Hunter Horticultural Services
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ARBORIST'S REPORT

PROPERTY:	4 Murray Rose Avenue, Homebush Bay
NUMBER OF SUBJECT TREES:	2
DATE OF REPORT:	30/10/2013
REQUESTED BY:	Lend Lease Project Management and Construction
CONTACT:	Johanna Nolan

CONTENTS

DISCLAIMER

The recommendations given in this report assumes that reasonable maintenance will be provided by a qualified Arboriculturist working to Australian Standard 4373 (2007), *Pruning Amenity Trees* and *AS* 4970 (2009) *Protection of Trees on Construction Sites*.
Incorrect tree work practices can significantly accelerate tree decline and increase hazard potential.

No liability is accepted for any effects if the recommendations in this report were not followed.

The information in this report does not take into account the effects of unforeseen circumstances or severe weather events on the subject trees.

INTRODUCTION

Project Brief

Assess the condition of the subject trees, consider a proposed development and supply a written report.

Methodology

A visual inspection was made of the subject trees from ground level on the 25th of October 2013. No internal testing e.g. Resistograph or drilling, or excavation was carried out. The trees were assessed from observations made during the inspection.

Glossary of Terminology

Refer to page 11 for full explanations.

SITUATION OVERVIEW

The trees will be affected by a proposed development.

SUMMARY OF ACTION PROPOSED FOR THE SUBJECT TREES

The trees are proposed for removal to allow the proposed development to proceed, based on their condition, their availability for replacement as part of the landscape plan and the inability to adequately protect them during and after construction according to *AS 4970* (2009), if best use of the property is to be achieved.

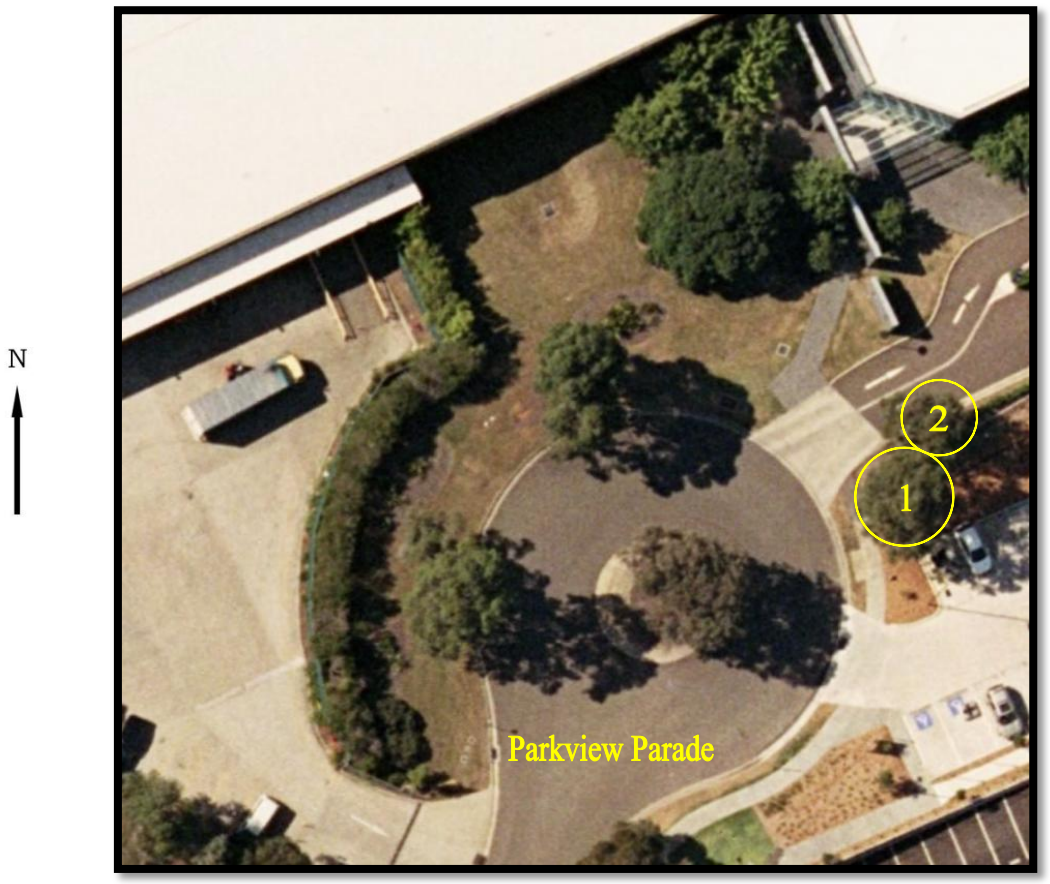
The term removal does not necessarily mean destruction [of the tree]. Any proposal for relocation of any of the trees will need to be considered by qualified specialist contractors, and is not the subject of this report. The economic viability of large tree transplant must be considered in detail as it may not be profitable compared to more carefully cultivated advanced [replacement] specimens which may have a much longer ULE (Useful Life Expectancy).

The success rate of large tree transplanting is another consideration.

SITE LOCATION

The site location.

SITE PLAN



An aerial photograph (2009) used as a site plan, showing the position of the trees.

SITE DESCRIPTION

The site is a flat area, mostly sealed by tarred and concreted areas with surrounding gardens, and part of a large commercial project. The trees appear to have been planted as part of previous landscape works.

TREE ASSESSMENT

Tree Identification	Description		Health	Structure	U.L.E. (Useful Life Expectancy)
Tree 1s Botanical Name *Corymbia maculata*	Age:	Mature	The tree is in good health having the following defects: Leaf density of 60% coverage. Slight deadwood to 50mm diameter. Some twig galls.	The tree has a good structure.	The tree has been given a ULE of 2B due to its good condition.
	CBH	1490mm			
	DBH	474mm			
Common Name Spotted Gum	Height:	16 metres			
	Canopy Spread:	9 x 10 metres			
Tree 2s Botanical Name *Corymbia maculata*	Age:	Early Mature	The tree is in good health having the following defects: Leaf density of 60% coverage. Slight deadwood to 50mm diameter. Some tip dieback. Some twig galls. Slight deadwood stubs around trunk.	The tree has a fair structure having the following defects: Co - dominant stems from 6 metres high. Slight stem bow at 5 metres high.	The tree has been given a ULE of 3B due to its fair condition.
	CBH	930mm			
	DBH	296mm			
Common Name Spotted Gum	Height:	10 metres			
	Canopy Spread:	9 x 8 metres			

TREE HAZARD EVALUATION

The hazard rating is derived from the International Society of Arboriculture Tree Hazard Evaluation Form where aspects of the tree's condition and situation are given numerical ratings between 1(low) and 4(severe).

This type of evaluation focuses on an immediate risk from the tree by an externally observable part(s) failure potential. It cannot evaluate other potential risks from the trees, such as loss of structural integrity caused by internal decay or instability from root damage.

The hazard aspects of the trees are:

H1:	**The size of the tree part most likely to fail (1=<150mm, 2=150-450mm, 3=450mm-750mm, 4=>750mm.**
H2:	**The potential for failure of that part, (1=low, 2=medium, 3=high, 4=severe**
H3:	**The frequency of use of the site, (1=occasional, 2=intermittent, 3=frequent, 4=constant)**

In this case and at this time, the numerical rating for each tree based on the above is:

Tree 1:	**H1=1** **H2=2** **H3=3** **1+2+3=6**	**Hazard rating is 6.** **The deadwood branches are the parts most likely to fail.**

Tree 2:	**H1=1** **H2=2** **H3=3** **1+2+3=6**	**Hazard rating is 6.** **The deadwood branches are the parts most likely to fail.**

TREE PROTECTION ZONES (TPZ) and STRUCTURAL ROOT ZONES (SRZ)

In accordance with *AS* 4970 (2009), *Protection of Trees on Construction Sites*, the following TPZ and SRZ (as a radius from the trunk) are applicable to each tree.

Tree	TPZ	SRZ
1	5.7	2.4
2	3.5	2.0

The trees cannot be adequately protected during and after construction.

CONCLUSION

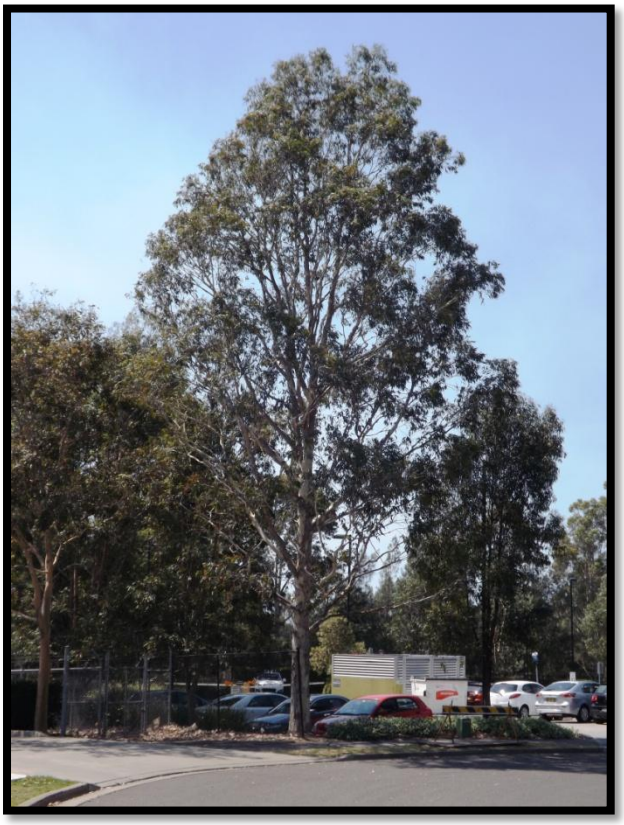
Tree 1 is a good specimen whose relocation may be a viable option since protection cannot be implemented.

Tree 2 is a fair specimen whose removal and replacement with a good specimen may be a more viable option.

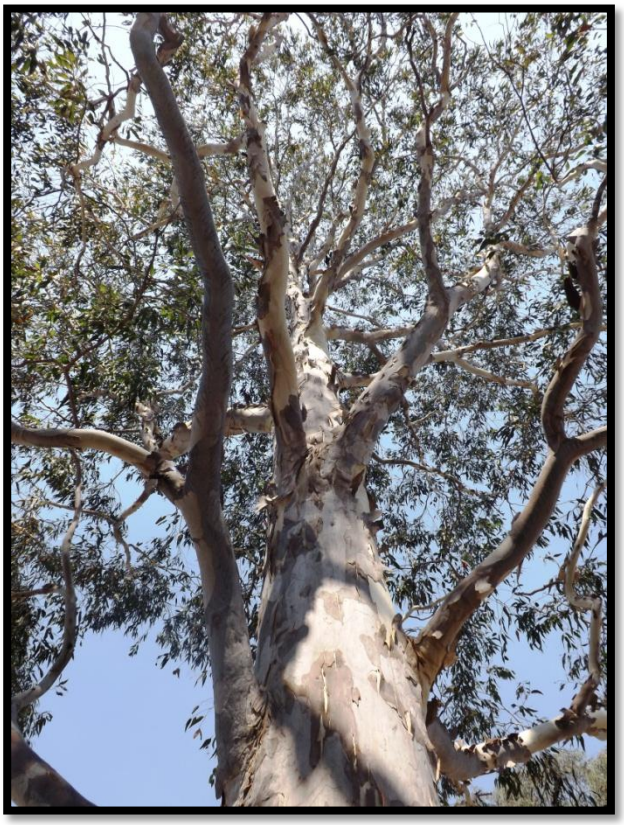
RECOMMENDATIONS

Due to the various aspects of tree condition and position, it is recommended that the trees be removed for the construction to proceed, and compensatory planting be carried out as part of the landscape plan.

PHOTOGRAPHS



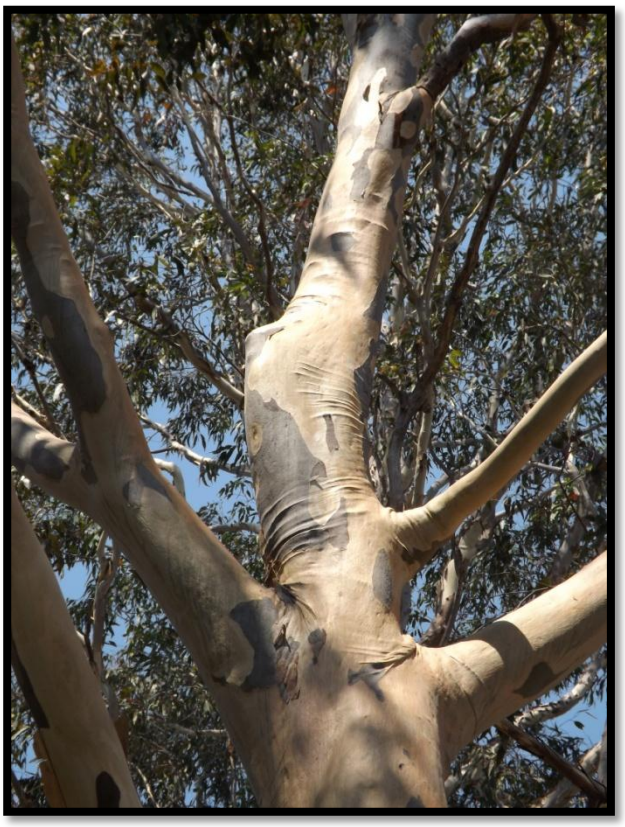
Tree 1 (centre) viewed from the west.



The straight trunk of Tree 1.

PHOTOGRAPHS CONTINUED

Tree 2 (outlined) viewed from the east.



Stem bow in Tree 2.

Tip dieback in Tree 2.

This report has been prepared by Stephen Williams on 30 October 2013.

Acknowledgements

Aerial Photograph courtesy of Google™ Earth.

New South Wales Flora Online, http://plantnet.rbgsyd.nsw.gov.au

APPENDICES

ULE

ULE is an acronym for Useful Life Expectancy. There are a number of ULE categories that indicate the safe useful life anticipated for each tree. Factors such as the location, age, condition and health of the tree are significant to determining this rating. Other influences such as the tree's effect on better specimens and the economics of managing the tree successfully in its location are also relevant to ULE (Barrell 1993, 1995).

ULE categories and subgroups:

1 = Long ULE of > 40 years

A Structurally sound in suitable location	**B** Suitable to retain with some remedial care	**C** Significant status – requires Special care to preserve

2 = Medium ULE of 15 – 40 years

A Lifespan limit	**B** Eventual removal for safety or nuisance	**C** Remove for adjacent trees or replanting	**D** Requires extensive remedial care

3 = Short ULE of 5 – 15 years

A Lifespan limit	**B** Eventual removal for safety or nuisance	**C** Remove for adjacent trees or replanting	**D** Requires extensive remedial care

4 = Remove tree within 5 years

A Dead, dying or diseased	**B** Unstable or exposed by new clearing	**C** Structurally defective	**D** Damaged and unsafe	**E** Remove for adjacent trees or replanting	**F** Damaging existing structures	**G** Clearing will affect stability

5 = Trees suitable to transplant

A Less than 5m high	**B** Young trees over 5m high	**C** Height/width contained by pruning

The ULE rating given to any tree in this report assumes that reasonable maintenance will be provided by a qualified Arboriculturist using correct and acknowledged techniques. Retained trees are to be protected from root damage. Incorrect tree work practices can significantly accelerate tree decline and increase hazard potential.

Appendix 1.1

Glossary of Terminology

CBH: Trunk circumference at 1.4 metres high or as otherwise stated

DBH: Trunk diameter at 1.4 metres high or as otherwise stated

Epicormic: Leaf shoots which arise from under the bark, and are not attached to the heartwood. These can detach, especially as they become larger, and have a high risk factor

Kino: A type of resin exudated by Eucalypts and Angophoras as a defence mechanism against insect attack

Mistletoe: A genus of parasitic plants, often hastening the decline of trees in poor health; many species are host specific.

Structure: The shape of the tree, ranging from very good, with a single straight trunk, to very poor, with misshapen multiple trunks. Trees with multiple trunks etc. can have a higher risk factor, as splitting and trunk collapse may occur.

ULE: An acronym for Useful Life Expectancy. A system for rating the possible longevity of a tree, designed by English Arborist Jeremy Barrell (see appendices).

Included Bark: Bark that occurs in a crotch between branch and trunk or between co-dominant stems.

Included bark usually:

- prevents the trunk from growing around a branch.
- occurs on defective V-shaped crotches in which the bark grows inward and on itself, causing a physical weakness where the co-dominant leaders meet.

Appendix 1.2

Contact Details	Qualifications
P.O. Box 3193 **Glendale NSW 2285** **Ph 0409 559 147** **Email: jwi52886@bigpond.net au**	**Bachelor of Arts Degree (Botany)** **Horticulture Certificate (1989) with Arboriculture component included.** **Horticulture Certificate (2000 Northern Melbourne Institute of Technology)** **Diploma of Horticulture (2007 Kurri Kurri Tafe) Arboriculture. 5510397**

Appendix 1.3

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ARBORIST'S SUPPLEMENTARY REPORT

Hunter Horticultural Services

PROPERTY:	7 Parkview Parade, Homebush Bay
NUMBER OF SUBJECT TREES:	8
DATE OF REPORT:	18/11/2009
DEVELOPMENT APPLICATION:	
REQUESTED BY:	Bovis Lend Lease
CONTACT:	Grant Eckett

CONTENTS

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Incorrect tree work practices can significantly accelerate tree decline and increase hazard potential.

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The information in this report does not take into account the effects of unforeseen circumstances or severe weather events on the nominated trees.

INTRODUCTION

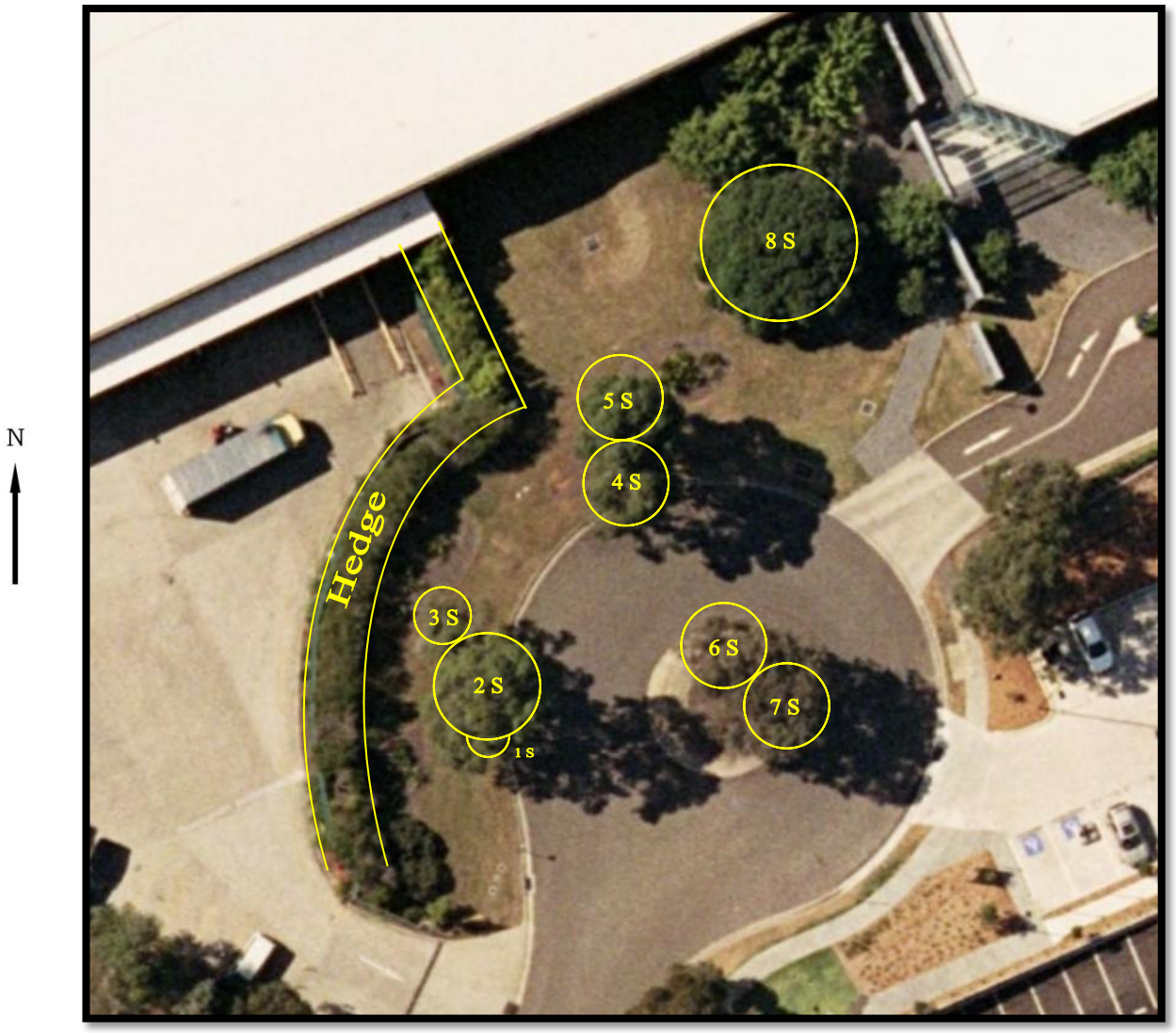
Project Brief

Stage One
Assess the condition of trees with a DBH (trunk diameter at 1.4 metres high) greater than 150mm, excluding planted landscape exotics.
Hedges to be assessed as a group.

Methodology

A visual inspection was made of the nominated trees from ground level on 17rd of November 2009. No internal testing e.g. Resistograph or drilling, or excavation was carried out. The trees were assessed from observations made during the inspection.

LOCATIONSITE DETAILS



An aerial photograph used as a site plan.

Site Description

The subject land slopes towards Parkview Drive in the south and is built up to form a tiered embankment to Bennelong Drive on the east. Culverts on the eastern embankment, transport stormwater and run-off from the subject land to the wetlands associated with the Badu Mangroves.

The subject trees and hedges are located along the western and north western boundaries adjacent to the warehouse, and adjacent to the roundabout in Parkview Parade.

TREE ASSESSMENT TREES 1s – 3s

Tree Identification	Description		Health	Structure	U.L.E. (Useful Life Expectancy)
Tree 1s Botanical Name *Corymbia maculata*	Age:	Semi mature	The tree is in poor health. The main stem has died back, and some small scaffold branches the new leaders.	The tree has a poor structure, due to the dead main stem.	The tree has been given a ULE of 4A due to the dieback.
	DBH	152mm			
Common Name Spotted Gum	Height:	9 metres			
	Canopy Spread:	2.5 metres			
Tree 2s Botanical Name *Corymbia maculata*	Age:	Mature	The tree is in good health.	The tree has a good structure.	The tree has been given a ULE of 3B due to its age and species, which is too large for its position.
	DBH	423 mm			
Common Name Spotted Gum	Height:	15 metres			
	Canopy Spread:	8 metres			
Tree 3s Botanical Name *Eucalyptus crebra*	Age:	Early Mature	The tree is in fair health, having moderate tip dieback. The leaf density is tending toward thin, and a branch has been lost at 5.5 metres high.	The tree has a fair structure, having co – dominant stems from 3.5 metres high. Moderate [sized] epicormic growth is present, and the canopy is approximately 80% epicormic.	The tree has been given a ULE of 3B due to health and structure.
	DBH	226			
Common Name Small Leaved Ironbark	Height:	8 metres			
	Canopy Spread:	5 metres			

TREE ASSESSMENT TREES 4s – 6s

Tree Identification	Description		Health	Structure	U.L.E. (Useful Life Expectancy)
Tree 4s Botanical Name *Corymbia maculata*	Age:	Mature	The tree is in fair health, having slight deadwood to 50mm diameter, and the leaf density is tending toward thin.	The tree has a fair structure, having co – dominant stems from 6 metres high, and slight trunk bow.	The tree has been given a ULE of 3B due to the health and structure.
	DBH	302mm			
Common Name Spotted Gum	Height:	13.5 metres			
	Canopy Spread:	6 metres			
Tree 5s Botanical Name *Corymbia maculata*	Age:	Early Mature	The tree is in good health.	The tree has a fair structure, hacing co – dominant stems from 2.5 metres high.	The tree has been given a ULE of 3B due to its age and species, which is too large for its position.
	DBH	375mm			
Common Name Spotted Gum	Height:	9 metres			
	Canopy Spread:	5 metres			
Tree 6s Botanical Name *Eucalyptus sideroxylon*	Age:	Early Mature	The tree is in fair health, having slight tip dieback on some branches, the leaf density is tending toward thin.	The tree has a poor structure, having co - dominant stems from 1.5 metres high. Some epicormic growth is also present.	The tree has been given a ULE of 3B due to its age, structure and species, which is too large for its position.
	DBH	398mm at 800mm high			
Common Name Mugga Ironbark	Height:	10 metres			
	Canopy Spread:	6 metres			

TREE ASSESSMENT TREES 7s & 8s

Tree Identification	Description		Health	Structure	U.L.E. (Useful Life Expectancy)
Tree 7s Botanical Name *Eucalyptus sideroxylon*	Age:	Early Mature	The tree is in fair health, having slight deadwood to 25mm diameter, and the leaf density is tending toward thin.	The tree has a fair structure, having 3 dominant stems from 2 metres high, and some epicormic growth.	The tree has been given a ULE of 3B due to its age, structure and species, which is too large for its position.
	DBH	414mm			
Common Name Mugga Ironbark	Height:	10 metres			
	Canopy Spread:	8 metres			
Tree 8s Botanical Name *Ficus rubiginosa*	Age:	Mature	The tree is in fair health, having a severe infestation of Black Scale and some accompanying Sooty Mould. There is slight deadwood to 60mm diameter.	The tree has a poor structure, having 3 dominant stems from 1 metre high, and the trunk has a 30° lean to the SSW. The tree has moved in the ground as is indicated by soil heaving on the NNE side. The tree is also growing around an old fence post.	The tree has been given a ULE of 3B due to the structure. As the tree is intended for retention, various remedial actions will be required to increase the ULE.
	DBH	764mm at 600mm high			
Common Name Port Jackson Fig	Height:	7 metres			
	Canopy Spread:	11 metres			

CONLUSION

Trees 1s – 7s may be removed due to either health/structure or the fact that the species is too large for the development.

Replacement with suitable landscape alternatives is recommended to prevent loss of environmental and aesthetic value.

Tree 8s will require remedial action to increase its ULE. The most effective options for this are being considered, given the species and large size of the tree.

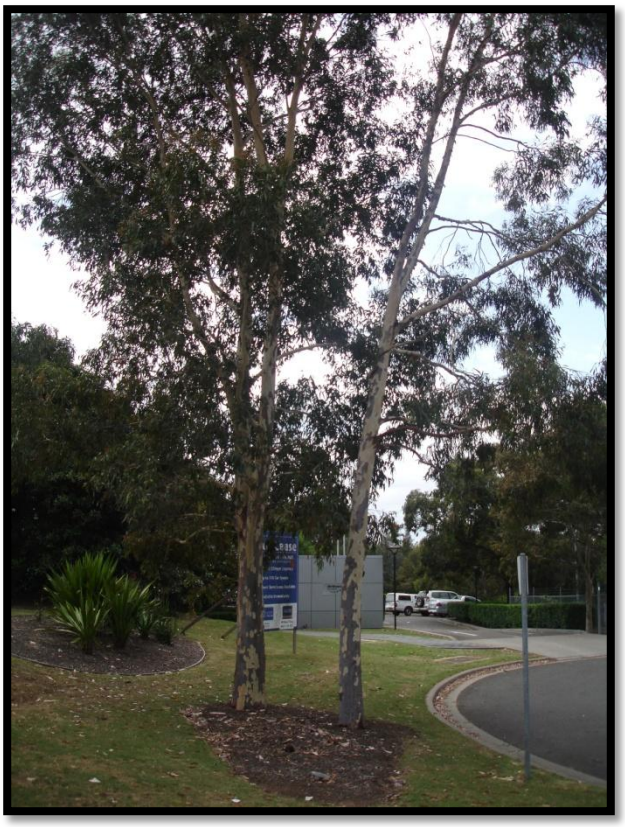
The hedge and exotics may be removed to suit the new landscape design.

PHOTOGRAPHS TREES 1s – 5s

Tree 1S (circled) and Tree 2S (centre).

Tree 3S.

Tree 4s (left) and Tree 5s (right).



Tree 4s (right), note the trunk bow.

PHOTOGRAPHS TREES 6s – 8s

Tree 6s (left) and Tree 7s (right).

Tree 8s viewed from the west.

PHOTOGRAPHS TREE 8s CON'T

The post in Tree 8s, note the angle of the trunk.

Soil heaving in the root zone of Tree 8s.

This report has been prepared by Stephen Williams

Acknowledgements

Aerial Photograph courtesy of Google™ Earth.

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ULE Categories and Subgroups

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