MELBOURNE
ARBORIST REPORTS

Arboricultural Report

Development Impact Assessment

Site address: 8 Carpenter Street, Noble Park. VIC 3174

Date of assessment: 15 Sep 2023
Date of issue: 14 Nov 2023
Version: 1

Prepared by: Jack Machar
Graduate Certificate in Arboriculture
Diploma of Horticulture (Arboriculture)

Contents

1 INTRODUCTION

1.1 SCOPE OF REPORT

This report has been prepared to accompany a planning permit application for the construction of four (4) units at the subject site. The purpose of this report is to provide a detailed assessment of trees onsite and in proximity to the site and to outline the potential impacts proposed development will have on these trees.

Tree assessment data including tree species, health and structural condition, location, dimensions, age class, useful life expectancy (ULE), origin, retention value, tree protection zones (TPZ) and structural root zones (SRZ) was collected for each tree.

1.2 ASSESSMENT METHODOLOGIES AND LIMITATIONS

Tree assessment was conducted by Jack Machar using Visual Tree Assessment (VTA) principals described by Mattheck and Breloer (1994) and is limited to parts of the tree which are easily viewed from within the subject site, at ground level. No assessment was made of soil characteristics or below ground tree parts unless otherwise stated. Tree health and structure were assessed to record the condition of the trees and inform useful life expectancy (ULE) and retention value ratings only. The scope of this report does not include any tree risk assessment. The content provided within this report relates to information and observations available at the time of inspection only. All plans supplied by the client or third-party are assumed to be correct and accurate. Melbourne Arborist Reports or it's representatives will not be held responsible for errors resulting from supplied documents or plans.

Diameter at Breast Height (DBH) = 1.4m above ground level, methods shown in appendix A of AS4970-2009 were used for low branching, multi-stemmed and leaning trees.
Diameter Above Base (DAB) = above root flare on main stem.
A diameter tape was used for DBH and DAB measurements, tree heights and canopy spreads are estimates only unless otherwise stated. DBH and DAB measurements of third-party trees or trees with inaccessible stems may have been estimated due to access restrictions. Tree Protection Zones (TPZ) and Structural Root Zones (SRZ) have been calculated using the formulas provided in section 3 of AS4970-2009.

Descriptors were used to define tree health, tree structure, ULE, age class, origin and tree retention values. Descriptors are in the appendix section at the rear of the report and should be referred to for definitions of ratings assigned to trees within this report. All photos were taken by the author unless otherwise stated.

1.3 PLANNING INFORMATION

Responsible Authority: Greater Dandenong City Council
Planning Zones: General Residential Zone – Schedule 1
Planning Overlays: None affecting this land
(State Government of Victoria DTP 2023)

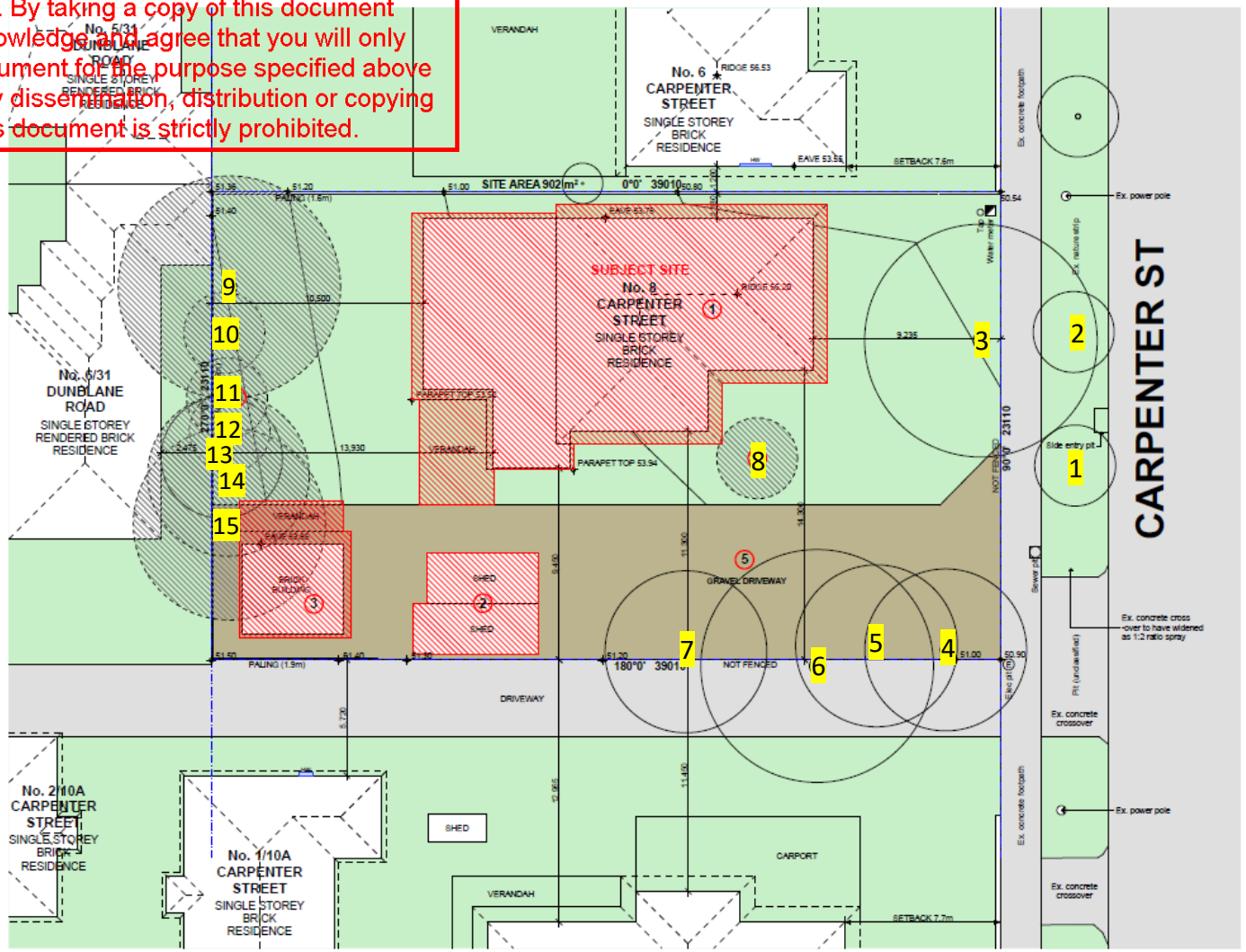
2 FINDINGS

2.1 TREE ASSESSMENT DATA

Table 1 Tree assessment data. Descriptors supplied in the appendix section of this report should be referred to as part of the assessment provided in table 1.

Tree No	Botanical Name Common Name	Origin	DBH cm	DAB m	TPZ Radius m	SRZ Radius m	Height m	Spread Dia. m	Health	Structure	ULE	Age class	Retention value
1	*Syzygium smithii* Lilly Pilly	Vic native	29	0.33	3.5	2.1	8	4	Good	Fair	15-30yrs	Mature	Third party
2	*Callistemon salignus* Willow Bottlebrush	Native	21	0.33	2.5	2.1	5	2	Poor	Fair	<5yrs	Mature	Third party
3	*Eucalyptus nicholii* Willow Peppermint	Native	97	1.10	11.6	3.4	17	11	Good	Fair	30+yrs	Mature	High
4	*Eucalyptus botryoides* Southern Mahogany Gum	Vic native	46	0.46	5.5	2.4	9	7	Good	Fair	30+yrs	Mature	Moderate
5	*Eucalyptus nicholii* Willow Peppermint	Native	62	0.69	7.4	2.8	14	7	Good	Fair	30+yrs	Mature	Moderate
6	*Eucalyptus globulus* subsp. *globulus* Tasmanian Blue Gum	Vic native	133	1.33	15.0	3.7	18	12	Good	Poor	<5yrs	Mature	Third party
7	*Eucalyptus nicholii* Willow Peppermint	Native	67	0.80	8.0	3.0	10	10	Fair	Poor	<5yrs	Mature	Low
8	*Olea europaea* European Olive	Exotic	15	0.18	1.8	1.6	3	3	Good	Good	15-30yrs	Semi-mature	Low
9	*Hesperocyparis macrocarpa* Monterey Cypress	Exotic	100	1.20	12.0	3.6	16	10	Good	Fair	5-15yrs	Mature	Low
10	*Hesperocyparis macrocarpa* Monterey Cypress	Exotic	18	0.18	2.2	1.6	5	2	Fair	Fair	5-15yrs	Semi-mature	Low
11	*Hesperocyparis macrocarpa* Monterey Cypress	Exotic	24	0.30	2.9	2.0	12	3	Good	Fair	5-15yrs	Mature	Low
12	*Hesperocyparis macrocarpa* Monterey Cypress	Exotic	20	0.30	2.4	2.0	10	3	Fair	Fair	5-15yrs	Semi-mature	Low
13	*Hesperocyparis macrocarpa* Monterey Cypress	Exotic	33	0.38	4.0	2.2	7	4	Fair	Fair	5-15yrs	Mature	Low
14	*XCupressocyparis leylandii* Leyland Cypress	Exotic	45	0.55	5.4	2.6	15	4	Good	Poor	5-15yrs	Mature	Low
15	*XCupressocyparis leylandii* Leyland Cypress	Exotic	55	0.65	6.6	2.8	15	4	Good	Poor	5-15yrs	Mature	Low

2 2 EXISTING SITE PLAN



LEGEND

- Existing Tree
- Existing Tree to be removed
- Existing Building Works to be removed
- Proposed Building Works
- W Habitable Window
- NH Non-habitable Window
- FW Frosted Window
- D Door
- BM Bench Mark
- TBM Temporary Bench Mark
- AHD Australian Height Datum
- RL Reduced Levels in metres to the Australian Height Datum

SITE ANALYSIS

1. Existing single storey brick house to be removed
2. Existing sheds to be removed
3. Existing additional brick building to be removed
4. Existing trees to be removed
5. Existing gravel driveway to be removed

1 EXISTING SITE PLAN
1:100

amendments:

project: PROPOSED FIVE THREE-STOREY DWELLINGS
for: -

address: 8 CARPENTER ST NOBLE PARK VIC 3174

kxarchitecture

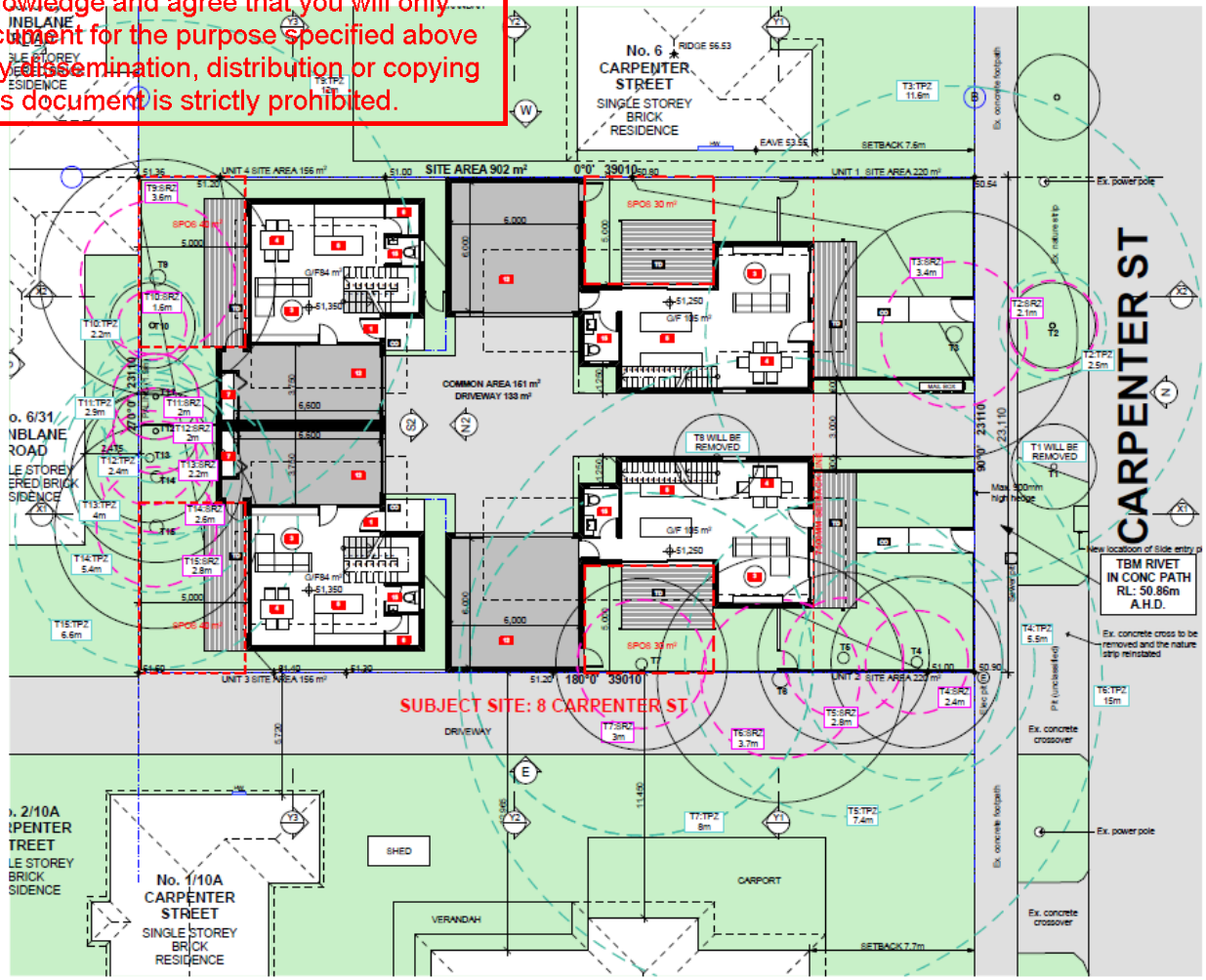
drawing title: SITE ANALYSIS
job No.: 21087

date: 4/04/2023 | scale: as shown on A1 | dwg. no.: TP02 | rev.: -
drawn: - | checked: -

verify all dimensions on site before commencing work or shop drawings and report any discrepancies to the architect
© copyright of architect

Figure 1 Existing site plan prepared by KX Architecture shows tree locations and existing site conditions

2.3 PROPOSED SITE PLAN



1 / - TREE MANAGEMENT PLAN 1:100

amendments:	project: PROPOSED FIVE THREE-STORY DWELLINGS	address: 8 CARPENTER ST NOBLE PARK VIC 3174	kx architecture	drawing title: TREE MANAGEMENT	date: 25/09/2023	scale: as shown on A1	dwg. no.: TP13	rev.: -
	for: -			job No.: 21087		drawn: -	checked: -	

verify all dimensions on site before commencing work or shop drawings and report any discrepancies to the architect
© copyright of architect

Figure 2 Proposed site plan prepared by KX Architecture shows proposed development layout, TPZs and SRZs

3 IMPACT TO TREES BY PROPOSED DEVELOPMENT

3.1 TREE PROTECTION ZONES

Each tree is allocated a tree protection zone (TPZ) and structural root zone (SRZ) calculated using formulas provided in AS4970-2009 *Protection of Trees on Development Sites*. These zones are used to gain an understanding of the impact to trees by development activities. Minor encroachments up to 10% of the total TPZ area are generally considered acceptable. Encroachments that exceed 10% of the TPZ or enter the SRZ are considered major and must either be justified by the project arborist, reduced to an acceptable level, or allow for the tree to be removed.

3.2 TREES REQUIRING REMOVAL UNDER PROPOSAL

Proposed development plans shown in Figure 2 will require the removal of trees 1, 3, 5-15 as detailed in table 2 below. Proposed plans show trees 3, 5-7, 9-15 being retained however, major TPZ encroachments will result for these trees which will necessitate their removal. Trees 9-15 were growing in close proximity to each other and should therefore be managed as group.

Table 2 Overview of trees planned for removal

	Low retention value	Moderate retention value	High retention value	Third-party trees
Total number of trees being removed	9	1	1	2
Tree number reference	7, 8, 9, 10, 11, 12, 13, 14, 15	5	3	1, 6

3.3 TREES ABLE TO BE RETAINED

Proposed plans allow for the successful retention of trees 2 and 4 with zero or minor TPZ encroachment.

Tree 2 was a small street tree located on the nature strip in front of the site. Proposed plans show no encroachment of the tree 2 TPZ.

Tree 4 was a moderate retention value tree located towards the front of the site. Proposed plans show a minor TPZ encroachment by the front landing of the proposed north-east unit.

4 CONCLUSION AND RECOMMENDATIONS

Proposed plans to develop the subject site as shown in Figure 2 will require the removal of trees 1, 3, 5-15 as outlined in section 3.2.

Consent from the respective tree owners will be required for the removal of trees 1 and 6.

The subject site is not affected by any planning overlays relating vegetation management. Therefore, removal of site trees, and tree 6, will not trigger a planning permit.

Tree removal and replacement tree planting proposed as part of site development must be to the satisfaction of the Responsible Authority in accordance with planning permit conditions.

Proposed plans are able to retain trees 2 and 4 as outlined in section 3.3.

Retained trees must be protected during all stages of development in accordance with AS4970-2009 *Protection of Trees on Development Sites* and to the satisfaction of the Responsible Authority.

The following site-specific tree protection requirements are recommended:

A. An AQF level 5 or higher arborist must be engaged as the Project Arborist for the duration of site works.
B. Tree protection zones (TPZ) must be established within the site and nature strip around each retained tree prior to any works commencing. 1.8m high temporary chain mesh fencing held in position with concrete pads must be used to exclude works from within a TPZ. TPZ fence locations must be defined by referring to TPZ dimensions provided in this report, modified only to allow for site access and construction works approved within those zones.
C. Signage in accordance with AS1319 stating the words 'Tree Protection Zone-No Access' must be affixed to TPZ fencing and remain visible from within the development site.
D. Areas of exposed soil within a TPZ radius that cannot be fenced off due to essential site access requirements must be covered by geotextile fabric, 100mm of mulch and be topped by wooden rumble boards or plastic tracker mats.
E. Soil excavation within a TPZ must be supervised and documented by the Project Arborist. Excavation encroachments must be limited to those shown on endorsed plans. Any modification or additional excavation inside a TPZ must first be approved by the Responsible Authority.
F. Underground utilities and services must be routed outside of TPZs or be installed using manual excavation, non-destructive digging (NDD) or directional boring at a depth greater than 1.0m. Boring pits must be positioned outside of TPZs.
G. Roots damaged during site works must be pruned back to undamaged wood using clean sharp tools. Root pruning must be conducted and documented by the project arborist and be in accordance with AS4373-2007 *Pruning of Amenity Trees*.
H. Pruning of roots greater than 50mm in diameter must first be approved by the Responsible Authority.
I. Material storage, waste disposal and site amenities must be located outside of TPZs.
J. Any essential canopy pruning must be completed in accordance with AS4373-2007 *Pruning of Amenity Trees* and any other relevant law, policy or guidelines enforced by local authority.
K. The project arborist must supply final documentation that all tree protection measures were implemented, comment on the post development health of the trees and make any further recommendations as required.

5 REFERENCES AND APPENDICES

5.1 APPENDIX 1 SUPPORTIVE PHOTOGRAPHS

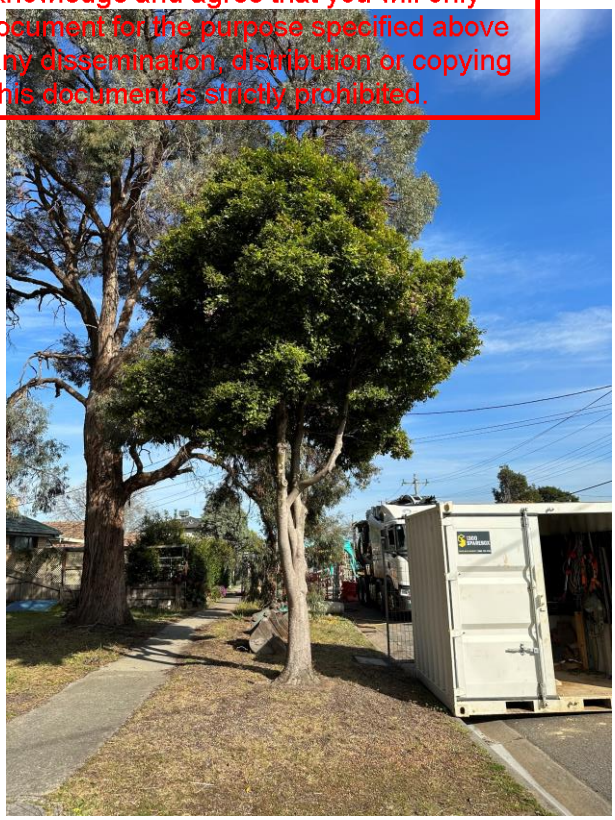


Figure 3 Tree 1

Figure 4 Tree 2

Figure 5 Tree 3

Figure 6 Tree 4

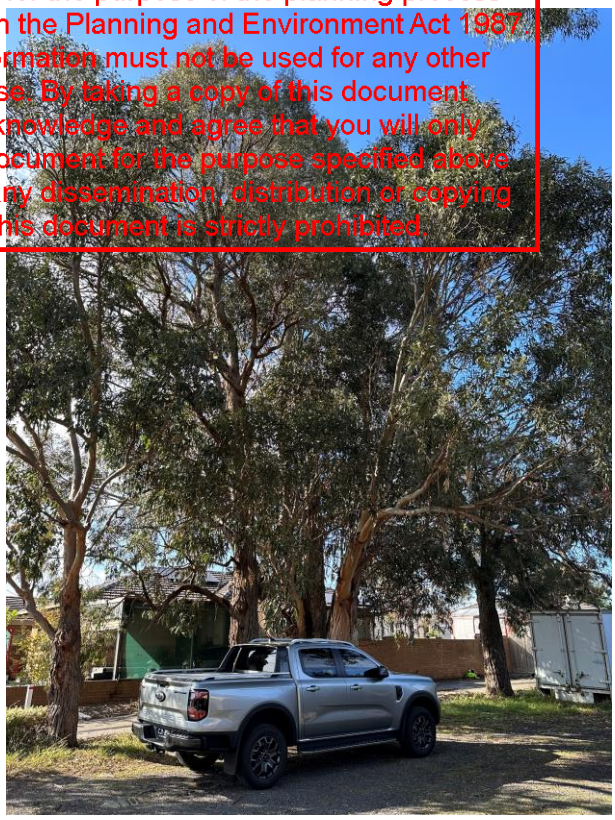


Figure 7 Trees 5 and 6

Figure 8 Tree 7

Figure 9 Tree 8

Figure 10 Trees 9 and 10

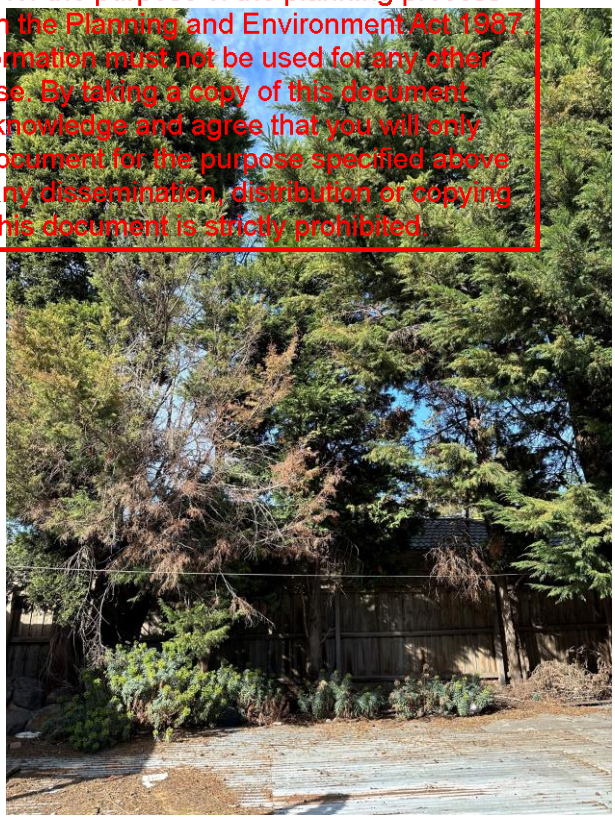


Figure 11 Trees 11-13

Figure 12 Trees 13-15

Origin

Indigenous – Known to occur naturally in the local area of the subject site.

Vic native – Species that occur naturally in Victoria (may include the subject site location).

Native – Species that occur naturally in other states of Australia, but not Victoria.

Exotic – Species that do not occur naturally in Australia.

Health ratings

Dead – Tree is completely dead, non-functional crown (no green leaves), stem cambium completely dead, no evidence of root suckers or sprouts.

Poor – Tree is presenting large quantities of crown dieback and/or major crown thinning. Persistent infections of pathogens, insect borers, fungal cankers and root disease may be present. Irreversible condition, any treatments may only be temporary to achieve hazard reduction prior to tree removal.

Fair – Tree is presenting symptoms of stress that may be due to seasonal biotic or abiotic conditions e.g. water stress or seasonal defoliators. The symptoms may include tip dieback, crown thinning, defoliation, leaf discoloration, reduced leaf and/or internode length. The condition may be reversible.

Good – Tree is generally free of pest and disease symptoms; any biotic or abiotic stress is not present over more than 10% of the tree parts concerned. Internode length may be variable but generally consistent in length for the last two annual increments.

Excellent – Tree is completely free from evidence of pest or disease organisms. Tree is exhibiting no signs of abiotic stress such as tip dieback or loss of foliage. Growth is of typical colouration, size and quantity for that species at that location. Internode length is consistent or increasing in length from previous two increments. The tree crown appears complete and balanced.

Structure ratings

Compromised – Tree has suffered mechanical damage and now presents a risk of partial or whole tree collapse.

Hazardous – Tree presents with one or more snapped branches caught in the crown of the tree. Removal of defective branch may then change structure rating.

Very poor – Tree has pronounced structural weakness that may be due to poor growth development, advanced fungal decay, multiple previous failures within crown, and/or mechanical damage. Tree is presenting signs of instability and possible imminent structural failure of major structural component(s).

Poor – Tree has structural weakness that may be due to poor growth development, fungal decay, mechanical damage including past pruning or a combination of these but is not at this time presenting signs of imminent structural failure of major structural components.

Fair – Tree has some structural weakness but failure of which is not a major structural component and does not present any signs of potential imminent failure. Fungal degradation was not observed in any structurally significant component.

Good – Tree does not appear to have any obvious, notable structural defects, signs of structural distress or indicators of fungal decay.

Age classifications

Juvenile – Young trees that are yet to reach one third of their expected size, generally less than 10 years old.

Reformed – Trees which have previously been cut to a stump and allowed to regrow.

Semi-mature – Trees which have reached approximately half of their expected size and are less than one third of the way through their expected lifespan; species and location considered.

Mature – Trees which have reached two thirds of their expected size or more and are approximately two thirds or more of the way through their expected lifespan; species and location considered.

Senescent – Trees which have over matured within the surrounding landscape and present in a state of irreversible health and/or structural decline.

Dead – Trees with a non-functional crown (no green leaves), stem cambium completely dead, no evidence of root suckers or sprouts.

Retention value

Low retention value – Trees that offer little opportunity of contributing to the future site for reasons of health or structural condition, low horticultural value of the species, inaptness in relation to unacceptable growth habit, noxious or invasive weed species or a combination of these characteristics. Juvenile and semi-mature trees which could be readily replaced may also be placed in this category.

Low retention value trees should be considered for removal prior to development works proceeding. Trees of low retention value should place no restraints on proposed designs.

Moderate retention value – Trees offering some beneficial attributes that may enhance the site or local environment in relation to botanical, historical or local significance, but may be limited to some degree by their current health condition, structural condition, species traits or ULE.

Moderate retention value trees should be considered for retention where possible within the development design, but not necessarily to the detriment of the design. Arboricultural works or alternate construction techniques within practical limits may be utilized to allow construction to proceed with the retention of moderate retention value tree/s.

High retention value – Trees with potential to positively contribute to the future site or local environment due to their botanical, historical or local significance in combination with good characteristics of health and structure, ULE of >30 yrs. Significant remnant specimens may also be placed in this category regardless of health and structure.

High retention value trees should be considered for retention and be incorporated into the design layout. All avenues of tree protection and alternative construction techniques that will allow for tree retention should be investigated.

Third-party – Trees located within adjoining properties or Council owned land adjacent to the subject site. Third-party trees must be protected from major physical injury, or where appropriate permission may be sought to alter or replace the tree(s).

Useful Life Expectancy - ULE
(Adapted from Barrell 2001)

30+ years/long: *Trees that appear to be retainable in the current landscape for more than 30 years.*

1. Structurally sound trees located in positions that can accommodate future growth.
2. Minimally defective trees that could be made suitable for retention in the long term by remedial arboricultural practices and maintenance.
3. Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

15-30 years/Medium: *Trees that appear to be retainable in the current landscape for 15 to 30 years.*

1. Trees that may only live between 15 and 30 years.
2. Trees that may live for more than 30 years but would be removed to allow for new plantings.
3. Trees that may live for more than 30 years but would be removed during the course of normal management for safety or nuisance reasons.
4. Minimally defective trees that can be made suitable for retention in the medium term by remedial arboricultural practices and maintenance.

5-15 years/Short: *Trees that appear to be retainable in the current landscape for 5 to 15 years.*

1. Trees that may only live for 5 to 15 years.
2. Trees that may live for more than 15 years but would be removed to allow for new plantings.
3. Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons.
4. Defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.

<5 years/Remove: *Trees requiring immediate removal or trees that should be removed within 5 years.*

1. Dead trees.
2. Declining trees through disease or inhospitable conditions.
3. Dangerous trees through instability or recent loss of adjacent trees.
4. Dangerous trees through advanced structural defects.
5. Damaged trees that are considered unsafe to retain.
6. Trees that are listed as invasive or noxious weeds in the local area.
7. Trees conflicting with structures, underground utilities or hard surfaces that cannot be remedied through arboricultural practices or engineering solutions.

N/A: *Small, young or regularly pruned trees of low retention value.*

1. Trees that can be reliably moved or replaced.
2. Small trees less than 5m in height.
3. Young trees less than 10 years old but over 5m in height.
4. Trees intended for regular pruning to artificially control growth and rated as low retention value.

5.3 References

Barrell. J, 2001. *SULE: Its use and status into the new millennium*. Viewed 18 Oct 2018 <https://www.barrelltreecare.co.uk/assets/Uploads/BTC08-Sydney.pdf>

Mattheck. C and Breloer. H, 1994. *The body language of trees-a handbook for failure analysis*, The Stationary Office, UK.

Standards Australia, 1994. *Australian Standard AS1319-1994 Safety signs for the occupational environment,* Standards Australia, Sydney.

Standards Australia, 2007. *Australian Standard AS-4373-2007 Pruning of amenity trees*, Standards Australia, Sydney.

Standards Australia, 2007. *Australian Standard AS-4687-2007 Temporary fencing and hoardings*, Standards Australia, Sydney.

Standards Australia, 2009. *Australian Standard AS-4970-2009 Protection of Trees on Development Sites,* Standards Australia, Sydney.

State Government of Victoria DTP, 2023. *Vicplan*. Viewed 19 Sep 2023 <https://mapshare.vic.gov.au/vicplan/>