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Arborist Report

Warners Bay Private Hospital

project no: **10738.5**
date: **Thursday, 25 August 2016**
revision: **F**

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date:	25-07-16
project no:	10738.5
site:	Fairfax Road, Warners Bay
council:	Lake Macquarie City Council
proposal:	Hospital extension and car parking

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1 introduction

Ramsay Health Care has engaged Terras Landscape Architects to undertake an inspection and assessment of trees within the property described as Lot 1 DP34935 located off Fairfax Road, Warners Bay.

The subject trees have been assessed in relation to Useful Life Expectancy (ULE), Tree AZ and LMCC's Tree Preservation and Native Vegetation Management Guidelines and Significant Tree Register.

The purpose of this arborist's report is to identifiy and record relevant data pertaining to trees located within the nominated site. Further, it includes an impact assessment on how the proposed development may affect the trees.

2 assessing arborist

Terras Landscape Architects
(Landscape Architects and Consulting Arborists)

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AQF Level	5

3 client

Client:	Ramsay Health Care C/-Erilyan Pty Ltd
Client's Representative:	James Curtin
Address:	60 Strathallen Avenue, Northbridge NSW 2063
Contact No.	0401 196 423

4 methodology

The site was first visited on 3rd of December, 2015 whereby initail recordings and assessments were made. A further site visit was undertaken on the 14th of April 2016 to assess additional trees located within the proposed overflow carpark area. Access to some of the trees was restricted due to heavy weed growth and snake activity. Those trees parameters were estimated.

The following methods have been employed in preparing this report:

- Visual Tree Inspection (VTA) (Mattheck & Breloer, 1994) was undertaken. Trees were inspected and assessed from the ground. The visual tree inspection included all visible above ground parts of the tree including exposed roots, trunk, branches and foliage.
- An assessment of Useful Life Expectancy (ULE) (Barrell, 1993). ULE categories give an indication of the useful life expectancy of a tree. Several factors are taken into consideration in determining ULE ratings such as, location, species, age, health and structure of the tree. Refer to Appendix C
- Tree Protection Zones (TPZ) were calculated from the Australian Standard 4970-2009 *Protection of trees on development sites.*
- Retention value of trees was determined using Tree A-Z version 10.10-ANZ. Refer to Appendix D for an explanation of Tree A-Z.

No below ground inspections or analyses was undertaken in the root zone or on soil depths athough where surface roots were visible, inspections were made.
No internal inspections or tissue analyses was undertaken on the subject trees.
A review of LMCC's Register of Significant trees was also undertaken and revealed that there were no significant trees occurring within the site.

5 site

As noted earlier, the subject site consists of Lot 1 DP34935 located off Faifax Road, Warners Bay.

Currently much of the site is occupied by the existing hospital facilities.
To the south of the site is Biddibah Public School, to the north is an over 55's medium density development. The topography of the site slopes gently to the east to a swampy area and creek line.

Vegetation within the eastern study area consists of remnant trees with a disturbed understorey. Much of this lower eastern area towards the swamp is infested with Camphor Laurel and Lantana, some areas are impenetrable.

FIGURE 1: APPROXIMATE SUBJECT SITE BOUNDARY OUTLINED IN RED. [Source: NearMap: 2015-12-07 used under licence]

6 the proposal

As shown in the site plan below, an extention to the existing hospital is proposed. The proposal includes an access driveway and car parking. The proposal extends to the east into an area of disturbed remnant bushland.

7 tree assessment

A visual tree assessment was undertaken on the of 3rd of December 2015 and the 14th of April 2016, the results of which have been included in Appendix B.

Trees located within the development site were assessed. A number of trees located close to the boundary within the adjoing school were also assessed. None of the trees assessed are listed on Lake Macquarie City Council's Significant Tree Register.

The dominant native tree species consist of *Angophora costata*, *Eucalyptus acmenoides* and *Eucalyptus piperita*. Many of the trees are in a poor state having reached over maturity and a number of these are dead.

As can be expected with trees growing in a competitive bushland situation, many of the assessed trees exhibit less than perfect form with crown asymmetry, supression and poor branch structure being the predominant problem caused by phototropism.

The eastern portion of the study area is dominated by Camphor Laurel, which has formed dense thickets. A small number of native trees (*Melaleuca sp)* are mixed throughout the Camphor Laurels, however trying to distinguish which tree is which on the survey is impossible due the close nature of the thickets. This area is shown as orange on appendix A 'Site Plan'. It is suggested that during site clearing works that a consulting arborist

is present to enable the retention of any worthy native trees in this area outside of the development footprint.

The addional tree assessment within the overflow car park area found that most of the Eucalypt species were of a poor quality. Large amounts of dead wood and sparse canopies were common. A number of trees are dead. Tree 69 appears healthy, however there are 2 large Phellinus fruiting bodies present on the lower trunk which would indicate decay. A number of small Melaleuca stypheloides are also present within this area and are of reasonable health. These could be retained if desired, however if removed replacement planting with this species could be undertaken.

Applying Tree **AZ** ratings to the subject trees, there are 31 **Z** trees and 40 **A** trees. **A** trees are considered suitable for retention for more than 10 years and are worthy of being a material constraint.
Z trees are considered unimportant and not worthy of retention due to their short Useful Life Expectancy, associated risks with decay and poor structure, particularly in light of the proposed development.

As can be seen by the **AZ** ratings the majority of trees are **A** trees and are healthy with an anticipated life expectancy of greater than 15 years (i.e. ULE ratings of 1 & 2) some with minor defects and problems that could be treated with proper tree management should it be desired.

FIGURE 5: TYPICAL VEGETATION OCCURRING ON SITE CLOSE TO EXISTING BUILDINGS.

FIGURE 3: MANY OF THE TREES ASSESSED ARE OVER MATURE.

FIGURE 4: TREE 32 ROOT PLATE FAILURE.

FIGURE 5: TYPICAL VEGETATION WITHIN THE EASTERN PORTION OF THE SITE DOMINATED BY CAMPHOR LAUREL.

8 impacts of development

A total of 70 trees were assessed. 3 of these trees are located on the adjoining school grounds.

The car park design is constrained by the location of the riparian zone within the eastern portion of the lot. This has lead to the previously proposed 78 car park spaces being reduced to 62 car park spaces. This has enabled the retention of a further 5 A rated trees. A number of Z rated trees are also proposed for retention due to their habitat potential, Trees 60, 61, 62, 66, 69 and 70. These trees pose a low risk due to thier distance from the proposed car park.

Based on the proposed development footprint it was determined that 1 tree located on the school grounds and 55 trees within the site would need to be removed applying the requirements of AS 4970 *Protection of trees on development sites.*

Tree 6, located within the school grounds requires removal. Tree 6 will lose approximately 50% of its TPZ due to the building footprint.

9 recommendations

- Undertake appropriate replacement plantings on site to replace lost canopy cover and amenity trees.
- Seek approval from the ajoining school for the removal of tree 6 located within their property.
- That trees earmarked for removal to be dismantled and mulched with the mulch being utilised in the proposed landscape works. Any residual mulch to be disposed of in an appropriate manner offsite
- That all tree removal work be carried out by or supervised by a qualified tree worker (AQF Level 3 or equivalent) in accordance with the NSW WorkCover Code of Practice for the Amenity Tree Industry, 1998.
- That trees to be retained are to be protected in accordance with AS4970-2009 *Protection of trees on development sites.* This is to include but not limited to the erection of self-supporting temporary protective fencing.
- Trees to be retained within the car park area are to be crown cleaned in accordance with AS 4373 Pruning of amenity trees to remove dead wood and structurally poor branches.
- A consulting arborist should be on site during clearing works to identify any trees worthy of retention located within the Camphor Laurel thickets and outside of the development footprint.

10 references

Barrell Tree Consultancy	*Tree AZ Version 10.10-ANZ* (2010)
Costello, L.R. Jones, K. S.	*Reducing Infrastructure Damage By Tree Roots (A Compendium of Strategies)* WCISA, Porterville, 2003.
Lake Macquarie City Council	*Lake Macquarie City Council Tree Preservation Guidelines- 2015*
Lake Macquarie City Council	*Lake Macquarie City development Control Plan 2014*
Draper, D. Richards, P.A.	*Dictionary for Managing Trees in Urban Environments.* CSIRO, Collingwood Vic, 2009.
Link Tree System Ltd. Barrell, J.	Arboricultural Journal 1993, Vol. 17pp. 33-46, 01/03/98
Matheck, C. Breloer, H.	*The Body Language of Trees: A Handbook for Failure Analysis.*TSO, London, England.
Matheny, N. Clark, J.R.	*Trees and Development (A Technical Guide to Preservation of Trees During Land Development)* ISA, Illinois, 1998
Standards Australia	Australian Standard *AS 4970 Protection of Trees on Development Sites.* (December 2008)

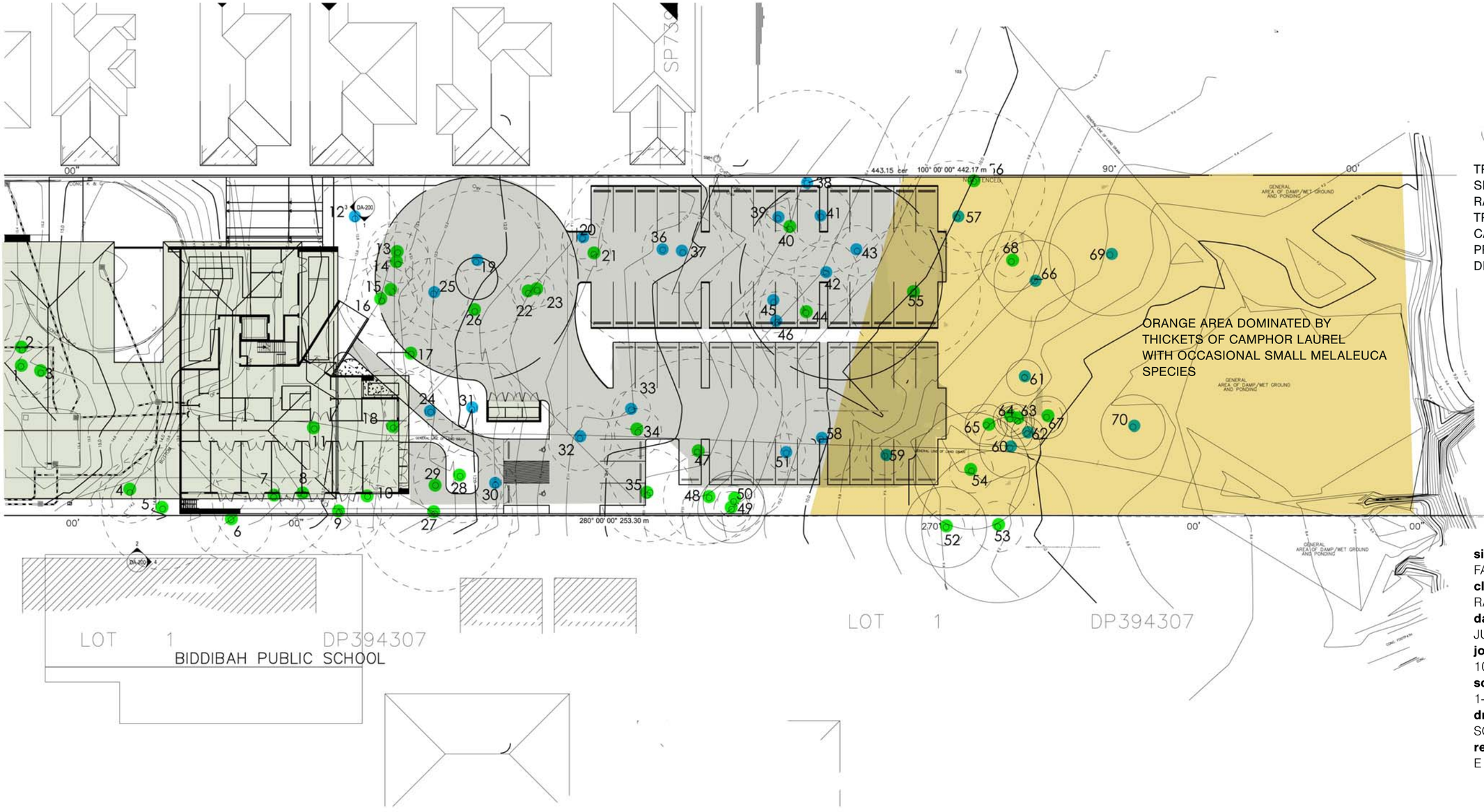
Appendix A: site plan

site plan

warners bay private hospital

01

july 2016



A RATED TREE

Z RATED TREE

STRUCTURAL ROOT ZONE

TREES PROPOSED FOR REMOVAL SHOWN DASHED.
RADIUS OF TREES SHOWN AS TREE PROTECTION ZONES CALCULATED FROM AS 4970 PROTECTION OF TREES ON DEVELOPMENT SITES.

site details:
FAIRFAX ROAD, WARNERS BAY
client:
RAMSAY HEALTH CARE
date:
JULY 2016
job number:
10738.5
scale:
1-500 @ A3
drawn:
SGK
rev. number:
E

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Appendix B: Tree Assessment Summary

FIELD ASSESSMENT SHEET

PROJECT: WARNERS BAY PRIVATE HOSPITAL

JULY 2016

No	BOTANICAL NAME	COMMON NAME	AGE CLASS	HEIGHT [M]	DBH [MM]	SPREAD [M]				ULE	TREE AZ	STRUCTURE	HEALTH	COMMENTS
						NORTH	EAST	SOUTH	WEST					
1	*Melaleuca quinquenervia*	Broad Leaved Paper Bark	M	7	200 130	2	2	2	2	1A	A1	F	F	SMALL TREE
2	*Eucalyptus botryoides*	Bangalay	M	20	460	6	9	9	8	1A	A1	AV	AV	MINOR DEAD WOOD.
3	*Casuarina cunninghamiana*	River She-Oak	M	10	250	3	3	3	3	1A	A1	AV	AV	
4	*Angophora costata*	Smooth Barked Apple	M	17	300	2	2	4	3	1A	A1	AV	AV	
5	*Eucalyptus acmenoides*	White Mahogany	M	17	600	10	8	8	5	2D	A2	F	F	MODERATE AMOUNT OF DEAD WOOD OF A MODERATE SIZE.
6	*Eucalyptus robusta*	Swamp Mahogany	M	15	400	6	6	6	6	2D	A2	F	F	DEAD WOOD.
7	*Angophora costata*	Smooth Barked Apple	M	22	610	6	3	4	4	2D	A2	AV	AV	MODERATELY SIZED DEAD WOOD.
8	*Angophora costata*	Smooth Barked Apple	M	16	250	4	3	5	2	1A	A1	AV	AV	
9	*Angophora costata*	Smooth Barked Apple	M	20	420	6	4	7	5	1A	A1	AV	AV	MINOR DEAD WOOD.
10	*Angophora costata*	Smooth Barked Apple	M	17	310	5	4	6	5	1A	A1	AV	AV	
11	*Angophora costata*	Smooth Barked Apple	M	21	720	9	5	8	7	3D	Z9	F	F	LARGE WOUND AND DECAY ASSOCIATED WITH A FAILED BRANCH. MODERATELY SIZED DEAD WOOD.
12	*Alphitonia excelsa*	Red Ash	M	16	410	4	8	3	3	3D	Z9	F	F	ON A LEAN TO THE EAST, WOUND ON 1ST SCAFFOLD BRANCH, TWIGGY DEAD WOOD AND SEVERE INSECT ATTACK ON FOLIAGE.
13	*Angophora costata*	Smooth Barked Apple	M	15	300	9	5	2	3	2D	A2	F	F	TWIGGY DEAD WOOD.
14	*Angophora costata*	Smooth Barked Apple	M	17	320	6	6	2	4	1A	A1	AV	AV	
15	*Angophora costata*	Smooth Barked Apple	M	17	300	5	4	4	2	1A	A1	AV	AV	
16	*Angophora costata*	Smooth Barked Apple	M	16	350 170	7	3	5	6	1A	A1	AV	AV	
17	*Angophora costata*	Smooth Barked Apple	M	15	210	3	4	4	4	1A	A1	AV	AV	
18	*Angophora costata*	Smooth Barked Apple	M	20	460	9	8	7	6	2D	A2	AV	AV	MINOR DEAD WOOD.
19	*Eucalyptus acmenoides*	White Mahogany	OM	14	700	8	2	0	0	4B	Z4	P	P	ALMOST DEAD, TOP OF TREE IS DEAD, TERMITE NEST.
20	*Eucalyptus acmenoides*	White Mahogany	OM	15	620	9	5	0	2	4B	Z4	P	P	LARGE AMOUNT OF DEAD WOOD, POOR STRUCTURE AND LEANING TO THE NORTH, LARGE DEAD LIMBS.

** MULTI TRUNKED. BASAL DIAMETER MEASURED IMMEDIATELY ABOVE ROOT FLARE*

LEGEND

AGE CLASS	Y	YOUNG SAPLING/HAS NOT REACHED 1ST ADULT FORM	SM	SEMI-MATURE DBH < 300mm/APPROACHING FULL HEIGHT	M	MATURE DBH BET. 300 -700/APPROACH. MAX HT & SPREAD	OM	OVER-MATURE/SENESCENT LGE DBH, LGE BRANCH FAILURES/STRUCT FAULTS
STRUCTURE	P	POOR NUMEROUS STRUCTURAL FAULTS/HIGH RISK OF SEVERE FAILURE	F	FAIR STRUCTURAL FAULTS PRESENT /MODERATE RISK OF SEVERE FAILURE	Av	AVERAGE SOME MINOR FAULTS /MODERATE RISK FOR MAJOR FAILURE	Ex	EXCELLENT SOME MINOR FAULTS/LOW-MOD RISK OF MINOR FAILURES
HEALTH	P	POOR SIG. SIGNS OF LOST VIGOUR EG DIEBACK, REDUCED CANOPY	F	FAIR SIGNS OF REDUCED VIGOUR EG LEAF UNDER STRESS, STUNTING	Av	AVERAGE LOCALISED PATCHES OF LOST VIGOUR/NOT WIDESPREAD	Ex	EXCELLENT NO EVIDENCE OF STRESS/SIGNS OF NEW GROWTH/WIDESPREAD
RETENTION	TREES TO BE RETAINED		TREES TO BE REMOVED		THREATENED TREE			

FIELD ASSESSMENT SHEET

PROJECT: WARNERS BAY PRIVATE HOSPITAL

JULY 2016

No	BOTANICAL NAME	COMMON NAME	AGE CLASS	HEIGHT [M]	DBH [MM]	SPREAD [M]				ULE	TREE AZ	STRUCTURE	HEALTH	COMMENTS
						NORTH	EAST	SOUTH	WEST					
21	*Alphitonia excelsa*	Red Ash	SM	12	200	3	3	3	3	1A	A1	AV	AV	
22	*Angophora costata*	Smooth Barked Apple	SM	12	160	1	1	1	1	1A	A1	AV	AV	
23	*Angophora costata*	Smooth Barked Apple	SM	11	150	1	1	1	1	1A	A1	AV	AV	
24	*Eucalyptus species*	Gum Tree	OM	18	380	3	2	2	2	4B	Z4	P	P	LARGE AMOUNT OF DECAY, CANOPY DIEBACK AND DEAD WOOD.
25	*Eucalyptus species*	Gum Tree	OM	18	350	2	5	2	1	4B	Z4	P	P	LARGE AMOUNT OF DECAY, CANOPY DIEBACK AND DEAD WOOD.
26	*Angophora costata*	Smooth Barked Apple	M	14	420	7	4	4	3	1A	A1	AV	AV	
27	*Angophora costata*	Smooth Barked Apple	M	18	770	4	7	8	6	2D	A2	F	AV	DEAD WOOD
28	*Angophora costata*	Smooth Barked Apple	M	20	460	10	7	3	3	2D	A2	F	AV	LEAN TO THE NORTH AND A MODERATE AMOUNT OF DEAD WOOD.
29	*Angophora costata*	Smooth Barked Apple	M	21	650	12	10	5	7	2D	A2	AV	AV	MODERATE AMOUNT OF DEAD WOOD.
30	*Dead Tree*									4A	Z4			
31	*Eucalyptus acmenoides*	White Mahogany	OM	19	460	4	4	3	3	4B	Z4	P	P	DECLINING TREE WITH MASSES OF DEAD WOOD. LARGE HANGING BRANCHES AND TERMITE NEST.
32	*Angophora costata*	Smooth Barked Apple	M	18	300 250					4C	Z6	P	P	ROOT PLATE FAILURE LEANING INTO ADJACENT TREE.
33	*Dead Tree*									4A	Z4			
34	*Eucalyptus acmenoides*	White Mahogany	M	15	240	2	2	2	2	1A	A1	AV	AV	
35	*Angophora costata*	Smooth Barked Apple	M	18	460	6	4	6	5	1A	A1	AV	AV	
36	*Eucalyptus acmenoides*	White Mahogany	OM	18	1000	10	5	0	4	4B	Z4	P	P	DECLINING TREE ON A LEAN TO THE NORTH, LARGE AMOUNT OF DEAD WOOD AND CANOPY DIEBACK.
37	*Eucalyptus species*	Gum Tree	OM	18	400	6	5	6	6	4B	Z4	P	P	LARGE AMOUNT OF DEAD WOOD AND CANOPY DIEBACK.
38	*Eucalyptus piperita*	Sydney Peppermint	M	17	930	12	10	0	3	3D	Z9	P	F	POORLY STRUCTURED, LEANING TO THE NORTH WITH END WEIGHT ISSUES ON BRANCHES, MODERATE AMOUNT OF DEAD WOOD.
39	*Dead tree*									4A	Z4			

** MULTI TRUNKED. BASAL DIAMETER MEASURED IMMEDIATELY ABOVE ROOT FLARE*

LEGEND

AGE CLASS	Y	YOUNG SAPLING/HAS NOT REACHED 1ST ADULT FORM	SM	SEMI-MATURE DBH < 300mm/APPROACHING FULL HEIGHT	M	MATURE DBH BET. 300 -700/APPROACH. MAX HT & SPREAD	OM	OVER-MATURE/SENESCENT LGE DBH, LGE BRANCH FAILURES/STRUCT FAULTS
STRUCTURE	P	POOR NUMEROUS STRUCTURAL FAULTS/HIGH RISK OF SEVERE FAILURE	F	FAIR STRUCTURAL FAULTS PRESENT /MODERATE RISK OF SEVERE FAILURE	Av	AVERAGE SOME MINOR FAULTS /MODERATE RISK FOR MAJOR FAILURE	Ex	EXCELLENT SOME MINOR FAULTS/LOW-MOD RISK OF MINOR FAILURES
HEALTH	P	POOR SIG. SIGNS OF LOST VIGOUR EG DIEBACK, REDUCED CANOPY	F	FAIR SIGNS OF REDUCED VIGOUR EG LEAF UNDER STRESS, STUNTING	Av	AVERAGE LOCALISED PATCHES OF LOST VIGOUR/NOT WIDESPREAD	Ex	EXCELLENT NO EVIDENCE OF STRESS/SIGNS OF NEW GROWTH/WIDESPREAD
RETENTION	TREES TO BE RETAINED			TREES TO BE REMOVED			THREATENED TREE	

FIELD ASSESSMENT SHEET

PROJECT: WARNERS BAY PRIVATE HOSPITAL

JULY 2016

No	BOTANICAL NAME	COMMON NAME	AGE CLASS	HEIGHT [M]	DBH [MM]	SPREAD [M]				ULE	TREE AZ	STRUCTURE	HEALTH	COMMENTS
						NORTH	EAST	SOUTH	WEST					
40	*Angophora costata*	Smooth Barked Apple	M	17	320	8	7	6	6	1A	A1	AV	AV	
41	*Eucalyptus acmenoides*	White Mahogany	M	17	300	5	8	3	3	3D	Z9	F	F	LARGE AMOUNT OF TWIGGY DEAD WOOD.
42	*Eucalyptus acmenoides*	White Mahogany	M	17	340	2	4	2	2	3D	Z9	F	F	LARGE AMOUNT OF TWIGGY DEAD WOOD.
43	*Eucalyptus species*	Gum Tree	M	15	250	2	1	1	1	4B	Z4	P	P	CODOMINANT TREE WITH ONE LEADER DEAD, LITTLE LIVE CANOPY LEFT.
44	*Eucalyptus piperita*	Sydney Peppermint	M	19	420	6	6	7	8	1A	A1	AV	AV	
45	*Eucalyptus acmenoides*	White Mahogany	OM	17	250 250	1	1	1	3	4B	Z4	P	P	ALMOST DEAD
46	*Eucalyptus acmenoides*	White Mahogany	OM	17	300	3	4	3	4	4B	Z4	P	P	DECLINING TREE WITH LITTLE LIVE CANOPY LEFT.
47	*Eucalyptus piperita*	Sydney Peppermint	M	22	920	12	12	12	12	2A	A2	AV	AV	
48	*Angophora costata*	Smooth Barked Apple	M	17	450	6	5	5	4	1A	A1	AV	AV	
49	*Eucalyptus acmenoides*	White Mahogany	M	15	340	4	4	3	3	2D	A2	F	F	LARGE AMOUNT OF LARGE SIZED DEAD WOOD.
50	*Angophora costata*	Smooth Barked Apple	M	16	300	5	4	4	4	1A	A1	AV	AV	
51	*Dead tree*									4A	Z4			
52	*Eucalyptus piperita*	Sydney Peppermint	M	17	400	8	8	10	10	1A	A1	AV	AV	LOCATED ON ADJOINING PROPERTY
53	*Eucalyptus piperita*	Sydney Peppermint	M	18	650 450	10	5	6	8	1A	A1	AV	AV	LOCATED ON ADJOINING PROPERTY
54	*Angophora costata*	Smooth Barked Apple	M	20	580	6	6	10	8	2D	A2	AV	AV	MINOR DEAD WOOD
55	*Eucalyptus acmenoides*	White Mahogany	M	20	600	6	6	6	6	2D	A2	AV	AV	DEAD WOOD
56	*Eucalyptus acmenoides*	White Mahogany	M	19	500 500	5	5	6	5	2D	A2	F	F	CO-DOMINANT LEADERS, MODERATE AMOUNT OF DEAD WOOD
57	*Eucalyptus acmenoides*	White Mahogany	M	18	400 400	4	4	4	4	3D	Z9	F	F	SPARSE CANOPY AND A LARGE AMOUNT OF DEAD WOOD
58	*Angophora costata*	Smooth Barked Apple	M	16	300	2	3	2	2	3D	Z9	F	P	VERY SPARSE CANOPY AND A LARGE AMOUNT OF DEAD WOOD
59	*Dead tree*									4B	Z4			
60	*Eucalyptus acmenoides*	White Mahogany	M	16	300	4	3	0	2	4B	Z4	P	P	DECLINING TREE WITH SIGNIFICANT STORM DAMAGE

** MULTI TRUNKED. BASAL DIAMETER MEASURED IMMEDIATELY ABOVE ROOT FLARE*

LEGEND

AGE CLASS	Y	YOUNG SAPLING/HAS NOT REACHED 1st ADULT FORM	SM	SEMI-MATURE DBH < 300mm/APPROACHING FULL HEIGHT	M	MATURE DBH BET. 300 -700/APPROACH. MAX HT & SPREAD	OM	OVER-MATURE/SENESCENT LGE DBH, LGE BRANCH FAILURES/STRUCT FAULTS
STRUCTURE	P	POOR NUMEROUS STRUCTURAL FAULTS/HIGH RISK OF SEVERE FAILURE	F	FAIR STRUCTURAL FAULTS PRESENT /MODERATE RISK OF SEVERE FAILURE	Av	AVERAGE SOME MINOR FAULTS /MODERATE RISK FOR MAJOR FAILURE	Ex	EXCELLENT SOME MINOR FAULTS/LOW-MOD RISK OF MINOR FAILURES
HEALTH	P	POOR SIG. SIGNS OF LOST VIGOUR EG DIEBACK, REDUCED CANOPY	F	FAIR SIGNS OF REDUCED VIGOUR EG LEAF UNDER STRESS, STUNTING	Av	AVERAGE LOCALISED PATCHES OF LOST VIGOUR/NOT WIDESPREAD	Ex	EXCELLENT NO EVIDENCE OF STRESS/SIGNS OF NEW GROWTH/WIDESPREAD
RETENTION	TREES TO BE RETAINED		TREES TO BE REMOVED			THREATENED TREE		

FIELD ASSESSMENT SHEET

PROJECT: WARNERS BAY PRIVATE HOSPITAL

JULY 2016

No	BOTANICAL NAME	COMMON NAME	AGE CLASS	HEIGHT [M]	DBH [MM]	SPREAD [M]				ULE	TREE AZ	STRUCTURE	HEALTH	COMMENTS
						NORTH	EAST	SOUTH	WEST					
61	*Dead tree*									4B	Z4			
62	*Dead tree*									4B	Z4			
63	*Melaleuca stypheloides*	Prickly Leaved Paper Bark	M	8	150	2	2	2	2	2A	A1	F	F	
64	*Melaleuca stypheloides*	Prickly Leaved Paper Bark	M	8	170	2	2	2	2	2A	A1	F	F	
65	*Melaleuca stypheloides*	Prickly Leaved Paper Bark	M	10	210	2	2	2	2	2A	A1	F	F	
66	*Dead tree*									4B	Z4			
67	*Melaleuca stypheloides*	Prickly Leaved Paper Bark	M	12	150 150	2	2	2	2	2D	A2	P	F	SMALL TREE WITH A POORLY STRUCTURED TRUNK
68	*Melaleuca stypheloides*	Prickly Leaved Paper Bark	M	13	300	3	2	2	2	2A	A1	F	F	
69	*Eucalyptus species*	Gum Tree	M	20	600	6	6	7	7	4B	Z4	F	F	TWO PHELLINUS FRUITING BODIES LOCATED ON THE LOWER TRUNK AT APPROXIMATELY 2M
70	*Eucalyptus acmenoides*	White Mahogany	M	17	320	6	2	3	4	3D	Z9	F	F	LARGE AMOUNT OF DEAD WOOD

** MULTI TRUNKED. BASAL DIAMETER MEASURED IMMEDIATELY ABOVE ROOT FLARE*

LEGEND

AGE CLASS	Y	YOUNG SAPLING/HAS NOT REACHED 1st ADULT FORM	SM	SEMI-MATURE DBH < 300mm/APPROACHING FULL HEIGHT	M	MATURE DBH BET. 300 -700/APPROACH. MAX HT & SPREAD	OM	OVER-MATURE/SENESCENT LGE DBH, LGE BRANCH FAILURES/STRUCT FAULTS
STRUCTURE	P	POOR NUMEROUS STRUCTURAL FAULTS/HIGH RISK OF SEVERE FAILURE	F	FAIR STRUCTURAL FAULTS PRESENT /MODERATE RISK OF SEVERE FAILURE	Av	AVERAGE SOME MINOR FAULTS /MODERATE RISK FOR MAJOR FAILURE	Ex	EXCELLENT SOME MINOR FAULTS/LOW-MOD RISK OF MINOR FAILURES
HEALTH	P	POOR SIG. SIGNS OF LOST VIGOUR EG DIEBACK, REDUCED CANOPY	F	FAIR SIGNS OF REDUCED VIGOUR EG LEAF UNDER STRESS, STUNTING	Av	AVERAGE LOCALISED PATCHES OF LOST VIGOUR/NOT WIDESPREAD	Ex	EXCELLENT NO EVIDENCE OF STRESS/SIGNS OF NEW GROWTH/WIDESPREAD
RETENTION	TREES TO BE RETAINED		TREES TO BE REMOVED			THREATENED TREE		

Appendix C: Useful Life Expectancy (ULE)

ULE CLASSIFICATIONS

1	LONG ULE : GREATER THAN 40 YEARS [>40] TREES THAT APPEAR TO BE RETAINABLE WITH AN ACCEPTABLE LEVEL OF RISK FOR MORE THAN 40 YEARS
A	Structurally sound trees located in positions that can accommodate future growth.
B	Storm damaged or defective trees that could be made suitable for retention by remedial tree surgery.
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

2	MEDIUM ULE : MORE THAN 15 YEARS, LESS THAN 40 YEARS [15 - 40] TREES THAT APPEAR TO BE RETAINABLE WITH AN ACCEPTABLE LEVEL OF RISK FOR 15 TO 40 YEARS
A	Trees that may only live between 15 and 40 more years
B	Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals
C	Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons
D	Storm damaged or defective trees that can be made suitable for retention by remedial work

3	SHORT ULE : MORE THAN 5 YEARS, LESS THAN 15 YEARS [5 -15] TREES THAT APPEAR TO BE RETAINABLE WITH AN ACCEPTABLE LEVEL OF RISK FOR 5 TO 15 YEARS
A	Trees that may only live between 5 and 15 more years
B	Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals
C	Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons
D	Storm damaged or defective trees that require substantial remedial work to make safe, and are only suitable for retention in the short term

4	REMOVE : LESS THAN 5 YEARS [<5] TREES WITH A HIGH LEVEL OF RISK THAT WOULD NEED REMOVING WITHIN THE NEXT 5 YEARS
A	Dead trees
B	Dying or suppressed and declining trees through disease or inhospitable conditions
C	Dangerous trees through instability or recent loss of adjacent trees
D	Dangerous trees through structural defects, including cavities, decay, included bark, wounds or poor form
E	Damaged trees that are considered unsafe to retain
F	Trees that will become dangerous after removal of others for the reasons given in A to E

REFERENCE: LINK TREE SYSTEM LTD. JEREMY BARRELL, ARBORICULTURAL JOURNAL 1993, VOL. 17PP. 33-46, 01/03/98

Appendix D: Tree AZ Categories

TREE A-Z CATEGORIES

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.
Z2	Too close to a building i.e. exempt from legal protection because of proximity.
Z3	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.
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 remediation care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions.
Z6	Instability, i.e. poor anchorage and/or increased exposure.
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 recognised court or tribunal would be likely to authorise removal, i.e. dominance, debris and/or interference.
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognised court or tribunal would be likely to authorise removal, i.e. severe structural damage to surfacing and buildings.
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 high risk of failure can be **temporarily** reduces by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions.
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings and/or poor architectural framework.
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference and/or suppression.
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance.

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 categorisation 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 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 form ecological reasons (Advisory requiring specialist assessment)

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

CAUTION: Tree AZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The preceding category descriptions are designed to be a brief field reference and are not to be self explanatory. They must be read in conjunction with the most current explanations published at www.treeaz.com