

I, Glenn Waters, consent to having my personal information (name, initial, signature, photograph, and personal contact details) contained in this document submitted as part of Planning Permit Application No. PLN22/0392, be made available electronically in accordance with the public availability requirements of the Planning and Environment Act 1987. I understand that if I wish to withdraw my consent at any time, I need to notify Council's Statutory Planning Unit in writing.

Date of Report:	3 October 2023
Report Prepared By:	Glenn Waters Glenn Waters Arboriculture
Author Qualifications:	Bachelor Applied Science Diploma of Horticulture Advanced Certificate of Arboriculture Certificate of Tree Surgery AQF - Level 9 Registered QTRA Assessor
Report ID:	23_124 / Version 1

ARBORICULTURAL ASSESSMENT & REPORT

2-10 Clarke Street, Abbotsford

GLENN WATERS | ARBORICULTURE

PO Box 88 | Torquay | Victoria | 3228

M | 0439 273 771

E | gw-arb@bigpond.com

Arboricultural Assessment & Report

2-10 Clarke Street, Abbotsford

Introduction

Glenn Waters has been engaged to undertake an inspection and report for the subject site and street trees at 2-10 Clarke Street, Abbotsford.

This report is considered to be a 'Preliminary Tree Assessment' under the Australian Standard AS 4970-2009 *Protection of trees on development sites* and the purpose of this assessment is to provide quantitative and qualitative information on the trees and is the basis for deciding which trees are suitable for retention.

This report will provide comment on the individual site, neighbouring property and street trees in question and provide advice regarding the species, condition and suitability for retention of the existing site trees and also provide advice regarding the future management of the trees.

Objectives

- To inspect the sites and existing trees located within site at 2-10 Clarke Street, Abbotsford including any nearby neighbouring property or street trees that may be impacted by the proposed development of the subject site.
- To collect data on the individual site, neighbouring property and street trees (where required) and provide a tree number plan that corresponds to the report tree data.
- To provide an arboricultural report that provides advice and solutions for the future management of the site, neighbouring property and street trees (as required).

Method

- Trees or shrubs under 3.0 metres in height were not assessed as they do not meet the criteria for a 'tree' under the Australian Standard AS 4970-2009 *Protection of trees on development sites*.
- No aerial climbing assessment was done. No samples of tree or site soil were taken and no diagnostic testing was undertaken as part of this assessment.
- The diameter at breast height (DBH) of trees was measured using a diameter tape at 1.4m above ground level in accordance with AS-4970.
- Heights and spreads of canopies were measured using a laser height meter.

- Where direct access to the trees was not possible (eg: neighbouring property trees) DBH, heights and spreads have been estimated.
- Where leaves, buds and fruit of a tree are inaccessible, botanical identification is as accurate as is possible.

Observations

The subject site is located at 2-10 Clarke Street, Abbotsford and the site inspection and assessment captured data on thirty (30) individual trees including four (4) neighbouring Convent Gardens trees and fourteen (14) footpath and roadway Council-owned trees.

The existing subject site trees (#1, #2, 22 - #27, #29 and #30) are all sited close to the existing building and any development that includes the demolition of this building will almost certainly require the removal of these trees.



↑ images showing the bases of the existing trees close to the building. ↑

Discussion

Local Government Vegetation Controls:

The project site is located within Special Use Zone – (SUZ2) of the Yarra Planning Scheme. The site is subject to the following overlays:

Table 1: Vegetation Protection Controls:

Vegetation Controls/ Exemptions	Applies to Site	Applies to Tree	Reason
Heritage Overlay (HO9)	Yes	Not Clear with regard to existing building	HO9 states that tree controls apply to former Convent of the Good Shepherd complex, including surrounding land
Significant Landscape Overlay (SLO1)	Yes	Yes Applies to all subject site trees other than #21, #29 & #30	A permit is required to: Remove, destroy or lop vegetation. This does not apply to: Non-native vegetation that is less than 6 metres in height, has a trunk circumference of less than 0.35 metre measured at 1.4 metres above ground level and a branch spread of less than 4 metres.
Environmental Significant Overlay (ESO)	No	No	No Overlay on subject site
Vegetation Protection Overlay (VPO)	No	No	No Overlay on subject site
Clause 52:17 'Native Vegetation'	No	No	All trees are considered to be planted or are no-Victorian Native species
Clause 52:12 'Bushfire Protection; Exemptions'	No	No	Site is not within a Bushfire Prone Area (BPA)
Local Law / Significant Tree Listing	Yes	Yes Tree #1	Any tree with a greater than 40cm trunk diameter at 1.5m from ground

General Tree Retention Discussion:

The Australian Standard AS 4970-2009 Protection of trees on development sites has been used to calculate the TPZ for the neighbouring property and street trees.

The TPZ is calculated based on trunk (stem) diameter (DBH), measured at approximately 1.4 metres up from ground level. The radius of the TPZ is calculated by multiplying the trees DBH by 12. The method provides a TPZ that addresses both the stability and growing requirements of a tree. TPZ distances are measured as a radius from the centre of the trunk at (or near) ground level.

Heterogeneous soil conditions, existing barriers, hard paved surfaces, roads and buildings may have inhibited the development of a symmetrically radiating root system and this may impact on the size and shape of a TPZ and therefore 'normal' tree protection zone calculations may need to be modified to allow for such anomalies.

The Australian Standard AS 4970-2009 Protection of trees on development sites identifies this as *“The presence of existing or past structures or obstacles affecting root growth”* and it is areas of TPZ that are currently covered by hard surfaces or buildings where tree root growth is unable to occur. Such areas should not be included in the TPZ area and are not considered to be a current encroachment.

Encroachment into the TPZ is permissible under certain circumstances though is dependent on both site conditions and tree characteristics. Minor encroachment, up to 10% of the TPZ, is generally permissible provided encroachment is compensated for by recruitment of an equal area contiguous with the TPZ.

The Structural Root Zone (SRZ) is the area required for tree stability. A larger area is required to maintain a viable tree. The SRZ formula does not apply to palms and other monocots, cycads and tree ferns. The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

Table 2: Discussion regarding the Convent Property and Street Trees:

No	Common Name	dbh (cm)	Age	Value	TPZs	SRZs
3	Holm Oak	130	Over-mature	Significant	15.0m	3.9m
4	Lemon Scented Gum	50	Maturing	Moderate	6.0m	2.8m
5	Red Ironbark	18	Young	Low-Moderate	2.2m	1.8m
6	Lemon Scented Gum	48	Maturing	Moderate	5.8m	2.8m
7	Yellow Gum	22	Semi-mature	Low-Moderate	2.6m	2.0m
8	Swamp Paperbark	10	Young	Low-Moderate	2.0m	1.5m
9	Desert Ash	90	Mature	Moderate-High	10.8m	3.4m
10	Swamp Paperbark	10	Young	Low-Moderate	2.0m	1.5m
11	Prickly-leaf Paperbark	60	Maturing	Low-Moderate	7.2m	2.9m
12	Swamp Paperbark	10	Young	Low-Moderate	2.0m	1.5m
13	Kanooka	15,15,12	Semi-mature	Low-Moderate	2.9m	2.1m
14	Swamp Paperbark	12,8	Semi-mature	Low-Moderate	2.0m	1.6m
15	Yellow Box ?	15	Young	Low	2.0m	1.7m
16	Desert Ash	46	Maturing	Low-Moderate	5.5m	2.6m
17	Dutch Elm	65	Maturing	Low	7.8m	3.0m
18	Desert Ash	35	Maturing	Low-Moderate	4.2m	2.4m
19	Dutch Elm	45	Maturing	Low	5.4m	2.7m
28	Gum	5	Young	Low	2.0m	1.5m

Tree Retention & Removal:

- All off-site neighbouring property and street trees will need to be retained and protected during demolition and construction.
- If the existing building is to be demolished, all existing subject site tree will have to be removed.
- This includes the following trees

#1	Flowering Gum	Moderate arboricultural/retention value
#2	Douglas Fir	Low-Moderate arboricultural/retention value
#20	Silky Oak	Low-Moderate arboricultural/retention value
#21	Yellow Gum	Low Arboricultural/Retention Value
#22 - #27	Cut-leaf Birches	Low arboricultural/retention value

#29	Hedge Wattle	Low arboricultural/retention value
#30	Common Olive	Low arboricultural/retention value

Standard Tree Protection Measures:

Appendix 1 lists the standard tree protection works that should be considered as part of the management of trees to be retained during development and these works should be seen as a minimum standard to apply.

Glenn Waters

[GLENN WATERS](#) | ARBORICULTURE

Appendix 1: Tree Protection During Development

The following are guidelines that must be implemented to minimise the impact of the proposed construction works on the retained trees.

- The Tree Protection Zone (TPZ) is fenced and clearly marked at all times. This fence should deter the placement of building materials, entry of heavy equipment and vehicles and also the entry of workers and/or the public into the TPZ. Australian Standard AS 4687 - 2007 *Temporary fencing and hoardings*, specifies appropriate fencing requirements. Existing perimeter fencing can be incorporated into the protective fencing. Shade cloth should be attached to reduce the movement of dust and other particulates into the TPZ. Signs identifying the TPZ are to be placed on the fencing.
- If the area within the TPZ is to be accessed during the construction phase then the area will need ground protection. Measures may include a permeable membrane, such as a geotextile, to cover the TPZ area beneath a 100 mm layer of crushed rock below rumble boards.
- Contractors and site workers should receive written and verbal instruction as to the importance of tree protection and preservation within the site. Successful tree preservation occurs when there is a commitment from all relevant parties involved in designing, constructing and managing a development project.
- The Project Arborist is on-site to supervise excavation works around the existing trees where the TPZ will be encroached.
- There is no immediate requirement for mulching within the TPZ. There is benefit to maintaining existing site conditions within the TPZ and is more analogous to proposed completion conditions. Monitoring of the trees in-line with prevailing weather conditions will indicate if mulching will be required. The same approach is to be used in providing supplemental irrigation.
- No persons, vehicles or machinery to enter the TPZ without the consent of the consulting arborist or site manager.
- Any underground service installations within the allocated TPZ should be bored and utility authorities should common trench where possible.
- No fuel, oil dumps or chemicals shall be allowed in or stored on the TPZ and the servicing and refuelling of equipment and vehicles should be carried out away from the root zones. No storage of material, equipment or temporary building should take place over the root zone of the tree. Nothing whatsoever should be attached to the tree including temporary services wires, nails, screws or any other fixing device.
- Any pruning that is required must be carried out by trained and competent arborist who has a thorough knowledge of tree physiology and pruning methods and carry out pruning to the Australian Standard – AS 4373 – 2007 *Pruning of Amenity Trees*.
- All excavation within the Tree Protection Zone must be carried out by hand digging or with the use of 'NDD-Excavation' techniques and only when supervised by the Project Arborist. Where the Project Arborist identifies roots to be pruned within the TPZ, they should be pruned with a final cut to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. It is not acceptable for roots within the TPZ to be 'pruned' with machinery such as backhoes or excavators.

No	Species	Common Name	Dbh	btd	H x S	Health	Structure	Age	Arb Value	TPZ	SRZ	Origin	Comments
1	<i>Corymbia ficifolia</i>	Flowering Gum	55	70	12 x 11	Fair	Fair-Poor	Mature	Moderate	6.6m	2.8m	Aust. Native	planter surrounded by paving
2	<i>Pseudotsuga menziesii</i>	Douglas Fir	30	46	7 x 8	Fair	Poor	Semi-mature	Low-Moderate	3.6m	2.4m	Exotic Conifer	
3	<i>Quercus ilex</i>	Holm Oak	130	150	20 x 18	Poor	Fair	Over-mature	Significant	15.0m	3.9m	Exotic Evergreen	in Convent Gardens
4	<i>Corymbia citriodora</i>	Lemon Scented Gum	50	70	18 x 16	Fair-Poor	Fair	Maturing	Moderate	6.0m	2.8m	Aust. Native	in Convent Gardens
5	<i>Eucalyptus sideroxylon</i>	Red Ironbark	18	25	7 x 5	Fair-Poor	Fair	Young	Low-Moderate	2.2m	1.8m	Vic. Native	in Convent Gardens
6	<i>Corymbia citriodora</i>	Lemon Scented Gum	48	65	18 x 16	Fair-Poor	Fair	Maturing	Moderate	5.8m	2.8m	Aust. Native	in Convent Gardens
7	<i>Eucalyptus leucoxylon</i>	Yellow Gum	22	30	5.5 x 5	Fair	Fair	Semi-mature	Low-Moderate	2.6m	2.0m	Vic. Native	street tree in roadway cutout
8	<i>Melaleuca ericifolia</i>	Swamp Paperbark	10	13	3.5 x 2	Fair	Fair-Poor	Young	Low-Moderate	2.0m	1.5m	Vic. Native	street tree in footpath cutout
9	<i>Fraxinus angustifolia</i>	Desert Ash	90	110	16 x 18	Fair-Poor	Fair-Poor	Mature	Moderate-High	10.8m	3.4m	Exotic Deciduous	street tree in roadway cutout
10	<i>Melaleuca ericifolia</i>	Swamp Paperbark	10	13	3.5 x 2	Fair	Fair-Poor	Young	Low-Moderate	2.0m	1.5m	Vic. Native	street tree in footpath cutout
11	<i>Melaleuca styphelioides</i>	Prickly-leaf Paperbark	60	75	5 x 8	Fair-Poor	Poor	Maturing	Low-Moderate	7.2m	2.9m	Aust. Native	street tree in footpath cutout
12	<i>Melaleuca ericifolia</i>	Swamp Paperbark	10	13	3.5 x 2	Fair	Fair-Poor	Young	Low-Moderate	2.0m	1.5m	Vic. Native	street tree in footpath cutout
13	<i>Tristaniopsis laurina</i>	Kanooka	15,15,12	35	4 x 7	Fair-Poor	Fair-Poor	Semi-mature	Low-Moderate	2.9m	2.1m	Aust. Native	street tree in footpath cutout
14	<i>Melaleuca ericifolia</i>	Swamp Paperbark	12,8	18	4.5 x 3	Fair	Fair-Poor	Semi-mature	Low-Moderate	2.0m	1.6m	Vic. Native	street tree in footpath cutout
15	<i>Eucalyptus sp.</i>	Yellow Box ?	15	20	6 x 3	Fair	Fair	Young	Low	2.0m	1.7m	Vic. Native	street tree in roadway cutout
16	<i>Fraxinus angustifolia</i>	Desert Ash	46	58	9 x 8	Fair-Poor	Fair-Poor	Maturing	Low-Moderate	5.5m	2.6m	Exotic Deciduous	street tree in roadway cutout
17	<i>Ulmus xhollandica</i>	Dutch Elm	65	80	9 x 8	Poor	Poor	Maturing	Low	7.8m	3.0m	Exotic Deciduous	street tree in roadway cutout
18	<i>Fraxinus angustifolia</i>	Desert Ash	35	45	9 x 8	Fair-Poor	Fair-Poor	Maturing	Low-Moderate	4.2m	2.4m	Exotic Deciduous	street tree in roadway cutout
19	<i>Ulmus xhollandica</i>	Dutch Elm	45	60	9 x 8	Poor	Poor	Maturing	Low	5.4m	2.7m	Exotic Deciduous	street tree in roadway cutout
20	<i>Grevillea robusta</i>	Silky Oak	50	70	20 x 10	Fair-Poor	Fair-Poor	Maturing	Low-Moderate	6.0m	2.8m	Aust. Native	
21	<i>Eucalyptus leucoxylon</i>	Yellow Gum	15	20	4.5 x 6	Poor	Poor	Semi-mature	Low	2.0m	1.7m	Vic. Native	
22	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	15,15	28	8 x 4	Poor	Poor	Semi-mature	Low	2.5m	1.9m	Exotic Deciduous	some decline
23	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	25	33	8 x 4	Poor	Poor	Semi-mature	Low	3.0m	2.1m	Exotic Deciduous	some decline
24	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	15	20	7 x 3	Fair-Poor	Fair-Poor	Semi-mature	Low	2.0m	1.7m	Exotic Deciduous	some decline
25	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	35	40	8 x 7	Poor	Poor	Semi-mature	Low	4.2m	2.3m	Exotic Deciduous	some decline
26	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	25	30	7 x 4	Fair-Poor	Fair-Poor	Semi-mature	Low	3.0m	2.0m	Exotic Deciduous	some decline
27	<i>Betula pendula 'Dalecarlica'</i>	Cut-leaf Birch	20	25	8 x 6	Fair-Poor	Fair-Poor	Semi-mature	Low	2.4m	1.8m	Exotic Deciduous	some decline
28	<i>Eucalyptus sp.</i>	Gum	5	10	3 x 1	Fair	Fair	Young	Low	2.0m	1.5m	Aust. Native	street tree in roadway cutout
29	<i>Acacia paradoxa</i>	Hedge Wattle	12	18	5.5 x 5	Fair-Poor	Fair-Poor	Semi-mature	Low	2.0m	1.6m	Vic. Native	
30	<i>Olea europaea</i>	Common Olive	20	25	5.5 x 4	Fair-Poor	Poor	Semi-mature	Low	2.4m	1.8m	Exotic Evergreen	



28

15

16

17

18

19

1

20

21

14

22

23

24

13

25

2

11

10

26

27.0m

43.8m

9

27

30

29

39.0m

8

7

6

5

4

46.1m

3



TREE #1



TREE #2



CONVENT TREE #3



CONVENT TREE #4



CONVENT TREE #5



CONVENT TREE #6



STREET TREE #7



STREET TREE #8



STREET TREE #9



STREET TREE #10



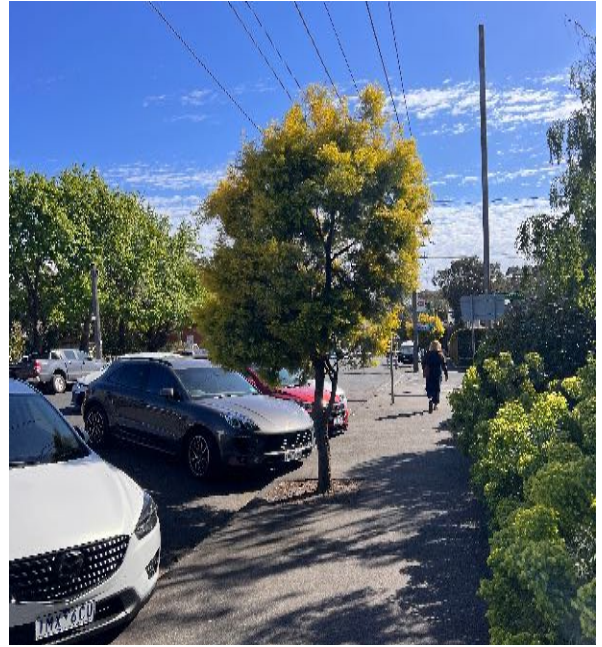
STREET TREE #11



STREET TREE #12



STREET TREE #13



STREET TREE #14



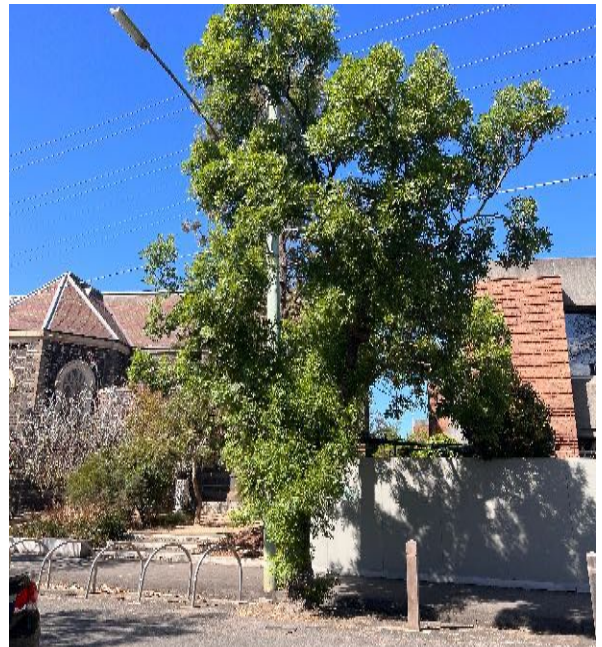
STREET TREE #15



STREET TREE #16



STREET TREE #17



STREET TREE #18



STREET TREE #19



TREE #20



TREE #21



TREE #22



TREE #23



TREE #24



TREE #25



TREE #26



TREE #27



STREET TREE #28



TREE #29



TREE #30

Tree Descriptors - Version 11 (June 2021)

The typical assessment of a tree evaluates the factors of health and structure. The descriptors of health and structure attributed to a tree evaluate the individual specimen as compared to what could be considered [typical for that species growing in its location](#). The two factors are completely separate and it is possible to have a tree in good health with very poor structure or, conversely, a tree in very poor health with good structure. These two factors are used as a guide to the overall tree condition at the time of inspection.

Tree No:

A unique identifier, normally a number and often associated with a plan or map reference and used to identify an individual tree or tree group.

Species:

Provides botanical name, (genus, species, variety and cultivar) according to accepted international codes of taxonomic classification (where possible).

Common Name:

Provide the most well-known non-scientific name by which the tree is generally known.

DBH (trunk diameter, measured at 1.4m from ground):

Indicates the trunk diameter (expressed in centimetres) of an individual tree measured at 1.4m above the existing ground level. Multi-stemmed trees may be measured below the 1.4m or at the tree base. DBH measurements are usually undertaken with foresters diameter tape or builders tape.

It is used to calculate the Tree Protection Zone (TPZ) as outlined in the Australian Standard AS 4970-2009 *Protection of trees on development sites*.

DBH in the tree data followed by an * are where the dbh has been estimated due to not having access to the tree (usually neighbouring properties).

Basal Trunk Diameter:

This is the trunk diameter measured at the base of the trunk immediately above the root buttress or trunk flare. It is used to calculate the Structural Root Zone (SRZ) as outlined in the Australian Standard AS 4970-2009 *Protection of trees on development sites*.

H x W (Height x Width or Canopy Spread):

Indicates the height and width of the individual tree; dimensions are expressed in metres. Height is measured with a clinometer/height-meter where possible. Tree heights may be estimated in line with previous clinometer readings in conjunction with author's experience. Crown widths are generally paced (estimated) at the widest axis or averaged.

Tree Type:

Describes the general geographic origin of the species and its type (e.g. deciduous or evergreen).

Category	Description
Indigenous	Occurs naturally in the area or region of the subject site
Victorian native	Occurs naturally within some part of the State of Victoria (not exclusively) but is not indigenous
Australian native	Occurs naturally within Australia but is not a Victorian native or indigenous
Exotic deciduous	Occurs outside of Australia and typically sheds its leaves during winter
Exotic evergreen	Occurs outside of Australia and typically holds its leaves all year round
Exotic conifer	Occurs outside of Australia and is classified as a gymnosperm
Native conifer	Occurs naturally within Australia and is classified as a gymnosperm
Palm	Woody monocotyledon

Age:

Relates to the physiological stage of the tree's life cycle.

Category	Description
Young	Sapling tree and/or recently planted
Semi-mature	Tree rapidly increasing in size and yet to achieve expected size in situation
Maturing	Specimen approaching expected size in situation, with reduced incremental growth
Mature	Specimen at its expected size in its situation
Over-mature	Tree is over-mature and in decline
Dead	Tree is dead

Health:

Assesses a range of attributes to describe the overall health of the tree.

Category	Growth Indicators	Decline symptoms/ Deadwood	Foliage density, colour, size, intact- ness	Pests and/or disease
Good	Above typical	None or minimal	Better than typical	None or minimal
Fair	Typical	Typical or expected	Typical	Typical, within damage thresholds
Fair to Poor	Below typical	More than typical	Exhibiting deficiencies	Exceeds damage thresholds
Poor	Minimal	Considerable amount/ size	Exhibiting severe defi- ciencies	Contributing to decline
Very Poor	Below minimal	Significant amount and size	Significantly below typi- cal	Extreme
Dead	N/A	N/A	N/A	N/A

Structure:

Assesses principal components of tree structure.

Descriptor	Root plate & lower stem	Trunk	Primary branch support	Outer crown and roots	Lean from vertical
Good	No damage, disease or decay; obvious basal flare / stable in ground	No damage, disease or decay; well tapered	Well formed, attached, spaced and tapered	No damage, disease, decay or structural defect	Low or none
Fair	Minor damage or decay	Minor damage or decay	Typically formed, attached, spaced and tapered	Minor damage, disease or decay; minor branch end-weight or over-extension	Minor / natural
Poor	Moderate damage or decay; minimal basal flare	Moderate damage or decay; approaching recognised thresholds	Weak, decayed or with acute branch attachments; previous branch failure evidence	Moderate damage, disease or decay; moderate branch end-weight or over-extension	Moderate
Very Poor	Major damage, disease or decay; fungal fruiting bodies present	Major damage, disease or decay; exceeds recognised thresholds; fungal fruiting bodies present	Decayed, cavities or has acute branch attachments with included bark; excessive compression flaring; failure likely	Major damage, disease or decay; fungal fruiting bodies present; major branch end-weight or over-extension	Acute
Hazardous	Excessive damage, disease or decay; unstable / loose in ground; failure probable	Excessive damage, disease or decay; cavities	Decayed, cavities or branch attachments with active split; failure imminent	Excessive damage, disease or decay; excessive branch end-weight or over-extension	Excessive – root plate failure or stem failure probable

The lowest or worst descriptor assigned to the tree in any column is generally the overall rating assigned to the tree. The assessment for structure is limited to observations of external and above ground tree parts. It does not include any exploratory assessment of underground or internal tree parts unless this is requested as part of the investigation.

Trees are assessed and the given a rating for a point in time. Generally, trees with a poor or very poor structure are beyond the benefit of practical arboricultural treatments. The management of trees in the urban environment requires appropriate arboricultural input and consideration of risk.

Arboricultural / Retention Value Rating:

Relates to the combination of previous tree rating factors, including health, structure and form (arboricultural merit), and also conveys an amenity value. This rating relates to the trees biological, functional and aesthetic characteristics within an urban landscape context.

Category	Description
Significant	Tree of better than high quality and will be an outstanding example of the species due to factors such as age, size, outstanding example, rare in cultivation, etc. Retention of these trees should be a priority for the site.
High	Tree of high quality in good to fair condition. Generally a prominent arboricultural feature. Tree is capable of tolerating changes in its environment. These trees have the potential to be a medium to long-term component of the landscape if managed appropriately. Retention of these trees is highly desirable.
Moderate	Tree of moderate quality, in fair or better condition. Generally contributes to the landscape. Tree may have a condition, and or structural problem that will respond to arboricultural treatment. Tree is capable of tolerating changes in its environment. These trees have the potential to be a medium to long-term component of the landscape if managed appropriately. Retention of these trees is generally desirable.
Low-Moderate	Trees with indicators that sit between Low and Moderate
Low	Tree of low quality and/or little amenity value. Tree in poor health and/or with poor structure. Tree unlikely to respond positively to changes in its environment and does not warrant design modification to preserve it. Tree may be beyond the benefit of practical arboricultural treatments. Tree is not significant for its size and/or young. These trees are easily replaceable. Tree (species) is functionally inappropriate to specific location and would be expected to be problematic if retained. Retention of such trees may be considered if not requiring a disproportionate expenditure of resources for a tree in its condition and location.
None	Tree has a severe structural defect and/or health problem that cannot be sustained with practical arboricultural techniques and the loss of tree would be expected in the short term. Tree whose retention would be impractical after the removal of adjacent trees (includes trees that have developed in close spaced groups and would not be expected to acclimatise to severe alterations to surrounding environment – removal of adjacent shelter trees) Tree has a detrimental effect on the environment, for example, the tree is a woody weed. These trees should be removed on the basis of sound arboricultural management.

Useful Life Expectancy

Assessment of useful life expectancy provides an indication of health and tree appropriateness and involves an estimate of how long a tree is likely to remain in the landscape based on species, stage of life (cycle), health, amenity, environmental services contribution, conflicts with adjacent infrastructure and risk to the community.

The assessment is based on the site conditions not being significantly altered and that any prescribed maintenance works are carried out (site conditions are presumed to remain relatively constant and the tree would be maintained under scheduled maintenance programs).

ULE Rating	Description
< 1 year	Tree may be dead or mostly dead. Tree may exhibit major structural faults. Tree may be an imminent failure hazard. Excessive infrastructure damage with high risk potential that cannot be remedied.
1 - 5 years	Tree is exhibiting severe chronic decline. Crown is likely to be less than 50% typical density. Crown may be mostly epicormic growth. Dieback of large limbs is common (large deadwood may have been pruned out). Over-mature and senescing. Infrastructure conflicts with heightened risk potential. Tree has outgrown site constraints.
6 - 10 years	Tree is exhibiting chronic decline. Crown density will be less than typical and epicormic growth is likely to present. The crown may still be mostly entire, but some dieback is likely to be evident. Dieback may include large limbs. Over-mature and senescing or early decline symptoms in short-lived species. Early infrastructure conflicts with potential to increase regardless of management inputs.
10-25 years	Trees displaying normal growth characteristics. Tree may be growing in restricted environment (e.g. streetscapes) or may be in late maturity. Tree may be growing in restricted environment (e.g. streetscapes) or may be in late maturity.
25+ years	Generally juvenile and semi-mature trees exhibiting normal growth characteristics in parks or open space. Could also be maturing, long-lived trees. Tree well suited to the site with negligible potential for infrastructure conflicts.

Tree Risk Assessment

A primary goal of tree risk assessment is to provide information about the level of risk posed by a tree over a specific time period. This is accomplished in qualitative tree risk assessment by first determining the categories for likelihood and consequences of tree failure. These factors are determined by:

1. Evaluating the structural conditions that may lead to failure; the potential loads on the tree; and the trees' adaptations to weaknesses—to determine the likelihood of failure.
2. Evaluating the likelihood that a tree or branch could strike people or property or disrupt activities.
3. Assessing the injury, damage or disruption—to estimate the consequences of failure.

A matrix-based, qualitative approach to tree risk assessment is used to define the level of risk. The factors collected during the tree assessment, particularly with regard to the tree's structure, are used in this determination.

The risk category is then compared to the level of risk that is acceptable to the client, controlling authority, or societal standards. If the risk category defined for the tree risk exceeds the level of acceptable risk, mitigation is recommended.

Risk Assessment Matrix

Likelihood of Failure	Likelihood of Failure (Target/Consequence)			
	Unlikely	Somewhat Likely	Likely	Very Likely
Imminent (Very Poor Structure)	Low	Moderate	High	Extreme
Probable (Poor Structure)	Low	Moderate	High	High
Possible (Fair-Poor Structure)	Low	Low	Moderate	Moderate
Improbable (Fair Structure)	Low	Low	Low	Low

Bibliography:

- Coder, K.D. (1996) Construction damage assessments: trees and sites, University of Georgia, USA
- Hitchmough, J.D. (1994) Urban landscape management, Inkata Press, Australia
- Gooding, R.F., Ingram, J.B., Urban, J.R., Bloch, L.B., Steigerwaldt, W.M., Harris, R.W. and Allen, E.N. (2000) Guide for plant appraisal, 9th edition, International Society of Arboriculture, USA
- Standards Australia (2009) Australian Standard AS 4970-2009 Protection of trees on development sites.

GLENN WATERS | ARBORICULTURE

P.O. Box 88,
Torquay VIC 3228

Arboricultural Consultancy: Precedent disclaimer and copyright

Copyright notice: © Glenn Waters | Arboriculture 2023. All rights reserved, except as expressly provided otherwise in this publication.

Disclaimer: Although Glenn Waters | Arboriculture uses all due care and skill in providing you the information made available in this report, to the extent permitted by law Glenn Waters | Arboriculture otherwise excludes all warranties of any kind, either expressed or implied.

To the extent permitted by law, you agree the Glenn Waters | Arboriculture is not liable to you or any other person or entity for any loss or damage caused or alleged to have been caused (including loss or damage resulting from negligence), either directly or indirectly, by your use of the information (including by way of example, arboricultural advice) made available to you in this report. Without limiting this disclaimer, in no event will Glenn Waters | Arboriculture be liable to you for any lost revenue or profits, or for special, indirect, consequential or incidental damage (however caused and regardless of the theory of liability) arising out of or related to your use of that information, even if Glenn Waters | Arboriculture has been advised of the possibility of such loss or damage.

This disclaimer is governed by the law in force in the State of Victoria, Australia.

Report Assumptions:

- Any legal description provided to Glenn Waters | Arboriculture is assumed to be correct. Any titles and ownerships to any property are assumed to be correct. No responsibility is assumed for matters outside the consultant's control.
- Glenn Waters | Arboriculture assumes that any property or project is not in violation of any applicable codes, ordinances, statutes or other local, state or federal government regulations.
- Glenn Waters | Arboriculture shall take care to obtain all information from reliable sources. All data shall be verified insofar as possible; however Glenn Waters | Arboriculture can neither guarantee nor be responsible for the accuracy of the information provided by others not directly under Glenn Waters | Arboriculture's control.
- No Glenn Waters | Arboriculture employee shall be required to give testimony or to attend court by reason of the report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.
- Loss of the report or alteration of any part of the report not undertaken by Glenn Waters | Arboriculture invalidates the entire report.
- Possession of the report or a copy thereof does not imply right of publication or use for any purpose by anyone but the client or their directed representatives, without the prior consent of the Glenn Waters | Arboriculture.
- The report and any values expressed therein represent the opinion of Glenn Waters | Arboriculture and Glenn Waters | Arboriculture's fee is in no way conditional upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
- Sketches, diagrams, graphs and photographs used in the report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural drawings, reports or surveys.
- Unless expressed otherwise: i) Information contained in the report will cover those items that were outlined in the project brief or that were examined during the assessment and reflect the condition of those items at the time of inspection; and ii) The inspection is limited to visual examination of accessible components without dissection, excavation or probing unless otherwise stipulated.
- There is no warranty or guarantee, expressed or implied by Glenn Waters | Arboriculture, that the problems or deficiencies of the plants or site in question may not arise in the future.
- All instructions (verbal or written) that define the scope of the report have been included in the report and all documents and other materials that Glenn Waters | Arboriculture has been instructed to consider or to take into account in preparing the report have been included or listed within the report.

To the writer's knowledge all facts, matter and all assumptions upon which the report proceeds have been stated within the body of the report and all opinion contained within the report will be fully researched and referenced and any such opinion not duly researched is based upon the writers experience and observations.