

Action Tree Specialists
MELBOURNE Vic. 3083
e-Mail: action_tree18@bigpond.com
Mobile: 0428560289
ABN: 26 342 463 956



ADVERTISED PLAN

ARBORICULTURAL ASSESSMENT/REPORT for *Krystal Rawnsen – Law Architects*

Report on Construction/Development on grounds
Catholic Ladies College, Eltham.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

PREPARED BY:
Paul Miller, Bryce Miller
Action Tree Specialists
Certified Arborists
Consulting/Project Arborists

Report Commissioned By:
Master planners/Architects/Project Managers
The Old Dairy 2/45 Watkins St Fitzroy North 3068
Tel/Fax: 0424017382
Email: clc.eltham@lawarchitects.com.au
18th March 2021

Contents

2. INTRODUCTION	3
3. METHODOLOGY	3
4. TREE DETAILS	4
5. OBSERVATIONS	7
6. DISCUSSION.	8
<i>Determining Tree Value</i>	8
<i>Accommodating for trees on building sites</i>	8
<i>Protecting Trees in Construction</i>	9
<i>Tree Population Overview</i>	10
7. RECOMMENDATIONS	10
11. TREE PHOTOGRAPH	12
12. TREE OVERLAY	13
13. REFERENCES	15
Appendix 1: DESCRIPTION OF HEALTH, STRUCTURE AND USEFUL LIFE EXPECTANCY.	16
14.1 HEALTH.....	16
14.2 STRUCTURE	16
14.3 USEFUL LIFE EXPECTANCY (ULE):	17
14.4 TOLERANCE TO IMPACT	17
14.5 RETENTION VALUE	17
14.6 AGE.....	18

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2. INTRODUCTION

This report contains information associated to a selection of trees standing on the grounds of Catholic Ladies College in Eltham Victoria. Key objectives for the report detail objective and subjective field observations made about each individual tree. In addition is a description of the methods used for collecting field data and the relevant plans supplied for the building proposal. A discussion about the significance of findings is followed by recommendations from an Arboricultural perspective, this will conclude the report.

3. METHODOLOGY

- Field observations were conducted at ground-base.
- Data collection was non-invasive, and no samples/soil were extracted or disturbed from the trees immediate environment.
- Determinant factors of age, species, dimensions, structure/health were noted using a standardised field-data table.
- Photographs were taken using a Samsung digital d500 camera.
- Measurements were taken using generic tape.
- Satellite images extracted from Google Earth Pty.Ltd.
- Trees allocated numerical figure on satellite image, data table and photograph sections.

Building plans comprehended through files provided by Law Architects:

- A050 [P3]_EXIST.SITE PLAN
- A060 [P3]_EXIST.GROUND PLAN
- A100 [P4]_SITE CONTEXT PLAN
- A120 [P4]_GROUND FLOOR PLAN
- A121 [P4]_FIRST FLOOR PLAN
- A122 [P4]_SECOND FLOOR PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

4. TREE DETAILS

Tree No.	Genus Species (common name)	Origin	Age	Height Spread (m)	Structure	Health	DBH (cm)	TPZ (mR)	SRZ (mR)	%10 TPZ (mR)	R.V	T.I	Action/Comments
1	Eucalyptus melliodora (Yellow Box)	South Eastern Australia	SM	12 4	Good	Fair	32	3.8	2.20	0.38	H	M	Species has a moderate to high tolerance to root loss and soil compaction
2	Eucalyptus cladocalyx (Sugar Gum)	South Eastern Australia	SM	12 5	Good	Fair	17	2.0	1.85	0.20	M	H	Species has a moderate to high tolerance to root loss and soil compaction
3	Eucalyptus cladocalyx (Sugar Gum)	South Eastern Australia	SM	10 4	Fair	Fair	12	2.0	1.72	0.20	M	H	Species has a moderate to high tolerance to root loss and soil compaction
4	Melaleuca armillaris (paperbark)	South Eastern Australia	SM	7 3	Good	Fair	8	2	1.5	0.20	M	M	Species has a moderate to high tolerance to root loss and soil compaction
5	Corymbia maculata (Spotted Gum)	South Eastern Australia	SM	14 4	Fair	Fair	20	2.4	1.68	0.24	M	M	Species has a moderate to high tolerance to root loss and soil compaction
6	Eucalyptus goniocalyx (Long Leaf Box)	South Eastern Australia	M	16 9	Fair	Good	30	3.6	2	0.36	M	M	Species has a moderate to high tolerance to root loss and soil compaction
7	Eucalyptus goniocalyx (Long Leaf Box)	South Eastern Australia	M	18 11	Fair	Good	50	6	2.47	0.60	M	M	Species has a moderate to high tolerance to root loss and soil compaction
8	Eucalyptus melliodora (Yellow Box)	South Eastern Australia	M	15 8	Good	Fair	39*	4.68	2.23	0.46	H	M	Species has a moderate to high tolerance to root loss and soil compaction
9	Eucalyptus melliodora (Yellow Box)	South Eastern Australia	M	14 9	Good	Good	39	4.68	2.23	0.46	H	M	Species has a moderate to high tolerance to root loss and soil compaction

TPZ: Tree Protection Zone

SRZ: Structural Root Zone

DBH: Diameter at Breast Height (cm)

Retention Value (RV): H = High, M = Medium, L = Low

Tolerance to Impact (T.I): G = Good, M = Moderate, P = Poor.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree No.	Genus Species (common name)	Origin	Age	Height Spread (m)	Structure	Health	DBH (cm)	TPZ (mR)	SRZ (mR)	%10 TPZ (mR)	R.V	T.I	Action/Comments
10	<i>Eucalyptus gonioocalyx</i> (Long Leaf Box)	South Eastern Australia	M	11 5	Fair	Good	25*	3	1.85	0.3	M	M	Species has a moderate to high tolerance to root loss and soil compaction
11	<i>Eucalyptus gonioocalyx</i> (Long Leaf Box)	South Eastern Australia	M	12 6	Poor	Fair	47*	5.64	2.41	0.56	M	M	Species has a moderate to high tolerance to root loss and soil compaction
12	<i>Eucalyptus melliodora</i> (Yellow Box)	South Eastern Australia	Y	5 2	Good	Good	13	2	1.5	0.2	M	M	Species has a moderate to high tolerance to root loss and soil compaction
13	<i>Eucalyptus leucoxydon</i> (Yellow Gum)	South Eastern Australia	Y	5 3	Good	Good	10	2	1.5	0.2	M	M	Species has a moderate to high tolerance to root loss and soil compaction
14	<i>Eucalyptus melliodora</i> (Yellow Box)	South Eastern Australia	M	12 7	Good	Good	37	4.44	2.25	0.44	M	M	Species has a moderate to high tolerance to root loss and soil compaction
15	<i>Eucalyptus gonioocalyx</i> (Long Leaf Box)	South Eastern Australia	M	14 9	Fair	Fair	47	5.64	2.47	0.56	M	M	Species has a moderate to high tolerance to root loss and soil compaction
16	<i>Eucalyptus gonioocalyx</i> (Long Leaf Box)	South Eastern Australia	M	15 12	Fair	Fair	59*	7.08	2.69	0.71	M	M	Species has a moderate to high tolerance to root loss and soil compaction

TPZ: Tree Protection Zone

SRZ: Structural Root Zone

DBH: Diameter at Breast Height (cm)

Retention Value (RV): H = High, M = Medium, L = Low

Tolerance to Impact (T.I): G = Good, M = Moderate, P = Poor.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Tree No.	Genus Species (common name)	Origin	Age	Height Spread (m)	Structure	Health	DBH (cm)	TPZ (mR)	SRZ (mR)	%10 TPZ (mR)	R.V	T.I	Action/Comments
17	<i>Eucalyptus melliodora</i> (Yellow Box)	South Eastern Australia	sM	13 7	Good	Good	32*	3.84	2.08	0.38	H	M	Species has a moderate to high tolerance to root loss and soil compaction
18	<i>Eucalyptus melliodora</i> (Yellow Box)	South Eastern Australia	M	15 20	Good	Good	65*	7.8	2.88	0.79	H	M	Species has a moderate to high tolerance to root loss and soil compaction
19	<i>Eucalyptus melliodora</i> (Yellow Box)	South Eastern Australia	Y	11 8	Good	Good	59*	7.08	2.73	0.71	M	M	Species has a moderate to high tolerance to root loss and soil compaction
20	<i>Eucalyptus camaldulensis</i> (River Red Gum)	South Eastern Australia	Y	6 4	Fair	Good	21	2.52	1.82	0.25	L	M	Species has a moderate to high tolerance to root loss and soil compaction
21	<i>Eucalyptus camaldulensis</i> (River Red Gum)	South Eastern Australia	M	13 10	Good	Good	59	7.08	2.73	0.71	H	M	Species has a moderate to high tolerance to root loss and soil compaction
22	<i>Eucalyptus camaldulensis</i> (River Red Gum)	South Eastern Australia	SM	10 8	Good	Good	49	5.88	2.51	0.59	H	M	Species has a moderate to high tolerance to root loss and soil compaction
23	<i>Eucalyptus sideroxylon</i> (Red Iron Bark)	South Eastern Australia	M	13 7	Good	Good	45*	5.4	2.41	0.54	H	M	Species has a moderate to high tolerance to root loss and soil compaction

TPZ: Tree Protection Zone

SRZ: Structural Root Zone

DBH: Diameter at Breast Height (cm)

Retention Value (RV): H = High, M = Medium, L = Low

Tolerance to Impact (T.I): G = Good, M = Moderate, P = Poor.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

5. OBSERVATIONS

Trees that appear within the boundaries of proposed construction are seen in figure 1, in red and numbered 2,3,4,5,6,7 are potential trees for removal. The remaining trees numbered 1,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23, and coloured white, are considered trees with retainable quality on the landscape.

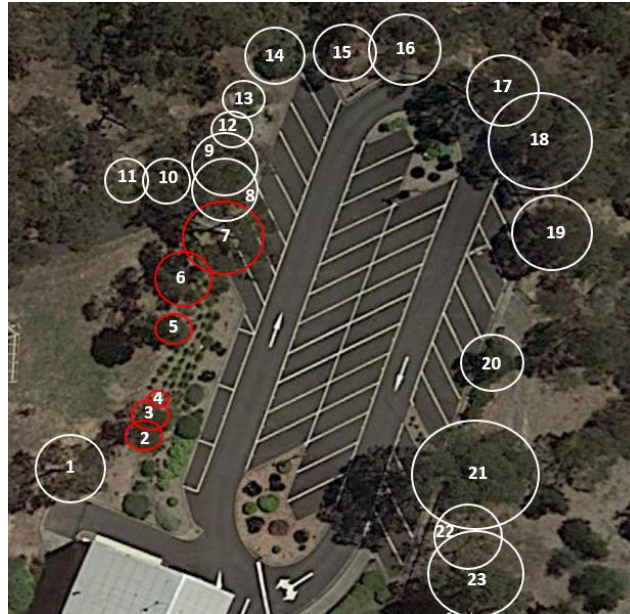


Figure 1 – Tree Population.

Most of the site trees are native to Victoria, with a number fitting a potential to form as future specimen trees. The trees vary in age class from young to mature. The area makes up a combination of species that have been introduced to the landscape accompanied by a select that pre-date deliberate planting schemes.

Trees 2,3,4,5 appear insignificant to the endemic population surrounding them and present an underwhelming contribution to the landscape. These trees also appear to have endured previous structural failures and compromised health due to pest/insect invasion.

As part of the Nillumbik planning scheme, the site has an attachment of an environmental significance overlay schedule 1 and 4.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

6. DISCUSSION.

Determining Tree Value

Trees and buildings can co-exist in harmony and can work well together to produce a unique aesthetic. Trees can apply a sense of maturity, history, and culture to rejuvenated landscapes. Retaining mature trees also prevent a perceived loss of connection to surrounding vegetation, and work to soften a development's visual impact. Specimen trees not only offer numerous artistic elements to a new building development, but practical functions such as shade and cooling of the building.

In reality, not all trees make suitable candidates for retention, and commonly draw low significance to their urban environment. By placing a retention value on trees, an arborist can convey potential for positive or negative influences the tree may have on a proposed site.

Factors that contribute to forming retention value concern hazard potential, ecological impact, age, form, tolerance to impact, genetic tendency, health and structure.

Tree retention value is further classified into three fields:

- Low (unsuitable for retention)
- Medium (retainable if site constraints accommodate)
- High (recommended for retention and protection)

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

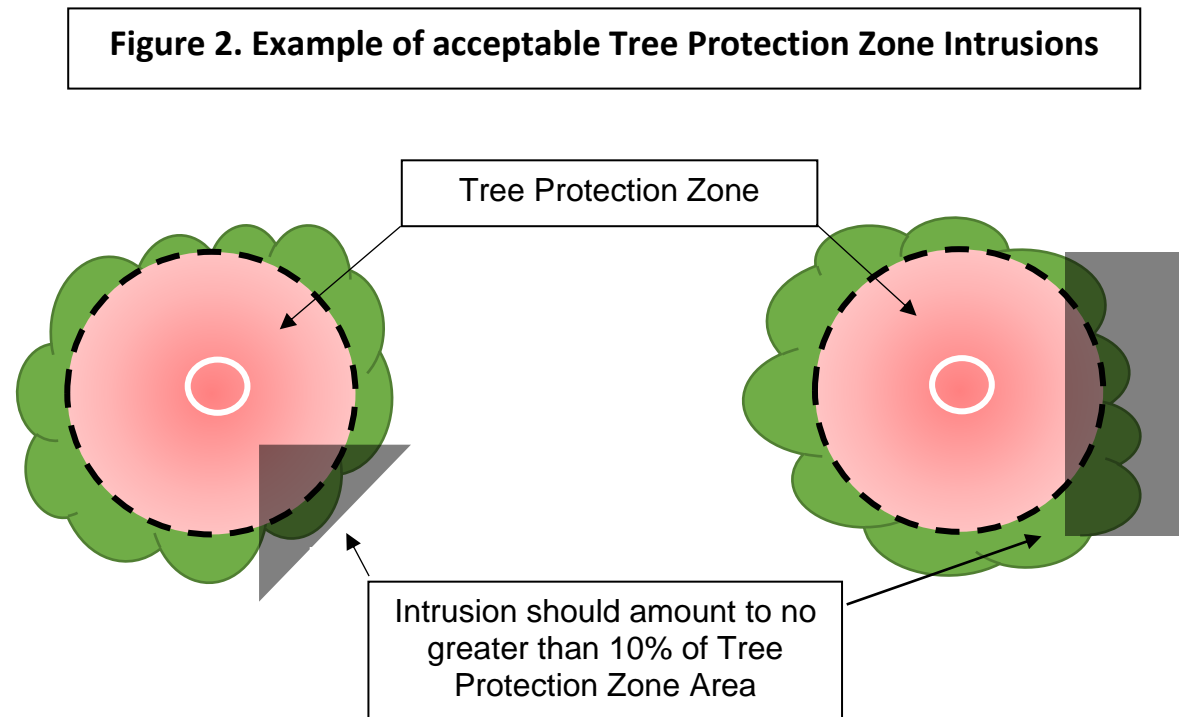
Accommodating for trees on building sites

Trees that are classified for retainment within development require protection of canopy and root mass. This is supported through the application of a 'Tree Protection Zone (TPZ) where a healthy amount of canopy and root mass are preserved through construction events.

A TPZ is calculated from measurements of a tree trunk diameter and trunk buttress, this value is then applied to an encroachment percentage of 10%. Guidelines for determining TPZ are stated in the AS 4970-2009 *Protection of Trees on*

**ADVERTISED
PLAN**

Development Sites document. An example of TPZ and encroachments are provided in figure 2, illustrating some options available to construction.



Protecting Trees in Construction

Prior to any construction work, a Tree Protection Fence (TPF) is to be erected and inspected by a qualified arborist. Once erected, protective fencing must not be altered, entered, or removed without authorization by the Project Arborist. Contractors must be instructed to avoid damage to trees within the protection areas, this may include restriction of vehicle movements.

Construction work encroachment within the Tree Protection Zone (T.P.Z.) i.e., post hole/excavation, elicits the guidance of a project arborist is to be present for any root loss or pruning of tree crown mass. Prior to any post hole cut/excavation, a preliminary root crown inspection is to be carried out by the project arborist i.e., locating surfacing roots at the area delineated for post holes/excavation.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**

Tree Population Overview

Of the 23 trees on the landscape, all are indigenous species. Those assumed to be naturally occurring vegetation are the species *E.goniocalyx* and *E.melliodora*. It is likely that the latter species, although native, were introduced to the landscape.

One potentially naturally occurring tree (Tree 1) stands well within the boundary of proposed construction, this tree has a high retention value and requires protection. This tree is a *Eucalyptus melliodora* and has favourable characteristics and good genetic potential for longevity. All species identified as *E.melliodora* yielded high retention values due to numerous beneficial factors.

The remaining trees are considered to exhibit medium retention values, these are trees 8-23. This population feature good health and structure, stand away from immediate proposed construction and have a moderate-high tolerance to impact. Potential construction design impacts are within the tolerance range of these trees. When retained, this population has potential to support new landscape/construction design.

Trees 2-7 feature low-medium retention value and appear to possess defective growth pattern and insect/pest damage. These trees have been planted in unfavourable positions, appear to have been introduced to the landscape and can be replaced through more effective species selection practices.

Six of the Seven trees within the proposed planning zone (red icons in figure 1) are replaceable. The remaining (tree 1) poses a potential to provide optimum function and aesthetic to the building landscape. The potential loss of five trees that exhibit medium retention values might be considered fair when comparing to the preservation of the remaining eighteen. The result, in this scenario, can produce a landscape where construction ties neatly into a natural/native surrounding environment.

**ADVERTISED
PLAN**

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

7. RECOMMENDATIONS

It is proposed that trees 2,3,4,5,6 and 7 are removed for construction.

Retention of the remaining trees, particularly tree 1 is recommended.

AS4970 *Protection of Trees on Development Sites* states guidelines for the implementation for retaining trees:

- Erection of protective fencing for the TPZ
- Project arborist inspection of the site at all TPZ intrusions
- Mulching of retained trees in the construction area
- Irrigation of soil within retained tree TPZ
- Underground infrastructure less than 500mm must divert the retained tree protection zones.

Replanting of vegetation removed for construction should feature:

- 3:1 ratio of new plantation of species same and/or similar
- Tree selections of heights no less than 2.5 meters
- Replacement trees must be included into a future landscape plan.

To safeguard the health of the remaining trees, a Tree Management Plan in accordance with Australian Standards is required. This ensures that care for the surrounding tree population is taken by a qualified arborist, and that effective protection is provided from the beginning to end of construction.



**ADVERTISED
PLAN**

11. TREE PHOTOGRAPH



Tree 1. *E. melliodora*



Tree 2. *E. cladocalyx*



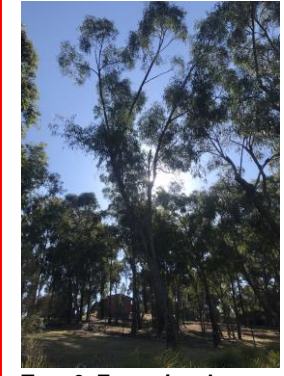
Tree 3. *E. cladocalyx*



Tree 4. *M. armillaris*



Tree 5. *C. maculata*



Tree 6. *E. goniocalyx*



Tree 7. *E. goniocalyx*



Tree 8. *E. melliodora*



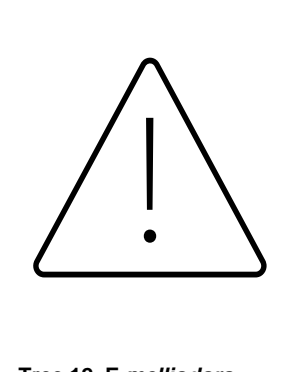
Tree 9. *E. melliodora*



Tree 10. *E. goniocalyx*



Tree 11. *E. goniocalyx*



Tree 12. *E. melliodora*

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

**ADVERTISED
PLAN**



**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

12. TREE OVERLAY

**ADVERTISED
PLAN**



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

13. REFERENCES

ASA 4970 2009 protection of Trees on Development Sites (Standards Australia)

Trees and Development – Nelda Matheny and James R. Clark –
ISBN 1-881956-20-2

Trees of Victoria and Adjoining areas – Leon Costermans –
ISBN 0 9599105 2 2.

The Royal Horticultural Society Garden Trees – Dorling Kindersley –
ISBN 0-7513-017-52

ABC Gardening Australia Flora's Native Plants – ISBN 0 7333 1449 X

IPM For Gardeners – A guide to Integrated Pest Management –
Cloyd, Nixon & Pataky – ISBN 0-88192-647-7

Principles of Tree Hazard Assessment and Management – Dr David Lonsdale –
ISBN 0 11 753355 6

Diseases and Pathogens of Eucalypts – Keane, Kile, Podger and Brown –
ISBN 0 643 06523 7

Diseases of Trees and Shrubs – Sinclair and Lyon –
ISBN –13:978-0-8014-4371-8 (cloth: alk.paper)
ISBN-10:0-8014-4371-7 (cloth;alk;paper)

Encyclopaedia Botanica – Frances Bodkin – ISBN 0 207 15064 8

Native trees and Shrubs of South-Eastern Australia – Leon Costermans –
ISBN 1 876334 64 9.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

**ADVERTISED
PLAN**

Appendix 1: DESCRIPTION OF HEALTH, STRUCTURE AND USEFUL LIFE EXPECTANCY.

14.1 HEALTH

- * Good
- * Fair
- * Poor
- * Dead

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

14.1.1 Good

Full crown with good foliar density. Leaf size and colour is consistent. Anticipated terminal extension has been achieved. No or minimal terminal decline present. Good wound wood development

14.1.2 Fair

Subject tree is displaying one or more of the following symptoms. Tree has less than 30% deadwood throughout the canopy and or minor terminal decline. Some foliar discolouration may be evident of leaf size may be smaller than anticipated. Minor pathogen damage evident.

14.1.3 Poor

Subject tree has greater than 30% deadwood in the canopy. Extensive terminal decline is evident. Foliage is displaying discolouration or distortion. Epicormic growth may be evident. Major pathogen damage evident.

15.1.4 Dead

The tree has less than 5% living crown and/or vascular tissues are displaying no sign of activity.

14.2 STRUCTURE

- * Good
- * Fair
- * Poor
- * Hazardous

**ADVERTISED
PLAN**

14.2.1. Good

Good branch attachment and/no or minor structural defect. Trunks and scaffold limbs appear sound or have only minor defects. Good branch and scaffold taper. No branch over-extension. No damage to root crown, structural roots and/or good buttressing present. No pest or disease that may impact upon structural integrity.

14.2.2. Fair

Some minor structural defects and/or minor damage to scaffold limbs or the trunk. Bark may be missing. Mino or no damage to root crown. Signs of adaptive growth. Cavities may be present.

14.2.3. Poor

Major structural fault evident in limb scaffolds and or trunk. Extensive damage to scaffolds or trunk. Bark missing. Damage to root crown that is problematic. Indication of fungal pathogen (white or brown rot) that could compromise integrity.

14.2.4 Hazardous

The tree poses an immediate hazard to a potential target that could result in injury to person or property damage. Mitigation of hazard should be undertaken as soon as possible.

14.3 USEFUL LIFE EXPECTANCY (ULE):

1. 0 (Dead or in significant decline)
2. Less than 5 years
3. 5 - 20yrs
4. 21 – 50
5. >50

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Useful life Expectancy is approximately how long a tree can be retained safely and usefully. It is based on the principles of safety and usefulness in the landscape.

14.4 TOLERANCE TO IMPACT

*Good

*Moderate

*Poor

14.4.1 Good

Based on species tolerance and relative age. Local knowledge of the species and/or details provided in “Trees and Development” Matheny and Clark.

14.4.2 Moderate

Based on species tolerance and relative age. Local knowledge of the species and/or details in “Trees and Development” Matheny and Clark.

14.4.3 Poor

Based on species tolerance and relative age. Local knowledge of the species and/or details provided in “Trees and Development” Matheny and Clark.

14.5 RETENTION VALUE

*High

*Medium

*Low

**ADVERTISED
PLAN**

14.5.1 High

The tree is good health and structurally sound and has the potential for longevity at the site. Future amenity of the tree is considered when making this determination.

14.5.2 Medium

The tree is in fair health and/or structural defect that can be abated. The tree may require more intense management and monitoring and/or may have a shorter life span within the site.

14.5.3 Low

The tree is in poor health with a structural defect that cannot be mitigated by treatment. The tree species or individual characteristics may be undesirable or unsuitable for use within the given area.

14.6 AGE

- *Young
- *Semi-Mature
- *Mature
- *Senescent

14.6.1 Young

Immature or juvenile tree that has been planted or emerged within the last 5 to 10 years.

14.6.2 Semi-Mature

Tree is still growing.

14.6.3 Mature

The tree has reached its expected size in the given situation.

14.6.4 Senescent

The tree is over-mature and considered to be in decline.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

**ADVERTISED
PLAN**