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27 June 2016

Preliminary Arboricultural Report[1]

Ref: 2046

Re: A Trees on Block 16, Section 7 (41 National Circuit), Forrest, ACT

Prepared for:

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Prepared by:

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Consulting Arborist
Diploma of Arboriculture with Distinction
Bachelor of Agricultural Science
Certificate of Horticulture

Assessment:

- **Date:** The trees were assessed on 24 June 2016
- **Assessor:** Alan Mann

Tree Location:
Site location is shown in Figure 1. Tree numbers and tree locations are shown in Appendix 1 at the end of this report

Figure 1 The Site Block 16, Section 7, (41 National Circuit), Forrest, Aerial photo from actmapi.act.gov.au accessed 20160627

[1] This report follows the requirements of a Preliminary Arboricultural Report as specified in AS4970-2009 *Protection of trees on development sites*. Sometimes called a Preliminary Tree Assessment Report

Contents

Assessment

Tree No.	Species	Status	TQC	Arborist's Recom.	Probable Outcome	Tree Condition		Trunk Circ. 1.4m	TPZ[49 70]	D10	Trunk Circ. Butt.	SRZ[4970]	Ht.	Canopy Spread				TPZ[ACT]	Comments
						Structure	Health							N	E	W	S		
1	Quercus bicolor - Swamp White Oak	Street Tree	High	Retain	Not affected if driveways in same location	Good	Good	2.47	9.4	6.4	2.63	3.1	18	9	9	9	5	11	
2	Quercus bicolor - Swamp White Oak	Street Tree	High	Retain	Not affected if driveways in same location	Good	Good	2.45	9.4	6.3	2.72	3.1	18	10	9	9	9	12	
3	Quercus macrocarpa – Burr Oak	Street Tree	High	Retain	Not affected if driveways in same location. Minor pruning for construction vehicle access	Good	Good	1.32	5.0	3.4	1.46	2.4	15	6	5	5	6	8	Low branches over driveway
4	Quercus macrocarpa – Burr Oak	Street Tree	High	Retain	Not affected if driveways in same location. Minor pruning for construction vehicle access	Good	Good	1.16	4.4	3.0	1.37	2.3	14	5	5	5	5	7	Low branches over driveway
5	Albizia julibrissin - Silk Tree	Not Regulated			Remove														Short lived
6	Albizia julibrissin - Silk Tree	Not Regulated			Remove														Short lived
7	Ligustrum lucidum - Large leaf Privet	Pest Plant (Weed)			Remove														
8	Arbutus unedo - Strawberry Tree	Regulated Tree	Medium		Retain/ Remove	Good	Fair	0.73, 0.58, 0.32	3.8	2.5	1.2	2.2	4	1	2	6		8	Branches extend mostly into this block. Could be retained as screening/shade (Evergreen)
9	Liquidambar styraciflua – Sweet gum	Not Regulated			Remove			1.27					11.8						Poor form & shape
10	Pittosporum eugenioides 'Variegatum' - Tarata	Not Regulated			Remove														Multi stemmed
11	Cupressus sempervirens	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Good	0.73, 0.60,	4.4	3.0	1.55	2.5	14	1	1	1	1	4	This species is usually OK with a smaller TPZ than is

Tree No.	Species	Status	TQC	Arborist's Recom.	Probable Outcome	Tree Condition		Trunk Circ. 1.4m	TPZ[49 70]	D10	Trunk Circ. Butt.	SRZ[4970]	Ht.	Canopy Spread				TPZ[ACT]	Comments
						Structure	Health							N	E	W	S		
	'Stricta' – Pencil Pine							0.60, 0.20, 0.20											calculated here
12	Cupressus sempervirens 'Stricta' – Pencil Pine	Not Regulated																	
13	Cupressus sempervirens 'Stricta' – Pencil Pine	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Good	0.67, 0.35, 0.36	3.2	2.2	0.89	1.9	12	1	1	1	1	4	This species is usually OK with smaller TPZ
14	Cupressus sempervirens 'Stricta' – Pencil Pine	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Good	0.71, 0.69	3.8	2.6	0.98	2.0	12	1	1	1	1	4	This species is usually OK with smaller TPZ
15	Cupressus sempervirens 'Stricta' – Pencil Pine	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Good	1.17	4.5	3.0	1.13	2.2	16	1	1	1	1	4	This species is usually OK with smaller TPZ
16	Cupressus sempervirens 'Stricta' – Pencil Pine	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Good	1.50, 1.20	7.3	5.0	1.97	2.7	16	1	1	1	1	3	This species is usually OK with smaller TPZ
17	Liquidambar styraciflua – Sweet gum	Regulated Tree	Medium	Retain	Retain. Likely to required designing features of unit 1 and paving to prevent root damage	Good	Good	3.1	11.9	8.1	3.7	3.6	12	7	7	9	7	11	Has some evidence of previous broken branches but branch structure good for this species
18	Ginkgo biloba - Maidenhair Tree	Regulated Tree	Medium	Retain	Retain. Roots protection may be required but much of TPZ falls between garages of Units 1 &2	Good	Good	0.98	3.7	2.5	1.2	2.2	12	5	5	5	5	7	Fruit drop; Has xylorictid type borer damage which can cause branch failure or branch death
19	Populus nigra 'Italica' - Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain.			1.5	5.7	3.8	1.8	2.6							Ivy up trunk

Tree No.	Species	Status	TQC	Arborist's Recom.	Probable Outcome	Tree Condition		Trunk Circ. 1.4m	TPZ[49 70]	D10	Trunk Circ. Butt.	SRZ[4970]	Ht.	Canopy Spread				TPZ[ACT]	Comments
						Structure	Health							N	E	W	S		
20	Populus nigra 'Italica' – Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain.			1.9	7.3	4.9	2.3	2.9							Ivy up trunk
21	Populus nigra 'Italica' – Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain. Check levels of paving at rear of Unit 3.			1.0	3.8	2.6	1.2	2.2						11	Ivy up trunk
22	Populus nigra 'Italica' – Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain. Check levels of paving at rear of Unit 3.			1.7	6.5	4.4	2.0	2.8							Ivy up trunk
23	Populus nigra 'Italica' – Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain. Check levels of paving at rear of Unit 3.			1.7	6.5	4.4	2.0	2.8							Ivy up trunk
24	Populus nigra 'Italica' – Lombardy Poplar	Pest Plant (Weed)		Retain/ Remove	Retain			0.8	3.1	2.1	1.0	2.0							Ivy up trunk
25	Quercus palustris - Pin Oak	Regulated Tree	Medium	Retain/ Remove	Retain	Good	Fair	2.5	9.6	6.4	3.0	3.2	22	10	5	5	7	12	Poor form - no low branches , poor branch distribution; Ivy up trunk
					See Appendix 2 Explanations of Terms Used in the Tree Assessments														

General Notes

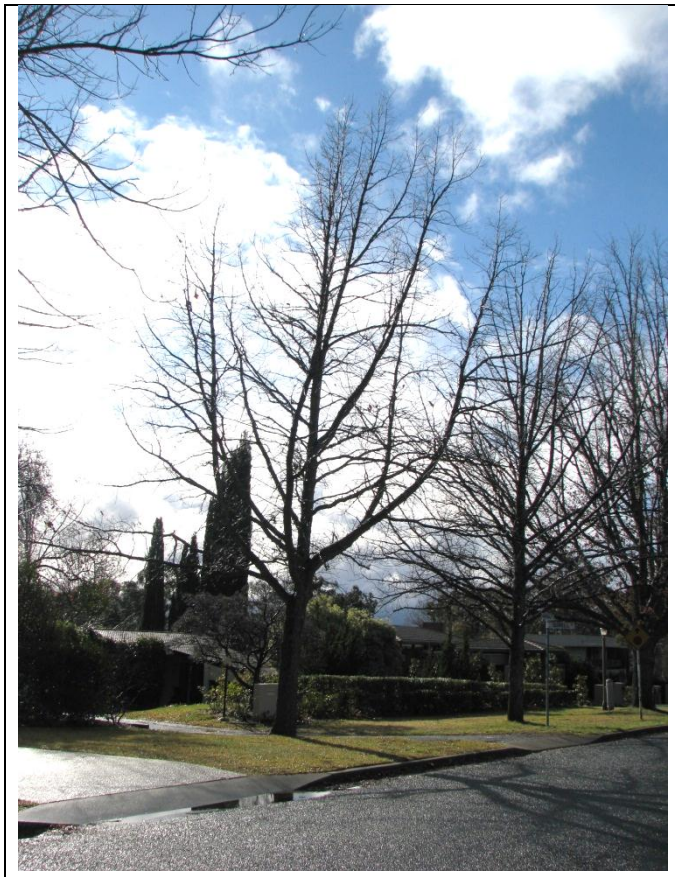
- Trees 8 & 24 were not shown on the site survey by M& M Surveys dated 15-6-2016. Tree 8 is only regulated due to a quirk in the *Tree Protection Act 2005* that adds circumferences. It may or may not be identified as regulated by an officer from the TPU. Tree 24 is small compared to the rest of the row of poplars.
- Trees 19 – 24 (Lombardy Poplars) are not protected by the Tree Protection Act 2005, because of their Pest Plant listing, but as they are not on this block there is a moral (perhaps legal) obligation to ensure they are not destabilised.

Photo Gallery

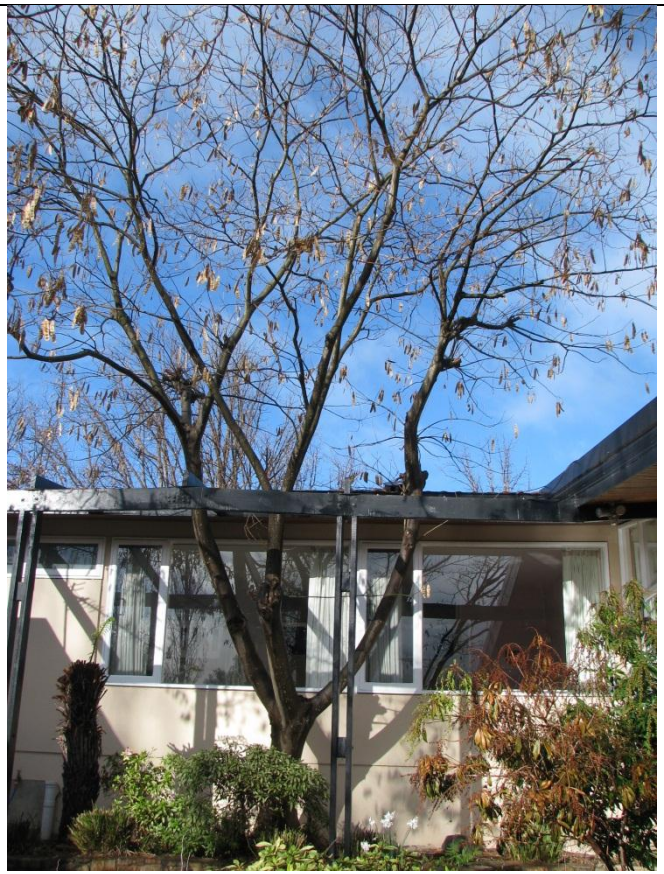
Tree 1

Tree 2

Tree 3



Tree 4



Tree 5

Tree 6

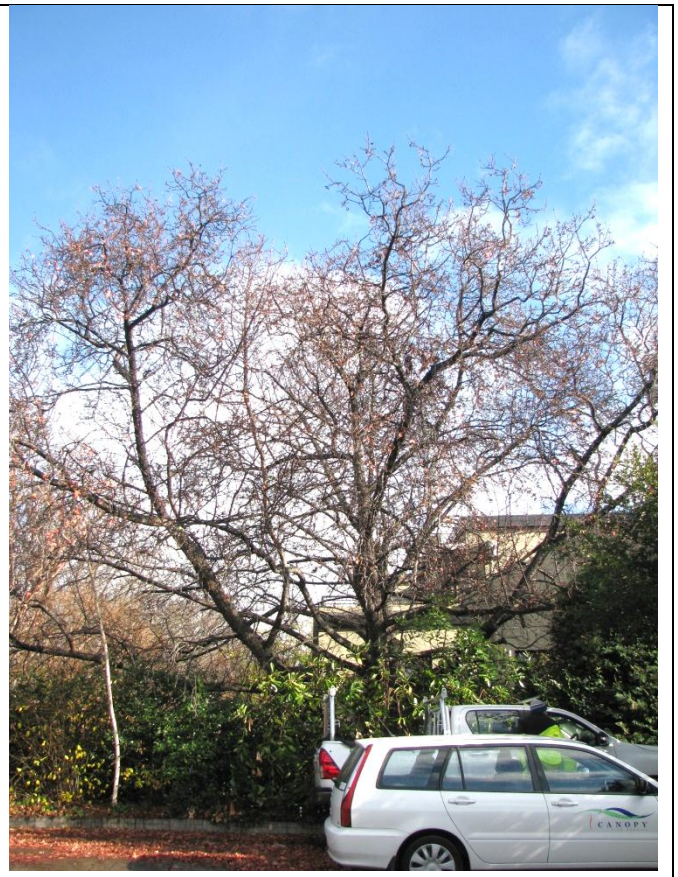
Tree 7

Tree 8

Tree 9

Tree 10

Trees 11 – 16 Left to right (The broad leaf shrub is not included in the survey or numbers)

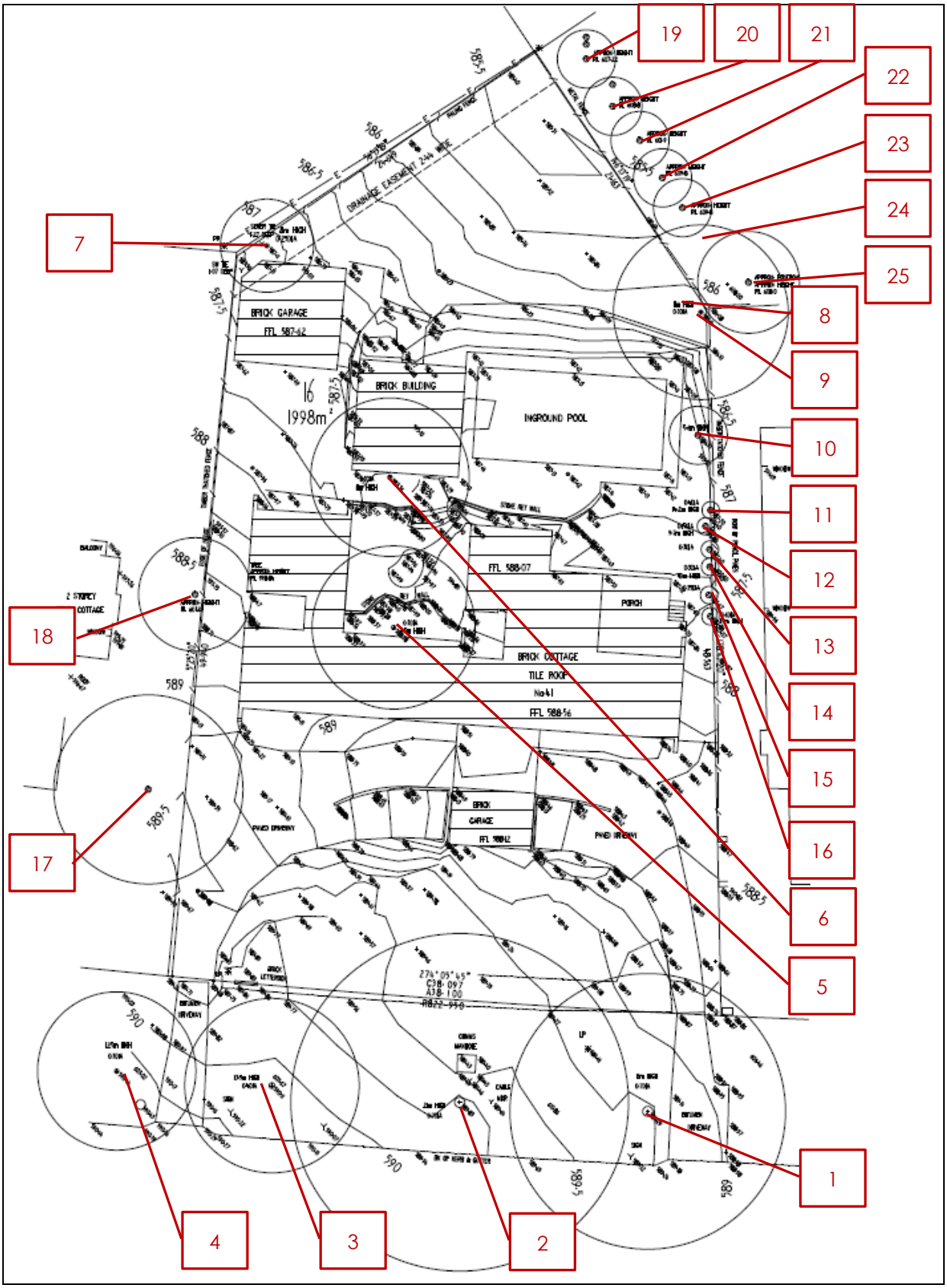


Tree 17

Tree 18

Trees 19 – 25 Left to Right

Appendix 1 Tree Location and Tree Numbers



Appendix 2 Explanations of Terms Used in the Tree Assessments

This Assessment format has been developed to conform to the requirements *'Notifiable Instrument NI2007-422'* and with the *Australian Standard AS4970-2009 Protection of trees on construction sites*

Tree Number

These are allocated to the trees located on the block, overhanging the block or on the verge. The numbers are allocated in Appendix 1.

Height

The tree height expressed in metres to the nearest meter. Tree Heights were estimated or measured using a clinometer from a measured offset.

Trunk Circumference

Trunk circumferences were measured by tape measure following the guidelines in AS4970-2009.
Trunk Circumference (for ACT Tree Protection Act 2005) is the total trunk circumference at 1m above ground level (AGL), is expressed in millimetres and is the sum of the individual trunk circumferences if there are more than 1 trunk at that height.
Trunk Circumference (for Tree Protection Zone as per AS4970 = **TPZ^{4970}**) is the trunk circumference at 1.4m above ground level (AGL), is expressed in millimetres and lists the individual trunk circumferences if there are more than 1 trunk at that height. These are used to calculate the DBH and subsequently the Radius TPZ^{4970} (The Radius of the Tree Protection Zone as recommended by the AS4970-2009). Where there is more than one trunk at 1.4 m AGL then the DBH is calculated by the formula presented in AS4970-2009. (Branches, as opposed to trunks, are not included).
Trunk Circumference (for Structural Root Zone as per AS4970 = **SRZ^{4970}**) is the trunk circumference just above the root buttress and is used to calculate the Radius SRZ^{4970} (the radius of the Structural Root Zone as proposed by the AS4970-2009)

Zone Radii

TPZ^{ACT} is the calculated radius of the Tree Protection Zone for this tree to fulfil the requirement of the Tree Protection Act 2005 (ACT Government 2005) and is the projected 'dripline' of the canopy plus 2m (Regulated tree) or 4m (Registered tree)
This Tree Protection Zone can be redefined in accordance with the Tree Protection Act 2005 Part 2 Section 11 Sub-section 2 in an approved Tree Management Plan. *Not included in this assessment*
TPZ^{4970} is the radius of a circular Tree Protection Zone as calculated for this tree following the formula in the Australian Standard AS 4970-2009 (Australian Standards 2009) The standard allows for encroachment into this zone provided the project arborist 'considers relevant factors' and the encroachment is 'compensated for elsewhere' In this document these adjustments are made in the 'Arboricultural Impact Assessment' in the 'Tree Protection Recommendations' and these should be accounted for in the 'Tree Management Plan'
SRZ^{4970} is the radius of a circular Structural Root Zone as calculated for this tree following the formula in the Australian Standard AS 4970-2009 (Australian Standards 2009). *According to this standard this is the area required to ensure tree stability.* No activity is to occur within this zone of a tree that is to be Retain.

DBH Not included in this report

DBH (Diameter at Breast Height = 1.4m above ground level) is calculated by the formula presented in the AS4970-2009

No. of Trunks Not included in this report but can be deduced from the number of circumference measurements given.

The number of trunks at 1m AGL

Canopy Spread

Four radial canopy diameters are shown (in meters) measured at the cardinal points. These were measured by stepping. Where measurement of these would require entry onto neighbouring blocks or access was difficult, the measurements have been estimated.

Tree Condition

Tree Health

Is an indication of the tree's health and vigour. It has been judged against the following range:

Very Good, Good, Fair, Poor, or Very Poor

General comments on the tree's health and vigour, and specific comments on evidence of **insect** infestation or **disease** presence in the tree may be included.

Tree Structure

Is an indication of the structural integrity of the tree. It has been judged against the following range:

Very Good, Good, Fair, Poor, or Very Poor

General comments on the tree's structure and specific comments on evidence of **Root Zone Disturbance** and **Structural Damage** to the tree may be included in the general comments

Growth Stage Not specifically included in this report but would be incorporated into 'Tree Structure', TQC and 'General Comments'

Classified as one of the following:

Juvenile, Semi-Mature, Mature, or Over Mature

This is required under the AS 4970-2009 but is not very definitive as trees don't necessarily follow a set time frame of aging. If relevant comments relating to growth stage may be included in general comments. Growth Stage is accounted for in the TQC.

Risk Assessment Not specifically included in this report but would be incorporated into 'Tree Structure', TQC and 'General Comments'

Arborist's Recommendation

This is the assessing arborist's recommendation as to whether the tree warrants to be:

Retain and Protected
Remove
Retain/Remove (there are no specific arboricultural reasons for the tree's removal or retention)
Remove and Replaced.

The arborist's recommendation does not necessarily match the **Probable Outcome** because the proposed activities take into account the proposed development plans.

Probable Outcome

The activities which are likely to be required in the Tree Protection Zones of the individual trees. (**Note:** these do not necessarily match the arborist's recommendation). Possible activities include (Those marked with an * will require approval by the conservator):

Tree Removal*
Minor Pruning
Major Pruning*
Construction on the Site,
Ground Works *

Tree Quality Classification (TQC) TQC is a 'Retention Value'

The trees are classified as being in one of the following quality groups:

Poor – A poor quality tree is likely to represent a significant safety hazard
Low - A low quality tree is of poor form, structure or health
Medium - A medium quality tree is one of reasonable form, structure and health and is not likely to represent a significant safety hazard.
High – A high quality tree is one that is of good form and condition and without structural defect. It should not represent a significant hazard.
Exceptional- A tree may be considered exceptional on the basis that it is an important part of the landscape due to factors such as prominence of location, contribution to the surrounding landscape and its general appearance. An exceptional tree should be free of any defects that cannot be addressed by remedial treatment. A tree may also be assessed as being exceptional for its botanic, scientific and cultural and natural heritage values.

These classifications are based on the guidelines in the 'Draft Guidelines for the Preparation of Tree Management Reports for Development on unleased Territory Land 2004 Draft'.

Status

The legal and or protection status of each of the trees is given as one of the following:

Pest Plant (Prohibited)-no protection required, can be Retain or Remove.
Not Regulated -no protection required, can be Retain or Remove.
Street Tree -protected by legislation other than the Tree Protection Act 2005. To be protected by the Verge Management Plan.
Park Tree -protected by legislation other than the Tree Protection Act 2005. To be protected by the Verge Management Plan.
Regulated Tree -a tree that, due to its size, is classified as a 'Regulated Tree' under 'The Tree Protection Act 2005' and therefore a permit would be required to:

- Remove the tree;
- Prune the tree, except where the pruning is done by a qualified arborist and is done to the 'Australian Standard for Pruning of Amenity Trees' AS 4373;
- Carry out ground works within 2m of the 'drip line' of the tree.

A Tree Management Plan that is formulated according to the 'Notifiable Instrument NI2007-422: *Tree Protection (Guidelines for Tree Management Plans) Determination 2007' is* designed to act as an application for the Tree Damaging Activities associated with this development.

Remnant Eucalypt. Some of approval criteria for approval of removal, ground work or other damage to regulated trees specifically exclude 'Remnant Eucalypts' without giving a definition. It is taken here to mean: a tree of a Eucalyptus spp. that is indigenous to the area and which obviously was present before urbanisation of the land it is located on.

Registered Tree -a tree that has been nominated to the 'Significant Tree' Register. It has similar, but more rigorous, protection to a regulated tree. For example a Registered Tree's Tree Protection Zone is drip line plus 4m.

Declared Site -an area of land that once was the Tree Protection Zone of a Registered Tree. Approval is required to undertake activities in a declared site.

Appendix 3 Method, Limits and Assumptions

Method

The site was inspected visually.

The inspection of the trees was limited to a visual examination from ground level without the use of boring or testing devices. Where necessary the trunk was 'sounded' with a mallet.

The tree measurements were estimated.

To determine if the tree is regulated, if it was not obvious that one of these measurements exceeded the required size:

- The trunk circumference at 1.0m above ground level was measured using a tape measure around the trunk. Where more than 1 trunk occurred at 1.0m above ground level the circumferences were totalled,
- The height was measured from 20m away using an inclinometer
- The canopy spread was paced out across the broadest diameter.

The diameter at breast height (DBH) was calculated by measuring trunk circumference at 1.4m above ground level using a tape measure around the trunk except where diversity of trunk shapes, configurations or growing conditions dictated a different approach, then trunk circumferences were measured as outlined for DBH in Appendix A of AS4970-2009 'Protection of trees on development sites'

Limits

Site specific

I had full access to the trees on the block but not to the trees on the neighbours' blocks as I did not have permission to enter those blocks. The measurements were estimated where access for measuring was not available

Covers only those trees listed

The information in this report covers only those trees listed and reflects the condition of those trees at the time of the inspection.

Identification of Species

The identification of the species that are listed in this report were made on site and are based on the arborist's examination of the macro-botanical characteristics of the trees that were present at the time of the assessment, in most cases this will be accurate to species level, however:

- As there are only small differences between some species and cultivars, and;
- Not all botanical features are necessarily present at any one time;

some inaccuracies may occur.

If an absolute identification is required, then further examination, including of some micro-characteristics, may be necessary; to identify the species or cultivar.

Further studies may be required

No **heritage**, **ecological** or **habitat assessments** were carried out for this site by Canopy's arborists or their agents.

No study of the **benefits of these trees** was made.

Reinspection

Tree Risk Assessment

Although the arborist is qualified and authorised to assess risk by both the QTRA and TRAQ methods of assessment, neither was carried out for this report. However the training for these authorisations will have influenced the way in which the assessor views the risk associated with trees. A QTRA assessment can be carried out if requested. (www.qtra.co.uk, www.isa-arbor.com)

Assumptions

None that are not otherwise liusted