



Tree Consultants & Contractors
40 Glyndon Road, Camberwell 3124
Tel (03) 9888 5214
Fax (03) 9888 5063

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Darren Horisk
Assistant Project Manager
Point Polaris
L27 Rialto Tower South
525 Collins Street
Melbourne VIC 3000

Dear Sir,

re: 10 Alvina Street, Oakleigh South

Introduction

I am informed a multi residential development is proposed for 10 Alvina Street, Oakleigh South. Galbraith and Associates has been requested by Point Polaris to report on the trees which are on or close to the site, including street trees. Each of these trees is described in terms of species type, origin, size, condition and worth for retention for the site trees. Tree protection zones according to the Australian Standard approach are provided for the higher worth site trees plus any neighbouring trees in close proximity.

Each tree is located and numbered on the accompanying copy of the existing site conditions survey on page 3 of this report and described in the accompanying excel spreadsheet of data.

The Trees – General

Of the approximately 100 trees on the site, only one is possibly a remnant self-sown individual. This is the Drooping Sheoke (*Allocasuarina verticellata*) (tree 4), a small to medium old tree which is highly likely to have been well established before the Oakleigh South Primary School was constructed. It is however getting close to the end of its safe useful life expectancy with considerable decay in its trunk.

The age of the trees mostly varies between about 25 years and 50 years. Mature, attractive large specimens of English Oak (*Quercus robur*), Lemon-scented Gum (*Corymbia citriodora*), Brush Cherry (*Syzygium paniculatum*), Red Iron bark (*Eucalyptus sideroxylon*) and Smooth barked Apple (*Angophora costata*), all Australian natives except the oak, are present.

Other Australian natives include more than 20 trees of Queensland Brush Box (*Lophostemon confertus*), some of which have moderate retention value. Of lower significance due to their small size and/or poorer condition are, for example, Willow Peppermints (*Eucalyptus nicholii*), Bushy Sugar Gums (*Eucalyptus cladocalyx* 'Nana'), Red-flowering Gums (*Corymbia ficifolia*), a Wallangarra White Gum (*Eucalyptus scoparia*), several melaleucas and most of the nine Willow Myrtles (*Agonis flexuosa*).

Trees of Victorian origin on the site are numerically dominated by the two weed species Sweet Pittosporum (*Pittosporum undulatum*) and Sallow Wattle (*Acacia longifolia*). One individual of Red Ironbark (*Eucalyptus sideroxylon*) is healthy but will need works if retained, whilst those of Lilly Pilly (*Syzygium smithii*), Yellow Gum (*Eucalyptus leucoxylon*) and Bracelet Honey-myrtle (*Melaleuca armillaris*) are over-mature and/or structurally poor.

Apart from the afore-mentioned oak, the various non-Australian species on the site are diminutive and/or in poor health. The largest, a Weeping Willow (*Salix babylonica* or hybrid thereof) on the western boundary, is in decline, evidenced both by dieback of branches and decay in the main stems.

Notes on Terminology

In order to understand the column headings of the table of data, I have provided the following explanations:

DBH diameter of trunk over bark at breast height In a number of cases where the tree has forked into multiple trunks below breast height (1.3-1.5m) the diameter is measured below the fork and an estimate is made for the single trunk equivalent at breast height, or else figures for each of the individual stems can be given.

HxS This is the estimated height (H) of the tree and its average crown spread (S).

SULE Safe useful life expectancy in years. Taken in the context that the area is to be developed for residential use, and that sensible distances are maintained between the buildings and the trees, this is the estimate of time that the tree will continue to provide useful amenity without imposing an onerous financial burden in order to maintain relative safety, and avoid excessive nuisance.

Condition This descriptor can be encapsulated by three terms, namely **Health (H), Structure (S) and Form (F)**.

Health is largely governed by the ease in which the metabolic functions are occurring throughout the tree. Symptoms of health include the amount, distribution, density, size and colour of the foliage.

Structure refers to the structural stability of the tree and its branches. A well structured tree is not likely to shed branches or stems, or snap in the trunk or blow over, whereas a poorly structured tree is more likely to.

Form basically refers to the symmetry of the tree. A tree with a straight trunk and symmetrical crown and evenly distributed branches is referred to as having good form, whilst a lopsided leaning tree may have fair – poor form.

Worthiness of Retention (WOR):

The worth for retention of a tree is based on the assumption that the site is to be re-developed, and that there is the opportunity for new tree planting. It is based on a number of factors. These factors are:

1. structure, health, form and safe useful life expectancy,
2. size, prominence in the landscape,
3. species rarity,
4. whether indigenous,
5. whether an environmental weed.
6. importance for habitat of native wildlife
7. whether of historical or cultural interest

Any tree with a WOR rating of 3 or less should be seriously considered for removal before development begins because it is dead, nearly dead or dangerous, a weed, is causing or is likely to cause a severe nuisance in the near future, or just of very little significance and readily replaceable with new plantings. Trees rated 4-6 are of some significance. Some of these trees may respond to treatments such as formative pruning, removal of dead wood, weight reduction pruning etc. Trees rated 7 or higher are of high significance (the higher the ranking the more so), primarily because of their good health, structure, form, prominence in the landscape and SULE, although all they still may need substantial works done on them as already detailed, if they are to be retained.

Tree Protection Zone (TPZ) According to the Australian Standard AS 4970-2009 'Protection of Trees on Building Sites', the TPZ is the principal means of protecting trees on development sites. It is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.' The radius of the TPZ is calculated by multiplying the DBH by 12. The radius is measured from the centre of the stem at ground level. An area of 10% of the TPZ is deemed acceptable to violate if 10% of the area of the TPZ is made up in other directions. *Thus if encroachment is from one side only, encroachment to as close as approximately 8 times the DBH (2/3 the listed TPZ radius) is permissible according to the Standard.*

The AS 4970-2009 should only be construed as a rough guide. It is only used in this statement because various local authorities now demand it in their assessments of development applications. Many factors such as the type of encroachment on the TPZ, species tolerance, age, presence of spiral grain, soil type, soil depth, tree lean, the existence of onsite structures or root directional impediments, level of wind exposure, irrigation and ongoing tree care and maintenance are each highly influential on the size and success of the TPZ estimation, therefore the figures derived from the Standard and provided in this report must be treated as rough guides only.

Tree Origin Categories

Each tree has been classified as to whether it is indigenous (**I**), native to Victoria (**V**), native to Australia (**A**), exotic (**E**) or an environmental weed (**W**).

An indigenous species (**I**) is one that is known to grow naturally in the local area, even if the individual tree has been planted and is from a seed source or provenance foreign to the area.

A species classified **V** is one which has a part or all, even if very small, of its natural range within Victoria, although it may occur outside the state as well. It does not however occur naturally in the local area.

A species classified **A** is native elsewhere in Australia than Victoria. It does not occur naturally in the local area.

A species classified **E** has its natural range occurring outside Australia.

A species classified **W** is a seriously invasive environmental weed.

GALBRAITH & ASSOCIATES

Rob Galbraith
B.For.Sci.(Melb.)
N.C.H. (Arb) UK

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
	I: Indigenous						
	V: Victorian Native						
	A: Australian Native						
	E: Exotic						
	W: Weed						
1	Syzygium paniculatum (Brush Cherry)	A	39, 40, 26	10x10	G	7	Healthy medium to large tree with a long safe useful life expectancy. TPZ 7.4
2	Angophora costata (Smooth bark Apple)	A	83	16x18	G	8	Large tree in good condition. TPZ 10.
3	Eucalyptus sideroxylon (Red Iron bark)	V	67	15x13	G	6	Good health but has a structurally poor pressure fork developing at 7m. TPZ 8
4	Allocasuarina verticellata (Coast Sheoke)	I	55	9x9	F/P	4	Over mature remnant type tree with lower trunk decay. TPZ 6.6
5	Eucalyptus pryoriana (Gippsland Manna Gum)	I	65	17x13	F/P		Over mature neighbouring tree which leans north-east into the subject site. It poses a threat of shedding large limbs or even collapsing onto the subject site. TPZ 7.8
6	Eucalyptus saligna (Sydney Blue Gum)	A	65	20x15	G		Neighbouring tree in good health. TPZ 7.8
7	Angophora costata	A	63	13x16		5	Mature tree leaning north - branch shedder. TPZ 7.6
8	Angophora costata	A	83	16x19	G	8	Mature tree in good condition. TPZ 10
9	Fraxinus angustifolia (Desert Ash)	EW	47, 35, 26, 23	12x16	G		Healthy neighbouring weed tree. TPZ 8.2
10	Corymbia citridora (Lemon Scented Gum)	A	72	18x18	G	6	Large tree in good condition, but the species when mature tends to develop limb shed tendencies, hence its worth for retention is somewhat compromised. TPZ 8.6
11	Quercus robur (English Oak)	E	83	18x18	G	8	Large deciduous tree in good condition. TPZ 10
12	Angophora costata	A	89	21x18	G	5	Large good specimen but its WOR is average due to the potential liability its continuous existence poses to the dwelling to the north only 5m from the trunk. TPZ 10.7
13	Eucalyptus leucoxylon (Yellow Gum)	V	47 equiv	10x11	F	4	Patchy crown, deadwood.
14	Salix babylonica (Weeping Willow)	E	46,43 equiv approx	11x11	F/P	3	In decline.
15	Agonis flexuosa (Willow Myrtle)	A	30,23,20,19, 13,22,16	7x11	F/P	3	Coppice stems from decayed base.
16	Agonis flexuosa (Willow Myrtle)	A	32,22	7x10	P	2	Decayed.
17	Lophostemon confertus (Queensland Brush Box)	A	34	8x6	F/P	5	Basically OK, crown density is modest. TPZ 4.1.
18	Lophostemon confertus (Queensland Brush Box)	A	23	9x6	F/P	4	Partly suppressed.
19	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	50,50,50,40, 40 approx	8x14	P	3	Over-mature, decay.
20	Lophostemon confertus (Queensland Brush Box)	A	37 equiv	9x9	F/G	5	Mildly lopsided to east but generally OK. TPZ 4.4.
21	Eucalyptus viminalis (Manna Gum)	I	5,10	4x6	F		Not on plan. In adjacent property approx 4m from northern boundary and 2m west of fence. Young tree - may be E. Pryoriana.
22	Eucalyptus viminalis (Manna Gum)	I	10,9	4x4	F		Not on plan. In adjacent property, located approx west of tree 3 and 0.3m from fence. Re ID: see comments for tree 21. TPZ 2.0.
23	Eucalyptus pryoriana (Coast Manna Gum)	I	55 approx	11x7	Dead		Not on plan. In adjacent property approx 7m south of 22 and 0.8m from fence. Likely ID (tree is dead). A few dead branches overhang subject site. A tree of Acacia longifolia (a weed species) is located 3m to the south.
24	Corymbia citridora (Lemon-Scented Gum)	A	32	13x11	F	5	Structure, health and form all are fair. TPZ 3.8.
25	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	30,17,20,23, 25 approx	5x8	F/P		Not on plan, located in adjacent property approx west of tree 4 and 1.6m from fence. Over-mature. TPZ 6.3.
26	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	34	14x6	P	2	

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
27	Lophostemon confertus (Queensland Brush Box)	A	27,21	10x9	P	3	Bifurcated at base.
28	Eucalyptus nicholii (x6) (Willow Peppermint)	A	Mostly 37 to 52 (two trees are smaller)	Dom ht 16m	F/P	3 to 4	Close group. Structure fair to poor. Failures.
29	Pittosporum undulatum (Sweet Pittosporum)	VW	28,27	8x10	F	3	
30	Lophostemon confertus (Queensland Brush Box)	A	41 equiv	9x9	F	5	TPZ 4.9.
31	Syzygium smithii (Lilly Pilly)	V	27,26,23,16,15	9x8	F	5	Healthy but structure fair only. TPZ 5.9.
32	Pittosporum undulatum (Sweet Pittosporum)	VW	25	6x8	F	3	
33	Pittosporum undulatum (Sweet Pittosporum)	VW	22,18,13	9x9	F	3	
34	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	25,25,20 approx	11x8	F		Not on plan. In adjacent property approx 2.5m SW of 33 and 0.3m from fence. TPZ 4.9.
35	Cupressus sempervirens (Italian Cypress)	E	32 approx	8x2.5	G		As above but approx 2.5m SE of 33. TPX 3.8.
36	Leptospermum laevigatum (Coast Tea-tree)	I	14 equiv	3x4	F	3	
37	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	28	9x8	F/G	3	
38	Lophostemon confertus (Queensland Brush Box)	A	33	10x8	F/G	5	Developing a tight crotch at 2m but generally good. Good form. TPZ 4.0.
39	Agonis flexuosa (Willow Myrtle)	A	85 approx	9x11	P	2	
40	Acacia longifolia (x6) (Sallow Wattle)	VW	10 to 24 equiv	dom ht 5m	F	2	Close, shrubby group.
41	Corymbia ficifolia (Red-flowering Gum)	A	32	7x9	F	4	Branch failure.
42	Prunus domestica (Plum)	E	25 equiv	4x6	F	3	
43	Lophostemon confertus (Queensland Brush Box)	A	19	7x6	F/P	3	Patchy crown.
44	Lophostemon confertus (Queensland Brush Box)	A	30,21	8x8	F/P	3	Borers in stem to north.
45	Prunus persica (Peach)	E	14 approx	4x4	F/G		Not on plan, in NW corner of 29 Scotsburn Ave. Approx 0.9m from fence. TPZ 2.0.
46	Lophostemon confertus (Queensland Brush Box)	A	30	7x8	F	5	Modest crown density. TPZ 3.6.
47	Pittosporum undulatum (Sweet Pittosporum)	VW	33 equiv	7x8	F	3	
48	Corymbia ficifolia (Red-flowering Gum)	A	27,23,22,21	9x11	F/P	4	Bifurcation developing between main stems.
49	Chamaecytisus palmensis (Tree Lucern)	E	15 equiv	7x8	F	3	
50	Lophostemon confertus (Queensland Brush Box)	A	25,16,16,15	9x10	P	2	One stem has split away from base of tree.
51	Lophostemon confertus (Queensland Brush Box)	A	31,20,15	8x9	F	4	Fair in all regards.
52	Melaleuca linariifolia (Snow in Summer)	A	22 equiv	4x3	F/P	3	Stump regrowth.
53	Lophostemon confertus (Queensland Brush Box)	A	25	6x6	F	4	
54	Eucalyptus sideroxylon (Red Ironbark)	V	60	12x11	F	5	Healthy but prone to further branch failures. TPZ 7.2

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
55	Casuarina cunninghamiana (River She-Oak)	A	49	13x12	F	4	Of limited useful life - likely to decline markedly when extended dry weather occurs.
56	Photinia "Robusta" (Photinia)	E	25,20	6x6	P	2	In decline.
57	Agonis flexuosa (Willow Myrtle)	A	20 equiv	7x5	F/P	3	
58	Agonis flexuosa (Willow Myrtle)	A	68 equiv approx	13x12	P	2	Has fungal decay brackets (Phellinus) in one of its main stems.
59	Agonis flexuosa (Willow Myrtle)	A	50 equiv approx	5x10	F	4	Low-spreading crown.
60	Lophostemon confertus (Queensland Brush Box)	A	36	11x9	G	5 to 6	Attractive smaller tree, long useful life. TPZ 4.3.
61	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	43,39	9x12	P	2	Has split apart.
62	Agonis flexuosa (Willow Myrtle)	A	49,44,34	11x10	F/G	5	Generally sound and healthy. TPZ 8.9.
63	Allocasuarina torulosa (Forest She-Oak)	A	45	11x8	F/P	3	Lopsided, over-mature.
64	Melaleuca armillaris (Bacelet Honey-Myrtle)	V	48 equiv approx	10x10	F/P	2	In decline.
65	Eucalyptus nicholii (Willow Peppermint)	A	61	13x10	F	5	TPZ 7.3.
66	Agonis flexuosa (Willow Myrtle)	A	17,16,10	7x6	F/P	3	Stump regrowth.
67	Lophostemon confertus (Queensland Brush Box)	A	38	9x9	F/G	5	Sound, long useful life. TPZ 4.6.
68	Agonis flexuosa (Willow Myrtle)	A	36,28 equiv	7x7	F	5	TPZ 5.5.
69	Eucalyptus scoparia (Wallangarra White Gum)	A	51,42 equiv	12x11	F/P	4	Assorted degrees of dieback, although some refoliation.
70	Corymbia ficifolia (Red-flowering Gum)	A	31,28,26	5x7	F/P	3	Dieback, V crotches.
71	Lophostemon confertus (Queensland Brush Box)	A	33 equiv	9x9	F/G	5	Leafy to ground level; lopsided and some lean to south. TPZ 4.0.
72	Eucalyptus leucoxyton	V	22	6x5	P	2	
73	Fraxinus angustifolia subsp angustifolia (Desert Ash)	EW	42 equiv	9x10	F	3	Pruned back to fence on north side.
74	Syzygium smithii (Lilly Pilly)	V	23,17,16,14,14	8x6	F/P	3	Stump regrowth stems.
75	Lophostemon confertus (Queensland Brush Box)	A	23,16	9x6	F/P	3	Partly suppressed.
76	Lophostemon confertus (Queensland Brush Box)	A	28 equiv	6x6	F	4	
77	Lophostemon confertus (Queensland Brush Box)	A	34,29 equiv	9x10	F/P	3	Bifurcated. Fair health.
78	Lophostemon confertus (Queensland Brush Box)	A	25 equiv	7x6	F	4	
79	Lophostemon confertus (Queensland Brush Box)	A	31 equiv	8x8	F/G	5	TPZ 3.7.
80	Pittosporum undulatum (Sweet Pittosporum)	VW	21 equiv	5x5	P	2	
81	Lophostemon confertus (Queensland Brush Box)	A	41	9x9	F	4	Fair structure - V crotches at 2.5m.
82	Lophostemon confertus (Queensland Brush Box)	A	39 equiv	9x9	F	4	V crotch at 2m.
83,84	Hakea salicifolia (x2) (Willow-leaf Hakea)	A	35 each approx	dom ht 5m	P	2	Over-mature, in decline.

Tree No.	Species	Origin	DBH (cm)	HxS (m)	Condition	W.O.R. 1 to 10	Comments and TPZ (m)
85	Melaleuca linariifolia (Snow in Summer)	A	36 equiv approx	6x6	P	2	
86	Corymbia ficifolia (Red-flowering Gum)	A	49 equiv	8x9	F/P	3	Numerous V crotches.
87	Acacia saligna (Golden Wreath Wattle)	AW	13,12 equiv	5x4	P	2	
88	Acacia saligna (Golden Wreath Wattle)	AW	15,9	4x5	F	3	
89	Acer negundo (Box Elder)	E	35 equiv	8x8	P	2	Much of the crown is dead.
90	Acacia longifolia (Sallow Wattle)	VW	22 equiv	4x6	P	2	Splitting.
91	Pittosporum undulatum (Sweet Pittosporum)	VW	14,13	7x4	P	2	
92	Lophostemon confertus (Queensland Brush Box)	A	39 equiv	8x7	F	4	Health fair and some branch attachments fair only.
93	Metrosideros excelsa (NZ Christmas Tree)	E	25,23	6x3	P	2	Much of crown is dead.
94	Pittosporum undulatum (Sweet Pittosporum)	VW	37 equiv	8x11	F	3	
95	Prunus cerasifera "Nigra" (Purple-leaved Cherry-plum)	E	10 equiv	4x3	F	3	
96	Leptospermum petersonii (Lemon-scented Tea-tree)	A	27,21,16 equiv	5x8	P	2	In decline, splitting.
97	Callistemon rugulosus (Scarlet Bottlebrush)	V	16 equiv	4x4	F	3	Shrub species.
98	Eucalyptus cladocalyx "Nana" (Bush Sugar Gum)	A	36,29	10x11	P	2	Heavy-limbed, cankers.
99	Melaleuca styphelioides (Prickly Paperbark)	A	33 equiv	7x6	F/P	3	V crotches, lacking foliage in parts due to closeness of adjacent trees.