian Standard *AS4970* (Section 4 of this report). This report defines the structural root zone (SRZ), tree protection zone (TPZ) and other protection measures required for trees to be retained in accordance with Australian Standard *AS4970*.

Removal of trees to facilitate the development

This assessment found that one-hundred and fifty (150) trees will need to be removed for the development which includes ILUs, roads, parks, paths, retaining walls and landscaping. This number includes trees being removed due to excessive impacts to either their TPZ or SRZ. A further fifty-four (54) trees have been assigned a poor SULE rating (3b or 4a-f), indicating that these trees pose a significant risk to life and property and are therefore recommended for removal.

Trees removed for the development (includes ILUs, roads, parks & gardens, paths, earthworks, retaining walls, carparks and landscaping)	150	48.54%
Trees removed to create a bushfire Asset Protection Zone (APZ)	34	11.00%
Trees removed for very poor condition (SULE 3b and 4a-f)	54	17.48%
Trees retained (15 will need pruning for APZ purposes)	71	22.98%
Total	309	100%

Significance of trees

Travers bushfire & ecology has assessed the significance of trees, based on four categories (a) threatened species status, (b) visual significance, (c) habitat and (d) heritage conservation significance.

Trees are also assessed using a rating system to establish the importance of a particular tree present on the site. This rating system ensures consistency, and eliminates bias. The IACA significance of a tree, assessment rating system (STARS) utilises qualitative criteria to determine the retention value for a tree.

The native trees present within the proposed impact area are not commensurate with any endangered ecological community (EEC) under the NSW *Biodiversity Conservation Act 2016 (BC Act)*.

Fifty-three (53) trees within the study area are visually prominent trees primarily due to their size and being ‘larger than most’ of the trees observed in the locality.

Thirteen (13) hollow-bearing trees were recorded present within the tree assessment study area. A further six (6) hollow-bearing or habitat trees were plotted during the separate fauna survey which extended past the survey area for this Arboricultural Impact Assessment. Data for each of the nineteen (19) habitat trees plotted in the combined surveys are provided in Table 3.1 within Section 3.4 of this report.

Schedule 5 (Register of Environmental Heritage) of the Willoughby Local Environmental Plan (LEP) 2012 does not list any trees of heritage conservation significance within the vicinity of the study area. Trees may however be included into a tree significance register if the specimen displays cultural, historic, scientific and / or aesthetic value. No trees present on site are considered appropriate for nomination to the significant tree register.

List of abbreviations

AS 1319	Safety signs for the occupational environment
AS 4970	Protection of trees on a development site
APZ	asset protection zone
BC Act	*Biodiversity Conservation Act 2016*
BPA	bushfire protection assessment
CEEC	Critically endangered ecological community
CRZ	critical root zone
DBH	Diameter at breast height
DCP	Development Control Plan
DOEE	Commonwealth Department of Environment & Energy
EEC	endangered ecological community
EP&A Act	*Environment Protection and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act*
ha	hectares
HTA	habitat tree assessment
IPA	inner protection area
LEP	local environment plan
LGA	local government area
m	metres
NES	national environmental significance
OPA	outer protection area
PBP	*Planning for bush fire protection 2006*
SRZ	structural root zone
SULE	safe useful life expectancy
TPO	tree preservation order
TPZ	tree protection zone
TRRP	tree retention and removal plan
TSC Act	*Threatened Species Conservation Act 1995*

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Attached Schedules

Background 1

This arboricultural impact assessment report has been prepared by *Travers bushfire & ecology* to assess the condition and significance of trees and to determine the effect that the proposed development will have on existing trees within the proposed Chatswood Golf Leisure Resort within Part Lot 163 DP 752067, Part Lot 1 DP 651667, Part Lot 1 DP 1124646 & Part Lot 22 DP 626634, at 128 Beaconsfield Road, Chatswood in the Willoughby local government area (LGA).

The area subject to detailed tree survey effort is identified in Figure 1 and will hereafter be referred to as the 'study area'. This study area is commensurate with the extents of the required bushfire asset protection zones (APZs).

Figure 1 – Tree assessment area

Survey Methods 2

2.1 Tree survey and condition assessment

Tree survey and assessment of the study area was conducted on 4 to 6 February, 2020. Tree inspections and assessment were undertaken in accordance with Mattheck and Breloer's Visual Tree Assessment (VTA) methodology.

Reference: Mattheck, C. and Breloer, H (1994) The Body Language of Trees - A handbook for failure analysis. HMSO, London.

The aim of this impact assessment is to assess the condition and significance of trees within the study area, to map their locations and to determine the effect that the proposed development will have on existing trees.

The following survey and assessments were undertaken:

- a tree condition assessment
- a health assessment (SULE rating) of the trees
- an AZ rating for each tree
- plotting the location of each tree using a handheld differential GPS unit
- an assessment of the significance of individual trees
- compilation of this report detailing the results of the above assessments.

Only trees with diameter at breast height (DBH) of 15cm or greater were assessed. The tree assessment data is provided within Schedule 1, the location and number of each tree is shown in Schedule 2 (and three separate zooms) and a description of terminology used is provided as Schedules 3 and 4.

The management requirements for maintaining safe trees (pruning, thinning etc.) were also considered in determining the health rating, therefore health ratings given to trees within this report assumes that appropriate maintenance will be provided by a qualified arborist during the life of the assessed trees. Incorrect or absent tree maintenance can significantly accelerate tree decline and increase hazard potential.

2.2 Identification of tree species

Tree identification was based on visual inspection of features available at the time of inspection. For any unidentifiable species a qualified and experienced botanist is utilised to confirm the tree identification. In some cases exotic species were able to be identified to family name only. Samples may be sent off to the Royal Botanic Gardens should a potential threatened or rare species be present and where the identification is not clear. Further samples may be required during flowering and fruiting seasons of the tree to confirm the identification.

2.3 Structural faults and decay

Visible evidence of structural defects and evidence of decay is briefly assessed during tree inspections. Structural defects are categorised into (Matheny & Clark 1994):

- root defects – including but not limited to suspected root rot, root exposure, root pruning or restriction

- trunk defects – including but not limited to evidence of decay, structural damage, *Phytophthora* and bracket fungi, excessive lean, borer damage, hollows, cracks, deadwood and multiple attachments

- crown defects - including but not limited to poor taper, bow or sweep, forks, multiple attachments, excessive end weight, cracks, splits, hangers, girdling, wounds, decay, cavities, conks, mushroom or bracket fungi, bleeding / sap flow, hollows, deadwood, borers, termites, ants, cankers, balls, burls and previous failures.

Visible evidence of structural defects or decay are noted during inspections however we advise that the individual trees require detailed assessment if they are located or are to be retained in close proximity to buildings or proposed works.

Overall tree health is an indicator of the life of the tree but sometimes hidden structural defects or decay can cause immediate structural failure when a tree is stressed due to high winds or other impacts.

Structural defects or decay are not always visible from the exterior and may only become evident after damage has been caused. In the event that structural faults are detected, such as caused by hollows, fungal or termite attack, then internal diagnostic testing of the structural integrity of trees is recommended.

Internal Diagnostic Testing (IDT) can be undertaken by *Resistograph*® to determine the trees structural integrity by measuring the location, extent and positioning of internal decay at the defects detected.

Travers bushfire & ecology advises that specialist advice should be sought for any trees in close proximity to any proposed works, or if a structural assessment is required to determine the extent of structural faults and decay for tree retention or removal purposes.

Survey results 3

A total of three-hundred and nine (309) trees with a DBH greater than 15cm were assessed within the study area (see Schedule 1). Trees were numbered T001, T002, T003, etc., and a metal tag embossed with the tree number was placed on the trunk for re-identification during future works.

3.1 Threatened ecological communities (TECs)

The following vegetation communities were identified within the Biodiversity Development Assessment Report (*Travers bushfire & ecology* 2020) through ground truthing. Threatened ecological communities are denoted with 'TEC'. There were no threatened ecological communities observed within the study area.

- PCT 1778 – Smooth-barked Apple - Coast Banksia / Cheese Tree open forest on sandstone slopes on the foreshores of the drowned river valleys of Sydney (Zones 1 & 2)
- Planted native vegetation (Zone 3)
- Planted exotic vegetation

An assessment of impacts to native or other vegetation and fauna species has been undertaken within the Biodiversity Development Assessment Report (*Travers bushfire & ecology* 2020).

3.2 Council's significant tree register

Schedule 5 (Register of Environmental Heritage) of the Willoughby Local Environmental Plan (LEP) 2012 does not list any trees of heritage conservation significance within the vicinity of the study area. Trees may however be included into a tree significance register if the specimen displays cultural, historic, scientific and / or aesthetic value. No trees present on site are considered appropriate for nomination to the significant tree register.

3.3 Visually prominent trees

Fifty-three (53) trees within the study area are visually prominent trees primarily due to their size and being 'larger than most' of the trees observed within the locality. A total of twenty nine (29) or 55% of the visually significant trees will be removed within the proposed development, due to their location within or in close proximity to the development footprints or due to poor health. Given the presence of trees comparable in size throughout the wider locality, the removal of these trees is not likely to be significant for local amenity and ecological reasons. If any of these trees are desired to be retained, an AQ5 qualified arborist must be engaged to determine the feasibility of retention.

3.4 Hollow-bearing trees

Nineteen (19) hollow-bearing trees were recorded within or adjacent to the tree assessment study area within the Biodiversity Development Assessment Report (*Travers bushfire and ecology* 2020). Data for each of these trees is provided in the table below and mapped within the Biodiversity Development Assessment Report (*Travers bushfire & ecology* 2020). Of the thirteen (13) habitat trees assessed in this arboricultural assessment, a total of three (3) are to be removed due to the impacts of the proposed development.

Table 3.1 – Habitat tree data

Tree No	Scientific Name	Common Name	DBH (cm)	Height (m)	Spread (m)	Vigour (%)	Hollows & Other Habitat Features Recorded	Retained or Removed
HT1 *T028*	*A. costata*	Smooth-barked Apple	29	14	9	75	1x 5cm branch spot 1x 10-15cm trunk hollow Scratches on trunk	Retained
HT2 *T059*		Stag	17	18	3	0	1x 5cm branch spout	Retained
HT3 *T112*	*A. costata*	Smooth-barked Apple	43	22	15	75	2x 10-15cm branch sprouts Scratches on trunk	Retained
HT4 *T116*	*E. piperita*	Sydney Peppermint	34	17	9	65	1x 5-10cm trunk split 3m long	Retained
HT5 *T113*		Stag	34	9	6	0	1x 5cm base hollow 2x 5-10cm ant nest hole 1x 10-15cm branch spout	Retained
HT6 *T114*	*E. piperita*	Sydney Peppermint	47	19	14	65	1x 5cm trunk hollow 1x 5-10cm trunk split Wear on bark around hollow	Retained
HT7 *T115*		Stag	18	8	1	0	1x 5-10cm branch spout 1x 5-10cm hollow split	Retained
HT8	*A. costata*	Smooth-barked Apple	65	22	18	55	1x 10-15cm branch split 1x 20-30cm trunk split 1x 20-30cm trunk hollow	Retained
HT9		Stag	67	20	4	0	1x 10-15cm branch spout 1x 30-40cm trunk hollow Sulphur-crested Cockatoo nest tree	Retained
HT10 *T162*		Stag	41	8	3	0	1x 10-15cm trunk split 1x 15-20cm branch spout	Removed
HT11 *T004*		Stag	37	18	3	0	1x 10-15cm trunk hollow	Retained
HT12 *T050*	*E. piperita*	Sydney Peppermint	19,25, 28	18	8	55	3x 5cm trunk hollows	Retained
HT13 *T273*		Stag	15,17	10	4	0	2x 5cm trunk hollows 1x 5cm Ant nest hollow	Removed
HT14 *T293*	*E. racemosa*	Narrow-leaved Scribbly Gum	0	0	0	0	1x 5-10cm branch spout Scratches on trunk	Retained
HT15 *T295*	*A. costata*	Smooth-barked Apple	0	23	13	75	2x 5-10cm branch spouts 1x 5-10cm trunk split Scratches on trunk	Removed
HT16		Stag	65	9	1	0	2x 5cm trunk hollows 1x 5cm trunk split	Retained
HT17	*E. piperita*	Sydney Peppermint	78,74	22	18	0	2x 5-10cm trunk splits	Retained
HT18	*E tereticornis*	Forest Red Gum	135	22	19	75	2x 15-20cm trunk split 1x 15-20cm branch spout	Retained
HT19	*E racemosa*	Narrow-leaved Scribbly Gum	27,32	9	6	55	1x 20-30cm open trunk	Retained

3.5 SULE rating

An assessment of the attributes and health of each tree is contained in Schedule 1. Where trees have been downgraded with respect to health, a comment as to the reasons for the downgrade is generally provided.

A summary of SULE results in provided in the following table:

Table 3.2 – Summary of SULE ratings

SULE rating	No. of trees assessed	Proportion of trees assessed
1a	10	3.24%
1b	10	3.24%
1c	1	0.32%
2a	161	52.10%
2b	5	1.62%
2c	5	1.62%
2d	20	6.47%
3a	13	4.21%
3b	17	5.50%
3c	9	2.91%
3d	-	-
4a	44	14.24%
4b	-	-
4c	12	3.88%
4d	2	0.65%
4e	-	-
4f	-	-
TOTAL	309	100%

Twenty-one (21) of the observed trees (6.80%) had a SULE condition rating of 1, indicating good condition trees.

One-hundred and ninety-one (191) of the observed trees (61.81%) had a SULE condition rating of 2. These trees are in good condition and are retainable for 15-40 years with an acceptable level of risk.

There were seventy-five (75) trees (24.27%) with significant structural weaknesses such as heavily leaning trunk, exposed decaying wood or the presence of borers or termites in the trunk. These trees subsequently received a SULE rating of 3b or 4a-f, as indicated in Schedule 1, and are in poor condition and should be removed due to the safety risk that they pose.

Twenty-two (22) other trees of lower health or vigor, or with less significant damage or instability have been given a SULE of 3a or 3c as they tend to have potential safety concerns now or in the near future, despite the potential for them to remain alive for up to fifteen (15) years or more.

Various other defects related to poor health were observed for different trees and generally, where the health of a tree has been downgraded the reasons are provided in the comments column in Schedule 1.

Tree Removal & Impacts 4

4.1 Removal of trees due to development

The development is sited in an area with moderately dense patches of trees, therefore the removal of trees for development is required. The option for tree removal needs to consider the TPZ and SRZ for all trees in close proximity to the development and associated works. Site development includes construction of ILUs, roads, cut and fill, services, retaining walls footpaths, parks and carparks that need to be taken into consideration. Trees that will have their TPZ impacted by more than 10% as listed in the Australian Standard *AS4970 (2009) – Amendment No. 1 2010* will not be retained. In total, one-hundred and fifty (150) trees (48.54%) are proposed for removal by the development and associated works.

4.2 Removal of trees due to condition

Trees assessed with a SULE rating of 3b and 4a-4f are generally recommended for removal based on a short life expectancy, and because they are dangerous or in a very poor condition. This is particularly the case for trees in close proximity to adjoining structures, site assets or pose a significant risk to people. Trees with ratings of 2b, and 3a may occasionally be recommended for removal also.

A total of fifty-four (54) trees are recommended for removal on the basis of their poor condition and/or long-term unsustainability, that is typically trees with a SULE 3b or 4a-f that are dead, dangerous or a nuisance (removal is recommended regardless of the proposed development).

4.3 Impact assessment

The following table is a summary of trees proposed for removal:

Table 4.1 – Trees to be removed

Trees removed for the development (includes ILUs, roads, parks & gardens, paths, earthworks, retaining walls, carparks and landscaping)	150	48.54%
Trees removed to create a bushfire Asset Protection Zone (APZ)	34	11.00%
Trees removed for very poor condition (SULE 3b and 4a-f)	54	17.48%
Trees retained (15 will need pruning for APZ purposes)	71	22.98%
Total	309	100%

Willoughby City Council has a significant heritage register at the following website:

https://www.legislation.nsw.gov.au/#/view/EPI/2012/679/sch5

There are no heritage listed trees on this schedule that are located in the locality, as such, the proposal will not impact any listed significant trees.

Thirteen (13) hollow-bearing trees were observed within the study area during the tree survey. An additional six (6) hollow bearing trees were observed in proximity to the tree survey area during the fauna survey undertaken for the BDAR (*Travers bushfire and ecology* 2020) (see Table 3.1).

A total of three (3) hollow bearing trees are proposed for removal due to the development, the required APZ, or due to poor health. Any tree with a hollow that is identified for removal will require supervision by a fauna ecologist at the time of removal to effectively recover and relocate any residing fauna, particularly threatened species, if present.

For all trees that are to be retained, it is recommended that TPZs are to be implemented for any retained tree in accordance with Australian Standard *AS 4970* (refer to section 5.1 of this report).

Fifteen (15) trees within the bushfire asset protection zone (APZ) will be retained but will require some lopping of branches to achieve a 2 metre separation from the crowns of adjoining trees (see Schedule 1 – Tree Data Table)

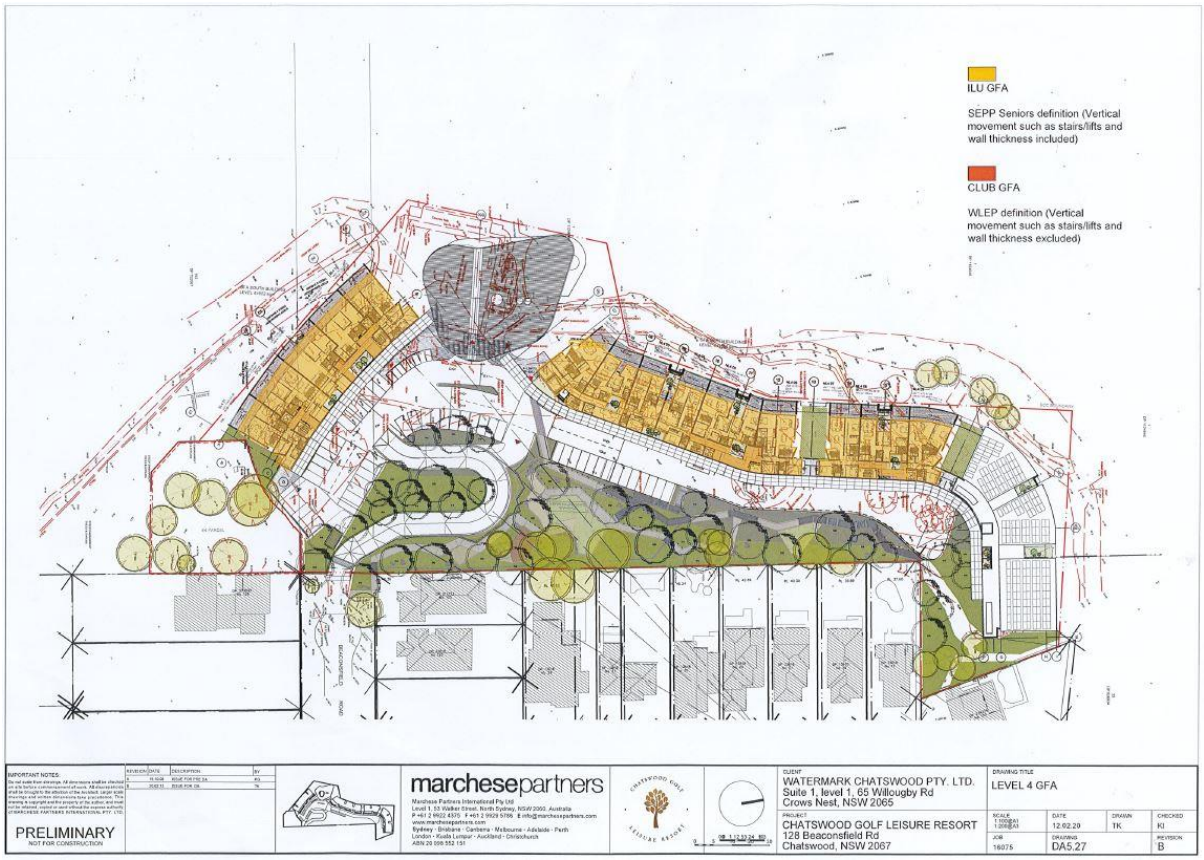


Figure 2 - Proposed landscapers tree removal and retention plan (TO BE UPDATED / REPLACED)

Tree Protection Guidelines 5

The following sections provide guidance as to the expected TPZs required for trees to be retained within or in proximity to any development site (either in the staged or ultimate development scenario), or affected by associated works. TPZs consist of:

(a) Tree protection zone (TPZ) which aims to protect the full extent of the tree, and
(b) Structural root zone (SRZ) which aims to define the critical root zone (CRZ) for the tree without causing fatal damage to the tree.

These are generic guidelines and any tree specific advice and management is required to assess impacts on trees that are affecting more than 10% of the tree protection zone or have suspected structural damage.

5.1 Tree protection measures

To determine the SRZ and TPZ, the following is applied in accordance with Australian Standard *AS 4970 – 2009 – Amendment 1-2010.*

The tree protection zone (TPZ) radius is measured by the DBH x 12 (Australian Standard *AS 4970* – 2009), where the DBH is the trunk diameter measured at 1.4m above the ground. A TPZ should not be less than 2m or greater than 15m (except where crown protection is required). Clause 3.3 covers variations to the TPZ. The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1m outside the crown projection.

The structural root zone (SRZ) is the area which is required to maintain a tree's stability. The SRZ is measured as:

SRZ radius = $(BD \times 50)^{0.42} \times 0.64$ where BD is the basal trunk diameter, in metres, measured above the root buttress. If BD is 50cm, then the SRZ would be 2.47m.

During the survey, DBH was measured for each tree to allow for TPZ to be calculated should the tree be retained as part of the future landscaping.

Table 5.1 – Estimated TPZ for trees

DBH (cm)	TPZ (m)
15	2.0 (min)
20	2.4
25	3
30	3.6
35	4.2
40	4.8
45	5.4

Table 5.1 – Estimated TPZ for trees

DBH (cm)	TPZ (m)
50	6
55	6.6
60	7.2
65	7.8
70	8.4
75	9
80	9.6
85	10.2
90	10.8
95	11.4
100	12
105	12.6
110	13.2
115	13.8
120	14.4
150	15 (max)
200	15 (max)
250	15 (max)

Table 5.2 – Estimated SRZ for trees

BD (cm)	SRZ (m)
15	1.49
20	1.68
25	1.85
30	2
35	2.13
40	2.25
45	2.37
50	2.47
55	2.57
60	2.67
65	2.76
70	2.85
75	2.93
80	3.01
85	3.09
90	3.17
95	3.24
100	3.31
105	3.38
110	3.44
115	3.51

120	3.57
150	3.92
200	4.43
250	4.86
300	5.25

The SRZ and TPZ calculated for each of the trees assessed within the study area are provided in Schedule 1.

When working in close proximity of any tree to be retained or the nominated TPZ located within or adjacent to potential development areas, the following general management principles should be adopted:

- earthworks around subject trees are to be undertaken in the presence of an AQ5-certified arborist who may provide additional on-site advice
- machine digging within the root mass of the subject tree (or trees) is to be minimised and, where possible, replaced by hand digging
- any exposed roots of the subject tree should be wrapped and protected during exposure and be replaced in a similar position prior to disturbance
- inspection of retained trees by an AQ5-certified arborist should be conducted at 3, 6, 9 and 12 months and then annually to 3 years after development completion.

Any retained tree on site will require protection both during and after development construction, applying the following tree protection guidelines:

The following guidelines are proposed in relation to any trees that may be retained within or adjacent to the proposed works area:

i. Installation of a TPZ will be required surrounding any retained tree or group of trees. This TPZ can generally be provided by preserving an area equivalent to that shown in Schedule 1. A SRZ will apply to all retained trees in close proximity to work areas. No more than 10% of the TPZ should be impacted by earthworks with no infiltration into the SRZ. The TPZ is to be compensated elsewhere on the impacted tree to compensate for the loss of small areas of the TPZ. This is achieved by increasing the TPZ to an equivalent area to the area of impacted TPZ (Figure 2).

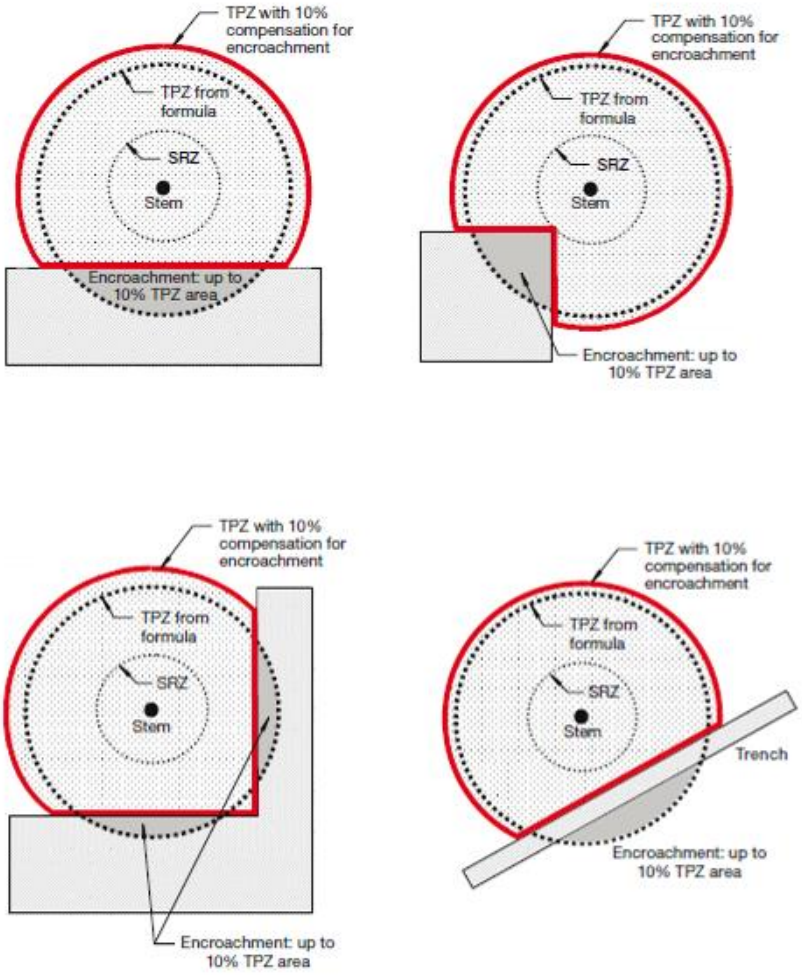


Figure 2 - Minor encroachment on TPZ and 10% compensation for encroachment
(source: AS 4970-2009)

ii. Trees to be retained, and in close proximity to any works, are to be protected by temporary fencing. Such temporary fencing can be constructed from plastic mesh, post and wire or temporary chain link fence panels. All fence posts and supports are to be located clear of the roots and have sufficient strength to support the fence without bending or collapsing. TPZs in close proximity to proposed works are to be marked and sign-posted. The protection fencing is not to be removed or altered without the approval an appointed arborist. TPZ fencing is to be inspected on a regular basis and maintained in good condition.

iii. All trees nominated for removal are to be removed only after the temporary fencing of the trees to be retained has been completed and prior to any construction activity or bulk earthworks. Approved tree removal operations in the vicinity of retained trees are to be undertaken in a manner that avoids canopy or root damage and / or soil compaction to any TPZ associated with any retained tree. Such works should be supervised by a qualified arborist.

iv. Stumps are to be ground not dozed or dug out unless they impact on the installation of services, roads or building works.

v. All excavation including but not limited to trenches, footings and major earth movement are to be avoided within TPZs.

vi. Stockpiling materials and soils within TPZs is to be avoided.

vii. All machinery and vehicles are to be excluded from TPZs during all operations.

viii. Where the proposed works are likely to cause excessive dust generation, the tree is to be protected with shade cloth on the tree protection fence to minimise dust collection on the leaves.

ix. The following activities prohibited within TPZs includes but are not limited to:

- machine excavation (including trenching)
- excavation for silt fencing
- cultivation
- storage
- preparation of chemicals, including cement products
- parking of vehicles or plant
- refuelling
- dumping of waste
- refuelling
  wash down or cleaning of equipment
- placement of fill
- lighting of fires
- soil level changes
- temporary or permanent installation of signs
- Physical damage to trees.

x. Any works undertaken within TPZs are to be supervised and certified (photographed and documented) by a qualified arborist.

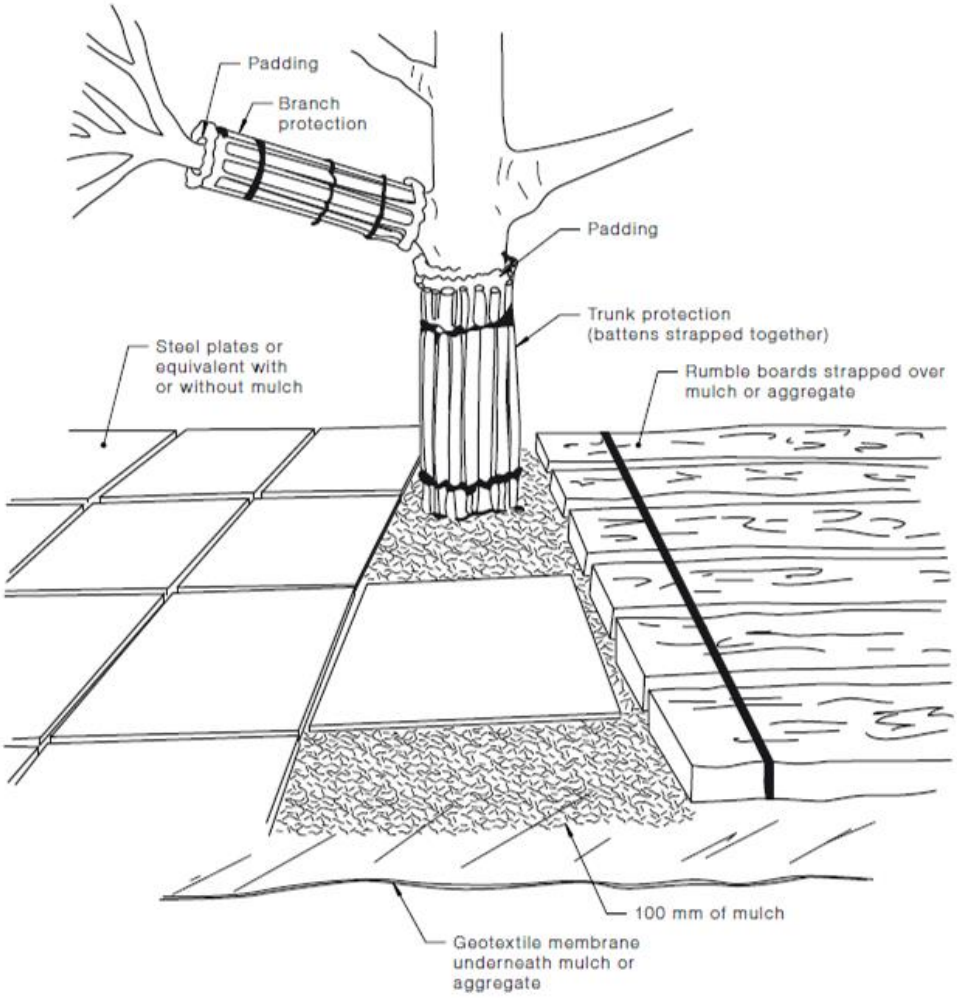
xi. Where advised by the arborist, trunk and branch protection (Figure 3) is to be installed to a minimum height of 2m using materials and positioning as advised by an appointed arborist.

xii. Where advised by the arborist, other temporary root protection measures (Figure 3) such as thick mulch (50-100mm deep) or crushed rock below rumble boards, are to be installed to prevent root damage and soil compaction within the TPZ.

xiii. Scaffolding is to be erected outside of the TPZ, where unavoidable, protection measures are to be specified by the appointed arborist.

xiv. All services are to be routed outside of the TPZ. Where not possible the arborist will specify directional drilling (at least 600mm deep) or manual excavation to avoid impacted on the insitu roots subject to the works and potential root damage.

xv. If pruning is required it is to be undertaken by an arborist in accordance with *AS4373* to prevent structural damage, disease and poor form.



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 3 - Examples of trunk, branch and ground protection as per *AS4970- 2009*

5.2 Tree protection fencing

Temporary tree protection fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works (including demolition and bulk earthworks). Once erected, protective fencing must not be removed or altered without approval by the project arborist. The fencing is to be fully secured to restrict access onto the protected root zone.

AS4687 specifies applicable fencing requirements. Installed construction fencing on the recommended alignment of the TPZ fencing can be installed as part of the protective fencing.

For construction crews, signage identifying the TPZ shall be placed at 10m intervals along the TPZ barrier fencing. These signs will face towards the development site and shall have lettering that complies with *AS 1319*. These signs will also specify the severe penalties for harming the TPZ in any way.

The TPZ protective fencing is to be inspected on a regular basis and maintained in good condition. Any works within the mapped TPZs is to be supervised (for excavation works) or under the direction of an AQ5 qualified arborist to limit damage to root zones and to install additional root, trunk and branch protection measures.

Conclusions & Recommendations 6

6.1 Conclusions

An assessment of all trees equal or greater than 15cm DBH was undertaken.

- Three-hundred and nine (309) trees were assessed within the site.
- One-hundred and fifty (150) trees are within or in close proximity to the development footprint or roads, parks and paths and will be removed regardless of their health.
- Fifty-four (54) trees are recommended for removal due to their poor condition and the risk to life and property that they pose.
- A further thirty (34) trees will require removal in order to create the required bushfire APZs.

Therefore, the study area will retain seventy one (71) or 22.98% of the assessed trees.

It is noted that the SULE assessment identifies that two-hundred and twelve (68.61%) of the assessed trees had a SULE condition rating of 1 or 2 (good to moderate condition). Seventy-five (75) trees (24.27%) had a poor SULE rating of 3b or 4a-f indicating that these trees posed a potential threat to life and property. Twenty-two (22) trees assessed (7.12%) had a SULE rating of 3a or 3c indicating that for 3a that it is a tree predicted to only live between 5–15 years, and for 3c that it is a tree that may live for more than fifteen (15) years but should be removed to prevent competition with more suitable individuals.

For any trees that are to be retained, it is recommended that TPZs are to be implemented for any retained tree in accordance with Australian Standard *AS 4970*.

6.2 Recommended tree protection strategies

To minimise impacts in local ecology and to maintain a stand of healthy trees within or proximal to any development, the following recommendations apply:

- Aim to retain hollow-bearing trees of good condition wherever possible throughout the landscape in order to retain fauna habitat and if not possible either re-purpose existing hollows for reinstallation, or install manufactured nest boxes.
- Preferentially remove dangerous or poor condition trees and examine development layouts to maximise tree retention
- Consider the placement of services to avoid or minimise tree removal or damage to Structural Root Zones (SRZs)
- Where appropriate, create mini reserves of good quality trees for future public or private use
- Remove suppressed or otherwise poor condition trees to reduce bushfire fuel loads

6.3 Recommended tree protection measures

In the event that trees are retained under any proposed or future development proposal, appropriate tree protection measures should be implemented including:

i. In the event that trees can be retained it is considered that an AQ5 qualified arborist be engaged to manage any construction works within the TPZ and to identify any other mitigation measures to maintain or improve their condition where the works proposed impact on more than 10% of the TPZ.

ii. TPZs in close proximity to proposed works should be adequately marked and sign-posted. Signage identifying the TPZ shall be placed at 10m intervals along the TPZ protection fencing. These signs will face towards the development site and shall have lettering that complies with *AS 1319*. TPZ fencing and signage should be inspected on a regular basis and maintained in good condition.

iii. All trees nominated for removal are to be removed prior to any construction activity or bulk earthworks. Approved tree removal operations in the vicinity of retained trees are to be undertaken in a manner that avoids canopy, root damage and soil compaction to retained trees. Such works should be supervised by an AQ5 qualified arborist.

iv. Stumps are to be ground, not dozed or dug out unless they impact on the installation of services, roads or building works.

v. All trenches, footings and major earth movement are to avoid TPZs.

vi. Stockpiling materials and soils within TPZs is forbidden.

vii. Machinery and other vehicles are to avoid TPZs during all operations.

viii. Any trenching or construction works unavoidably undertaken within TPZs should be witnessed, supervised and recorded (photographed and documented) by an AQ5 qualified arborist who will specify any works to be undertaken to avoid or remediate damage to trees or tree roots.

6.4 Recommended mitigation measures

The following mitigation measures are recommended:

- Revegetation or landscaping around the building and adjacent areas should consider utilising species that are typically found in PCT 1778 – Smooth-barked Apple - Coast Banksia / Cheese Tree open forest on sandstone slopes on the foreshores of the drowned river valleys of Sydney as this ecological community occurs in parts of the site.
- Mulching and planting around the base of trees to improve soil aeration, soil moisture and to minimise the risk of trampling.
- Installation of low beam and bollards or fencing to protect stands of good trees and to any future tree plantings.
- Harvesting and repurposing of hollows from felled trees for reinstallation within retained trees.

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Schedule 1

Tree Assessment Data Table

Tag No	Common Name	Scientific Name	DBH (cm)	Calc DBH (cm)	BD (cm)	Height (m)	Spread (m)	Vigour (%)	SULE	AZ Tree	STARS Life	STARS Significance	STARS Retention Value	TPZ Radius (m)	SRZ Radius (m)	Ret/Rem	Reason_for Rem	Visual Signif	Habitat Category	Comment
T001	Sydney Peppermint	*Eucalyptus piperita*	62,42	74.89	97	21	6	35	4c	Z5	<15yrs	Medium	Low	8.99	3.27	Retain		V3		Poor form, excessive damage
T002	Sydney Peppermint	*Eucalyptus piperita*	66,33	73.79	90	22	8	50	4c	Z5	5-15yrs	Low	Low	8.85	3.17	Remove	Health	V2		Structural decay on main trunk
T003	Sweet Pittosporum	*Pittosporum undulatum*	16,6	17.09	19	5.5	4.5	40	3a	A2	15-40yrs	High	High	2.05	1.65	Retain				Slight senescence, old tree
T004	Dead Stag	Dead Stag	47	47	58	13	2.5	0	4a	Z4	<15yrs	Low	Very low	5.64	2.63	Retain			Cat-2	HT11, Dead tree with hollows
T005	Cheese Tree	*Glochidion ferdinandi*	25	25	33	7	4	60	3a	A1	15-40yrs	Medium	Medium	3	2.08	Retain				Fair health with minor lean
T006	Sydney Peppermint	*Eucalyptus piperita*	29	29	36	17	5	40	4d	Z4	15-40yrs	Medium	Medium	3.48	2.15	Remove	Health			Termites and suppressed
T007	Large-leaved Privet	*Ligustrum lucidum*	24	24	31	11	4.5	70	2a	Z3	5-15yrs	Medium	Low	2.88	2.02	Remove	APZ			High threat exotic species
T008	Smooth-barked Apple	*Angophora costata*	73	73	90	26	12	35	4a	Z5	<15yrs	Low	Low	8.76	3.17	Remove	Health	V1		Lots of deadwood in canopy and bark inclusions
T009	Camphor Laurel	*Cinnamomum camphora*	multiple	25.83	43	15	7	75	2c	Z3	<15yrs	Low	Very low	3.1	2.32	Remove	APZ			High threat exotic species although in good form and condition
T010	Smooth-barked Apple	*Angophora costata*	35	35	39	23	5	65	2a	A1	<15yrs	Low	Low	4.2	2.23	Retain		V3		Moderate health and form
T011	Smooth-barked Apple	*Angophora costata*	34	34	39	22	7	75	1a	A1	5-15yrs	Medium	Low	4.08	2.23	Remove	APZ			Slightly suppressed
T012	Smooth-barked Apple	*Angophora costata*	44	44	50	25	7	65	1b	A1	15-40yrs	Medium	Medium	5.28	2.47	Retain		V3		Moderate canopy suppression
T013	Smooth-barked Apple	*Angophora costata*	24	24	28	18	4.5	85	1a	A1	15-40yrs	Medium	Medium	2.88	1.94	Retain				Good health and form
T014	Smooth-barked Apple	*Angophora costata*	40	40	44	22	6	75	1b	A1	15-40yrs	Low	Very low	4.8	2.34	Remove	APZ			Good health and form. Minor deadwood
T015	Camphor Laurel	*Cinnamomum camphora*	multiple	32.94	55	16	9	70	2b	Z3	>40yrs	Low	Very low	3.95	2.57	Remove	APZ			High threat exotic species
T016	NSW Christmas Bush	*Ceratopetalum gummiferum*	21	21	28	10	4	40	3a	A1	>40yrs	High	High	2.52	1.94	Remove	APZ			Very old tree with slight lean
T017	NSW Christmas Bush	*Ceratopetalum gummiferum*	19	19	25	10	4	30	4a	Z5	>40yrs	High	High	2.28	1.85	Remove	Health			Termites and basal cavity
T018	Smooth-barked Apple	*Angophora costata*	18	18	22	18	3	30	3b	Z4	>40yrs	High	High	2.16	1.75	Remove	Health			Majorly suppressed with very little canopy
T019	a Fig tree	*Ficus* sp.	41	41	55	20	10	75	1a	A1	5-15yrs	Medium	Low	4.92	2.57	Retain	Pruning required for APZ			Good health and form
T020	Smooth-barked Apple	*Angophora costata*	20	20	23	19	7	70	1b	A1	>40yrs	High	High	2.4	1.79	Remove	APZ			Moderate health and form
T021	Sweet Pittosporum	*Pittosporum undulatum*	15	15	18	6	4.5	70	2a	A1	>40yrs	Medium	Medium	2	1.61	Remove	APZ			Moderate health and form
T022	Coral Tree	*Erythrina x sykesii*	16	16	20	7	3.5	65	2b	Z3	15-40yrs	Medium	Medium	2	1.68	Remove	Development			High threat exotic
T023	Coral Tree	*Erythrina x sykesii*	24	24	33	8	5	50	4c	Z3	5-15yrs	Low	Low	2.88	2.08	Remove	Development			High threat exotic. Heavily leaning
T024	Coral Tree	*Erythrina x sykesii*	60	60	60	3	4	70	2b	Z3	5-15yrs	Low	Low	7.2	2.67	Remove	Development			<10 stems. Previously cut. High threat exotic
T025	Smooth-barked Apple	*Angophora costata*	22,21	30.41	50	16	4	35	4c	Z5	15-40yrs	Medium	Medium	3.65	2.47	Remove	Health			Major deadwood
T026	Smooth-barked Apple	*Angophora costata*	46	46	55	22	11	45	2d	A2	15-40yrs	Medium	Medium	5.52	2.57	Retain				Moderate deadwood, needs pruning
T027	Jacaranda	*Jacaranda mimosifolia*	54,33	63.29	74	17	13	50	3a	Z3	15-40yrs	Medium	Medium	7.59	2.92	Retain				Minor defects. Non native species
T028	Smooth-barked Apple	*Angophora costata*	42	42	46	19	10	65	2d	A2	15-40yrs	Low	Low	5.04	2.39	Retain			Cat-2	HT01, Minor deadwood

T029	Black She-oak	*Allocasuarina littoralis*	26	26	43	9	4	35	4d	Z4	15-40yrs	Medium	Medium	3.12	2.32	Remove	Development			Previously trimmed. Poor health and leaning
T030	Coral Tree	*Erythrina x sykesii*	multiple	48.82	48	8	8	70	2b	Z3	15-40yrs	Medium	Medium	5.86	2.43	Remove	Development			High threat exotic
T031	a Cypress	*Cupressus* sp. (Cultivar)	52	52	48	12	10	60	2d	A2	15-40yrs	Medium	Medium	6.24	2.43	Remove	Development			Moderately suppressed
T032	Crepe Myrtle	*Lagerstroemia indica*	25	25	30	6	4	50	3a	Z3	15-40yrs	Low	Low	3	2	Remove	Development			>10 stems. Moderate health
T033	Jacaranda	*Jacaranda mimosifolia*	multiple	25.48	27	9	6	55	3c	Z3	15-40yrs	Medium	Medium	3.06	1.91	Remove	Development			Non native species. Moderately suppressed
T034	Cheese Tree	*Glochidion ferdinandi*	21,19	28.32	29	9	7	80	2a	A1	15-40yrs	Medium	Medium	3.4	1.97	Remove	Development			Good health and form
T035	Large-leaved Privet	*Ligustrum lucidum*	12,9,9	17.49	22	7	4.5	70	3b	Z3	5-15yrs	Low	Low	2.1	1.75	Remove	Development			High threat exotic
T036	Sweet Pittosporum	*Pittosporum undulatum*	15	15	21	7	5	65	2a	A1	15-40yrs	Medium	Medium	2	1.72	Remove	Rd/Park/Paths			Mnor suppression
T037	Large-leaved Privet	*Ligustrum lucidum*	22,25	33.3	53	14	8	60	2d	A2	15-40yrs	Medium	Medium	4	2.53	Remove	Rd/Park/Paths			Moderately suppressed
T038	Camphor Laurel	*Cinnamomum camphora*	15	15	18	12	6	85	1a	Z3	15-40yrs	Medium	Medium	2	1.61	Remove	Rd/Park/Paths			High threat exotic
T039	Sweet Pittosporum	*Pittosporum undulatum*	20	20	24	9	5	70	2a	A1	5-15yrs	Low	Low	2.4	1.82	Remove	Rd/Park/Paths			Moderate health and form
T040	Silky Oak	*Grevillea robusta*	53	53	61	19	9	20	4a	Z5	15-40yrs	Low	Low	6.36	2.69	Remove	Health			Strangled by English Ivy. Canopy mostly dead
T041	Grey-leaved Cotoneaster	*Cotoneaster glaucophyllus*	17,9	19.24	32	4	5	30	4a	Z5	5-15yrs	Low	Low	2.31	2.05	Remove	Health			Strangled by English Ivy. Extremely suppressed
T042	Box Elder	*Acer negundo*	29	29	32	9	8	70	2a	Z3	5-15yrs	Low	Low	3.48	2.05	Remove	Rd/Park/Paths			Exotic species. Moderate to good form
T043	Broad-leaved Paperbark	*Melaleuca quinquenervia*	Multiple	109.17	122	10	10	75	2a	A1	15-40yrs	Medium	Medium	13.1	3.6	Remove	Rd/Park/Paths			Borers although good form. No senescence
T044	a Cypress	*Cupressus* sp. (Cultivar)	Multiple	26.8	47	9	6	60	2a	A1	15-40yrs	Low	Low	3.22	2.41	Remove	Rd/Park/Paths			Minor suppression
T045	a Cypress	*Cupressus* sp. (Cultivar)	Multiple	23.39	23	7	3.5	70	2a	A1	15-40yrs	Medium	Medium	2.81	1.79	Remove	Rd/Park/Paths			Moderate health and form
T046	Silky Oak	*Grevillea robusta*	23	23	28	11	4.5	60	2a	A1	15-40yrs	Medium	Medium	2.76	1.94	Remove	Rd/Park/Paths			Moderately suppressed
T047	Silky Oak	*Grevillea robusta*	36	36	41	16	9	60	2d	A2	15-40yrs	Low	Low	4.32	2.28	Remove	Rd/Park/Paths			Moderate health and form
T048	Large-leaved Privet	*Ligustrum lucidum*	multiple	23.26	31	6	3.5	45	3b	Z3	15-40yrs	Medium	Medium	2.79	2.02	Remove	Health			High threat exotic. Poor form
T049	Umbrella Tree	*Schefflera actinophylla*	Multiple	41.84	70	8	5	80	2a	A1	15-40yrs	Medium	Medium	5.02	2.85	Remove	Rd/Park/Paths			Good health and form
T050	Sydney Peppermint	*Eucalyptus piperita*	multiple	49.03	65	14	12	60	3c	Z1	15-40yrs	Medium	Medium	5.88	2.76	Retain			Cat-3	HT12, 3x widely spread trunks, suppressed, poor form
T051	Smooth-barked Apple	*Angophora costata*	68	68	88	24	15	70	3b	Z5	15-40yrs	Medium	High	8.16	3.14	Remove	Health	V1		exposed wood 2-6m, fungal attack
T052	Sydney Peppermint	*Eucalyptus piperita*	22,18	28.43	31	12	6	60	3c	Z1	15-40yrs	Low	Low	3.41	2.02	Remove	APZ			leaning 10deg, poor anchor, suppressed
T053	Dead Stag	Dead Stag	34	34	62	12	7	0	4a	Z4	15-40yrs	Medium	Medium	4.08	2.71	Remove	Health			termites in trunk
T054	Sydney Peppermint	*Eucalyptus piperita*	35	35	41	19	10	70	3c	Z6	15-40yrs	Low	Low	4.2	2.28	Remove	APZ			suppressed, leaning 10deg, canopy off centre
T055	Black Wattle	*Callicoma serratifolia*	15,8	17	26	10	6	85	2a	A1	15-40yrs	Medium	Medium	2.04	1.88	Remove	APZ			
T056	Camphor Laurel	*Cinnamomum camphora*	15	15	22	11	6	85	2a	A1	15-40yrs	Medium	Medium	2	1.75	Remove	APZ			
T057	Smooth-barked Apple	*Angophora costata*	28	28	34	22	8	85	2a	A1	15-40yrs	Medium	Medium	3.36	2.1	Retain				
T058	Smooth-barked Apple	*Angophora costata*	77	77	107	24	14	90	2a	A1	15-40yrs	Medium	Medium	9.24	3.4	Retain	Pruning required for APZ	V1		
T059	Dead Stag	Dead Stag	31	31	36	13	4	0	4a	Z4	15-40yrs	Medium	Medium	3.72	2.15	Retain			Cat-3	HT02

T060	Smooth-barked Apple	*Angophora costata*	40	40	58	23	12	85	2a	A1	15-40yrs	Medium	Medium	4.8	2.63	Retain	Pruning required for APZ	V2		
T061	Sweet Pittosporum	*Pittosporum undulatum*	20	20	27	10	8	90	2a	A1	5-15yrs	Low	Low	2.4	1.91	Remove	APZ			bird nest in canopy
T062	Smooth-barked Apple	*Angophora costata*	27	27	31	23	9	90	2a	A1	<15yrs	Low	Very low	3.24	2.02	Retain		V3		
T063	Smooth-barked Apple	*Angophora costata*	48	48	55	24	12	90	2a	A1	15-40yrs	Low	Low	5.76	2.57	Retain		V2		
T064	Large-leaved Privet	*Ligustrum lucidum*	17	17	21	9	7	90	4c	Z9	5-15yrs	Low	Low	2.04	1.72	Remove	Health			termites in trunk
T065	Sweet Pittosporum	*Pittosporum undulatum*	19	19	23	8	5	75	4c	Z5	5-15yrs	Low	Low	2.28	1.79	Remove	Health			termites in trunk
T066	Smooth-barked Apple	*Angophora costata*	81	81	101	23	17	80	2a	A1	5-15yrs	Low	Very low	9.72	3.32	Retain	Pruning required for APZ	V1		1x small burl, small kino spots
T067	Sydney Peppermint	*Eucalyptus piperita*	34	34	39	8	9	70	4c	Z6	<15yrs	Low	Low	4.08	2.23	Remove	Health			poor anchor, leaning 15deg, smll deadwood
T068	Dead Stag	Dead Stag	37,41	55.23	75	9	10	0	4a	Z4	<15yrs	Low	Very low	6.63	2.93	Remove	Development			
T069	a Cypress Pine	*Callitris* sp.	41	41	48	24	7	80	2a	A1	5-15yrs	Low	Very low	4.92	2.43	Remove	Development	V3		
T070	a Cypress Pine	*Callitris* sp.	22	22	28	19	5	80	2a	A1	15-40yrs	Medium	Low	2.64	1.94	Remove	Development			
T071	a Cypress Pine	*Callitris* sp.	43	43	55	24	7	80	2a	A1	0	Very low	Very low	5.16	2.57	Retain		V3		
T072	a Pine tree	*Pinus* sp	29	29	45	13	5	75	2d	A2	5-15yrs	Low	Low	3.48	2.37	Remove	Development			lots smll deadwood, lots kino from multiple branch loppings
T073	a Cypress	*Cupressus* sp. (Cultivar)	16	16	19	7	4	60	4c	Z6	5-15yrs	low	Low	2	1.65	Remove	Development			poor anchor, leaning 15deg, sparse canopy
T074	Sydney Peppermint	*Eucalyptus piperita*	31	31	37	14	9	85	2a	A1	5-15yrs	Medium	Low	3.72	2.18	Remove	Development			
T075	Large-leaved Privet	*Ligustrum lucidum*	multiple	22.14	26	15	8	80	3b	Z1	15-40yrs	Low	Low	2.66	1.88	Remove	Health			3x trunks, termites in 2x trunks, med deadwood
T076	Jacaranda	*Jacaranda mimosifolia*	15	15	17	10	4	90	2a	A1	5-15yrs	Low	Low	2	1.57	Remove	Rd/Park/Paths			
T077	Silky Oak	*Grevillea robusta*	83	83	103	15	14	60	2c	Z5	<15yrs	Low	Low	9.96	3.35	Remove	Rd/Park/Paths	V2		main trunk failure at 15m, lots sml & med deadwood
T078	Coral Tree	*Erythrina x sykesii*	20	20	28	12	5	80	2a	A1	<15yrs	Low	Very low	2.4	1.94	Remove	Rd/Park/Paths			sparse canopy
T079	Cheese Tree	*Glochidion ferdinandi*	27,25	36.8	37	17	9	80	2a	A1	<15yrs	Low	Very low	4.42	2.18	Remove	Rd/Park/Paths			2x trunks interfere at 2m
T080	Large-leaved Privet	*Ligustrum lucidum*	16,14	21.26	28	13	7	80	2a	A1	<15yrs	Low	Very low	2.55	1.94	Remove	Rd/Park/Paths			2x trunks at 0m
T081	Common Olive	*Olea europaea* ssp. *europaea*	15,12	19.21	28	6	6	80	2a	A1	<15yrs	Low	Very low	2.31	1.94	Remove	Rd/Park/Paths			invasive exotic
T082	Jacaranda	*Jacaranda mimosifolia*	multiple	25.57	34	14	11	80	2a		5-15yrs	Low	Very low	3.07	2.1	Remove	Rd/Park/Paths			4x trunks at 0m
T083	a Cypress Pine	*Callitris* sp.	Multiple	21.02	26	8	4	70	4a	Z4	0	Low	Very low	2.52	1.88	Remove	Health			declining, 4x trunks at 0.3m, lots smll deadwood
T084	Sweet Pittosporum	*Pittosporum undulatum*	17	17	23	9	7	80	3a	A1	0	Low	Very low	2.04	1.79	Remove	Rd/Park/Paths			leaning 10deg, crowded
T085	Jacaranda	*Jacaranda mimosifolia*	52	52	62	22	15	90	2a	A1	5-15yrs	Low	Low	6.24	2.71	Remove	Rd/Park/Paths	V3		staghorn on trunk
T086	Large-leaved Privet	*Ligustrum lucidum*	15,17	22.67	26	7	7	80	2a	A1	5-15yrs	Low	Low	2.72	1.88	Remove	Rd/Park/Paths			2x trunks at 0.2m
T087	planted exotic	-	multiple	18.89	24	4	4	80	3a	A1	5-15yrs	Low	Low	2.27	1.82	Remove	Rd/Park/Paths			
T088	large planted exotic shrub	-	13,13,9	20.47	26	6	3	80	3a	A1	0	Low	Very low	2.46	1.88	Remove	Development			
T089	Broad-leaved Paperbark	*Melaleuca quinquenervia*	multiple	96.23	85	22	14	80	2a	A1	5-15yrs	Low	Low	11.55	3.09	Remove	Development			6x trunks at 0.6m
T090	Broad-leaved	*multiple*	multiple	70.35	72	22	15	80	2a	A1	5-15yrs	Low	Low	8.44	2.88	Remove	Development			multiple trunks at 0.7m

	Paperbark																			
T091	Norfolk Island Hibiscus	*Lagunaria petersonii*	16	16	19	5	5	80	2a	A1	0	Low	Very low	2	1.65	Remove	Development			planted exotic
T092	Sweet Pittosporum	*Pittosporum undulatum*	15,14	20.52	26	3	3	80	2a	A1	0	Low	Very low	2.46	1.88	Remove	Development			2x trunks at 0.3m, sparse canopy
T093	Common Olive	*Olea europaea* ssp. *europaea*	22	22	26	6	5	80	2a	A1	0	Low	Very low	2.64	1.88	Remove	Development			planted invasive exotic
T094	White Cedar	Melia azedarach	15,5	15.81	23	6	5	80	2a	A1	0	Low	Low	2	1.79	Retain				
T095	Large-leaved Privet	*Ligustrum lucidum*	15,5,6	16.91	21	5	5	80	2a	A1	0	Low	Low	2.03	1.72	Remove	APZ			planted exotic
T096	a Cypress Pine	*Callitris* sp.	multiple	19.44	28	9	5	80	2a	A1	0	Low	Low	2.33	1.94	Retain				
T097	a Bottlebrush	*Callistemon* sp (Cultivar)	multiple	23.11	30	12	7	80	2a	A1	15-40yrs	Low	Low	2.77	2	Remove	APZ			
T098	Dead Stag	Dead Stag	multiple	125.34	27	8	8	0	4a	Z4	5-15yrs	Low	Low	15	1.91	Remove	Development			
T099	Crimson Bottlebrush	*Callistemon citrinus*	multiple	18.84	26	8	7	80	2a	A1	15-40yrs	Low	Low	2.26	1.88	Retain				
T100	Camphor Laurel	*Cinnamomum camphora*	16.5	16.5	25	9	5	90	2a	A1	5-15yrs	Low	Low	2	1.85	Remove	APZ			
T101	Sydney Peppermint	*Eucalyptus piperita*	32	32	45	12	8	60	3b	Z4	0	Low	Low	3.84	2.37	Remove	Health			termites, 25 degree lean
T102	Black She-oak	*Allocasuarina littoralis*	16	16	21	8	5	80	1b	A1	0	Low	Low	2	1.72	Retain				small dead wood
T103	Smooth-barked Apple	*Angophora costata*	39	39	49	22	7	80	1a	A1	0	Low	Low	4.68	2.45	Retain	Pruning required for APZ			small dead wood
T104	Smooth-barked Apple	*Angophora costata*	29	29	35	22	8	75	2a	A1	0	Low	Low	3.48	2.13	Retain	Pruning required for APZ			small dead wood
T105	Smooth-barked Apple	*Angophora costata*	42	42	51	24	10	70	2d	A2	5-15yrs	Low	Low	5.04	2.49	Remove	APZ	V3		exposed wood 6m up tree
T106	Smooth-barked Apple	*Angophora costata*	17	17	24	11	5	80	2a	A1	5-15yrs	Low	Low	2.04	1.82	Retain				
T107	Smooth-barked Apple	*Angophora costata*	19	19	24	14	3	65	2b	A2	0	Low	Low	2.28	1.82	Retain				dead wood
T108	Smooth-barked Apple	*Angophora costata*	19	19	22	19	6	70	1b	A2	0	Low	Low	2.28	1.75	Retain				small dead wood
T109	Smooth-barked Apple	*Angophora costata*	29	29	38	24	7	75	1b	A2	0	Low	Low	3.48	2.2	Retain	Pruning required for APZ	V3		small dead wood
T110	Dead Stag	Dead Stag	16	16	22	3	0	0	4a	Z4	5-15yrs	Low	Low	2	1.75	Remove	Health			dead, termites
T111	Smooth-barked Apple	*Angophora costata*	26	26	31	23	11	75	2a		15-40yrs	Low	Low	3.12	2.02	Remove	APZ	V3		small deadwood
T112	Smooth-barked Apple	*Angophora costata*	63	63	86	25	19	75	1b	A2	15-40yrs	Low	Low	7.56	3.11	Retain		V1	Cat-2	HT03, small dead wood, termites
T113	Dead Stag	Dead Stag	51	51	53	9	6	0	4a	Z4	>40yrs	Low	Very low	6.12	2.53	Retain			Cat-2	HT05, dead, termites, ant nest
T114	Sydney Peppermint	*Eucalyptus piperita*	48,29	56.08	84	24	13	65	3a	A2	5-15yrs	Low	Very low	6.73	3.08	Retain		V3	Cat-3	HT06, deadwood, termites
T115	Dead Stag	Dead Stag	27	27	42	12	2	0	4a	Z4	>40yrs	Low	Very low	3.24	2.3	Retain			Cat-3	HT07
T116	Sydney Peppermint	*Eucalyptus piperita*	32	32	47	21	7	70	1b	A2	5-15yrs	Low	Low	3.84	2.41	Retain			Cat-3	HT04, termites
T117	Canary Island Date Palm	*Phoenix canariensis*	56	56	64	11	8	90	2c	A1	>40yrs	Low	Very low	6.72	2.74	Remove	Development			
T118	a Cypress Pine	*Callitris* sp.	12,3,5	13.34	25	12	6	80	1a	A2	15-40yrs	Medium	Medium	2	1.85	Remove	Development			small deadwood
T119	Dead Stag	Dead Stag	24	24	34	3	0	0	4a	Z4	5-15yrs	Low	Low	2.88	2.1	Remove	Health			
T120	Silky Oak	*Grevillea robusta*	34	34	40	22	7	75	2a	A2	15-40yrs	Medium	Low	4.08	2.25	Retain	Off-site			small deadwood

T121	Smooth-barked Apple	*Angophora costata*	multiple	48.02	69	25	9	75	2a	A2	15-40yrs	Medium	Medium	5.76	2.83	Retain	Pruning required for APZ	V3		exposed wood 4m up trunk
T122	Large-leaved Privet	*Ligustrum lucidum*	multiple	20.22	1	9	6	80	2d	Z3	15-40yrs	Low	Very low	2.43	0.48	Remove	APZ			small deadwood
T123	Narrow-leaved Scribbly Gum	*Eucalyptus racemosa*	68,66	94.76	174	21	15	80	2a	A2	0	Low	Low	11.37	4.18	Remove	Development			small deadwood
T124	Sweet Pittosporum	*Pittosporum undulatum*	multiple	24.76	37	11	12	80	2a	A1	15-40yrs	Medium	Medium	2.97	2.18	Remove	Development			
T125	Pepper Tree	*Schinus areira*	42	42	47	11	9	75	2a	A1	15-40yrs	Medium	Medium	5.04	2.41	Remove	Development			
T126	Sweet Pittosporum	*Pittosporum undulatum*	multiple	82.71	39	12	8	80	2a	A1	15-40yrs	Low	Low	9.93	2.23	Remove	Development			
T127	Sweet Pittosporum	*Pittosporum undulatum*	6,9,10	14.73	32	7	4	75	2d	A2	5-15yrs	Low	Low	2	2.05	Remove	Rd/Park/Paths			small deadwood
T128	Sweet Pittosporum	*Pittosporum undulatum*	26	26	31	15	6	75	1b	A2	15-40yrs	Medium	Medium	3.12	2.02	Remove	Rd/Park/Paths			small deadwood
T129	Sweet Pittosporum	*Pittosporum undulatum*	23,18	29.21	37	11	6	80	2a	A1	5-15yrs	Low	Low	3.5	2.18	Remove	Rd/Park/Paths			
T130	Large-leaved Privet	*Ligustrum lucidum*	3,8,15	17.26	25	12	4	75	2a	Z3	15-40yrs	Medium	Medium	2.07	1.85	Remove	Rd/Park/Paths			small deadwood
T131	Camphor Laurel	*Cinnamomum camphora*	14,5	14.87	23	12	5	75	2a	Z3	15-40yrs	Medium	Medium	2	1.79	Remove	Rd/Park/Paths			
T132	Large-leaved Privet	*Ligustrum lucidum*	multiple	31.53	95	6	6	75	1b	Z3	15-40yrs	Low	Low	3.78	3.24	Remove	Rd/Park/Paths			small deadwood
T133	Large-leaved Privet	*Ligustrum lucidum*	18	18	21	14	4	75	2a	Z3	15-40yrs	Medium	Medium	2.16	1.72	Remove	Rd/Park/Paths			small deadwood
T134	exotic planted large shrub	-	36	36	43	17	8	65	3a	Z4	15-40yrs	Low	Low	4.32	2.32	Remove	Rd/Park/Paths			lots of deadwood, termites
T135	Pepper Tree	*Schinus areira*	18	18	23	13	4	75	2a	A2	0	Low	Low	2.16	1.79	Remove	Rd/Park/Paths			
T136	Pepper Tree	*Schinus areira*	15	15	16	8	3	80	2a	A1	>40yrs	High	High	2	1.53	Remove	Rd/Park/Paths			
T137	Pepper Tree	*Schinus areira*	13,10	16.4	17	7	4	80	2a	A1	>40yrs	High	High	2	1.57	Remove	Development			
T138	Crimson Bottlebrush	*Callistemon citrinus*	multiple	18.36	28	6	7	35	4a	Z4	15-40yrs	Medium	Medium	2.2	1.94	Remove	Health			lots of deadwood, vines
T139	Crimson Bottlebrush	*Callistemon citrinus*	multiple	18.36	24	6	6	35	4a	Z4	15-40yrs	Medium	Medium	2.2	1.82	Remove	Health			lots of deadwood, vines covering it
T140	Crimson Bottlebrush	*Callistemon citrinus*	multiple	21	29	5	5	75	2d	A2	15-40yrs	Medium	Medium	2.52	1.97	Remove	Rd/Park/Paths			vines supressing
T141	Chinese Elm	*Ulmus parvifolius*	22,18	28.43	41	8	7	75	2a	A2	15-40yrs	Medium	High	3.41	2.28	Remove	Development			small deadwood
T142	Lemon-scented Tea-tree	*Leptospermum petersonii*	multiple	17.52	27	8	5	80	2a	A1	15-40yrs	Medium	Medium	2.1	1.91	Remove	Development			
T143	Silky Oak	*Grevillea robusta*	32,19	37.22	44	23	7	80	2a	A2	15-40yrs	Medium	Medium	4.47	2.34	Remove	Development	V3		small deadwood
T144	Chinese Elm	*Ulmus parvifolius*	38	38	45	11	10	80	2a	A1	15-40yrs	Medium	Medium	4.56	2.37	Remove	Development			
T145	Apple Tree	Malus sp. (Cultivar)	26,17	31.06	33	9	9	65	2d	A2	15-40yrs	Medium	Medium	3.73	2.08	Remove	Development			lots of small deadwood
T146	Brush Box	*Lophostemon confertus*	multiple	43.79	32	16	13	75	2a	A2	15-40yrs	Medium	Medium	5.26	2.05	Remove	Development	V3		small deadwood
T147	a Cypress Pine	*Callitris* sp.	19	19	25	15	2	55	4a	Z3	15-40yrs	Medium	Medium	2.28	1.85	Remove	Development			extremely supressed
T148	Cocos Palm	*Syagrus romanzoffiana*	21	21	23	6	5	90	1a	A1	15-40yrs	Medium	Medium	2.52	1.79	Remove	Development			
T149	Broad-leaved Paperbark	*Melaleuca quinquenervia*	41	41	53	14	7	80	1a	A1	5-15yrs	Low	Low	4.92	2.53	Remove	Development			
T150	a Cypress	*Cupressus* sp. (Cultivar)	48	48	48	7	3	55	3a	A2	15-40yrs	Medium	Medium	5.76	2.43	Remove	Rd/Park/Paths			Moderately suppressed
T151	Chinese	*Triadica sebifera*	17	17	22	5	2.5	40	3c	Z3	15-40yrs	Medium	Medium	2.04	1.75	Remove	Rd/Park/Paths			Extremely suppressed

	Tallowwood																		
T152	Bangalow Palm	*Archontophoenix cunninghamiana*	16	16	21	9	2	95	1a	A1	>40yrs	Medium	Medium	2	1.72	Remove	Development			Good health and form
T153	Jacaranda	*Jacaranda mimosifolia*	25,21	32.65	29	8	5	50	3b	Z5	15-40yrs	Low	Low	3.92	1.97	Remove	Development			Heavily leaning west
T154	Large-leaved Privet	*Ligustrum lucidum*	15	15	18	5	2.5	40	3b	Z3	5-15yrs	Low	Very low	2	1.61	Remove	Development			Poor form
T155	Dead Stag	Dead Stag	23,7	24.04	26	9	2	0	4a	Z4	<15yrs	Low	Very low	2.88	1.88	Remove	Development			Dead, good chance of falling in next big storm event
T156	Kurrajong	*Brachychiton populneus* subsp. *populneus*	25	25	28	11	4	80	1a	A1	>40yrs	High	High	3	1.94	Remove	Development			Good health and form
T157	White Cedar	*Melia azedarach*	22,11	24.6	37	7	4.5	60	2d	A2	15-40yrs	Medium	Medium	2.95	2.18	Remove	Development			Moderately suppressed
T158	Jacaranda	*Jacaranda mimosifolia*	multiple	37.54	37	7	8	70	2a	A2	15-40yrs	Medium	Medium	4.5	2.18	Remove	Development			Minor suppression
T159	Queensland Firewheel	*Stenocarpus sinuatus*	34	34	38	9	5	65	2d	A2	15-40yrs	Medium	Medium	4.08	2.2	Remove	Development			Minor deadwood
T160	Jacaranda	*Jacaranda mimosifolia*	multiple	14.87	50	11	12	60	2d	A2	15-40yrs	Medium	Medium	2	2.47	Remove	Rd/Park/Paths			Moderately suppressed
T161	Jacaranda	*Jacaranda mimosifolia*	19	19	21	9	6	35	4a	Z5	15-40yrs	Medium	Medium	2.28	1.72	Remove	Health			Heavily leaning
T162	Sydney Peppermint	*Eucalyptus piperita*	multiple	86.91	143	17	20	55	2d	A2	15-40yrs	Medium	Medium	10.43	3.85	Remove	Development	V3	Cat-2	HT10, Minor suppression and minor deadwood
T163	Cheese Tree	*Glochidion ferdinandi*	20,13	23.85	24	8	4.5	75	2a	A1	15-40yrs	Medium	Medium	2.86	1.82	Remove	Development			Good health and form
T164	Black Tea-tree	*Melaleuca bracteata*	14,8,2	16.25	33	7	4	75	2a	A1	15-40yrs	Low	Low	2	2.08	Remove	Development			Good health and form
T165	Macadamia	*Macadamia integrifolia*	10,11,8	16.88	19	12	6	80	1c	A1	15-40yrs	Medium	Medium	2.03	1.65	Remove	Development			vine suppression
T166	Pepper Tree	*Schinus areira*	multiple	33.12	24	11	9	75	2a	A1	0	Low	Very low	3.97	1.82	Retain				minor vine suppression
T167	Sweet Pittosporum	*Pittosporum undulatum*	multiple	18.65	32	7	8	75	2a	A2	15-40yrs	Medium	Medium	2.24	2.05	Remove	Rd/Park/Paths			small deadwood
T168	Dead Stag	Dead Stag	15,5,4	16.31	23	3	3	0	4a		15-40yrs	Low	Low	2	1.79	Remove	Health			
T169	Narrow-leaved Apple	*Angophora bakeri*	multiple	21.45	34	7	6	70	2d	A2	15-40yrs	Low	Low	2.57	2.1	Remove	Rd/Park/Paths			medium deadwood
T170	Narrow-leaved Apple	*Angophora bakeri*	22	22	29	8	7	75	2a	A2	15-40yrs	Medium	Medium	2.64	1.97	Remove	Rd/Park/Paths			small deadwood
T171	Dead Stag	Dead Stag	multiple	18.3	43	4	3	0	4a	Z4	15-40yrs	Medium	Medium	2.2	2.32	Remove	Health			
T172	Sydney Blue Gum	*Eucalyptus saligna*	multiple	58.97	64	18	11	75	2a	A2	15-40yrs	Medium	Medium	7.08	2.74	Remove	Rd/Park/Paths			small deadwood
T173	Sydney Blue Gum	*Eucalyptus saligna*	multiple	59.68	60	21	9	55	4a	Z4	15-40yrs	Medium	Medium	7.16	2.67	Remove	Health			5m of exposed deadwood, termites/borers
T174	Sydney Blue Gum	*Eucalyptus saligna*	195	195	215	22	14	80	2a	A1	15-40yrs	Medium	Medium	15	4.56	Retain		V1		
T175	a Eucalypt	*Eucalyptus* sp.	23, 14	26.93	71	12	10	65	3a	Z6	0	Low	Low	3.23	2.87	Remove	APZ			regrowth from stump
T176	Silky Oak	*Grevillea robusta*	34	34	38	21	6	80	2a	A1	15-40yrs	Low	Low	4.08	2.2	Retain				
T177	Wallangarra White Gum	*Eucalyptus scoparia*	37,12	38.9	44	18	9	80	2a	A1	15-40yrs	Medium	Medium	4.67	2.34	Retain				
T178	Silky Oak	*Grevillea robusta*	31	31	40	22	5	80	2a	A1	15-40yrs	Low	Low	3.72	2.25	Retain				small deadwood
T179	Bangalow Palm	*Archontophoenix cunninghamiana*	22	22	35	9	5	80	2a	A1	15-40yrs	Low	Low	2.64	2.13	Retain				
T180	Spotted Gum	*Corymbia maculata*	21	21	25	22	6	80	2a	A1	15-40yrs	Medium	Medium	2.52	1.85	Retain				
T181	Camphor Laurel	*Cinnamomum camphora*	multiple	24.41	28	9	7	75	4a	Z3	15-40yrs	Low	Low	2.93	1.94	Remove	Health			

T182	Liquidambar	*Liquidambar styraciflua*	64	64	76	24	11	85	2a	A1	15-40yrs	Low	Low	7.68	2.95	Retain		V2		
T183	Black Locust	*Robinia pseudoacacia*	27,31	41.11	48	9	7	65	3b	Z4	15-40yrs	Low	Low	4.93	2.43	Remove	Health			head of tree dead, lots of deadwood, 1m of exposed wood from base of tree
T184	Dead Stag	Dead Stag	15	15	17	3	3	0	4a	Z4	0	Low	Very Low	2	1.57	Remove	Health			
T185	Black Locust	*Robinia pseudoacacia*	multiple	27.04	23	11	6	65	4a	Z4	0	Low	Very low	3.24	1.79	Remove	Health			head of tree dead, lots of small and medium deadwood
T186	Black Locust	*Robinia pseudoacacia*	21	21	23	15	6	65	4a	Z4	15-40yrs	Medium	Medium	2.52	1.79	Remove	Health			exposed wood at base, lots of medium deadwood
T187	Jacaranda	*Jacaranda mimosifolia*	26	26	30	14	6	75	2a	A2	15-40yrs	Low	Low	3.12	2	Remove	Rd/Park/Paths			small deadwood
T188	Dead Stag	Dead Stag	26	26	28	13	2	0	4a	Z4	15-40yrs	Low	Low	3.12	1.94	Remove	Health			
T189	Brush Box	*Lophostemon confertus*	38	38	43	22	12	90	2a	A1	15-40yrs	Medium	Medium	4.56	2.32	Remove	Rd/Park/Paths			
T190	Brush Box	*Lophostemon confertus*	36	36	39	15	7	70	2a	Z1	15-40yrs	Medium	Medium	4.32	2.23	Remove	Development			crowded, suppressed
T191	Brush Box	*Lophostemon confertus*	22	22	26	15	7	70	2a	Z1	15-40yrs	Low	Low	2.64	1.88	Remove	Development			crowded, supressed, canopy off centre
T192	Spotted Gum	*Corymbia maculata*	57	57	45	24	18	85	2a	A1	15-40yrs	Low	Low	6.84	2.37	Remove	Development	V2		
T193	Dead Stag	Dead Stag	36	36	39	19	5	0	4a	Z4	15-40yrs	Medium	Medium	4.32	2.23	Remove	Development			
T194	Jacaranda	*Jacaranda mimosifolia*	32,34	46.69	45	19	7	80	2a	Z3	15-40yrs	Low	Low	5.6	2.37	Remove	Rd/Park/Paths			
T195	Jacaranda	*Jacaranda mimosifolia*	19	19	21	17	4	75	2a	Z3	15-40yrs	Low	Low	2.28	1.72	Remove	Rd/Park/Paths			canopy off centre
T196	Jacaranda	*Jacaranda mimosifolia*	16	16	18	15	5	75	2a	Z3	15-40yrs	Low	Low	2	1.61	Remove	Rd/Park/Paths			supressed
T197	Dead Stag	Dead Stag	34	34	36	0	0	0	4a	Z4	5-15yrs	Low	Low	4.08	2.15	Remove	Health			
T198	Dead Stag	Dead Stag	24	24	27	7	2	0	4a	Z4	15-40yrs	Low	Low	2.88	1.91	Remove	Health			
T199	Western Grey Box	*Eucalyptus microcarpa*	37	37	39	24	7	85	2a	A1	15-40yrs	Medium	Medium	4.44	2.23	Remove	Development	V3		
T200	Dead Stag	Dead Stag	31	31	37	9	6	0	4a	Z4	15-40yrs	Medium	Medium	3.72	2.18	Remove	Health			
T201	Red Bloodwood	*Corymbia gummifera*	39,24	45.79	43	22	8	90	2a	A1	15-40yrs	Low	Low	5.5	2.32	Remove	Rd/Park/Paths			2x trunks at 0.5m
T202	Red Bloodwood	*Corymbia gummifera*	32	32	42	18	11	80	2a	A2	15-40yrs	Medium	Medium	3.84	2.3	Remove	Rd/Park/Paths			small old wounds with kino
T203	Black She-oak	*Allocasuarina littoralis*	16	16	22	7	7	90	2a	A1	15-40yrs	Low	Low	2	1.75	Remove	Rd/Park/Paths			
T204	Black She-oak	*Allocasuarina littoralis*	21	21	26	8	7	65	3a	Z4	15-40yrs	Low	Low	2.52	1.88	Remove	Rd/Park/Paths			declining, very sparse canopy - 20% left
T205	lemon-scented gum	*Corymbia citriodora*	17	17	22	14	9	90	2a	A1	5-15yrs	Low	Very low	2.04	1.75	Retain				
T206	a Eucalypt	*Eucalyptus* sp.	multiple	31.05	35	9	5	60	3c	Z1	15-40yrs	Low	Very low	3.73	2.13	Retain	Pruning required for APZ			declining, suppressed, poor form, epicormic growth
T207	Narrow-leaved Ironbark	*Eucalyptus crebra*	21	21	25	8	5	60	2c	Z1	15-40yrs	Low	Low	2.52	1.85	Remove	APZ			poor form, leaning 10deg, twisted trunk, wounds with kino
T208	Dead Stag	Dead Stag	28	28	34	15	1	0	4a	Z4	15-40yrs	Low	Low	3.36	2.1	Remove	Health			
T209	Dead Stag	Dead Stag	39	39	46	18	4	0	4a	Z4	15-40yrs	Low	Low	4.68	2.39	Remove	Health			
T210	Camphor Laurel	*Cinnamomum camphora*	27	27	34	4	5	65	3b	Z1	15-40yrs	Low	Low	3.24	2.1	Remove	Health			wees spp., trunk cut/pruned at 4m
T211	Black Locust	*Robinia pseudoacacia*	22,24	32.56	32	20	8	60	3b	Z5	15-40yrs	Low	Low	3.91	2.05	Remove	Health			2x trunks at 0m, canopy off centre, top 30% of tree is dead
T212	Black Locust	*Robinia pseudoacacia*	15	15	17	5	4	70	3b	Z1	15-40yrs	Low	Low	2	1.57	Remove	Health			suppressed, leaning 10deg, poor anchor, exposed wood at 2m
T213	Black Locust	*Robinia pseudoacacia*	15	15	18	12	3	70	3c	Z1	15-40yrs	Medium	Medium	2	1.61	Retain				crowded, suppressed, top 15% of tree is dead

T214	Black Locust	*Robinia pseudoacacia*	28	28	36	15	6	70	3c	Z1	15-40yrs	Medium	Medium	3.36	2.15	Remove	APZ			crowded, canopy off centre, top branches dead
T215	Jacaranda	*Jacaranda mimosifolia*	32	32	36	20	12	80	3b	Z6	>40yrs	Low	Low	3.84	2.15	Remove	Health			poor anchor, leaning 15deg, crowded
T216	Dead Stag	Dead Stag	15	15	18	5	1	0	4a	Z4	15-40yrs	Medium	Medium	2	1.61	Remove	Health			dead palm
T217	Cheese Tree	*Glochidion ferdinandi*	37,30	47.63	48	20	15	60	3b	Z5	15-40yrs	Low	Low	5.72	2.43	Remove	Development			2x trunks at 0m, both trunks leaning 20deg L&R
T218	Dead Palm	Dead Palm	26	26	30	10	1	0	4a	Z4	15-40yrs	Medium	Medium	3.12	2	Remove	Health			
T219	Cheese Tree	*Glochidion ferdinandi*	multiple	63.52	85	20	16	85	2a	A1	15-40yrs	Medium	Medium	7.62	3.09	Retain	Pruning required for APZ			3x trunks at 0.5m
T220	Liquidambar	*Liquidambar styraciflua*	52	52	72	25	15	90	2a	A1	15-40yrs	Medium	Medium	6.24	2.88	Retain		V2		
T221	Jacaranda	*Jacaranda mimosifolia*	multiple	24.37	29	18	9	80	2a	A1	15-40yrs	Medium	Medium	2.92	1.97	Remove	APZ			
T222	Cheese Tree	*Glochidion ferdinandi*	multiple	36.15	38	22	13	85	2a	A1	15-40yrs	Medium	Medium	4.34	2.2	Retain				
T223	Blueberry Ash	*Elaeocarpus reticulatus*	31	31	37	20	12	90	2a	A1	15-40yrs	Medium	Medium	3.72	2.18	Retain	Pruning required for APZ			
T224	exotic palm	-	15	15	18	9	3	90	2a	A1	15-40yrs	Medium	Medium	2	1.61	Retain				
T225	Patula Pine	*Pinus patula*	53	53	58	25	12	80	2a	A2	15-40yrs	Low	Low	6.36	2.63	Remove	Development	V3		lots smll deadwood
T226	Hoop Pine	*Araucaria cunninghami*	58	58	65	30	12	90	2a	A1	15-40yrs	Low	Low	6.96	2.76	Remove	Development	V2		
T227	Patula Pine	*Pinus patula*	47	47	54	28	15	80	2a	A1	15-40yrs	Medium	Medium	5.64	2.55	Remove	Development	V2		
T228	Blueberry Ash	*Elaeocarpus reticulatus*	26	26	30	21	7	80	2a	A1	15-40yrs	Low	Low	3.12	2	Retain				sparse canopy
T229	Blueberry Ash	*Elaeocarpus reticulatus*	15,21	25.81	26	22	8	85	2a	A1	15-40yrs	Low	Low	3.1	1.88	Remove	Development			2x trunks at 0.3m
T230	Blueberry Ash	*Elaeocarpus reticulatus*	11,21	23.71	26	16	8	80	2a	A1	15-40yrs	Medium	Medium	2.84	1.88	Remove	Development			2x trunks at 0.3m
T231	Cheese Tree	*Glochidion ferdinandi*	26	26	30	20	12	90	2a	A1	5-15yrs	Medium	Medium	3.12	2	Remove	Development			
T232	Dead Stag	Dead Stag	55	55	65	4	1	0	4a	Z4	15-40yrs	Medium	Medium	6.6	2.76	Remove	Health			trunk cut at 4m
T233	Blueberry Ash	*Elaeocarpus reticulatus*	24	24	28	22	10	90	2a	A1	15-40yrs	Low	Low	2.88	1.94	Retain				
T234	Dead Stag	Dead Stag	26	26	32	17	3	0	4a	Z4	5-15yrs	Low	Low	3.12	2.05	Remove	Development			
T235	Camphor Laurel	*Cinnamomum camphora*	34	34	40	22	11	80	2a	A1	15-40yrs	Medium	Medium	4.08	2.25	Remove	Development			crowded, canopy off centre
T236	Silky Oak	*Grevillea robusta*	23	23	26	23	7	80	2a	A1	15-40yrs	Medium	Medium	2.76	1.88	Remove	Development			
T237	Camphor Laurel	*Cinnamomum camphora*	30	30	34	23	11	80	2a	A1	15-40yrs	Medium	Medium	3.6	2.1	Remove	Development			exotic
T238	Hoop Pine	*Araucaria cunninghami*	67	67	77	30	14	85	2a	A1	15-40yrs	Medium	Medium	8.04	2.97	Remove	Development	V1		planted
T239	Box Elder	*Acer negundo*	17	17	19	13	7	80	2a	A1	15-40yrs	Medium	Medium	2.04	1.65	Remove	APZ			planted exotic
T240	Dead Stag	Dead Stag	28	28	32	17	9	0	4a	Z4	15-40yrs	Medium	Medium	3.36	2.05	Remove	Health			
T241	Water gum	*Tristaniopsis laurina*	multiple	22.14	26	5	5	80	2a	A1	15-40yrs	Medium	Medium	2.66	1.88	Remove	APZ			
T242	Rough-barked Apple	*Angophora floribunda*	20	20	23	18	8	60	4c	Z5	5-15yrs	Low	Low	2.4	1.79	Remove	Health			termites in trunk
T243	Narrow-leaved Scribbly Gum	*Eucalyptus racemosa*	91	91	96	23	15	65	3b	Z5	15-40yrs	Medium	Medium	10.92	3.25	Remove	Health	V1		major branch at 1m is dead, exposed wood 0-5m, borers in trunk
T244	Dead Stag	Dead Stag	52	52	56	7	10	0	4a	Z4	15-40yrs	Medium	Medium	6.24	2.59	Remove	Health			
T245	Prickly-leaved	*Melaleuca*	multiple	57.29	70	19	11	80	2a	A1	15-40yrs	Medium	Medium	6.87	2.85	Remove	Development			

	Tea Tree	*stypheloides*																	
T246	Pink W.A. Gum	*Corymbia ficifolia*	multiple	26.13	25	5	8	90	2a	A1	5-15yrs	Medium	Low	3.14	1.85	Retain				non-local native sp.
T247	Pink W.A. Gum	*Corymbia ficifolia*	7,7,4	10.68	21	4	4	80	2a	A2	5-15yrs	Medium	Low	1.28	1.72	Retain				exposed wood at 1m
T248	Lemon-scented Gum	*Eucalyptus citriodora*	18,31,4	36.07	61	15	8	70	2c	A2	15-40yrs	Medium	Low	4.33	2.69	Retain				2x trunks at 1m, lots epicormic growth, stressed
T249	Wallangarra White Gum	*Eucalyptus scoparia*	45	45	55	22	8	85	2a	A1	15-40yrs	Medium	Medium	5.4	2.57	Retain				
T250	Jacaranda	*Jacaranda mimosifolia*	37,26	45.22	38	21	9	75	2a	Z3	15-40yrs	Medium	Medium	5.43	2.2	Remove	Development			small deadwood, cut branch
T251	Jacaranda	*Jacaranda mimosifolia*	multiple	38.42	41	19	12	75	2a	Z3	15-40yrs	Medium	Medium	4.61	2.28	Remove	Development			
T252	Jacaranda	*Jacaranda mimosifolia*	35	35	39	20	13	75	2a	Z3	15-40yrs	Medium	Medium	4.2	2.23	Remove	Development			slight lean
T253	Dead Stag	Dead Stag	27	27	30	9	2	0	4a	Z4	15-40yrs	Medium	Medium	3.24	2	Remove	Development			
T254	Dead Stag	Dead Stag	34	34	36	21	6	0	4a	Z4	15-40yrs	Medium	Medium	4.08	2.15	Remove	Development			
T255	Silky Oak	*Grevillea robusta*	36	36	40	25	12	80	2a	A2	15-40yrs	Low	Low	4.32	2.25	Remove	Development	V3		small deadwood
T256	Jacaranda	*Jacaranda mimosifolia*	24,17	29.41	32	22	15	80	2a	Z3	15-40yrs	Low	Low	3.53	2.05	Remove	Development	V3		small deadwood
T257	Jacaranda	*Jacaranda mimosifolia*	multiple	34.16	52	18	9	75	2a	Z3	15-40yrs	Low	Low	4.1	2.51	Remove	Development			canopy off centre
T258	Sweet Pittosporum	*Pittosporum undulatum*	33	33	35	13	6	80	2a	A2	15-40yrs	Low	Low	3.96	2.13	Remove	Development			1 medium deadwood
T259	Sydney Blue Gum	*Eucalyptus saligna*	65	65	71	26	17	90	2a	A1	15-40yrs	Medium	Medium	7.8	2.87	Remove	Development	V1		
T260	Jacaranda	*Jacaranda mimosifolia*	21,8,9	24.21	32	14	16	80	2a	Z3	15-40yrs	Medium	Medium	2.9	2.05	Remove	Development			
T261	Jacaranda	*Jacaranda mimosifolia*	multiple	68.79	67	19	17	80	2a	Z3	5-15yrs	Low	Low	8.25	2.8	Remove	Development			
T262	an Acacia	*Acacia* sp.	17	17	19	19	7	75	2a	A2	15-40yrs	Medium	Medium	2.04	1.65	Remove	Development			slight lean, canopy not centered
T263	Jacaranda	*Jacaranda mimosifolia*	22	22	24	18	6	75	2d	Z3	15-40yrs	Medium	Medium	2.64	1.82	Remove	Development			suppressed, small deadwood
T264	Jacaranda	*Jacaranda mimosifolia*	21	21	25	17	9	80	2a	Z3	15-40yrs	Medium	Medium	2.52	1.85	Remove	Development			slight lean
T265	Western Grey Box	*Eucalyptus microcarpa*	15	15	19	12	8	75	2d	A2	>40yrs	Low	Very low	2	1.65	Remove	APZ			small deadwood
T266	Jacaranda	*Jacaranda mimosifolia*	17,24	29.41	31	17	7	75	2a	Z4	15-40yrs	Low	Low	3.53	2.02	Remove	Development			
T267	Western Grey Box	*Eucalyptus microcarpa*	5,3,19	19.87	24	13	7	80	2a	Z3	15-40yrs	Medium	Medium	2.38	1.82	Remove	APZ			
T268	Western Grey Box	*Eucalyptus microcarpa*	23	23	25	17	7	65	2d	Z4	15-40yrs	Medium	Medium	2.76	1.85	Remove	Development			lots of deadwood
T269	Jacaranda	*Jacaranda mimosifolia*	multiple	35.59	39	13	9	80	2a	Z3	>40yrs	Medium	Medium	4.27	2.23	Remove	Development			
T270	Liquidambar	*Liquidambar styraciflua*	37,32	48.92	57	23	14	80	2a	Z3	15-40yrs	Medium	Medium	5.87	2.61	Remove	Development	V2		
T271	Black She-oak	*Allocasuarina littoralis*	13,12	17.69	19	11	8	75	2a	A2	15-40yrs	Medium	Medium	2.12	1.65	Retain				small deadwood, cut branches
T272	Dead Stag	Dead Stag	21	21	29	9	8	0	4a	Z4	15-40yrs	Medium	Medium	2.52	1.97	Remove	Health			termites
T273	Dead Stag	Dead Stag	0	0	0	0	0	0	4a	Z4	15-40yrs	Medium	Medium	0	0	Remove	Health		Cat-3	HT13, Kingfisher nest
T274	Broad-leaved Paperbark	*Melaleuca quinquenervia*	84,32	89.89	95	18	11	80	2a	A1	15-40yrs	Medium	Medium	10.79	3.24	Retain	Off-site			
T275	Spotted Gum	*Corymbia maculata*	22	22	25	23	7	80	2a	A1	15-40yrs	Medium	Medium	2.64	1.85	Remove	Development			
T276	Jacaranda	*Jacaranda mimosifolia*	21,13	24.7	32	21	8	80	2a	Z3	15-40yrs	Medium	Medium	2.96	2.05	Remove	Development			

T277	Spotted Gum	*Corymbia maculata*	23	23	28	22	8	80	2a	A1	15-40yrs	Medium	Medium	2.76	1.94	Remove	Development			
T278	Jacaranda	*Jacaranda mimosifolia*	30	30	47	24	9	80	2a	Z3	15-40yrs	Medium	Medium	3.6	2.41	Remove	Development	V3		
T279	Jacaranda	*Jacaranda mimosifolia*	21,18	27.66	30	19	7	75	2d	Z3	5-15yrs	Low	Low	3.32	2	Remove	Development			suppressed
T280	Large-leaved Privet	*Ligustrum lucidum*	multiple	55.28	57	15	13	65	4a	Z4	5-15yrs	Low	Low	6.63	2.61	Remove	Development			deadwood in trunk from base to 3m, lots of medium deadwood
T281	Coral Tree	*Erythrina x sykesii*	multiple	46.78	61	19	15	80	2a	Z3	<15yrs	Low	Low	5.61	2.69	Remove	Development	V3		
T282	Coral Tree	*Erythrina x sykesii*	multiple	34.09	45	14	11	80	2a	Z3	15-40yrs	Medium	Medium	4.09	2.37	Remove	Development			
T283	Coral Tree	*Erythrina x sykesii*	multiple	74.13	97	22	18	80	2a	Z3	>40yrs	High	High	8.9	3.27	Remove	Development	V3		
T284	Coral Tree	*Erythrina x sykesii*	28	28	32	12	7	75	2a	Z3	5-15yrs	Medium	Medium	3.36	2.05	Remove	Development			
T285	Jacaranda	*Jacaranda mimosifolia*	multiple	52.81	46	22	14	80	2a	Z3	5-15yrs	Medium	Low	6.34	2.39	Remove	Development	V3		no tag
T286	Jacaranda	*Jacaranda mimosifolia*	37,41	55.23	45	21	13	80	2a	Z3	15-40yrs	Medium	Medium	6.63	2.37	Remove	Development			
T287	Jacaranda	*Jacaranda mimosifolia*	multiple	31.14	37	12	7	80	2a	Z3	15-40yrs	Medium	Medium	3.74	2.18	Remove	Development			
T288	Spotted Gum	*Corymbia maculata*	25	25	35	17	9	90	2a	A1	15-40yrs	Medium	Medium	3	2.13	Remove	APZ			
T289	Smooth-barked Apple	*Angophora costata*	56	56	66	23	12	80	2a	A1	15-40yrs	Medium	Medium	6.72	2.78	Retain	Pruning required for APZ	V3		anchored under large boulder, leaning 10deg
T290	Sydney Peppermint	*Eucalyptus piperita*	102	102	122	28	14	90	2a	A1	15-40yrs	Low	Low	12.24	3.6	Retain		V1		
T291	Rough-barked Apple	*Angophora floribunda*	21	21	25	17	7	80	2a	A1	15-40yrs	Medium	Medium	2.52	1.85	Retain				
T292	Black She-oak	*Allocasuarina littoralis*	15	15	19	6	7	80	3c	Z1	15-40yrs	Medium	Medium	2	1.65	Remove	APZ			suppressed, canopy off centre, major trunk failure at 3m
T293	Narrow-leaved Scribbly Gum	*Eucalyptus racemosa*	64	64	84	18	15	80	2a	A1	15-40yrs	Medium	Medium	7.68	3.08	Retain		V2	Cat-3	HT14
T294	Smooth-barked Apple	*Angophora costata*	42	42	52	24	12	80	2a	A1	15-40yrs	Medium	Medium	5.04	2.51	Remove	APZ	V3		
T295	Smooth-barked Apple	*Angophora costata*	78	78	98	24	15	45	4c	Z5	15-40yrs	Medium	Medium	9.36	3.28	Remove	Health	V1	Cat-2	HT15, exposed wood 0-1.5m, borers in trunk, canopy 85% dead, lots very lge deadwood
T296	Dead Stag	Dead Stag	38	38	48	17	14	0	4c	Z5	15-40yrs	Medium	Medium	4.56	2.43	Remove	Health			borers in base of trunk, leaning - weight well off centre, lots lge deadwood
T297	Smooth-barked Apple	*Angophora costata*	49	49	69	24	12	80	2a	A1	15-40yrs	High	High	5.88	2.83	Retain	Pruning required for APZ	V3		slightly crowded, canopy off centre
T298	Cheese Tree	*Glochidion ferdinandi*	16	16	19	9	7	90	2a	A1	15-40yrs	Medium	Medium	2	1.65	Remove	APZ			
T299	Turpentine	*Syncarpia glomulifera*	25	25	28	8	11	70	4c	Z6	15-40yrs	Medium	Medium	3	1.94	Remove	Health			leaning 45deg, canopy well off centre,
T300	Tallowwood	*Eucalyptus microcorys*	66	66	76	23	14	90	2a	A1	15-40yrs	Low	Low	7.92	2.95	Retain	Pruning required	V2		
T301	Turpentine	*Syncarpia glomulifera*	22	22	24	11	5	90	2a	A1	15-40yrs	Low	Low	2.64	1.82	Remove	APZ			
T302	Tallowwood	*Eucalyptus microcorys*	68	68	88	23	16	90	2a	A1	15-40yrs	Medium	Medium	8.16	3.14	Retain		V2		
T303	Turpentine	*Syncarpia glomulifera*	58	58	78	24	13	90	2a	A1	15-40yrs	Medium	Medium	6.96	2.98	Retain		V3		
T304	Lemon-scented Gum	*Eucalyptus citriodora*	35	35	45	22	8	65	3b	Z5	15-40yrs	Medium	Medium	4.2	2.37	Remove	Health			med deadwood, exposed wood 1.5m, fungal attack, epicormic growth
T305	Narrow-leaved Scribbly Gum	*Eucalyptus racemosa*	59	59	79	23	16	80	2a	A1	15-40yrs	Medium	Medium	7.08	3	Retain	Pruning required for APZ	V2		canopy off centre

T306	Cheese Tree	*Glochidion ferdinandi*	23,6	23.77	27	12	13	80	2a	A1	15-40yrs	Medium	Medium	2.85	1.91	Remove	APZ			
T307	Sydney Peppermint	*Eucalyptus piperita*	56	56	67	25	15	85	2a	A1	15-40yrs	Medium	Medium	6.72	2.8	Retain	Off-site	V2		
T308	Sweet Pittosporum	*Pittosporum undulatum*	16,7	17.46	24	18	10	85	2a	A1	15-40yrs	Medium	Medium	2.1	1.82	Remove	APZ			
T309	Narrow-leaved Scribbly Gum	*Eucalyptus racemosa*	23	23	28	14	9	70	3b	Z6	15-40yrs	Medium	Medium	2.76	1.94	Remove	Health			leaning 10deg, crowded, suppressed

Note 1: Visual Significance

V1 – High significance typically >25m height/ >20m spread / >600mm DBH – Large emergent tree
V2 – Moderate significance generally 15-25m height/ >10m spread>600mm DBH – Prominent tree typically with a large spread
V3 – Low significance >10m height/ >10m spread>600mm DBH –Typically a visually attractive low tree with large spread and DBH

Note 2: Habitat Trees

The habitat trees recorded within the study area fall under one of three categories:

Category 1: Significant habitat trees (high):

- Large hollow suitable for cockatoos or large forest owls >30cm and/or
- Trees containing two (2) or more good quality medium hollows 10-30cm and/or
- >8 small hollows

Category 2: Significant habitat trees (moderate)

- Trees containing one medium hollow 10-30cm and/or
- 3-8 small hollows

Category 3: Remaining hollow bearing trees generally containing small or low numbers of hollows

Note 3: SULE Rating (refer to detailed breakdown in Schedule 4)

1A to 1C	Trees that appear to be retainable at the time of assessment with more than 40 years life expectancy with acceptable risk.
2A to 2D	Trees that appear to be retainable at the time of assessment with 15-40 years life expectancy with acceptable risk.
3A to 3D	Trees that appear to be retainable at the time of assessment with 5-15 years life expectancy with acceptable risk.
4A to 4F	Trees with a high level of risk and should be removed within 5 years.

Note 4: TreeAZ rating (refer to detailed breakdown in Schedule 5)

A1 to A4	Important trees suitable for retention for more than 10 years and worthy of being a material constraint
Z1 to Z3	Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species
Z4 to Z6	High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure
Z7 to Z8	Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people
Z9 to Z12	Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population

Schedule 2

SULE Assessment Plans

Legend

- Development footprint
- Asset Protection Zone (APZ)
- Trees to retain
- Trees to remove
- Structural Root Zones (SRZ)
- Tree Protection Zone (TPZ)

Aerial source: Nearmap

PROJECT & MXD REFERENCE	DATE & ISSUE	SCALE & COORDINATE SYSTEM
Beaconsfield Road, Chatswood 19WRL02_T001	14/09/2020 Issue 1	1:1,500 @ A4 GDA 1994 MGA Zone 56

0 25 50 m

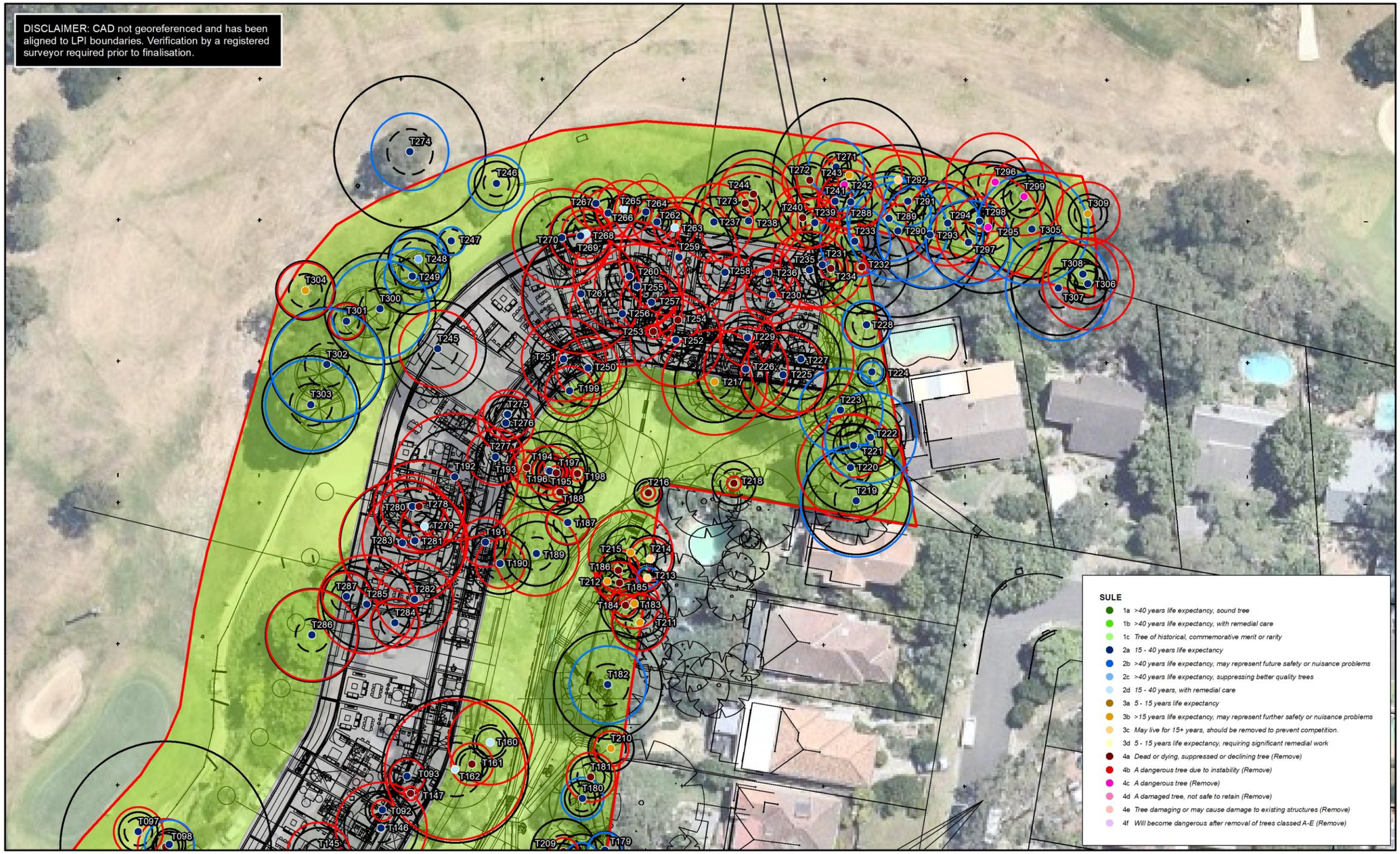
TITLE

Tree Assessment Plan - Overview

Document Path: N:\GIS STORAGE\N Drive\19WRL02_Beaconsfield_Chatswood\MXDs\19WRL02_T001.mxd

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

DISCLAIMER: CAD not georeferenced and has been aligned to LPI boundaries. Verification by a registered surveyor required prior to finalisation.

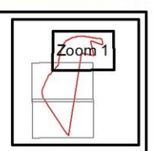


SULE

- 1a >40 years life expectancy, sound tree
- 1b >40 years life expectancy, with remedial care
- 1c Tree of historical, commemorative merit or rarity
- 2a 15 - 40 years life expectancy
- 2b >40 years life expectancy, may represent future safety or nuisance problems
- 2c >40 years life expectancy, suppressing better quality trees
- 2d 15 - 40 years, with remedial care
- 3a 5 - 15 years life expectancy
- 3b >15 years life expectancy, may represent further safety or nuisance problems
- 3c May live for 15+ years, should be removed to prevent competition.
- 3d 5 - 15 years life expectancy, requiring significant remedial work
- 4a Dead or dying, suppressed or declining tree (Remove)
- 4b A dangerous tree due to instability (Remove)
- 4c A dangerous tree (Remove)
- 4d A damaged tree, not safe to retain (Remove)
- 4e Tree damaging or may cause damage to existing structures (Remove)
- 4f Will become dangerous after removal of trees classed A-E (Remove)

Legend

- Development footprint
- Asset Protection Zone (APZ)
- Building footprint
- Trees to retain (71)
- Trees to remove (238)
- Structural Root Zones (SRZ)
- Tree Protection Zone (TPZ)



Aerial source: Nearmap

0 10 20 m

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

PROJECT & MXD REFERENCE	DATE & ISSUE NUMBER	SCALE & COORDINATE SYSTEM
Beaconsfield Road, Chatswood 19WRL02_T002	14/09/2020 Issue 1 SC	1:700 @ A4 GDA 1994 MGA Zone 56

TITLE

Tree Assessment Plan - Zoom 1

Document Path: N:\GIS STORAGE\N Drive\19WRL02_Beaconsfield_Chatswood\MXDs\19WRL02_T002.mxd

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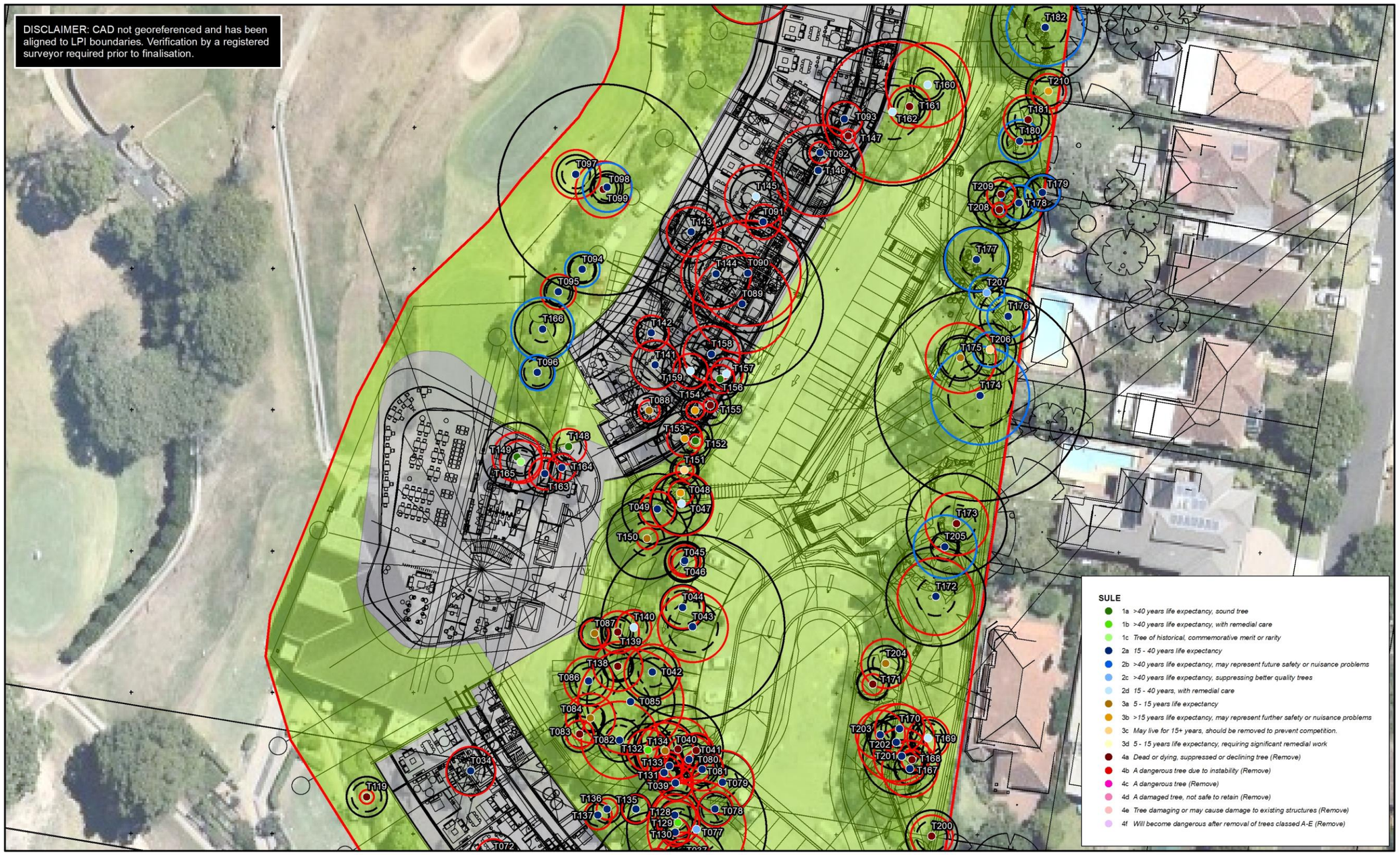
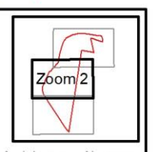
DISCLAIMER: CAD not georeferenced and has been aligned to LPI boundaries. Verification by a registered surveyor required prior to finalisation.



Legend

- Development footprint
- Asset Protection Zone (APZ)
- Building footprint
- Trees to retain (71)
- Trees to remove (238)
- Structural Root Zones (SRZ)
- Tree Protection Zone (TPZ)



Aerial source: Nearmap

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PROJECT & MXD REFERENCE	DATE & ISSUE NUMBER	SCALE & COORDINATE SYSTEM
Beaconsfield Road, Chatswood 19WRL02_T002	14/09/2020 Issue 1 sc	1:700 @ A4 GDA 1994 MGA Zone 56

TITLE

Tree Assessment Plan - Zoom 2

Document Path: N:\GIS STORAGE\N Drive\19WRL02_Beaconsfield_Chatswood\MXDs\19WRL02_T002.mxd

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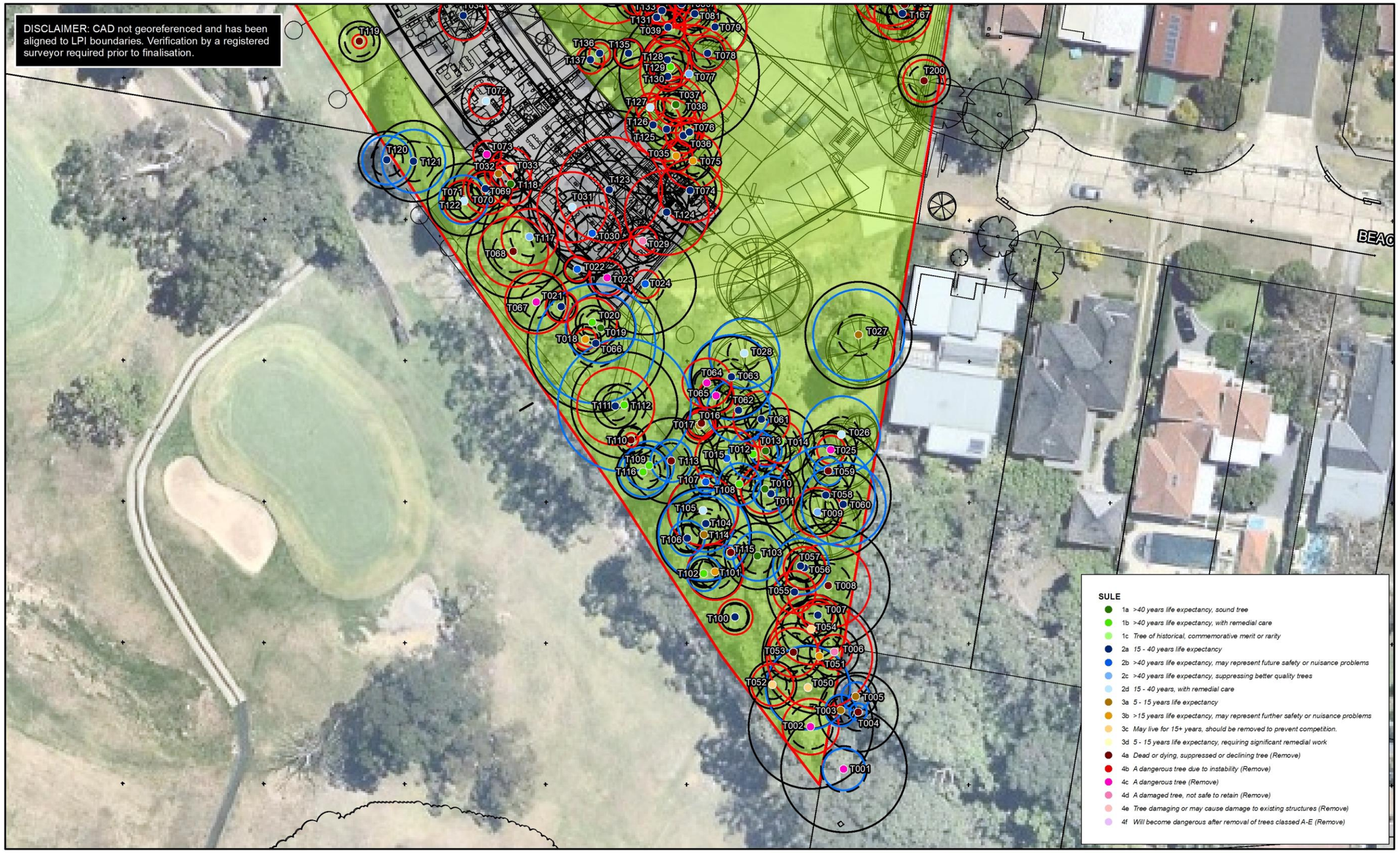
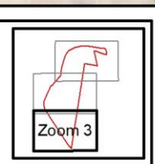


Legend

- Development footprint
- Asset Protection Zone (APZ)
- Building footprint
- Trees to retain (71)
- Trees to remove (238)
- Structural Root Zones (SRZ)
- Tree Protection Zone (TPZ)



Aerial source: Nearmap

0 10 20 m

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

PROJECT & MXD REFERENCE	DATE & ISSUE NUMBER	SCALE & COORDINATE SYSTEM
Beaconsfield Road, Chatswood 19WRL02_T002	14/09/2020 Issue 1 sc	1:700 @ A4 GDA 1994 MGA Zone 56

TITLE

Tree Assessment Plan - Zoom 3

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Schedule 3

SULE Ratings and Terminology

SULE Ratings and Terminology

SULE (an acronym for **safe useful life expectancy**). Particular consideration is given to the following points when making the final SULE assessment for each tree;

- obvious past influences (suppression)
- present health and condition, and future potential in current position
- estimated age at assessment in relation to the life expectancy for the species
- observed and potential structural defects which may influence potential life expectancy
- potential remedial work which may allow retention in the existing location.

An outline of the four relevant SULE categories and their subgroups used in this report is as follows:

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1 Long **SULE** (trees that appear to be retainable at the time of assessment for more than 40 years with an acceptable level of risk)

A A structurally sound tree, located where potential future growth can be accommodated.
B A damaged or defective tree that could be made suitable in the long term (40+ years), where remedial care is given.
C A tree of particular significance (historical / commemorative merit or rarity) that warrants extensive efforts in securing long term retention.

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2 Medium **SULE** (trees that appear to be retainable at the time of assessment, for 15–40 years with an acceptable level of risk)

A A tree predicted to only live between 15 and 40 years
B A tree that may live for more than 40 years, but should be removed to prevent safety or nuisance problems
C A tree that may live for more than 40 years, but should be removed to prevent competition with more suitable individuals, or to provide space for new planting
D A damaged or defective tree that could be made suitable in the medium term (15-40 years), where remedial care is given.

---

3 Short **SULE** (trees that appear to be retainable at the time of assessment for 5–15 years with an acceptable level of risk)

A A tree predicted to only live between 5–15 years
B A tree that may live for more than 15 years, but should be removed to prevent safety or nuisance problems
C A tree that may live for more than 15 years, but should be removed to prevent competition with more suitable individuals or to provide space for new planting
D A damaged or defective tree that could only be made suitable in the short term (5–15 years), and would require significant remedial work.

---

4 **Removals** (Trees with a high level of risk that should be removed within the next 5 years)

A A dead, dying, suppressed or declining tree
B A dangerous tree made so through instability or recent loss of neighbouring trees
C A dangerous tree made so through structural defects (cavities, decay, included bark, wounds or poor form)
D A damaged tree that is clearly not safe to retain
E A tree that is damaging, or may cause damage, to existing structures within 5 years
F A tree that will become dangerous after removal of neighbouring trees for the reasons given in A to E.

SULE ratings given to any tree in this report assumes that appropriate maintenance (if required) will be provided by a qualified arborist. Incorrect tree work practices can significantly accelerate tree suppression and increase hazard potential

EXPLANATION OF TERMINOLOGY USED

DBH - An acronym for bole or trunk diameter at breast height (1.4m from ground level).

Health - An indication of the vigour of a tree and is determined by the observed crown colour, density, presence of insect attack, the percentage of dead or dying branches and the amount of epicormic growth. The health of the canopy and that of the root system is interdependent and significant loss of tree vigour can result through both root and canopy (pruning, suppression) damage.

Suppressed, unhealthy trees have reduced ability to initiate internal defence systems (by the process of compartmentalisation) thus predisposing them to attack by insects and pathogenic decay organisms which increase the potential to drop dangerous branches.

Cambium - The part of the tree situated between the bark and the true wood of a tree. This area is where the tree transports water, nutrients and waste products to and from the roots and leaves. It is this area that is targeted when “ring-barking” a tree in order to disrupt the nutrient transport system of the tree and cause its death.

Condition - An evaluation of the structural integrity of a tree, including defects that may affect the useful life of an otherwise healthy individual. Such influencing factors include cavities and decay, weak unions between branches or trunks and faults of form or habit.

Fungal Attack - Many fungi have evolved to break down wood and return its nutrients to the biocycle of the environment. Fungi usually gain access to the wood through the actions of borers, or from physical damage resulting in exposed wood. Trees suffering from fungal attack may be severely weakened on a structural basis but may not show any external signs of the weakness. This can result in a catastrophic structural failure of a branch or trunk when subjected to stress such as a windy day.

Kino - A dark reddish exudate, rich in polyphenols (tannins), developed in the cambial region of eucalypts often as a result of injury; incorrectly called gum (Boland *et.al.* 1992).

Deadwood - The mature crown of a eucalypt maintains itself by the continual production of new crown units, which die in turn. Thus there will always be some dead branches in a healthy mature crown (Florence, 1996). Minor deadwood refers to dead branchlets, Major deadwood refers to main branches from the trunk.

Schedule 4

TreeAZ Ratings and Terminology

TreeAZ Categories

(Version 10.10-ANZ)

Category Z: Unimportant trees not worthy of being a material constraint

	Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
	High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
	Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
	Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

Schedule 5

STARS – Significance of a Tree Assessment Rating System
(IACA 2010)

Tree Significance - Assessment Criteria

1. High Significance in landscape.

- The tree is in good condition and good vigour;
- 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.

2. Medium Significance in landscape.

- The tree is in fair-good condition and good or low vigour;
- 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.

3. Low Significance in landscape.

- The tree is in fair-poor condition and good or low vigour;
- 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 designed for individual trees only, but can be applied to a monoculture stand in its entirety e.g. hedge.

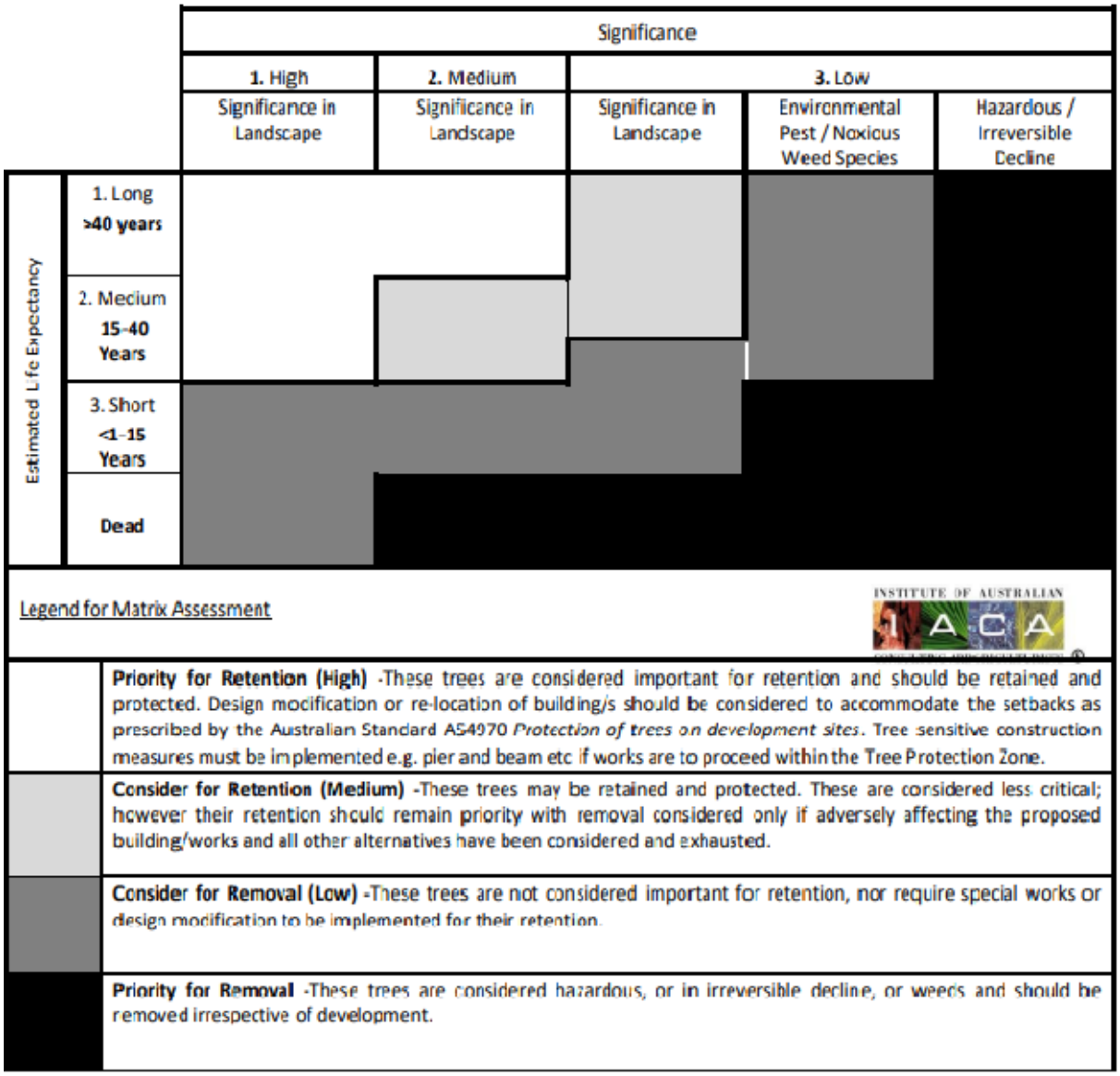

Table: Tree Retention Value – Priority Matrix