MELBOURNE
ARBORIST REPORTS

Arboricultural Report
Development Impact Assessment

Site address: 3 Waverley Avenue, Ivanhoe. VIC 3079

Date of assessment: 09 Feb 2023
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Version: 2

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Contents

1 INTRODUCTION

1.1 SCOPE OF REPORT

This report has been prepared to accompany a planning permit application for the re-development of 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.

1.2 ASSESSMENT METHODOLOGIES AND LIMITATIONS

This report has been prepared in accordance with AS4970-2009 *Protection of Trees on Development Sites*.

Tree assessment was conducted visually from ground level employing 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 and street frontage. No assessment has been made of soil characteristics or below ground tree parts unless otherwise stated. Tree health and structure have been 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. Tree assessments provided in this report are valid for 12 months. All plans supplied by the client or third-party are assumed to be correct and accurate. Melbourne Arborist Reports will not be responsible for errors resulting from supplied 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 value. 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: Banyule City Council
Planning Zones: General Residential Zone – Schedule 1
Planning Overlays: Design and Development Overlay – Schedule 12, Development Contribution Plan Overlay – Schedule 1, Vegetation Protection Overlay – Schedule 3
(Victoria State Government 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	*Koelreuteria paniculata* Golden Rain Tree	Exotic	3	0.15	2.0	1.5	2	2	Good	Fair	N/A	Juvenile	Third party
2	*Acer negundo* Box Elder	Exotic	44	0.53	5.3	2.5	7	7	Fair	Fair	5-15yrs	Mature	Low
3	*Corymbia citriodora* Lemon-scented Gum	Native	12	0.15	1.4	1.5	4.5	1.5	Fair	Fair	N/A	Juvenile	Low
4	*Eucalyptus racemosa* Scribbly Gum	Native	35	0.40	4.2	2.3	8	5	Good	Fair	30+yrs	Mature	Moderate
5	*Melia azedarach* White Cedar	Native	28	0.30	3.4	2.0	6	5	Fair	Fair	5-15yrs	Semi-mature	Low
6	*Camellia japonica* Camellia	Exotic	10	0.15	2.0	1.5	2	1.5	Fair	Fair	5-15yrs	Semi-mature	Low
7	*Nerium oleander* Oleander	Exotic	10	0.15	2.0	1.5	2	1.5	Good	Fair	5-15yrs	Semi-mature	Low
8	*Protea* sp. Protea	Exotic	10	0.15	2.0	1.5	2	1.5	Good	Fair	5-15yrs	Semi-mature	Low
9	*Ligustrum lucidum* Glossy Privet	Exotic	20	0.25	2.4	1.8	4	3	Good	Fair	<5yrs	Semi-mature	Low
10	*Betula pendula* Silver Birch	Exotic	20	0.25	2.4	1.8	6	2	Dead	Poor	<5yrs	Dead	Low
11	*Acer negundo* Box Elder	Exotic	10	0.15	2.0	1.5	3	3	Fair	Fair	<5yrs	Semi-mature	Low
12	*Prunus cerasifera* 'Nigra' Purple-leaved Cherry Plum	Exotic	10	0.15	2.0	1.5	3	3	Poor	Fair	<5yrs	Semi-mature	Low
13	*Melaleuca linariifolia* Snow in Summer	Native	45	0.45	5.4	2.4	6	5	Good	Fair	5-15yrs	Mature	Low
14	*Pittosporum undulatum* Sweet Pittosporum	Vic Native	30	0.35	3.6	2.1	7	6	Good	Fair	<5yrs	Mature	Low
15	*Ligustrum lucidum* Glossy Privet	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	<5yrs	Semi-mature	Low
16	*Ligustrum lucidum* Glossy Privet	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	<5yrs	Semi-mature	Low

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
17	*Fraxinus angustifolia* subsp. *angustifolia* Desert Ash	Exotic	16	0.18	2.0	1.6	4	4	Good	Fair	<5yrs	Semi-mature	Low
18	*Homalanthus populifolius* Bleeding Heart	Native	10	0.15	2.0	1.5	2	1	Good	Fair	N/A	Semi-mature	Low
19	*Lagerstroemia indica* Crepe Myrtle	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	5-15yrs	Semi-mature	Low
20	*Ligustrum lucidum* Glossy Privet	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	<5yrs	Semi-mature	Low
21	*Cupressus sempervirens* 'Swane's Golden' Golden Pencil Pine	Exotic	20	0.25	2.4	1.8	9	1	Good	Good	5-15yrs	Mature	Low
22	*Melaleuca bracteata* 'Revolution Gold' Melaleuca Revolution Gold	Native	28	0.30	3.4	2.0	5	4	Good	Fair	5-15yrs	Mature	Low
23	*Citrus reticulata* Mandarin	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	5-15yrs	Mature	Low
24	*Coprosma repens* Mirror Plant	Exotic	10	0.15	2.0	1.5	2	2	Good	Fair	<5yrs	Semi-mature	Low
25	*XCupressocyparis leylandii* Leyland Cypress	Exotic	18	0.18	2.2	1.6	4	3	Good	Fair	5-15yrs	Semi-mature	Third party
26	*Schinus molle* Peppercorn Tree	Exotic	40	0.4	4.8	2.3	8	8	Good	Fair	15-30yrs	Mature	Third party
27	*Laurus nobilis* Bay Tree	Exotic	20	0.22	2.4	1.8	6	2	Fair	Fair	5-15yrs	Semi-mature	Low
28	*Melaleuca styphelioides* Prickly Paperbark	Native	32	0.38	3.8	2.2	7	5	Fair	Fair	5-15yrs	Mature	Low
29	*Ulmus* sp. Elm	Exotic	10	0.15	2.0	1.5	2.5	2.5	Fair	Fair	<5yrs	Juvenile	Low

2.2 EXISTING SITE PLAN

Figure 1 Feature survey prepared by JCA Land Consultants DWG: 3053511F1D 20/01/2023 shows tree locations and existing conditions

2.3 Proposed basement plan

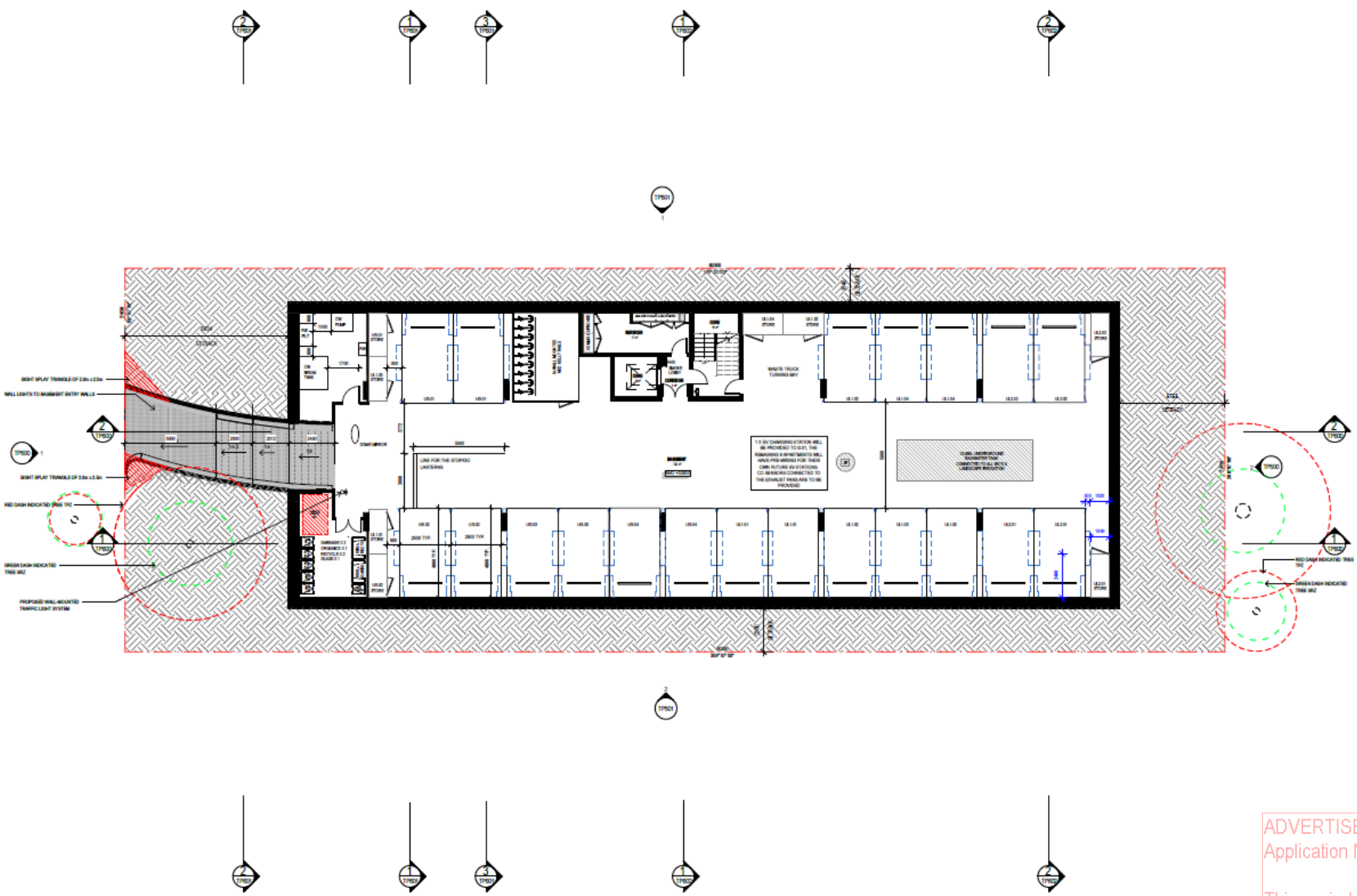
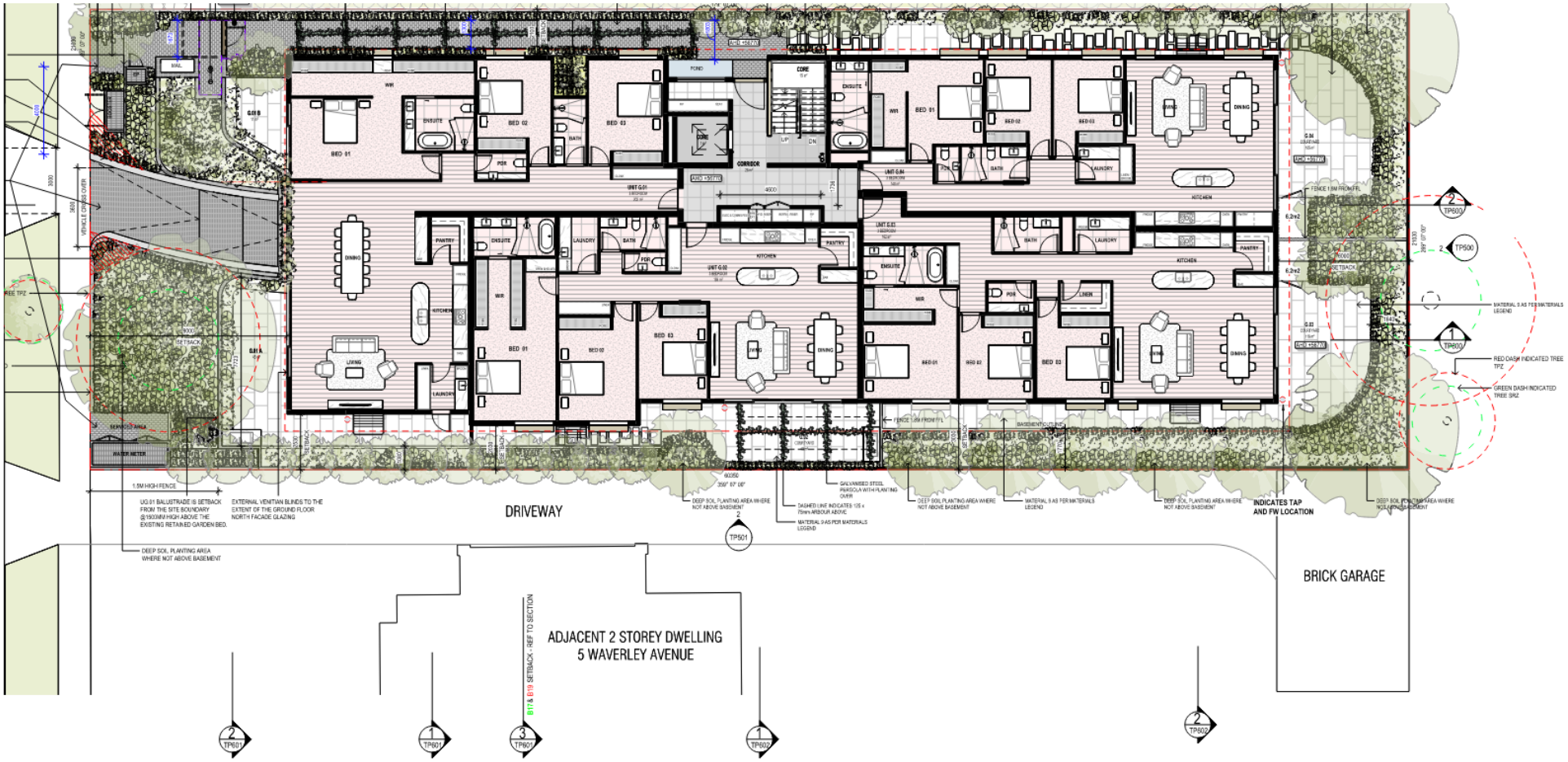


Figure 2 Proposed basement plan prepared by KUD

2.4 PROPOSED GROUND FLOOR PLAN



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REVISION	ISSUE	CHECKED	DATE
A	FOR SUBMISSION	RH	18.10.2024

DRAWING LEGEND:
FI - FOR INFORMATION
SK - SCHEMATIC DESIGN
TP - TOWN PLANNING
TP-E - TOWN PLANNING - ENDORSEMENT
TP-A - TOWN PLANNING - AMENDMENT
VCAT - VIC. CIVIL & ADMIN. TRIBUNAL
DD - DESIGN DEVELOPMENT
TI - TENDER ISSUE
WK - WARKTYPING
BP - BUILDING PERMIT
IFC - ISSUE FOR CONSTRUCTION
HO - HANDOVER

ISSUE FOR TOWN PLANNING

TITLE: LEVEL 00 PROPOSED GA PLAN
ADDRESS: 3 WAVERLEY AVENUE, IVANHOE
CLIENT: MELBOURNE DEVELOPMENT AQUISITIONS

PROJECT NO.	START DATE:	DATE DRAWN:	DRAWN:	REV:	SCALE:
22-022	01.01.2022	25/10/2024 1:48:56 PM	RE	A	1 : 100@A1

SHEET NO. TP301

3 IMPACT TO TREE 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 all trees onsite, except for tree 4 to be retained in the front setback.

Table 2 Overview of trees planned for removal

	Low retention value	Moderate retention value	High retention value	Trees subject to VPO3
Total number of trees affected	25	0	0	6
Tree number reference	2, 3, 5-24, 27, 28, 29	N/A	N/A	5, 13, 21, 22, 27, 28

3.3 TREES MARKED FOR RETENTION

Proposed plans allow for the successful retention of all third-party trees in proximity to the site and tree 4 in the front of the site, with the following considerations.

Tree 1 was a juvenile street tree planted in front of the subject site. Proposed plans show no direct impact to tree 1. TPZ fencing will be required around the tree 1 TPZ on the nature strip.

Tree 4 was a mature native tree located in the front site setback. Tree 4 was the only tree onsite assessed as moderate retention value. Proposed plans show the basement ramp, a site cut for a second emergency exit and a raised courtyard will result in a major TPZ encroachment for tree 4.

A non-destructive root investigation (NDRI) was completed on 05 May 2023, using hydro-excavation to establish a trench along the proposed basement ramp site cut. Trench depth was 500mm-700mm, no woody roots were found (Figures 25 & 26). Therefore, the proposed basement ramp will have no impact on the current condition of tree 4.

The site cut required to facilitate a second emergency exit will be at a location currently occupied by other trees and shrubs which are likely to have restricted root growth from tree 4 in that area.

The paved courtyard is planned to be raised entirely above the existing soil level and will therefore not impact on tree 4.

The current design has reduced development impacts on tree 4 as far as possible, no further design amendments are required to facilitate the retention of tree 4.

Trees 25 and 26 were located adjacent to the rear of the site. Tree 25 will not be impacted by the proposed development. Proposed plans show a minor 10% TPZ encroachment for tree 26 by a new retaining wall.

4 CONCLUSION AND RECOMMENDATIONS

Proposed plans to develop the subject site, as shown in Figure 2, will require the removal of all trees onsite, except for tree 4. In general, trees onsite were assessed as low retention value and should not be a constraint on the development design.

The removal of trees 5, 13, 21, 22, 27 and 28 will trigger a planning permit requirement under Schedule 3 to Clause 42.02 *Vegetation Protection Overlay*.

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.

Three trees were found in proximity to the site, including one street tree belonging to the Responsible Authority. Proposed plans have limited potential to impact upon the condition of third-party trees, with zero or minor TPZ encroachments planned.

Proposed plans adequately allow for the successful retention of trees 1, 4, 25 and 26, provided tree protection measures are implemented during all stages of site works, including demolition.

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.

A Tree Management and Protection Plan (TMPP) in accordance with AS4970-2009 *Protection of Trees on Development Sites*, must be prepared by an AQF level 5 or higher arborist as a condition to the planning permit. The TMPP must demonstrate how all trees to be retained will be protected during each stage of development, to remain viable post development.

The following site-specific tree protection measures must be implemented for all retained trees within and adjunct to the site:

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 4 Tree 1

Figure 5 Tree 2

Figure 6 Tree 3

Figure 7 Tree 4

Figure 8 Tree 5

Figure 9 Tree 6

Figure 10 Tree 8

Figure 11 Trees 9 & 10

Figure 12 Tree 11

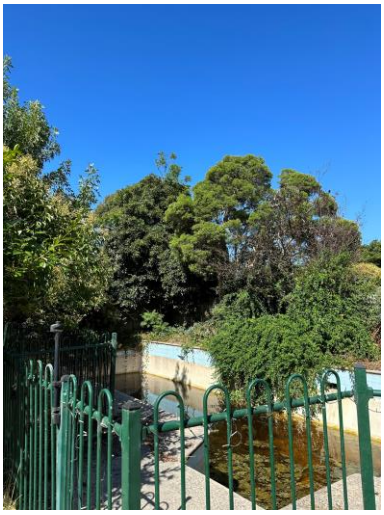

Figure 13 Trees 12-14

Figure 14 Tree 15

Figure 15 Tree 17

Figure 16 Tree 19

Figure 17 Trees 18 & 21

Figure 18 Trees 21 & 22

Figure 19 Tree 23

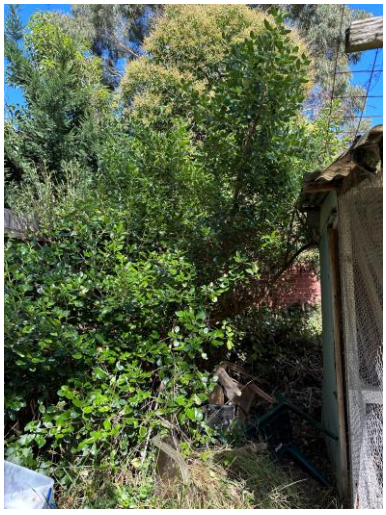

Figure 20 Tree 24

Figure 21 Tree 25

Figure 22 Trees 26 & 27

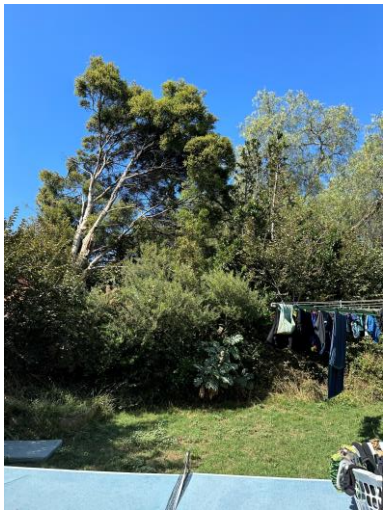

Figure 23 Tree 28

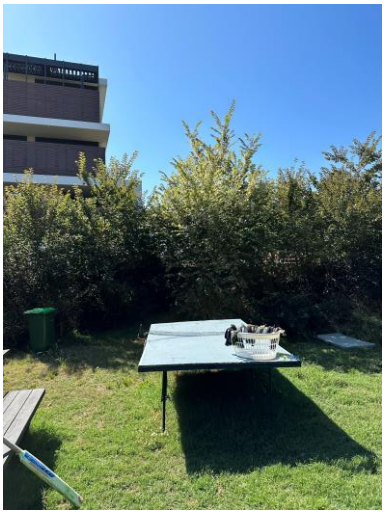

Figure 24 Tree 29

Figure 25 NDRI trench along proposed basement ramp in relation to tree 4

Figure 26 View into trench. No woody roots found. NB minor roots near surface originate from undergrowth

5.2 Appendix 2 Data descriptors, definitions and criteria

5.2.1 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.

5.2.2 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.

5.2.3 Structure ratings

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 symptoms 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.

5.2.4 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.

5.2.5 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).

5.2.6 Useful Life Expectancy – ULE

(Adapted from Barrell 2001)

30+ years: *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: *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: *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: *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

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