



Canopy Tree Experts Pty Ltd
ABN 50 051 283 946
PO Box 4464
Kingston ACT 2604
P: 02 61611800
E: trees@canopygroup.com.au
E: .hayley@canopygroup.com.au



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JOB REF: 8661

Preliminary Arboricultural Report 149 Canberra Avenue Fyshwick ACT 2609

Prepared By:

Hayley Crossing
AQF Level 5 Consulting Arborist (Dip Arb 2013)
Landscape Architect (B LA 2000)
QTRA assessor

Prepared For:

Brendan Doonan DNA Architects



Site Location - ActMap i 2021 aerial image. Brief:

Canopy Tree Experts were engaged to carry out a tree assessment and prepare a Preliminary Arboricultural Assessment of the trees. The Assessment is to conform to the requirements of 'Notifiable Instrument NI2007-422', and, AS4970-2009 'Protection of trees on development sites'.

Method

On the 7th of December 2021 and then again on the 2nd of February 2022 Hayley Crossing of Canopy Group (CG) inspected the above-mentioned site. It was visual assessments at ground level photos were taken.

The tree data and tree numbers were supplied by Veris surveyors. CG has used their tree numbers and data unless otherwise stated. For explanations and terminology used please refer to the Appendix 1. For method and limitations please refer to Appendix 2.

Field Findings

CG returned to the site on the 2nd of February 2022 to clarify tree heights that were identified by Veris surveyors as regulated and not by CG. The trees within the medium strips have canopies in conflict with each other and that has likely caused some errors with tree height.

The following tabulated tree schedule/tree assessment has determined that there are 30 Regulated Trees on the site. The vast majority of regulated trees have deadwood present and are medium quality. Many of the Regulated trees are located within a raised medium strip within a group of non regulated trees. It is for this reason CG recommends (in the schedule) to retain as a group or not at all. Removal of trees within the group is likely to create structural issues with the remaining trees.

Also – CG identified 1 groups of non regulated trees worth retaining should the developer wish to consider them.

Please refer to the Tree schedule, Tree Location plan and tree photos for details of tree assessment, For explanation of terminology refer to **Appendix 1** and **Appendix 2** for Methods and limitations.

All *Ulmus parvifolia* in this group are either Regulated in height or canopy, 2 *Pistacia chinensis* are not. Retain as a group only rather than saving individual regulated trees.

Tree 90, 28 and 24 are Regulated

Tree 35, 37 39, 40 are Regulated and 36, 44, 43, 42, 42, 41 and 38 are not Regulated. Retain as a group or not at all as removal of some is likely to impact the structural integrity of others.

Tree 21 and 19 are Regulated the rest 20, 16 and 17 are not. 18 is a weed. Retain as a group or not at all as removal of some is likely to impact the structural integrity of others.

Tree 30 is the only Regulated tree amongst the Copse of Casuarina trees with natural regrowth in understory.

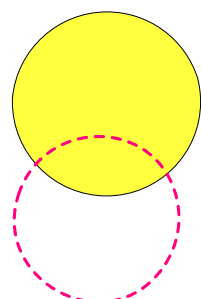
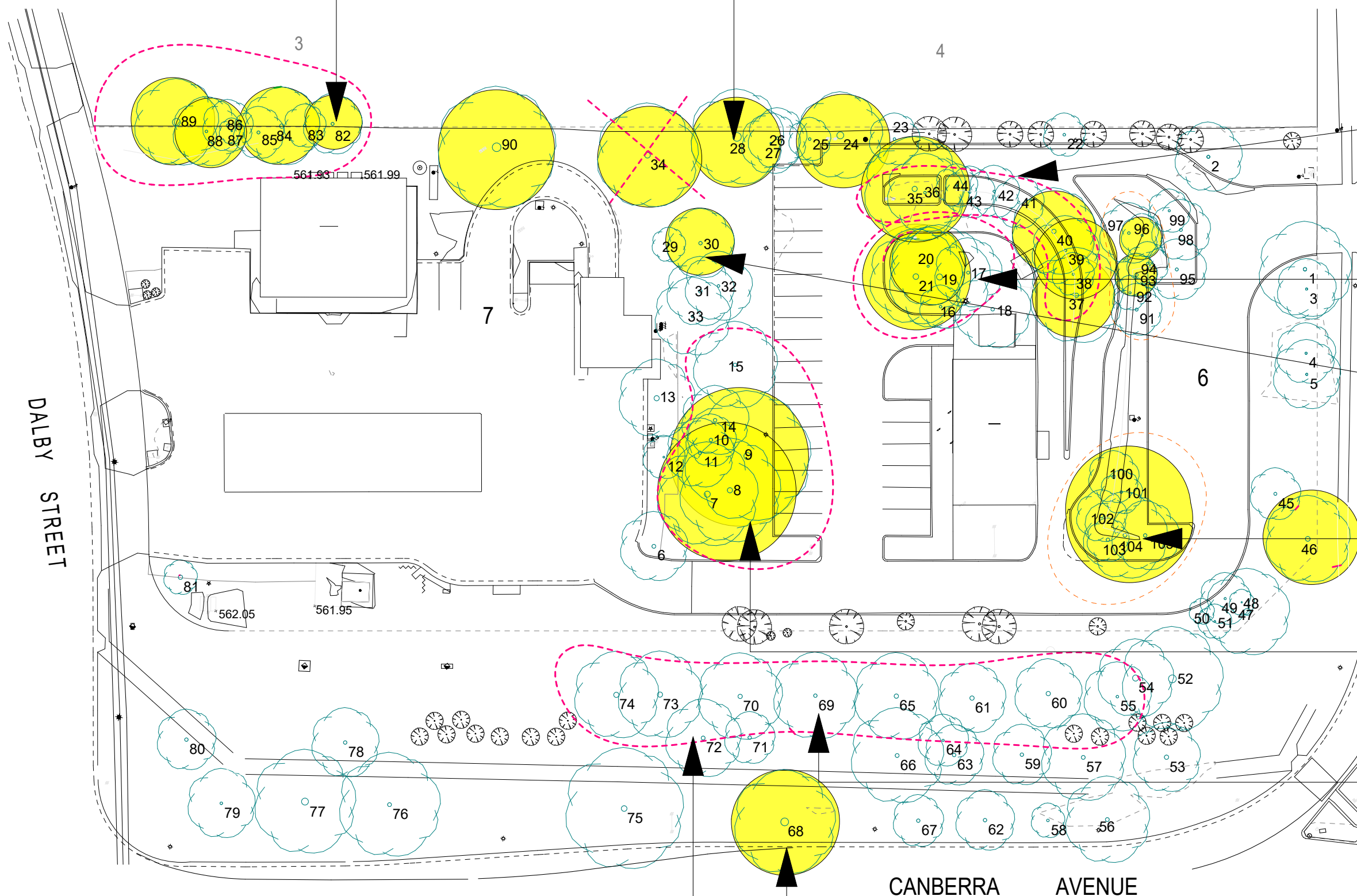
Tree 100, 102, 103, 104, 105 are Regulated trees and 101 are not. Retain as a group or not at all as removal of some is likely to impact the structural integrity

Tree 7, 8 and 9 are Regulated trees and 10, 11, 14 and 15 are not. Retain as a group rather than saving individual trees

Tree 60, 61, 65, 69, 70, 73, 74 are all the same species are just under Regulation height however are worth retaining as a group. Health, structure and Quality is good.

Tree 68 a Street tree is a Regulated tree.

Tree 71 & 72 are NOT regulated but could develop into quality trees to replace weed species on verge.



Represents Regulated Trees (refer to tree schedule for details)

Represents cope of trees that are worth saving as a group ONLY refer to tree schedule for details.

Tree schedule

Tree Schedule		Calculated from Veris data								Calculated from Veris data			
Tree No.	Species	Canopy spread (Veris)	Trunk Dia. (veris)	Height (Veris)	Health	Structure	Tree Quality	Tree Protection Status	Comments	Trunk Circ.	Radius TPZ ⁴⁹⁷⁰	D10 TPZ	Radius SRZ ⁴⁹⁷⁰
										0.00	0.0	0.0	0.0
1	<i>Populus deltoides</i> - Cottonwood	11	0.4	13.2			Poor	Not Regulated	Dieback and recovery. Canopy Group has assessed this tree as less than 12m because of Deadwood at top of canopy that reduces height.	1.3	4.8	3.3	2.4
2	<i>Populus deltoides</i> - Cottonwood	8	0.35	12.1			Poor	Not Regulated	Dieback and recovery. Canopy Group has assessed this tree as less than 12m because of Deadwood at top of canopy that reduces height.	1.1	4.2	2.9	2.3
3	<i>Populus deltoides</i> - Cottonwood	7	0.25	9.9			Poor	Not Regulated		0.8	3.0	2.0	2.0
4	<i>Populus deltoides</i> - Cottonwood	7	0.25	9			Poor	Not Regulated		0.8	3.0	2.0	2.0
5	<i>Populus deltoides</i> - Cottonwood	8	0.25	9			Poor	Not Regulated		0.8	3.0	2.0	2.0
6	<i>Ulmus parvifolia</i> - Chinese Elm	8	0.45	8			Poor	Not Regulated		1.4	5.4	3.7	2.6
7	<i>Eucalyptus mannifera</i> - Red Spotted Gum	12	0.7	12	Good	Good	Medium	REGULATED	deadwood present	2.2	8.4	5.7	3.1
8	<i>Eucalyptus melliodora</i> -Yellow Box	12	0.6	13	Good	Good	Medium	REGULATED	deadwood present	1.9	7.2	4.9	2.9
9	<i>Eucalyptus bridgesiana</i> - Apple Box	15	0.8	14	Good	Good	Medium	REGULATED REMNANT	Possibly a remnant	2.5	9.6	6.5	3.3
10	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.4	10				Not Regulated		1.3	4.8	3.3	2.4
11	<i>Eucalyptus mannifera</i> - Red Spotted Gum	8	0.4	9				Not Regulated		1.3	4.8	3.3	2.4
12	<i>Ulmus parvifolia</i> - Chinese Elm	5	0.2	5						0.6	2.4	1.6	1.8
13	<i>Ulmus parvifolia</i> - Chinese Elm	9	0.6	8				Not Regulated	Two different trees species one of which is an Acer negundo a listed weed Trunk circum by Veris is incorrect because of this.	1.9	7.2	4.9	2.9
14	<i>Eucalyptus mannifera</i> - Red Spotted Gum	8	0.4	12	Good	Good	Medium	REGULATED	deadwood present	1.3	4.8	3.3	2.4
15	<i>Eucalyptus mannifera</i> - Red Spotted Gum	10	0.4	12	Good	Good	Medium	REGULATED	deadwood present	1.3	4.8	3.3	2.4
16	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.3	6				Not Regulated	Deadwood present - retain as a group with others in raised medium strip or not at all.	1.1	4.2	2.9	2.3
17	<i>Eucalyptus mannifera</i> - Red Spotted Gum	8	0.35	11				Not Regulated		1.1	4.2	2.9	2.3
18	<i>Populus alba</i> - Silver Poplar	9	0.4	12				Listed Weed		1.3	4.8	3.3	2.4
19	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.3	12	Good	Good	Medium	REGULATED	Deadwood present Just regulated near tree 16 also regulated – retain as a group with others in raised medium strip or not at all.	1.35	5.2	3.5	2.5
20	<i>Eucalyptus mannifera</i> - Red Spotted Gum	9	0.25	9				Not Regulated		0.8	3.0	2.0	2.0
21	<i>Eucalyptus mannifera</i> - Red Spotted Gum	11	0.65	12	Good	Good	High	REGULATED	Just regulated near tree 16 also regulated – retain as a group with others in raised medium strip or not at all.	1.5	5.7	3.9	2.6
22		5	0.3	6.5					Not found	0.9	3.6	2.4	2.2
23	<i>Populus alba</i> - Silver Poplar	6	0.3	9				Listed Weed		0.9	3.6	2.4	2.2
24	<i>Eucalyptus elata</i> - River Peppermint Gum	10	0.8	14	Fair	Good	Poor	REGULATED	thin canopy deadwood present	2.5	9.6	6.5	3.3
25	<i>Eucalyptus</i> sp. - Gum Tree	5	0.3	6				Not Regulated		0.9	3.6	2.4	2.2
26	<i>Eucalyptus</i> sp. - Gum Tree	7	0.3	9				Not Regulated		0.9	3.6	2.4	2.2
27	<i>Populus alba</i> - Silver Poplar	7	0.2	8				Listed Weed		0.6	2.4	1.6	1.8
28	<i>Eucalyptus elata</i> - River Peppermint Gum	11	1	21	Good	Good	High	REGULATED		3.1	12.0	8.2	3.6

Tree Schedule		Calculated from Veris data								Calculated from Veris data			
Tree No.	Species	Canopy spread (Veris)	Trunk Dia. (veris)	Height (Veris)	Health	Structure	Tree Quality	Tree Protection Status	Comments	Trunk Circ.	Radius TPZ 4970	D10 TPZ	Radius SRZ 4970
29	<i>Casuarina cunninghamiana</i> - River Oak	4	0.2	7			low	Not Regulated	Poor quality group of <i>Casuarina</i> sp. mixed heights	0.6	2.4	1.6	1.8
30	<i>Casuarina cunninghamiana</i> - River Oak	8	0.4	15	Good	Good	poor	Not Regulated		1.3	4.8	3.3	2.4
31	<i>Casuarina cunninghamiana</i> - River Oak	8	0.4	11	Good	Good	Low	Not Regulated	Poor quality group of <i>Casuarina</i> sp. mixed heights	1.3	4.8	3.3	2.4
32	<i>Eucalyptus mannifera</i> - Red Spotted Gum	8	0.3	9	Good	Good	Medium	Not Regulated		0.9	3.6	2.4	2.2
33	<i>Casuarina cunninghamiana</i> - River Oak	9	0.3	13	Good	Good	Low	Not Regulated		0.9	3.6	2.4	2.2
34	<i>Eucalyptus</i> sp. - Gum Tree	12	0.65	16	Poor	Poor	Poor	REGULATED	Deadwood present and in Decline. Major scar and decay at base of tree – REMOVAL IS RECOMMENDED	1.5	3.9	2.6	5.7
35	<i>Eucalyptus mannifera</i> - Red Spotted Gum	12	0.6	18	Good	Good	Medium	REGULATED		1.9	7.2	4.9	2.9
36	<i>Eucalyptus mannifera</i> - Red Spotted Gum	9	0.3	8				Not Regulated	Canopy Group has assessed This tree to be not Regulated in height and circumference which is in conflict with Veris Data	0.9	3.6	2.4	2.2
37	<i>Eucalyptus mannifera</i> - Red Spotted Gum	11	0.5	12			Medium	REGULATED		1.6	6.0	4.1	2.7
38	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.25	9				Not Regulated		0.8	3.0	2.0	2.0
39	<i>Eucalyptus mannifera</i> - Red Spotted Gum	12	0.3	11			Medium	REGULATED		0.9	3.6	2.4	2.2
40	<i>Eucalyptus mannifera</i> - Red Spotted Gum	12	0.5	13			Medium	REGULATED		1.6	6.0	4.1	2.7
41	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.25	9				Not Regulated		0.8	3.0	2.0	2.0
42	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.25	8				Not Regulated		0.8	3.0	2.0	2.0
43	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.3	9				Not Regulated		0.9	3.6	2.4	2.2
44	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.2	6				Not Regulated		0.6	2.4	1.6	1.8
45	<i>Populus deltoides</i> - Cottonwood	6	0.35	11.2				Not Regulated		1.1	4.2	2.9	2.3
46	<i>Eucalyptus mannifera</i> - Red Spotted Gum	10	0.55	10.4	Good	Good	Low	REGULATED	Regulated trunk circum. thin canopy and deadwood present	1.7	6.6	4.5	2.8
47	<i>Populus alba</i> - Silver Poplar	10	0.8	15.6				Listed Weed		2.5	9.6	6.5	3.3
48	<i>Ulmus procera</i> - English elm	3	0.15	10.5				Not Regulated	Elm suckers	0.5	1.8	1.2	1.6
49	<i>Populus alba</i> - Silver Poplar	6	0.25	7.7				Listed Weed		0.8	3.0	2.0	2.0
50	<i>Ulmus procera</i> - English elm	3	0.2	8.3				Not Regulated	Elm suckers	0.6	2.4	1.6	1.8
51	<i>Ulmus procera</i> - English elm	4	0.2	5.2				Not Regulated	Elm suckers	0.6	2.4	1.6	1.8
52	<i>Pinus radiata</i> - Monterey Pine	12	0.9	14.6				Listed Weed		2.8	10.8	7.3	3.4
53	<i>Populus alba</i> - Silver Poplar	8	0.5	14.6				Listed Weed		1.6	6.0	4.1	2.7
54	<i>Pinus radiata</i> - Monterey Pine	9	0.7	14.8				Listed Weed		2.2	8.4	5.7	3.1
55	<i>Cupressus torulosa</i> - Bhutan Cypress	8	0.3	11.9	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	0.9	3.6	2.4	2.2
56	<i>Populus alba</i> - Silver Poplar	10	0.45	9				Listed Weed		1.4	5.4	3.7	2.6

Tree Schedule		Calculated from Veris data								Calculated from Veris data			
Tree No.	Species	Canopy spread (Veris)	Trunk Dia. (veris)	Height (Veris)	Health	Structure	Tree Quality	Tree Protection Status	Comments	Trunk Circ.	Radius TPZ 4970	D10 TPZ	Radius SRZ4970
57	<i>Populus alba</i> - Silver Poplar	10	0.45	10.1				Listed Weed		1.4	5.4	3.7	2.6
58	<i>Populus alba</i> - Silver Poplar	4	0.3	8.3				Listed Weed		0.9	3.6	2.4	2.2
59	<i>Populus alba</i> - Silver Poplar	7	0.4	9.5				Listed Weed		1.3	4.8	3.3	2.4
60	<i>Cupressus torulosa</i> - Bhutan Cypress	8	0.5	10.6	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.6	6.0	4.1	2.7
61	<i>Cupressus torulosa</i> - Bhutan Cypress	8	0.5	10.9	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.6	6.0	4.1	2.7
62	<i>Populus alba</i> - Silver Poplar	7	0.4	8.3				Listed Weed		1.3	4.8	3.3	2.4
63	<i>Populus alba</i> - Silver Poplar	7	0.4	10.3				Listed Weed		1.3	4.8	3.3	2.4
64	<i>Quercus palustris</i> - Pin Oak	6	0.25	10	Good	Good	Low	Juvenile Tree	Could develop into a nice tree to replace weed species	0.8	3.0	2.0	2.0
65	<i>Cupressus torulosa</i> - Bhutan Cypress	10	0.5	11.3	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.6	6.0	4.1	2.7
66	<i>Populus alba</i> - Silver Poplar	11	0.45	10.7				Listed Weed		1.4	5.4	3.7	2.6
67	<i>Populus alba</i> - Silver Poplar	6	0.4	9.6				Listed Weed		1.3	4.8	3.3	2.4
68	<i>Cupressus sp.</i> - Cypress	12	0.9	14.4				REGULATED	Street Tree	2.8	10.8	7.3	3.4
69	<i>Cupressus torulosa</i> - Bhutan Cypress	10	0.4	11.6	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.3	4.8	3.3	2.4
70	<i>Cupressus torulosa</i> - Bhutan Cypress	10	0.5	10.4	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.6	6.0	4.1	2.7
71	<i>Quercus palustris</i> - Pin Oak	6	0.4	11.7				Not Regulated	Could develop into a nice tree to replace weed species	1.3	4.8	3.3	2.4
72	<i>Quercus palustris</i> - Pin Oak	9	0.45	10				Not Regulated	Could develop into a nice tree to replace weed species	1.4	5.4	3.7	2.6
73	<i>Cupressus torulosa</i> - Bhutan Cypress	10	0.6	11.8	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.9	7.2	4.9	2.9
74	<i>Cupressus torulosa</i> - Bhutan Cypress	10	0.6	11.5	Good	Good	Medium	Not Regulated	Retain as group all in good health and form	1.9	7.2	4.9	2.9
75	<i>Populus alba</i> - Silver Poplar	14	0.65	11.1				Listed Weed	Good quality	2.0	7.8	5.3	3.0
76	<i>Populus alba</i> - Silver Poplar	12	0.45	11.1				Listed Weed		1.4	5.4	3.7	2.6
77	<i>Populus alba</i> - Silver Poplar	12	0.8	12.2				Listed Weed		2.5	9.6	6.5	3.3
78	<i>Populus alba</i> - Silver Poplar	8	0.4	10.7				Listed Weed		1.3	4.8	3.3	2.4
79	<i>Populus alba</i> - Silver Poplar	8	0.3	9.8				Listed Weed		0.9	3.6	2.4	2.2
80	<i>Populus alba</i> - Silver Poplar	7	0.4	11.1				Listed Weed		1.3	4.8	3.3	2.4
81	<i>Sequoia sempervirens</i> – Californian redwood	4	0.5	9.4	Good	Good	Medium	Not Regulated		1.1	4.2	2.9	2.3
82	<i>Ulmus parvifolia</i> - Chinese Elm	7	0.35	12			Medium	REGULATED	Retain as a group	1.1	4.2	2.9	2.3
83	<i>Ulmus parvifolia</i> - Chinese Elm	9	0.5	13.5			Medium	REGULATED	Retain as a group	0.9	3.6	2.4	2.2
84	<i>Pistacia chinensis</i>	5	0.3	7				Not regulated	Retain as a group				
85	<i>Ulmus parvifolia</i> - Chinese Elm	6	0.35	12			Medium	REGULATED	Retain as a group	1.1	4.2	2.9	2.3
86	<i>Ulmus parvifolia</i> - Chinese Elm	6	0.35	12			Medium	REGULATED	Retain as a group	1.1	4.2	2.9	2.3
87	<i>Pistacia chinensis</i>	3	0.15	4				not regulated	Retain as a group	0.5	1.8	1.2	1.6
88	<i>Ulmus parvifolia</i> - Chinese Elm	12	0.3	12			Medium		Retain as a group	0.9	3.6	2.4	2.2
89	<i>Ulmus parvifolia</i> - Chinese Elm	10	0.9	13.5			Medium	REGULATED	Retain as a group	2.8	10.8	7.3	3.4
90	<i>Eucalyptus sp.</i> - Gum Tree	16	1	20	Good	Good	High	REGULATED	Probably <i>E. elata</i> maybe Remnant	2.8	10.8	7.3	3.4






Tree Schedule		Calculated from Veris data								Calculated from Veris data			
Tree No.	Species	Canopy spread (Veris)	Trunk Dia. (veris)	Height (Veris)	Health	Structure	Tree Quality	Tree Protection Status	Comments	Trunk Circ.	Radius TPZ 4970	D10 TPZ	Radius SRZ4970
91	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.35	9				Not Regulated	Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	1.1	4.2	2.9	2.3
92	<i>Eucalyptus mannifera</i> - Red Spotted Gum	4	0.25	8				Not Regulated	Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	0.8	3.0	2.0	2.0
93	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.4	13	Good	Good	Medium	REGULATED	Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	1.3	4.8	3.3	2.4
94	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.25	9				Not Regulated	Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	0.8	3.0	2.0	2.0
95	<i>Populous deltoides</i> - Cottonwood	7	0.35	8	Poor	Poor	Poor	Not Regulated	Deadwood and dieback at top has reduced canopy height and therefore not regulated	1.1	4.2	2.9	2.3
96	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.25	12	Good	Fair	Medium	REGULATED	Tall and think -Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	0.8	3.0	2.0	2.0
97	<i>Eucalyptus macarthurii</i> ?	7	0.3	11				Not Regulated	Retain as a group within the medium strip on not at all. Removing one to retain others is likely to cause structural issues.	0.9	3.6	2.4	2.2
98	<i>Populous deltoides</i> - Cottonwood	7	0.35	8				Not Regulated	Deadwood and dieback at top has reduced canopy height and therefore not regulated	1.1	4.2	2.9	2.3
99	<i>Populous deltoides</i> - Cottonwood	5	0.25	8				Not Regulated	Deadwood and dieback at top has reduced canopy height and therefore not regulated.	0.8	3.0	2.0	2.0
100	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.4	12	Good	Good	Medium	REGULATED	Deadwood present- Retain as a group or not at all	1.3	4.8	3.3	2.4
101	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.3	9	Good	Fair	Low	Not Regulated	Deadwood present- Retain as a group or not at all	0.9	3.6	2.4	2.2
102	<i>Eucalyptus mannifera</i> - Red Spotted Gum	6	0.45	14	Good	Fair	Medium	REGULATED	Deadwood present- Retain as a group or not at all	1.4	5.4	3.7	2.6
103	<i>Eucalyptus mannifera</i> - Red Spotted Gum	5	0.4	13	Good	Fair	Medium	REGULATED	Deadwood present- Retain as a group or not at all	1.3	4.8	3.3	2.4
104	<i>Eucalyptus mannifera</i> - Red Spotted Gum	10	0.45	14	Good	Fair	Medium	REGULATED	Deadwood present- Retain as a group or not at all	1.4	5.4	3.7	2.6
105	<i>Eucalyptus mannifera</i> - Red Spotted Gum	8	0.4	15	Good	Fair	Medium	REGULATED	Deadwood present- Retain as a group or not at all	1.3	4.8	3.3	2.4

Legend for Tree Schedule.

	Regulated as per the Tree Protection ACT
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Trees 1-5 (less 2)	Tree 2 – Not Regulated , Height reduced because top of canopy is dead .	Trees 8 to 15 Mixed group retain as a group some regulated and some not.	Tree 9 - Regulated
			
Tree 21 – Regulated Tree 16, and 21 are Regulated the others are not .Retain as Group	Group of poor quality Casuarina's Trees 29-33	Tree 34 – Regulated Tree POOR QUALITY Tree	Tree 35 – REGULATED

			
<p>Tree 46- Regulated because of trunk</p>	<p>Tree 68 – Street Tree</p>	<p>71 & 72 Not Regulated but worth retaining to eventually replace adjacent weed species</p>	<p>A Regulated Group of Trees</p>
			
<p>Tree 24 Regulated</p>	<p>Trees 100 - 105 Mostly Regulated copse of Eucalyptus manniferra – Retain as a group</p>	<p>Tree 90 Regulated</p>	<p>Tree 28 - Regulated</p>

	<p>Tree 37 39 40 Regulated</p>		
<p>Tree 37, 39 and 40 are Regulated and located within the raised medium strip</p>		<p>Tree 30 - Regulated</p>	<p>Trees not regulated because dieback in canopy top has reduced canopy height.</p>
			
<p>Regulated ulmus parvifolia on boundary</p>	<p>Tree 81 Not Regulated</p>		

Appendix 1

Explanations of Terms Used in the Tree Assessments

This Assessment form has been developed to conform to the requirements of 'Notifiable Instrument NI2007-422', and; The AS4970-2009 'Protection of trees on development sites'

1. *Tree Number*

This is a unique sequential identification number allocated to each tree located on the block, overhanging the block or on the verge. The numbers are allocated in Figure 1.

2. *Species*

The binomial species name is given

3. *Height*

The tree height was estimated except where the height was determined to be near 12m in which case it was measured using a clinometer from a measured offset. Heights of between 11 and 12 metres are recorded as 11 metres.

4. *Directional Canopy Radii*

Canopy radii were measured at 90° intervals starting at north by stepping. Where it is indicated that a more accurate radius may be important, it was measured by tape measure.

The four radial canopy diameters are shown (in meters) in the 'table. Where measurement of these would require entry onto neighbouring blocks or access was difficult, the measurements have been estimated. If required, the broadest canopy diameter is also measured to determine if a tree is regulated.

5. *Health*

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

Very Good (VG), Good (G), Fair (F), Poor (P), or Very Poor (VP)

General comments on the tree's health and vigour, and specific comments on evidence of **insect** infestation or **disease** presence in the tree are included in the **Comments Column** if significant.

6. *Structure*

The structural integrity of the tree has been judged against the following range:

Very Good (VG), Good (G), Fair (F), Poor (P), or Very Poor (VP)

General comments on the tree's structure and specific comments on evidence of **Root Zone Disturbance** and **Structural Damage** to the tree are included in the **Comments Column** if significant.

7. *Tree Protection Status*

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

Not Regulated -no protection required, can be retained or removed.

Park Tree-protected by legislation other than the Tree Protection Act 2005. To be protected by the LMPP (Landscape Management and Protection Plan), or otherwise negotiated with Urban treespaces section of TCCS.

Pest Plant - is a weed: no protection required, may be removed without permit (or retained: -depending on level of classification).

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.

Registered Tree-a tree that has been nominated to the 'Significant Tree' Register. It may have more rigorous protection measures than a regulated tree (refer to its listing on the Tree Register.

Remnant – a regulated tree that is also a remnant eucalypt. For a Remnant, the Approval Criteria 1 (1) (d) (Inappropriate location) & (e) (substantially affecting solar access) in Disallowable Instrument *Tree Protection (Approval Criteria) Determination (No.2) DI2006-60* do not apply. Remnant eucalypt is not defined in the DI2006-60. In this assessment, it is taken as a eucalypt that was likely to be present at the time of initial subdivision of the land on which it stands.

Schedule 2 – a regulated tree that is of a species listed in Schedule 2 of Disallowable Instrument *Tree Protection (Approval Criteria) Determination (No.2) DI2006-60*. Schedule 2 lists problematic tree species for which the conservator may give approval for removal, if on a block of less than 1200m²

Street Tree-protected by legislation other than the Tree Protection Act 2005. To be protected by the Landscape Management and Protection Plan (LMPP).

Unofficial Street Tree – Trees that are located within the verge that are unlikely to have been planted by the government. Often planted by residents or are self-seeded. They are still the property of the government and permission for removal must be granted.

8. *Tree Quality Classification*

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'.

Poor – A poor quality tree is of poor form, structure or health or is likely to represent a significant safety hazard.

Low - A tree that does not have significant amenity value. (the classification Low Quality has been added (by Canopy Tree Experts) to this classification to indicate a tree that has no formal reason for removal other than is lack of significance in the landscape. Some of these trees may have potential to become significant, in which case this is indicated in the 'comments' column.

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,cultural** and **natural heritage** values. Trees with significant **botanic/scientific,cultural** and **natural heritage** values may not be ruled out of the exceptional classification due to health, structure or safety concerns.

9. *Comments*

Any comments that are relevant are recorded in this column especially those related to health and structure and value.

10. *Circumference*⁴⁹⁷⁰

Trunk Circumference for the calculation of the Tree Protection Zone as per Australian Standard AS4970-2009 (TPZ⁴⁹⁷⁰) is the trunk circumference at 1.4m above ground level. It is expressed in metres 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 TPZ⁴⁹⁷⁰**. 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, c.f. trunks, are not included).

11. *Radius TPZ⁴⁹⁷⁰*

The radius of the Root Protection Zone component of the Tree Protection Zone as calculated from the trunk diameter at 1.4m AGL as recommended by the AS4970-2009. Note the final TPZ⁴⁹⁷⁰ may need to be extended to include crown protection.

12. *D10 TPZ*

This is a construct of Canopy Tree Experts. It is the distance from the centre of the trunk to a straight-line excavation past the trunk that would excise 10% of the area of the TPZ⁴⁹⁷⁰. This measurement has no regulatory standing. It is only an indication how much root loss may occur with the such an excavation but should be interpreted in conjunction with on-site observations as to where active absorptive roots are likely to be, species knowledge and water availability. It is presented here as one example of how a 10% loss of TPZ⁴⁹⁷⁰ area could occur.

13. *Radius SRZ⁴⁹⁷⁰*

The figure given here is an approximation of the Structural Root Zone diameter as proposed in AS4970-2009. It is approximate as it is calculated from the circumference at 1.4m AGL + 20%, instead of the measurement at the root buttress. It is an indication only of the size of root ball required for tree stability. Accurate calculation of the SRZ may be required if a major encroachment into the TPZ⁴⁹⁷⁰ is envisaged.

Appendix 2– Method and Limits

Method

The inspection of the trees was limited to a visual examination from ground level without the use of boring or testing devices.

The VTA method¹ was used. Defects were identified and evaluated along with the tree's response to those defects, the tree's health and tree's vigour to produce an understanding of the tree's soundness.

Where indications suggest that 'sounding' would be worthwhile the trunk was 'sounded' with a mallet.

Limits

1. Some tree **heights** supplied by Veris appeared to be incorrect, for example; trees next to a taller tree may have assumed their height as well possibly because of the canopies blending together. . Tree heights were corrected by Canopy Group only when the heights by Veris were above 12m and it was determined by Canopy Group that they were less than 12m.
2. Some **trunk circumferences** supplied by Veris appeared incorrect also –trunk circumferences were corrected by Canopy Group only when the Veris dimension was

greater than 1.5m circum and Canopy Group measured them at less than 1.5m circum.

3. Christmas rush and time limitations should be considered for this report.

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.

Natural variability of trees and their environment
Canopy Tree Experts' arborists conscientiously apply their knowledge in assessing trees and recommending treatments with the aim of achieving the best outcomes for their clients' trees. However, given the natural variability of trees, the arborist may not be able to detect every possible way a tree, or part of a tree, may fail above or below ground. The arborist may not be able to predict when a tree may fail, but the arborist will be able to identify most problems, and the risk of failure will be reduced by having your trees inspected and carrying out of the arborist's recommendations.

Verbal Advice

Caution should be taken in interpreting advice given verbally as understanding and recollection may be unreliable.

Further studies that may be required

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

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

Tree Risk Assessment

Although the arborist is qualified and authorised to assess risk by both the QTRA and TRAQ methods of assessment, neither method 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)

¹VTA Method (Visual Tree Assessment) as presented in *The body language of trees* 1994 Mattheck, Claus & Breloer, Helge, The Stationery office, Norwich, UK pp.118-120.