Hunter Horticultural Services *Phone*: (02) 49 559 147
PO Box 3193 *Mobile*: 0409 559 147
Glendale NSW 2285 Email: jwi52886@bigpond.net.au
ABN: 40 747 273 254
Member of the Australian Institute of Horticulture and Arboriculture Australia

ARBORIST'S STAGE C REPORT

PROPERTY:	25 – 29 Prospero Street, Maryland NSW
NUMBER OF SUBJECT TREES:	6
NUMBER OF SHRUBS:	11
DATE OF REPORT:	28 October 2020 (updated 13 April 2023)
REQUESTED BY:	NSW Land & Housing Corporation

CONTENTS

REPORT SUMMARY

The report recommends the removal of Trees 1, 2, 5, and 6, and the retention and protection of Trees 3, 4 and the small fig adjacent to the fence in number 31 Prospero Street.

Removal of all of the shrubs may be possible, depending on design concepts, however, most are declared vegetation (over 5 metres high) in accordance with the City of Newcastle (2018) Urban Forest Technical Manual.

Retained trees and shrubs will require protection in accordance with Part A of the City of Newcastle Urban Forest Technical Manual, and *AS 4970* (2009) *Protection of Trees on development Sites.*

One large public tree and four public shrubs are present along the nature strip, and these will require retention and protection in accordance with Part B of the City of Newcastle Urban Forest Technical Manual, and *AS 4970* (2009) *Protection of Trees on development Sites.*

INTRODUCTION

Project Brief

Assess the vegetation on the three sites and supply a written report.

Methodology

A visual inspection was made of the vegetation from ground level on the 30th of September. No internal testing e.g. Resistograph or drilling, or excavation was carried out. The vegetation was assessed from observations made during the inspection.

Private trees are numbered T1, T2 etc.

Private shrubs are numbered S1, S2 etc (and S1A & S1B adjacent to number 23).

Public tree is numbered PT1, and public shrubs are numbered PS1, PS2 etc.

The Tree Protection Zone (TPZ) for multi-stemmed shrubs is the canopy spread or a minimum of 2 metres [radius].

The small fig in number 31 has not been numbered.

SITUATION OVERVIEW

The private vegetation may be affected by a proposed development.

SITE DESCRIPTION

The sites are suburban blocks facing NNW, and sloping slightly (rear yards), and moderately (front yards) down to the street.

Two trees and four shrubs are located in number 25, two are adjacent to the driveway of number 23.

Two trees and three shrubs are located in number 27.

Two trees and four shrubs are located in number 29, as well as one small tree in the neighbouring property of number 31 (adjacent to the fence).

The soil type is clay.

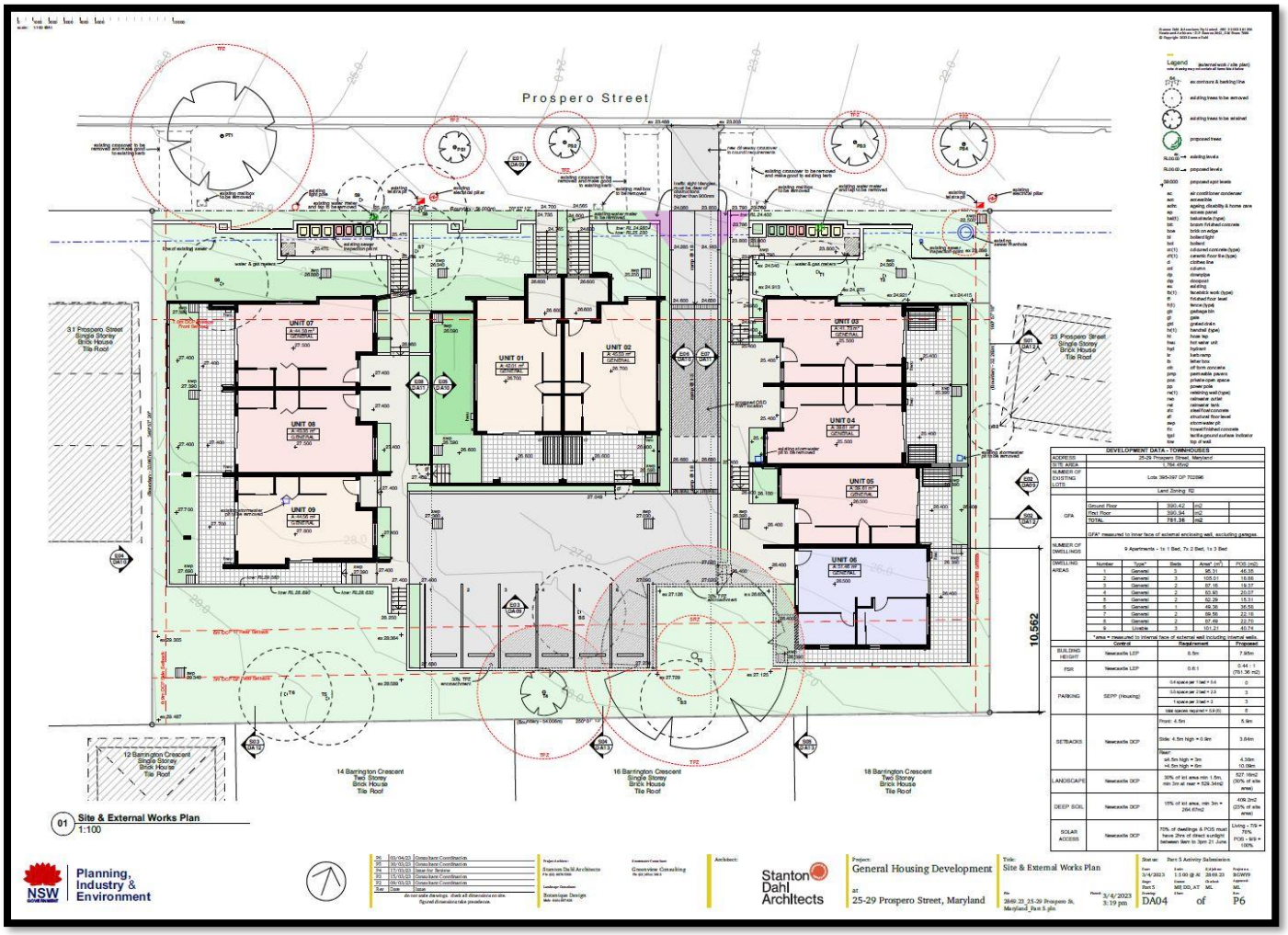
SITE LOCATION

The site location (indicated).

SITE PLAN

An aerial photograph (Six Maps) used as a site plan showing the positions of the subject trees and shrubs (indicated by the [numbered] red circles, and showing the approximate canopy extents).

SITE PLAN OF THE PROPOSED DEVELOPMENT



A supplied site plan of the proposed development, showing the positions of the trees and TPZs.

TREE ASSESSMENT

25 Prospero Street

Number of Trees	Tree Number	Species	Height (metres)	Condition		DBH (mm)	TPZ (metres)	ULE	Retention Value	Comments
				Health	Structure					
2	T1	*Cupressus sempervirens* (Italian Cypress)	8	Good	Good	N/A	2 (minimum as required by *AS* 4970)	2B	Low	Suitable to remove.
	T2	*Cupressus sempervirens* (Italian Cypress)	8	Good	Good	N/A	2 (minimum as required by *AS* 4970)	2B	Low	Suitable to remove.

TREE ASSESSMENT CONTINUED

Number of Shrubs	Shrub Number	Species	Height (metres)	Condition		DBH (mm)	TPZ (estimated metres)	ULE	Retention Value	Comments
				Health	Structure					
2	S1	*Callistemon viminalis* (Weeping Bottlebrush)	6	Good	Good	N/A (could not reach trunk)	3	2B	Low	Suitable to remove (within 3 metres of house)
	S2	*Syagrus romanzoffiana* (Cocos Palm)	3	Good	Good	N/A	2	2B	Low	Suitable to remove (within 3 metres of house)

27 Prospero Street

Number of Trees	Tree Number	Species	Height (metres)	Condition		DBH (mm)	TPZ (metres)	ULE	Retention Value	Comments
				Health	Structure					
2	T3	*Eucalyptus crebra* (Narrow Leaved Ironbark)	16	Good	Good	590	7.1	2B	Moderate	Retain and protect
	T4	*Melaleuca bracteata* 'Revolution Gold'	10	Good	Good	360	4.3	2B	Moderate	Retain and protect
Shrubs 3	S3	*Leptospermum petersonii* (Lemon Scented Tea Tree)	6.5	Good	Poor	N/A multi - stemmed	3 (canopy spread)	4C	Very Low	Topped. Suitable to remove.
	S4	*Buckinghamia celsissima* (Ivory Curl Tree)	8	Good	Fair (form)	180 (combined)	2.2	2B	Low	Co – dominant stems from 500 mm high. Suitable to remove.
	S5	*Callistemon viminalis* (Weeping Bottlebrush)	8	Good	Poor	250	3	4C	Very Low	Topped. Suitable to remove.

TREE ASSESSMENT CONTINUED

29 Prospero Street

Number of Trees	Tree Number	Species	Height (metres)	Condition		DBH (mm)	TPZ (metres)	ULE	Retention Value	Comments
				Health	Structure					
2	T5	*Ficus microcarpa* var *hillii* (Hill's Fig)	9	Good	Fair (form)	220	2.6	2B	Low	A young tree with a large growth and infrastructure damage potential. Suitable to remove.
	T6	*Ficus microcarpa* var *hillii* (Hill's Fig)	10	Good	Fair (form)	230	2.8	2B	Low	A young tree with a large growth and infrastructure damage potential. Suitable to remove.
Shrubs 4	S6	*Callistemon viminalis* (Weeping Bottlebrush)	6.5	Good	Fair (form)	250 (combined)	3	2B	Low	Suitable to remove (3 metres to existing house).
	S7	*Callistemon viminalis* (Weeping Bottlebrush)	6.5	Good	Fair (form)	250 (combined)	3	2B	Low	Three dominant stems from 300 mm high. Suitable to remove.
	S8	*Callistemon viminalis* (Weeping Bottlebrush)	6	Good	Fair (form)	240 (combined)	2.8	2B	Low	Retain if possible (close to boundary).
	S9	*Leptospermum petersonii* (Lemon Scented Tea Tree)	5	Fair	Poor (form)	110 (combined)	2 (minimum as required by *AS* 4970)	3B	Very Low	A poor specimen. Suitable to remove.

PUBLIC TREES

Number of Trees	Tree Number	Species	Height (metres)	Condition		DBH (mm)	TPZ (metres)	ULE	Retention Value	Comments
				Health	Structure					
1	PT1	*Eucalyptus crebra*. (Narrow Leaved Ironbark).	14	Good	Fair	490	5.9	3B	Moderate	Retain and protect. Co – dominant stems from 2.2 metres high with a developing structural fault. Council should be notified of structural fault.
Shrubs 4	PS1 – PS4	*Pyrus* cv. (Ornamental Pear)	2 – 3	Good	Good	N/A	2 (minimum as required by *AS* 4970)	2B	Low	Retain and protect.

ARBORICULTURAL IMPACT ASSESSMENT

The encroachment required for T3 consists mostly of above ground concrete on a bed of 10 – 15 mm aggregate and some building using screw piles. Additionally, some pruning of the canopy is required for this tree.

The encroachment required for T4 consists of above ground concrete on a bed of 10 – 15 mm aggregate.

The proposed development will require the following percentages of encroachment:

Tree	TPZ	Encroachment	SRZ	Encroachment	Tree	TPZ	Encroachment	SRZ	Encroachment
3/	7.1	32%	2.6	0%	**4/**	4.3	30%	2.1	13.47%

From the percentages above, the following impacts are expected:

No impact – N/A

Slight impact – Trees 3 & 4

Moderate impact – N/A

Severe impact – N/A

As the type of encroachment for T3 & T4 is *AS* 4970 acceptable (above ground concrete on a bed of aggregate), the impact will be reduced to slight.

S8 requires removal due to its proximity to the boundary. Approximately 30% encroachment may be required for the neighbouring shrubs adjacent to number 25. The impact for these could be reduced by the use of *AS* 4970 preferred construction such as permeable paving or raised concrete.

The effects of root loss or damage by any means, as required by the development could include:

- Loss of stability if structural woody roots or even lower order woody roots are cut
- Reduction in water and nutrient uptake
- An eventual loss of leaves, reduced photosynthesis and thus sugar production
- Decay as a result of wounding
- Predisposition to soil borne pathogens

NEIGHBOURING TREES

The small tree in number 31 (500 mm from the fence) requires the minimum 2 metres TPZ (1.5 metres into number 29). This tree is an immature specimen of *Ficus benjamina* (Weeping Fig). Some encroachment is required into its TPZ to install a blockwork retaining wall and prepare soil for turf.

As the encroachment is 8% of the TPZ and very minor, the impact on the tree is likely to be minimal.

The Arborist confirms the encroachment is consistent with tree retention, and the protection measures recommended are equal to the other retained trees as described in the following section.

TREE PROTECTION MEASURES

For all retained trees and shrubs, the following tree protection measures must be implemented by the construction supervisor:

Steel mesh fencing [around the TPZs] should be used where practical. Where this may be impractical, the TPZ of the [particular] tree should be measured and marked with road marking paint, and construction staff informed that the area is a Tree Protection Zone.

Vehicular & machinery movement is not permitted within the TPZ, and vehicles must not be parked within the TPZs.

Site compounds and amenities must be located away from the TPZs.

Pedestrian traffic within a TPZ must be kept to a minimum.

Location of storage of site materials and equipment must be away from the TPZs, e.g. no materials are to be stored within the TPZs.

Any excavation within the TPZs must be dug using hand tools or hydraulic or pneumatic excavating equipment, e.g. air spade.

New infrastructure for services should be installed around TPZs where possible.

Some root pruning within TPZs is acceptable, however, excavation machinery such as backhoes and hand tools (shovels etc.) must not be used to cut tree roots.

Root pruning must be carried out using secateurs or a saw. Any roots over 75 mm diameter within the TPZs requiring pruning should be inspected by an AQF 5 Arborist to ensure their removal will not have an adverse effect on the tree.

If encroachment into a SRZ becomes necessary, the project Arborist must assess the requirement beforehand to ensure the tree's viability.

Concrete should be above ground and laid on a 75 – 100 mm thick bed of 10 – 15 mm aggregate to facilitate continued air and moisture availability to tree roots.

Failure to follow the Arborist's recommendations may have an adverse effect on the [particular] tree.

Any pruning of a tree canopy must be carried out by a qualified contractor in accordance with *AS* 4373 (2007), *Pruning of Amenity Trees*, and within Council's policy.

SIGNIFICANCE CHECKLIST

None of the subject trees have any heritage significance, or any listing on the Biodiversity Conservation Act 2016, The Biodiversity Conservation Act 1999 or Council's Tree Register.

No faunal activity was observed in the trees/shrubs, that is, no nests or nesting hollows in the canopies, claw marks on the stems or scat around the bases.

CONCLUSION

- Trees 1 and 2 are suitable to remove for best use of the property.
- Trees 3 and 4 are good specimens, close to the boundary, more easily protected and should be retained.
- Trees 5 and 6 are in good health, however, they are problematic as they have the potential to become very large, and cause significant infrastructure damage over time. Their removal is seen as the best option.
- All of the shrubs are suitable to removed due to poor position or condition, to facilitate best use of the property.

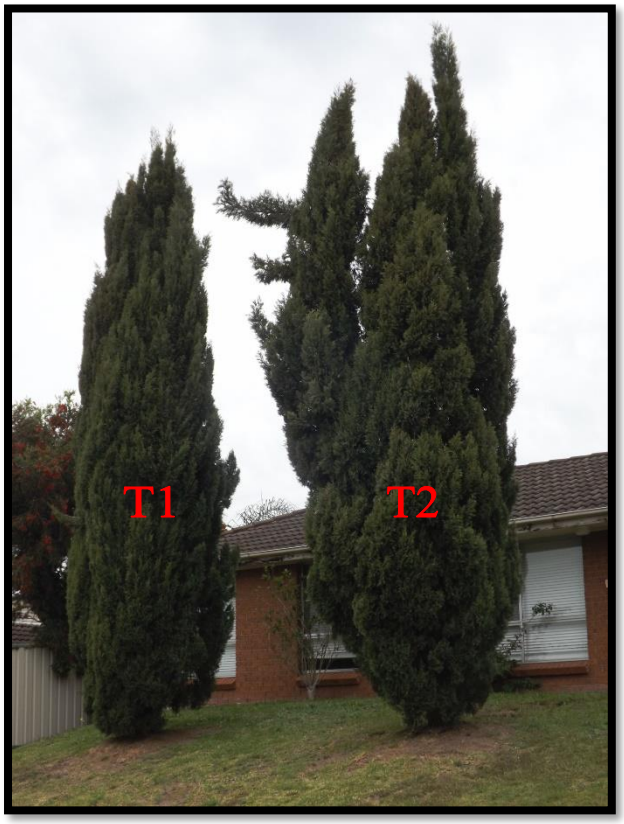
The public tree/shrubs require retention and protection.

RECOMMENDATIONS

Based on the observations made during the inspection, information supplied and the considerations in the conclusion, it is recommended that:

- T1, T2, T5 and T6 be removed
- T3 and T4 be retained and protected as discussed
- S1 – S9 be removed if required or retained and protected as discussed
- PT1, PS1 – PS4 be retained and protected as discussed

PHOTOGRAPHS

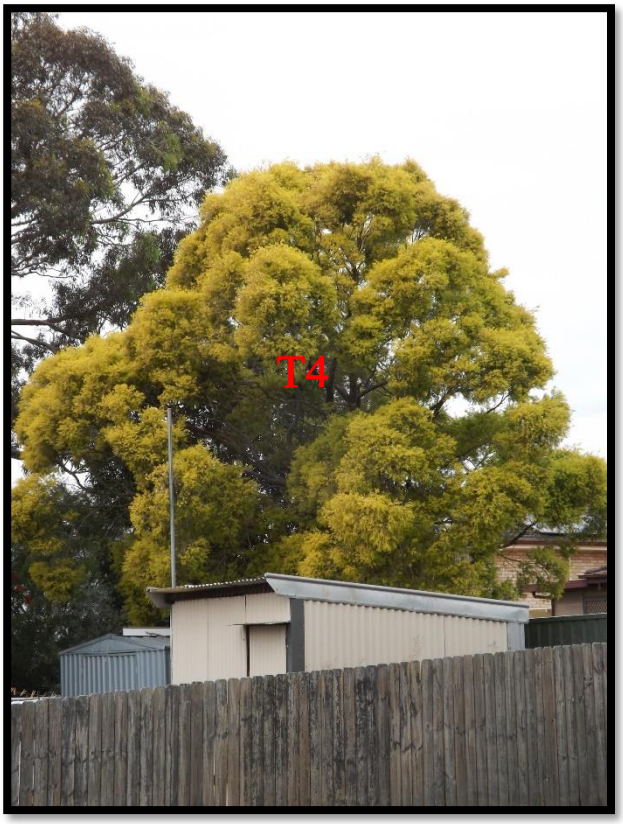


Trees 1 and 2 viewed from the NW.

Shrub 1 viewed from the NW.

PHOTOGRAPHS CONTINUED

Tree 3 & Shrub 3 viewed from the NE.



Tree 4 viewed from the NW.

Shrub 4 viewed from the north.

Shrub 5 viewed from the south.

PHOTOGRAPHS CONTINUED

Trees 5 & 6 viewed from the north.

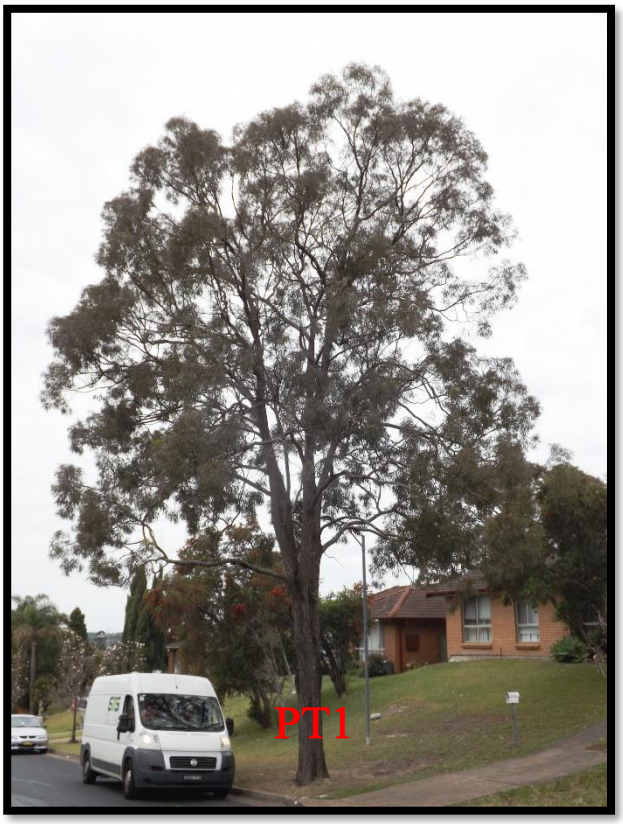
Neighbouring tree (west) viewed from the south.

Shrub 6 viewed from the NW.

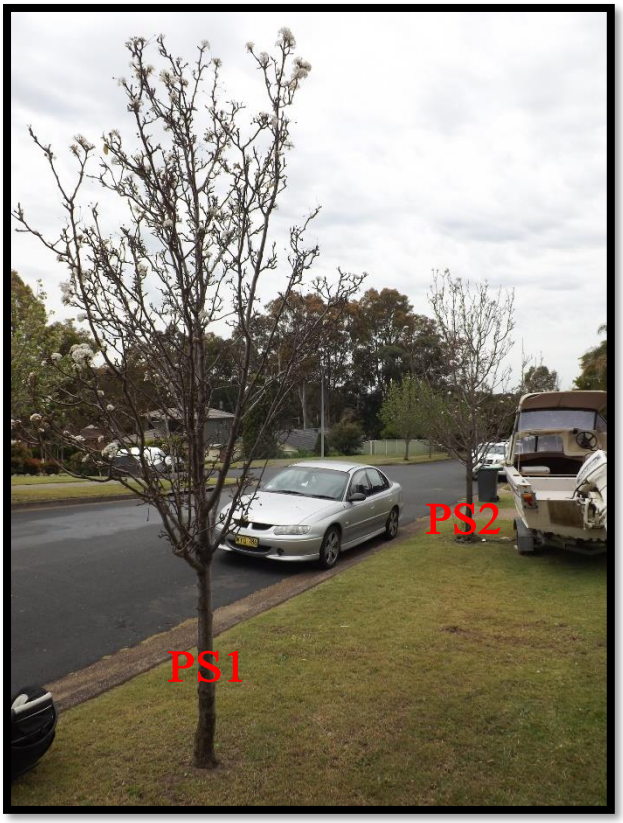
Shrubs 7 & 8 viewed from the west.

PHOTOGRAPHS CONTINUED

Shrub 9 viewed from the north.



Public Tree 1 viewed from the NW.



Public Shrubs 1 & 2 viewed from the west.

Public Shrubs 3 & 4 viewed from the west.

Stephen Williams.

AQF 5 Arborist
Hunter Horticultural Services

ACKNOWLEDGEMENTS

Aerial Photographs courtesy of Google Earth and Six Maps.

NSW Flora Online

REFERENCES

Australian Standard 4970 (2009), *Protection of Trees on Development Sites.*

Australian Standard 4373 (2007), *Pruning Amenity Trees*.

City of Newcastle (2018) *Urban Forest Technical Manual - Part A Private Trees.*

Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

NSW Biodiversity Conservation Act 2016.

Proofsafe TPZ calculator

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 Development 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, severe weather, external organisms or tree aging on the subject tree.

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

2 = Medium ULE of 15 – 40 years

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

3 = Short ULE of 5 – 15 years

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

4 = Remove tree within 5 years

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

5 = Trees suitable to transplant

A	B	C
Less than 5m high	Young trees over 5m high	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

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

Frass Sawdust and webbing combined to cover holes of certain types of wood borer

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

Mistletoe: A family (*Loranthaceae* in the southern hemisphere) of several genera [in the Sydney region] 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 appendix 1.2).

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 2

Qualifications

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.** **AQF Level 5** **Accreditation Number 5510397**

Appendix 3