Arboricultural Report

Construction Impact Assessment

Prepared for: Mr. Luciano Lucantonio

Subject site: 3 Hopetoun Street, Northcote Victoria.

Site inspection: 20th June 2024

Publication of report: 27th June 2024

Prepared by:

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27th June 2024

LCLC Pty Ltd
Mr Luciano Lucantonio

C/O Pro Planning
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Subject: Arboriculture Impact assessment report for trees located at 3 Hopetoun Street Northcote Victoria.

1 Background

1.1 Tree Radar Australia Pty. Ltd. Has been commissioned to provide an Arboricultural report assessing the tree populations within and surrounding the site at 3 Hopetoun Street Northcote Victoria.

1.2 This report is to identify the Tree Protection Zone (TPZ) levels of encroachment and impacts that the planning proposal may have on trees within and adjoining the site.

2 Objectives

2.1 To provide a site assessment identifying the trees genus / species, estimated age, canopy dimensions, trunk diameters, current health, structure, retention value, Tree Protection Zones (TPZ), tree protection area m², Structural Root Zone (SRZ) and level of encroachment within the TPZ area.

2.2 To provide an Impact Assessment on trees located within and adjoining the property (trees located within the site, adjoining properties, and road reserves / nature strips) and identify where TPZ encroachments are likely to occur and provide opinion on acceptable and sustainable levels of TPZ encroachments for the ongoing retention of trees suitable for retention.

2.3 Provide recommendations for the sustainability of trees for protection against construction impact.

3 Methodology

3.1 Tree Radar Australia's Consulting Arborist, Justin Simmonds inspected eight (8) trees in total on the 20th June 2024. Tree height and canopy dimensions have been estimated. Trunk diameters were measured at 1.4 meters from ground level to provide the optimal Tree Protection Zone (TPZ) distances to conform with the *Australian Standards, Protection of trees on development sites AS 4970-2009*.
All visual observations were taken from ground level, photographed, and documented within the tree assessment details.

3.2 Proposed development plans were obtained from *Professional Planning Pty. Ltd*. for the use in this report.

3.3 The Tree Protection Zone (TPZ) areas and areas of encroachment have been calculated using the Council Arborist of Victoria (CAV) algorithm to conform to the Australian Standards, Protection of trees on development sites AS 4970-2009.

3.4 The areas of where TPZ incursions are relevant or occur have been highlighted to demonstrate the TPZ encroachment area.

4 Tree Retention Values

4.1 Low Retention Value Trees

The following five (5) trees (Trees 1, 2, 4, 7 and 8) located within the nature strip subject site and neighbouring properties have been categorised as 'Low' retention and are generally trees with little or no amenity or ecological value and unlikely to be a landscape feature. These trees may also be considered as a common weed species, in decline or contain structural faults with an expired SULE or may be exempt from permit requirements.

Council tree (Tree 1). Proposed for its removal and replacement to accommodate the driveway construction to dwelling 1.

Neighbouring trees (Trees 2 and 8) will need to be protected from construction impacts.

4.2 Condition

A trees health or structural condition is so poor that it would not be suitable for retention due to its expected longevity.

The following three (3) trees (Trees 3, 5 and 6) located within the neighbouring property have been categorised as 'Condition' retention. All three trees have been lopped / poorly pruned and have no amenity or ecological value and unlikely to be a landscape feature.

These three trees are also located within the neighbouring property and as a third-party tree will need to be protected from construction impacts.

4.3 Tree populations within and adjoining the site - Tree images

Tree 1. *Robinia pseudoacacia 'Umbraculifera'*

Tree 2. *Schefflera actinophylla*

Tree 3. *Olea europaea*

Tree 4. *Ligustrum lucidum*

Tree 5. *Melia azedarach*

Tree 6. *Laurus nobilis*

Tree 8. *Pittosporum tenuifolium*

5 Discussion / Impact assessment

5.1 No Impact – None

Trees subject to No TPZ Encroachments or construction impact.

The following trees (Trees 2, 5, 6, 7 and 8) will not be subject to any Tree Protection Zone Ground / root encroachments from the current planning proposal. The retention of this trees can be achieved.

Tree 2 may be subject to minor canopy encroachments and will require minor pruning of 3-4 branches back to the boundary fence line, this tree is basically a pot plant that has become a small shrub which will tolerate and benefit from any pruning requirements.

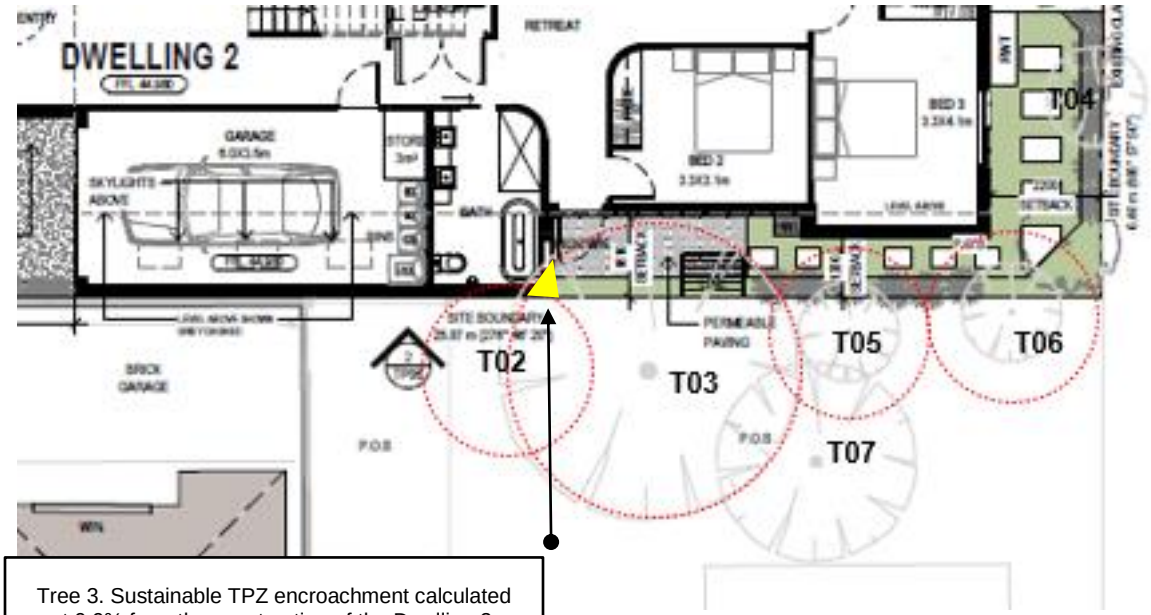
Trees 5, 6 and 7 may require minor pruning to replace the existing fence.

5.2 Impact Minor Encroachment – Sustainable

Trees subject to Minor (Sustainable) TPZ Encroachments from the planning proposal. (<10% of the total TPZ area). The following tree (Tree 3) will be subject to a minor and sustainable TPZ encroachments.

This TPZ encroachment will be from the construction of the proposed dwelling 2. The level of encroachment has been calculated at 0.9% the level of impact is extremely low and nonsignificant and will not have any impact to this tree.

It is anticipated that tree 3 will also require minor pruning to replace the existing fence.



Tree 3. Sustainable TPZ encroachment calculated at 0.9% from the construction of the Dwelling 2. (Yellow)

5.3 Impact Severe

Trees that will require removal as they will be within the area of the proposed development.

The following two (2) trees (Trees 1 and 4) that are located within the nature strip and subject site will be within the areas proposed for development due to the layout and design of the planning proposal.

Council tree (Tree 1) will require removal and replacement due to the location of the proposed crossover for dwelling 1.

Tree 4. Will require removal to accommodate new landscape plantings, this tree is a common weed species and is exempt from permit requirements.

6 Recommendations

6.1 Tree protection measures for trees to be retained

Tree Protection Zones (TPZ) are a combination of the root and canopy area around a tree requiring protection during the various stages of development to prevent damage that can occur to tree roots, trunks and canopies from compaction, excavation and other construction activities that occur within the site.

Tree protection will be required within the TPZ areas of the following trees:

- Trees 3, 5 and 6. Tree Protection Fencing (TPF) to be erected a distance of one meter from the southern boundary fence and running 5 meters from the eastern boundary to the Proposed dwelling 2. Tree protection fencing / barriers

Tree protection fencing must be strong enough to sustain knocks from machinery and construction activities and clearly defined with signage as the Tree Protection Zone.

The height for tree protection fencing must be a minimum of between 1.5 - 1.8 metres or greater and can be constructed from various acceptable materials that can include:

- Chain and mesh fence supported by concrete blocks (or similar),
- Ring lock, barrier webbing, or shade cloth with treated pine posts or star pickets greater than 20mm in diameter. Barrier tape is not considered as an acceptable tree protection fence.
- TPZ area to be mulched if applicable or at discretion of the project arborist.
- Posts must avoid tree roots and be offset if required.
- Existing perimeter or boundary fencing can also be combined or utilized within the tree protection fence.
- Entry into tree protection zones from people, vehicles and/or machinery is prohibited.

Tree protection zones are not to be used as storage facilities for building materials of any type. Soil levels must not be lowered or raised within the Tree Protection Zone.

The fence(s) are to remain intact throughout all proposed construction works and should only be dismantled after all construction works are complete.

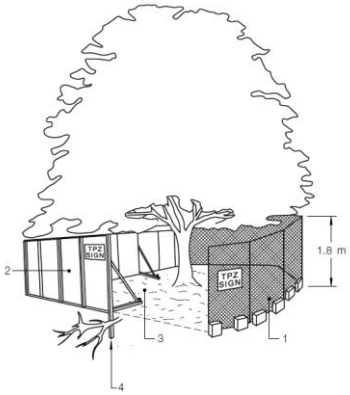
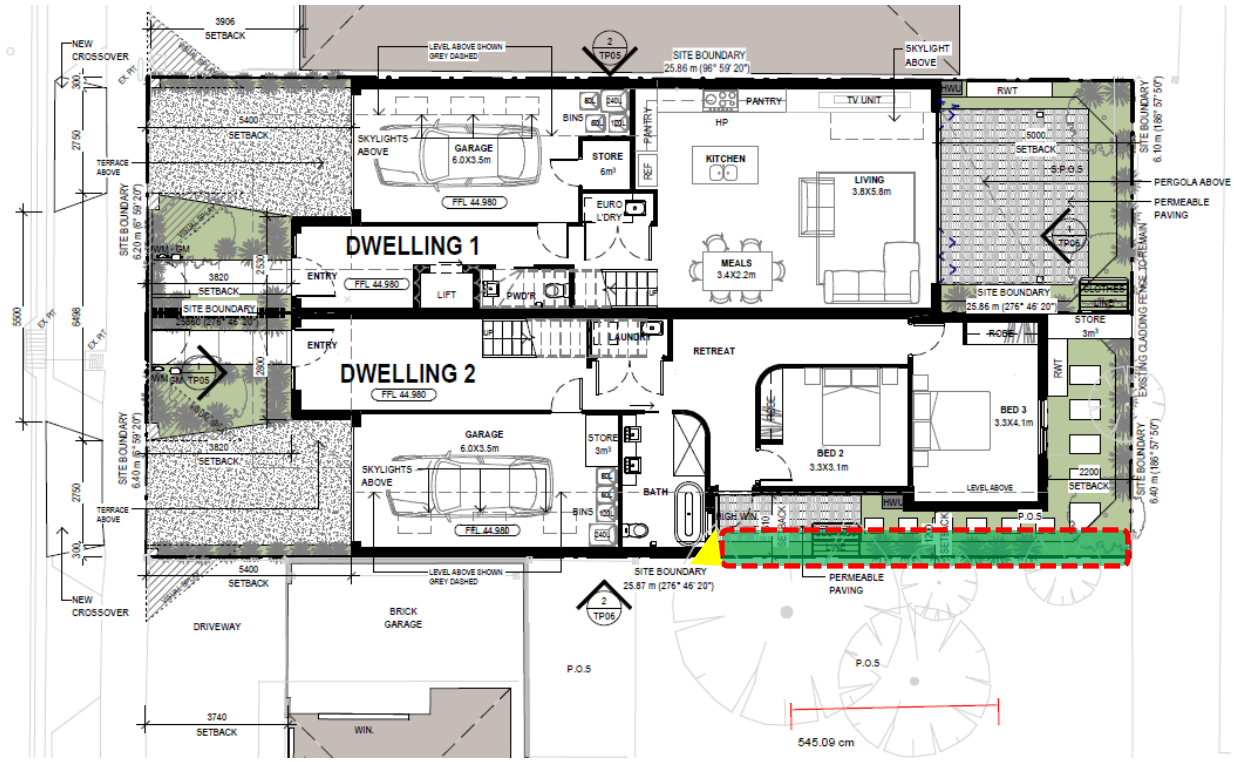


Figure 1. Tree Protection Fencing

Example: Temporary fencing.

6.2 Tree protection fencing / barriers. Areas recommended for protection for trees to be retained within and adjoining the site.



Tree protection zone and / or fencing

Ground and canopy area requiring protection.

Allocated Minor TPZ encroachment area.

7 Summary

7.1 Tree removal – Construction Impact Severe

Trees 1 and 4 located within the nature strip and subject site are within the areas proposed for development. Due to the layout and design of the planning proposal it will not be possible to retain these trees.

The removal of Tree 1 will need to be replaced with the same Genus and species to maintain the street scape.

Botanical name: *Robinia pseudoacacia 'Umbraculifera'* Common name: Mop Top / Robinia.

7.2 Trees subject to 'Impact Minor' - Sustainable

Tree 3. Will be subject to a minor and sustainable TPZ encroachment. This level of impact it is expected to be at a viable and sustainable level.

7.3 Tree subject to no TPZ encroachments

Neighbouring trees (Trees 2, 5, 6, 7 and 8) will not be subject to any Tree Protection Zone encroachments from the current planning proposal. The retention of these trees can be achieved.

Tree protection measures have been recommended within sections 6.1- 6.2 for neighbouring trees.

Justin Simmonds
Consulting Arborist

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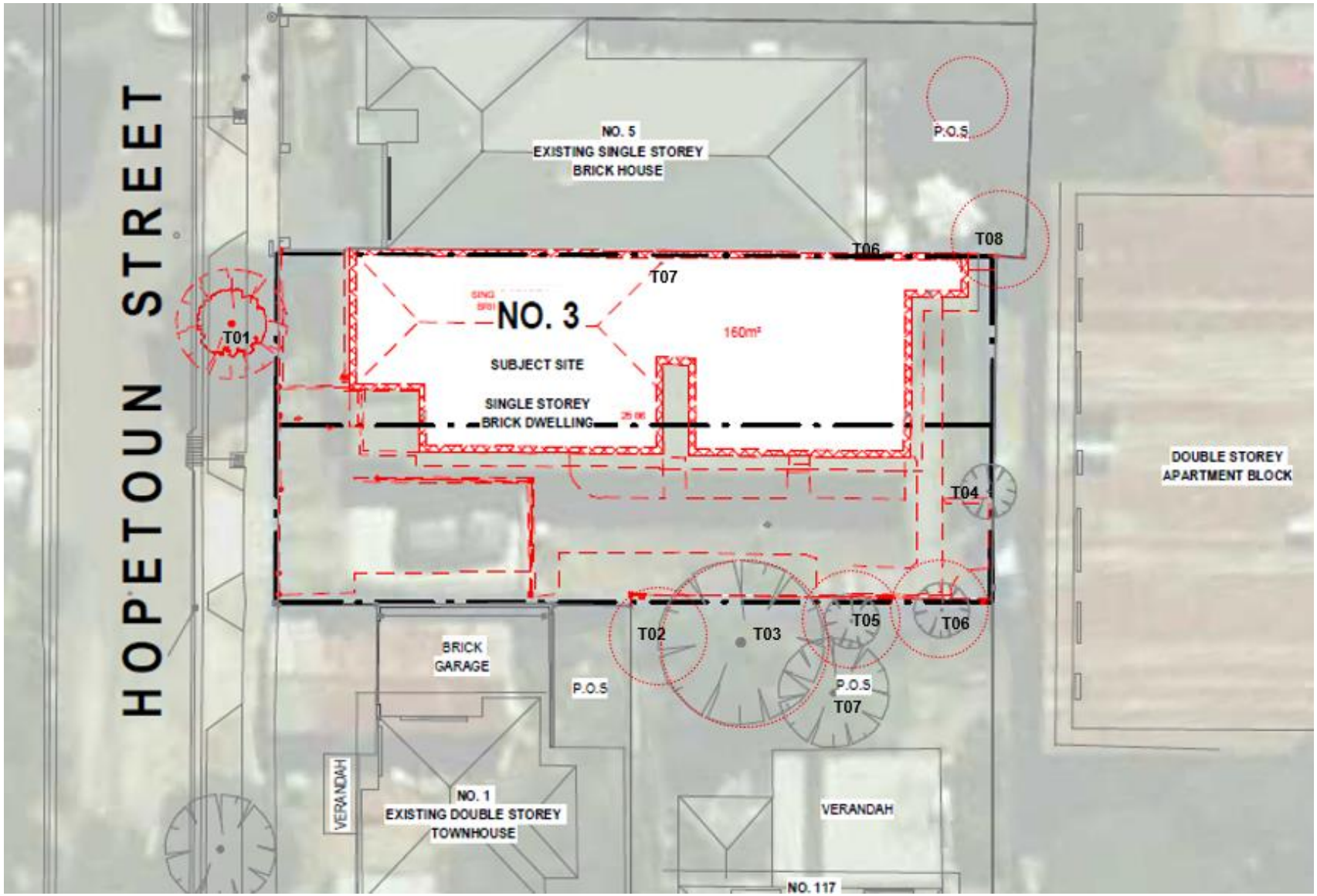
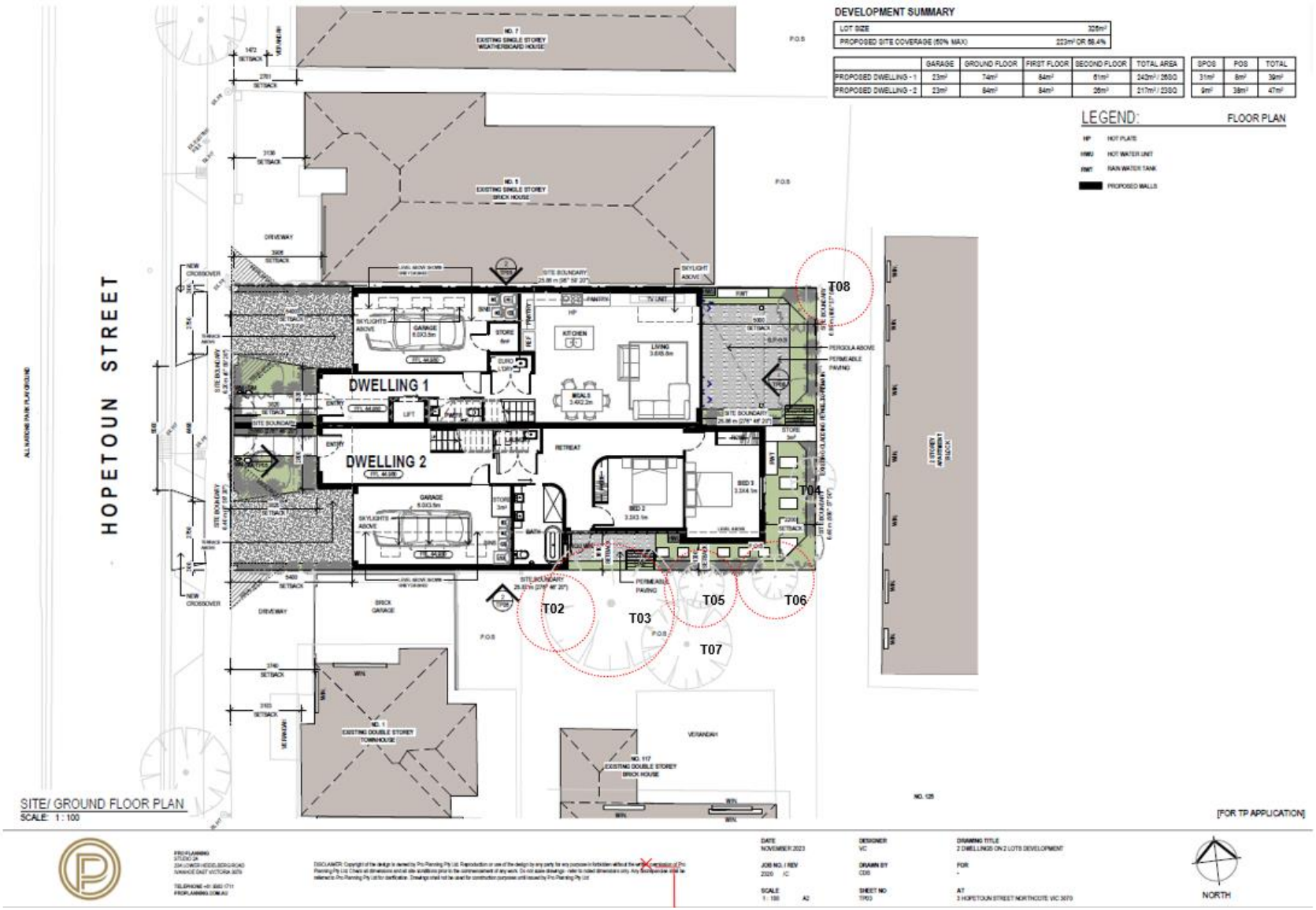
Appendix 1a. Tree assessment details. 3 Hopetoun Street Northcote Victoria. June 2024

Tree no.	Botanical Name	Common Name	Tree Type	Origin	Age	Height (m)	Width (m)	D.B.H. (cm)	TPZ (m)	TPZ Area m2	SRZ (m)	Level of Encroachment	Incursion %	Structure	Health	U.L.E. Yrs.	Retention Value	Comments
1	*Robinia pseudoacacia 'Umbraculifera'*	Mop Top Robinia	Exotic deciduous	Spain, Italy and the UK	Mature	6	5	25	3.0	28.3	1.8	**Severe**	**WPD**	Fair	Good	10'20	Low	Council tree within nature strip. Tree to be removed and replaced with same species, as approved by Council.
2	*Schefflera actinophylla*	Queensland umbrella tree	evergreen	Northern and north-eastern Queensland coasts and the Northern Territory. New Guinea and Java.	Mature	3	4	15	2.0	12.6	1.5	**None**	**0.0%**	Fair	Good	5'10	Low	Small shrub / bush in neighbouring property. No impact predicted
3	*Olea europaea*	Olive	Exotic evergreen	Mediterranean region	Mature	6	6	24	2.9	26.1	1.8	**Minor - sustainable**	**0.9%**	Fair	Good	5'10	Condition	Tree located within neighbouring property, tree has been lopped / poorly pruned and consists of epicormic regrowth no impact predicted
4	*Ligustrum lucidum*	Privet	Exotic evergreen	native to the southern half of China	Mature	4	2	11.3	2.0	12.6	1.5	**Severe**	**WPD**	Fair	Fair	5'10	Low	Tree located within subject site. Tree to be removed and replaced with new landscape plantings
5	*Melia azedarach*	White Cedar	Exotic & Australian Native deciduous	native to QLD NSW Australia and Southeast Asia	Mature	3	1	16	2.0	12.6	1.5	**None**	**0.0%**	Poor	Fair	5'10	Condition	Tree located within neighbouring property, tree has been lopped / poorly pruned and consists of epicormic regrowth no impact predicted
6	*Laurus nobilis*	Bay Laurel	Exotic evergreen	Mediterranean region	Mature	2	1	12	2.0	12.6	1.5	**None**	**0.0%**	Poor	Fair	5'10	Condition	Tree located within neighbouring property, tree has been lopped / poorly pruned and consists of epicormic regrowth no impact predicted
7	*Citrus X limon*	Lemon	Exotic evergreen	Asia	Mature	4	4	14.1	2.0	12.6	1.5	**None**	**0.0%**	Good	Good	5'10	Low	Tree located within neighbouring property. No impact predicted
8	*Pittosporum tenuifolium*	James Stirling Pittosporum	Exotic evergreen	New Zealand	Mature	5	2	13.9	2.0	12.6	1.5	**None**	0.0%	Fair	Fair	5'10	Low	Tree located within neighbouring property. No impact predicted

Appendix 2a. Tree location. 3 Hopetoun Street Northcote Victoria. June 2024



Appendix 2b. Tree location and planning proposal. 3 Hopetoun Street Northcote Victoria. June 2024



Appendix 3a. Tree Protection Zones (TPZ) and Fencing.

Tree protection zones (TPZ) are a combination of the root area and canopy area requiring protection around trees during the stages of development and is based on the Australian Standards, Protection of trees on development sites AS 4970-2009.

The TPZ for a tree is a radius measured in meters around the tree, this radius is derived from a mathematical formula and is measured from the central trunk radiating outwards from that tree to provide the optimum area around the tree that requires protection.

The TPZ can be used as a guild for the installation of tree protection fencing around trees to be retained through the stages of development.

The height for Tree Protection fencing must be a minimum of 1.5 meters or greater and can be constructed from various materials and would include: chain and mesh fence supported by concrete blocks (or similar), ring lock with treated pine posts.

The fence(s) must be strong enough to sustain knocks from machinery and construction activities and clearly defined as the Tree Protection Zone. Entry into tree protection zones from people, vehicles and/or machinery is prohibited.

Tree protection zones are not to be used as storage facilities for building materials of any type; neither are the trees themselves to be used as billboards to support advertising material.

Soil levels must not be lowered or raised within the Tree Protection Zone.

The fence(s) are to remain intact throughout all proposed construction works and should only be dismantled after all construction works are complete.

Appendix 3b. Explanation of Terms

Age

Category	Description
Juvenile	Small/young tree in terms of its potential physical size and reproductive ability. May have been recently planted.
Semi-Mature	Tree in active growth phase of life cycle and not yet of an expected maximum physical size for location.
Mature	Specimen has reached an expected maximum physical size and reproductive ability for the species in its particular location.
Senescent	The period of a plant's life cycle between maturity and death when a gradual deterioration in health occurs, often resulting in the abscission/shedding of fruit, foliage, and branches.

Health

Category	Description
Excellent	Exceptional specimen. Canopy full & evenly balanced. Entire foliage cover that is of good size and colour for species with no visible pathogen damage. Excellent growth indicators, e.g. seasonal extension growth, tree ideally suited to site.
Good	Crown full of foliage, can be slightly unbalanced. Good canopy density, foliage colour and size with minimal or no visible pathogen damage. None or minimal deadwood in canopy and good growth indicators, e.g. seasonal extension growth.
Fair	Canopy may be unbalanced. Reduced canopy density for species, with a possible reduction in foliage size and/or discolouration. Visible amounts of deadwood in canopy. Canopy may contain levels of epicormic growth. Minor pathogen damage present.
Poor	Clearly reduced canopy density for species. Significant amounts of deadwood and/or epicormic growth in canopy with noticeable dieback in branch tips. Discoloured foliage and/or reduced leaf size. Pathogen attack evident. Tree clearly in state of stress and health likely to decline further.
Dead	Tree is dead with no visible live material. Bark may be visibly peeling from trunk and/or branches.

Structure:

Category	Description
Good	Sound branch attachment with no visible structural defects e.g.: included bark. Trunk undamaged with no visible wounds. No visible damage to roots that could affect tree stability. No evident pests or diseases.
Fair	Minor structural defects with small amounts of included bark; dubious branch attachment(s), apical leaders sharing common union(s). Minor damage to structural roots. Small wounds on trunk where decay has or could begin.
Poor	Noticeable structural fault(s) with significant levels of included bark. Union failure likely in a short period of time (0-5 years). Trunk or branch wounds evident with large cavities. Damage to structural roots.
Hazardous	Tree deemed to be of immediate concern with branch and/or complete tree failure imminent. Immediate arboricultural works are required to mitigate danger to people or property.

Safe Useful Life Expectancy (S.U.L.E.):

Category
0-5 Years
5-10 Years
10-20 Years
20-30 Years
30-50 Years
50-100 Years

The S.U.L.E. of a tree refers to the period of time the tree can be retained within the landscape given its species, current age, health, structural condition, and location before its amenity value declines to a point where it may detract from the appearance of the landscape and/or becomes potentially hazardous to people and/or property.

Definitions

Epicormic Branches/Epicormic:

Fast growing, poorly attached branches, often produced by a tree as a result of stress or poor pruning practices.

Hazard:

Hazard tree evaluation is the systematic process of assessing the potential for a tree or its parts to fail and, in so doing, injure people or damage property. All trees have the potential to cause property damage or personal injury if failure occurs. The degree of hazard (and therefore the risk) will vary with the size of the tree, type and location of the defect, tree species and the nature of the target (Harris et al, 2004).

A tree is considered to be hazardous if it has structural defects that may cause part or all of it to fail, the size of the parts that fail could cause damage or injury and if targets are present for the tree or part thereof to fall onto. The greater the defect, the larger the part and the greater the occupancy of the target site, the greater the hazard. (Matheny & Clark, 1994).

Tree Retention Values

Very High

Trees which have been given **'Very High'** retention value are considered to be of sufficient amenity or ecological and/or of historical significance and considered ***irreplaceable***. Or are trees have the potential as a long-term landscape asset if management appropriately. Provision must be made for both the retention of these trees and the protection of the trees above and below ground structures (roots, trunk, and canopies) from construction impact.

High

Trees which have been given **'High'** retention value are considered to be of substantial amenity or ecological significance and a prominent landscape feature and as such will be difficult to replace. Considerable effort should be made to retain these trees. Provision must be made for both the retention of these trees and the protection of the trees above and below ground structures (roots, trunk, and canopies) from construction impact.

Medium

Trees which have been given a **'Medium'** retention value are considered to be of some amenity or ecological value. As such it is 'desirable' that these trees are retained where possible as they have the potential to become a medium to long-term landscape feature. These trees can be of moderate quality with minor health and structural issues that can be managed with arboricultural input. Where practical the modification to the layout and design of the planning proposal should be considered to protect from construction impact.

Low

Trees which have been allocated a **'Low'** retention value are generally trees with little or no amenity or ecological value and unlikely to be a landscape feature. The tree may also be considered as a common weed species, in decline or contain structural faults with an expired SULE or may be exempt from permit requirements.

Remove

Trees which have been given 'Remove' recommendation are trees which are:

- Structurally unsound/dangerous.
- Environmental weed species.
- Dead or senescent. (Senescent trees are over mature trees in an advanced state of decline which is unlikely to be reversible.)
- Young trees which are unable to achieve full potential due to inherent defect, disease, or unsuitable location.

Condition

A trees health or structural condition is so poor that it would not be suitable for retention due to its expected longevity.

Tree type

Indigenous species
Originating / occurring naturally and is characteristic to a particular region of Victoria. Tree, shrub or plant is an endemic local species that has provenance within the area of the subject site.

Victorian native species

Occurs naturally within various parts of Victoria but is not an indigenous or endemic species local to the subject site.

Australian native species

Originating / occurring naturally within various areas and parts of Australia but is not a Victorian native or indigenous species local to the subject site.

Exotic deciduous species

Originating outside of Australia and introduced from a foreign country, but not fully naturalized. Tree, shrub, or plant species sheds its leaves annually. Species usually planted / grown as a landscape specimen.

Exotic evergreen species

Originating outside of Australia and introduced from a foreign country, but not fully naturalized. Tree, shrub, or plant species retains its leaves all year round. Species usually planted / grown as a landscape specimen.

Palm Tree 'Palm'

Any of numerous plants of the family Arecaceae or alternatively Palmae, most species being tall and distinguished by their large, compound, **evergreen** leaves, known as fronds, arranged at the top of an unbranched stem. Roots are usually replaced by **adventitial** roots forming fibrous or fleshy root systems. A family in the monocot order or commonly referred to as a woody monocotyledon.

Other:

Specified as indicated.

Construction Impact. Level of Encroachment

NO Impact - None

Tree will not be subject to any TPZ encroachments from any proposed development works. Trees can be retained.

Impact Minor Encroachment - Sustainable

Trees that will be subject to a Minor and sustainable level of encroachment within the TPZ area from any proposed development. The TPZ encroachment will have an incursion <10% within the total / optimum TPZ area. Tree is expected to remain viable.

Impact Major Encroachment - Viable

Trees that will be subject to a Major and sustainable level of encroachment within the TPZ area from any proposed development. The TPZ encroachment will have an incursion >10% but less than 20% within the total / optimum TPZ area.

In addition:

- A non-destructive tree root investigation has demonstrated that roots were limited or absent within the area of proposed works.
- The species may be tolerant to tree root disturbance
- Modified or alternative tree sensitive building methods have been used within the layout and design of the planning proposal to limit tree root disturbance.

Impact Major Encroachment – Not Viable

Trees that will be subject to a Major level of encroachment within the TPZ area from any proposed development and construction works.

- The TPZ encroachment will generally have an incursion >20% within the total / optimum TPZ area.
- Construction impacts within the SRZ.
- The tree is likely to be exposed to non-sustainable tree root, trunk, or canopy damage.
- Impacts on the trees structurally integrity.

Impact Severe - Removal

Trees that will require removal as they will be within the area of the proposed development.

Condition – Removal

A trees health or structural condition is so poor that it is not suitable for retention, regardless of any proposed layout and design of any planning proposal.