ARBORISTS REPORT: 266 WINDSOR ROAD, BAULKHAM HILLS

VEGETATION ON PROPERTY FRONTAGE

Prepared for: LEIGHTON CONTRACTORS PTY LIMITED

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ARBORISTS REPORT: 266 WINDSOR ROAD, BAULKHAM HILLS VEGETATION ON PROPERTY FRONTAGE

INTRODUCTION

The vegetation inspected for this report comprises the trees and shrubs on the subject property located between the heritage-listed brick residence and Windsor Road footpath. Portion of the property frontage is proposed for resumption and incorporation into the new M2 Motorway access ramp, off Windsor Road. The specific area of investigation is shown on the cover page.

REPORT CONTENTS

View of the property frontage from Windsor Road

Report Part 1 follows

PART 1 TREE INSPECTIONS 7th November 2009 14 trees recorded:

Tree inventory / Inspection report: provenance, specifications, observable health & structural condition, and from this the Safe Useful Life Expectancy ("SULE") rating determined using the Barrell 1.4.01 format. (*Note that SULE ratings cannot predict the impact of extreme weather events on the subject trees, or necessarily detect internal defects in trunk or root plate).*

- Approximate tree heights were calculated with a Haglöf electronic clinometer.
- The tree location plan is on page 7

no	Species *provenance	H x R in m	Age, inspection comments **Age code: Y =** Young, **EM =** Early-mature **M =** Mature, **A =** Aged, **S =** Senile	SULE rating
1	*Grevillea robusta* **Silky Oak** * coastal r/f Nth NSW-Qld	11 x 5	EM: canopy healthy, primary trunk has a suspect narrow fork with fissure & sap bleed, (see photo below)	2d
2	*Castanospermum australe* **Black Bean** *coastal, Nth NSW & Qld	8.5 x 4.5	**M**: callused branch stubs, limited small dead wood, healthy	1
3	*Grevillea robusta*	11 x 3.5	**Y**: OK	1
4	*Pittosporum undulatum* **Native Daphne** * native inc. locally	6 x 3	**EM**: OK	2

View of trees 1 to 4 lining the northwest boundary of the property. The tall trees are Silky Oaks 1 & 3, the broad tree on the left is the Black Bean T.2. The right photo shows the suspect trunk fork on Silky Oak T. 1 (location arrowed in left photo).

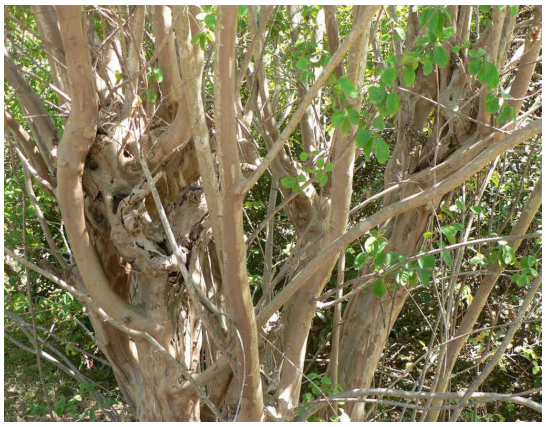
no	Species *provenance	H x R in m	Age, inspection comments **Age code: Y =** Young, **EM =** Early-mature **M =** Mature, **A =** Aged, **S =** Senile	SULE rating
5	*Syzygium paniculatum* **Brush Cherry** * native inc. regionally (uncommon)	9.5 x 5	**M**: multi-trunked at base, the trunk forks presently sound, tree healthy	2
6	*Acacia binervia* **Coast Myall** * native inc. regionally	6.7 x 2	**M**: leans to NE about 20°, healthy	2
7	*Acacia binervia*	7 x 2	**EM**: twiggy dieback on SW side	2

Southeast view of Trees 5, 6, 7 from Windsor Road. The large tree behind the clearway sign is the Brush Cherry (T. 5). The central blue-grey foliage belongs to Trees 6 & 7 the Coast Myalls. The shrub border in the foreground is hedged Bay Tree (Sweet Bay) *Laurus nobilis.*

no	Species *provenance	H x R in m	Age, inspection comments **Age code: Y =** Young, **EM =** Early-mature **M =** Mature, **A =** Aged, **S =** Senile	SULE rating
8	*Callistemon salignus* **Willow Bottlebrush** * native inc. regionally	5 x 2	**Y**: (shrublike) limited twiggy dieback lower 1.8m of trunks	2
9	*Lagerstroemia indica* **Crepe Myrtle** * Indian subcontinent & sth China	4.5 x 2.2	**M**: lopped at ~ 1.4 m, decay where lopped, upper branches are all watershoots (epicormics) growing from the lopped stubs. Photo next page.	2(3)
10	*Leptospermum petersonii* **Lemon Scented Tea Tree** * border ranges NE NSW-Sth Qld	5 x 2.5	**M**: shrublike, healthy	2

Photos of trees 8-10 follow

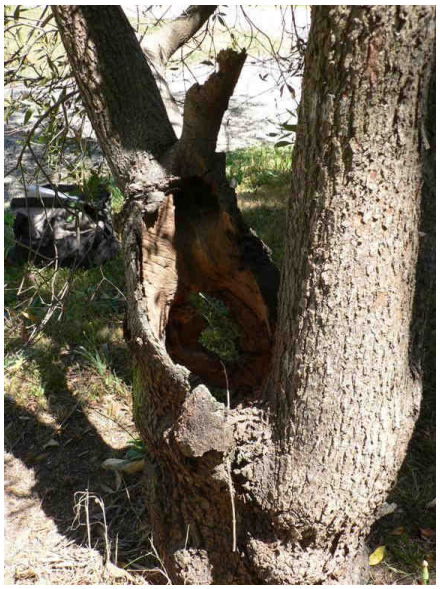
Right: View of trees 8, 9, 10 as seen from the verandah. The Lemon Scented Tea Tree (T. 10) is arrowed in the foreground



Left: effect of "lopping" on Crepe Myrtle T. 9

no	Species *provenance	H x R in m	Age, inspection comments **Age code: Y =** Young, **EM =** Early-mature **M =** Mature, **A =** Aged, **S =** Senile	SULE rating
11	*Jacaranda mimosifolia* **Jacaranda** * Brazil	4 x 1.8	**Y:** OK	1
12	*Photinia x fraseri* 'Robusta' **Photinia** * Orient	4.5 x 2	**M**: OK	1
13	*Ceratopetalum gummiferum* **NSW Christmas Bush** * native inc. regionally	6 x 2.5	**M**: large lesion & hollow in base (Photo next page)	2(3 ?)
14	*Grevillea robusta*	9 x 2.5	**Y**: upper half dead, advancing dieback, will die off	4

Photos of Trees 11-14 follow

Left: view including Trees 11-14, in a foliage mix of trees and shrubs. The dying Silky Oak T. 14 can be seen in the left background. The foreground shrub arrowed is a small Macadamia *Macadamia tetraphylla*. Right photo shows the decay and hollow in the base of NSW Christmas Bush T. 13

Inspection nomenclature: explanatory notes

Co-dominant trunks: may occur where a trunk divides with a narrow fork, which tends to wedge apart over time, set up hairline partition and a decay court inside the fork, which may split in time (various indicators if this is occurring).

Deadwood: expected on mature trees – to a degree. Beyond a point, the percentage of deadwood in the overall canopy will downgrade the SULE prognosis. In some cases, may indicate a progressive dieback pattern, or limb death caused by termites.

Epicormic branches: brittle-attached leafy shoots or branches, usually sprout from the trunk or limbs, as response to unsuitable environment ("stress"), fire, "lopping" or natural senility. Beyond a point, the percentage of epicormics in the overall canopy will downgrade the SULE prognosis.

H x R column: (3rd from left) this is the approximate height in metres recorded by the clinometer x the canopy radius (radius = average trunk-to-dripline distance, in metres).

Lesion: (generic) refers to any localised pathology such as decay, disease, infected wound, morbid tissue.

Lopping and topping: a structurally and pathologically destructive method of pruning trees. It is an unacceptable tree working method under *AS 4373-2007 Part 8* "Pruning of Amenity Trees"

"OK": indicates that the tree inspected as satisfactory for its age, location & seasonal conditions

Pre-emptive removal: Trees not expected to fail immediately, but with serious structural fault or disease that give a poor prognosis and foreseeable hazard. In young trees with serious inbuilt fault, pre-emptive removal is advisable before the tree grows larger and removal more difficult and expensive. These trees are flagged in the SULE column as Category 3(4)

Provenance: Australian or exotic centre-of-origin of the species (in species column).

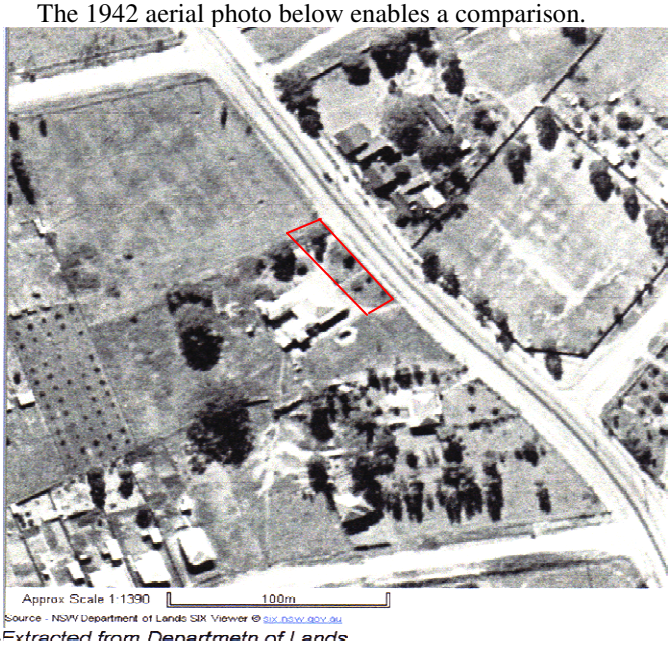
Safe Useful Life Expectancy "SULE" rating these ratings use the Barrell 2001 format for rating trees: SULE cat.1(40+ yrs), 2(15-40 yrs), 3(5-15yrs), 4(remove), full details page 12.

This completes Part 1, inventory and inspection results on the trees in the study area.

The tree location plan follows on page 7

APROXIMATE TREE LOCATIONS

Individual tree locations. The remaining vegetation filling in the gaps in this photo is shrubbery, to be discussed in report Part 2 on page 8. The 1942 aerial photo below enables a comparison.



Extracted from Departmetn of Lands

PART 2 SHRUB UNDERSTORY IN THE INSPECTION ZONE.

These are a mix of large and smaller shrubs and sapling trees. Because of planting density they fill in the gaps between the trees, and form a visual screen 2+ metres high between the residence and the road. Photos on page 2, 5 and 6 give a good impression of the screen effect.

The species forming the shrub understory are all quite common in suburban Sydney, and were identified and listed below:

Shrubs
Nerium oleander **Oleander**
Laurus nobilis **Bay Tree (Sweet Bay), hedged**
Viburnum tinus **Viburnum**
Plumbago auriculata **Plumbago**
Ochna serrulata **Mickey Mouse Plant**
Rosa multiflora **Multiflora Rose**
Callistemon viminalis 'Captain Cook' **Captain Cook bottlebrush**
Camellia japonica **Camellia**
Melaleuca hypericifolia **Red Flowered Honey Myrtle**
Hibiscus rosa-sinensis **Hawaiian Hibiscus**

Saplings of juvenile trees (currently shrub sized)
Macadamia integrifolia **Queensland Nut Tree**
Syzygium paniculatum **Brush Cherry**
Jacaranda mimosifolia **Jacaranda**
Ceratopetalum gummiferum **NSW Christmas Bush**

Fruit trees
Prunus persica **Peach Tree**
Citrus reticulata **Mandarine**

None of these shrubs were of great age. The oldest possibly is the Laurel "hedge" (photo page 4) which was in partial dieback, probably because of periodic infestations *Wax Scale* (sap sucking insect) to which the Sweet Bay is quite susceptible in eastern (coastal) regions.

End of Part 2 - shrub understory

PART 3 THE SITE TREE SUMMARY

The tree species
With the exception of Black Bean (T. 2) and the Brush Cherry (T. 5), the trees recorded in report Part 1 are relatively ubiquitous suburban favourites, of value here in an amenity sense - visual & screen - between the residence and road.
The mature examples here of Black Bean and Brush Cherry are less common in Sydney suburbs. Some of the trees were planted by the present owner for screen enhancement and (wishfully) for traffic noise mitigation.

Age of the trees
The signature trees of 19th century estates, large gardens and cemeteries, such as *Araucaria* spp (Hoop Pine, Bunya), *Quercus* spp (English Oak etc), *Ulmus* spp (Elms), *Cupressus* spp (Monterey Cypress), *Ficus* spp (Moreton Bay & Port Jackson Fig), *Phoenix canariensis* (Phoenix Palm) *Platanus* spp (Plane Tree), *Cinnamomum camphora* (Camphor Laurel) are **absent** from the study area. A large Camphor Laurel however is to be seen behind the residence, but not relevant to this report.

Trees **2** and **5** (Black Bean, Brush Cherry) are the oldest of the trees, but on appraisal were judged under 100 years of age. They easily post-date the brick residence, which is of 1860-70's vintage (pers. com. owner).

The Dept. of Lands 1942 aerial photograph (page 7) shows one tree in the same location as Tree 2, and it may well be the same tree (Black Bean), which would date it older than 70 years.
There are other trees (shrubs ?) in the 1942 photo, but they do not relate to anything in the present inventory.

Inspection prognoses: Safe Useful Life Expectancy ("SULE") ratings
With the exception of Trees 9, 13, 14 (see inspection table), the remaining trees all had satisfactory prognoses, rating SULE Category 1 (40+ years) or Category 2 (15-40 years).

Excepting the Laurel "hedge" with partial dieback (photo page 4), the shrubs were all in satisfactory condition for the exposed location and growing conditions.

A detailed explanation of the *Safe Useful Life Expectancy* categories is on page 12.

This completes Part 3 an overview of the trees in the study area.

PART 4 LANDSCAPE PLAN: RESTRAINTS AND SUITABLE REPLACEMENT SPECIES

Restraints
The concept Landscape Plan supplied by Tract Consultants indicates a "cut" along the resumed frontage of approximately 750mm depth, the vertical (i.e. not battered) level change being accommodated by a masonry wall.

Allowing for working room of another 500mm behind the construction line, I would advise removing any trees within 2.5 metres of the working excavation line, to avoid root truncation or destabilisation of anchorage.

In the bigger picture, it may be appropriate to remove the existing ad hoc mix of vegetation and replant with suitable species, as discussed below.

Potentially suitable trees & shrubs for the situation
Suitable species must be long lived, pollution and wind resistant, hardy to the confined garden area and soils. Very importantly, they must provide screening and privacy by dense branching habit and foliage, with floral display as an enhancement.
Among the selections that fit these specifications are:

***Acmena smithii* 'Minor'** Dense foliage, compact small tree to 6m maximum, flowers and fruits.
***Syzygium* 'Hunchy'** Dense dwarf Brush Cherry type.
***Metrosideros* 'Fiji Fire'** or ***Metrosideros* 'Spring Fire'** Large dense shrub, good floral display.

Part 5 report summary follows on page 11

PART 5 REPORT SUMMARY

- The site inspection recorded 14 trees with associated shrub plantings that provide useful amenity of a visual barrier between the residence and Windsor Road.
- None of the trees or shrubs were rare, endangered, forest remnant or in a heritage context had a direct connection to the original 1860/70's development. One tree (*Castanospermum australe*), whilst not 19th century vintage, appears in the Lands department 1942 aerial photograph.
- Resumption of part of this property frontage for the M2 upgrade and the level change will require removal of many of the trees and shrubs. These are to be replaced with carefully selected species suited to the site: pollution and wind resistant, compact and dense growth habit, visually appealing. Several are listed in Part 4 of this report.

END OF REPORT

Thank you for the opportunity to make this report,
I trust this information is helpful in your planning.

David Potts
December 2009

Following:
Explanatory notes: *Safe Useful Life Expectancy* categories and sub-categories.

SAFE USEFUL LIFE EXPECTANCY "S.U.L.E." CATEGORIES (Barrell Jan 2001 update)

1. LONG SULE (40+ years): *Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.*
1a) Structurally sound trees located in positions that can accommodate future growth.
1b) Trees that could be made suitable for retention in the long term by remedial tree care.
1c) Trees of special significance for historical, commercial or rarity reasons that would warrant extraordinary efforts to secure their long term retention.

2. MEDIUM SULE (15-40 years) *Trees that appeared to be retainable at the time of assessment for 15-40 years with an acceptable level of risk.*
2a) Trees that may only live between 15 and 40 years.
2b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.
2c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
2d) Trees that could be made suitable for retention in the medium term by remedial tree care

3. SHORT SULE (5-15 years) *Trees that appeared to be retainable at the time of assessment for 5-15 years with an acceptable level of risk.*
3a) Trees that may only live between 5 and 15 years
3b) Trees that could live for more than15 years but may be removed for safety or nuisance reasons.
3c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
3d) Trees that require substantial remedial care and are only suitable for retention in the short term

4. REMOVE *Trees that should be removed within the next 5 years.*
4a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.
4b) Dangerous trees because of instability or recent loss of adjacent trees.
4c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds, poor form.
4d) Dangerous trees that are clearly not safe to retain.
4e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
4f) Trees that are damaging or may cause damage to existing structures within 5 years.
4g) Trees that will become dangerous after the removal of other trees for the reasons given in a) to f).
4h) Trees in categories a) to g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.

5. SMALL, YOUNG OR REGULARLY PRUNED *Trees that can be reliably moved or replaced.*
5a) Small trees less than 5m in height
5b) Young trees less than 5 years old but over 5m in height
5c) Formal hedges and trees intended for regular pruning to artificially control growth.