12 CALLISTEMON COURT OCEAN GROVE

ARBORICULTURAL IMPACT ASSESSMENT

PREPARED BY: [redacted] (DIPLOMA OF ARBORICULTURE)

MARCH 31, 2026

1 CONTACT DETAILS

1.1 Assessing arborist

The assessment was conducted by an arborist demonstrating competence in accordance with Australian Standard 4970-2025 (Protection of trees on development sites) and AS4373-2007 (Pruning of amenity trees). This competence is evidenced by the arborist's 30 years of industry experience and attainment of a minimum Australian Qualification Framework (AQF) Level 5 Diploma of Arboriculture. This combination of extensive practical experience and formal qualifications ensures the arborist possesses the requisite knowledge and skills to accurately perform the assessments and adhere to the standards outlined within AS4970-2025 and AS4373-2007.

Assessing company	ATC Land Management
Assessing Arborist	[redacted]
Phone	0403 867 449
E-mail	steve@austreecare.com.au
Qualifications	Diploma of Horticulture (Arboriculture)

2 EXECUTIVE SUMMARY

2.1 Project overview & site context

This Arboricultural Impact Assessment (AIA) evaluates the vegetation at 12 Callistemon Court, Ocean Grove, to facilitate the decommissioning of the existing single-story dwelling and the subsequent construction of two modern residential units. The site's landscape is currently defined by a high density of internal garden species and a critical interface with public and third-party assets that must be managed in accordance with AS 4970-2025 (Protection of trees on development sites).

2.2 Statutory compliance & permit triggers

The subject property is governed by dual-layered vegetation controls through the City of Greater Geelong Planning Scheme. A formal audit has identified the following requirements:

- **Significant Landscape Overlay (SLO15):** This overlay protects the preferred character of Ocean Grove. Specimens such as Tree 23 (*Callistemon citrinus*) and Tree 28 (*Grevillea robusta*) trigger a permit requirement due to their taxonomic status and dimensions.
- **Clause 52.37 (Canopy Trees):** State-level controls apply to Tree 12 (*Quercus robur*), which is classified as a "Boundary Canopy Tree."
- **Permit Status:** A Planning Permit is a non-negotiable prerequisite for the removal of these three significant specimens. Conversely, 18 internal trees (including Specimens 9–11 and 13–22) are exempt from these controls and may be removed at the owner's discretion.

2.3 Impact assessment: Third-party & public assets

A primary design constraint is the preservation of trees situated on the Council nature strip and adjacent private properties.

- **Council-owned assets:** Trees 1 and 2 are high-value public assets. They must be afforded full protection and remain undisturbed throughout the demolition and construction phases.
- **Neighbouring assets:** Trees 3–8 are situated within adjacent lots. Protection of these trees is a legal and arboricultural necessity.
- **Encroachment modelling:** Most neighbouring assets experience "Minor Encroachment" (<10%). However, Tree 8 (*Melaleuca styphelioides*) will sustain an 11.5% encroachment. This

"Moderate Encroachment" is considered sustainable because the specimen has a compromised canopy due to historical lopping (non-compliant with AS 4373-2007), reducing its biological demand. Furthermore, ample contiguous soil volume exists within the neighbouring property to compensate for the loss.

2.4 Strategic impact reconciliation: Tree 28

Spatial analysis initially indicates a theoretical encroachment of **3**3.4% into the Tree Protection Zone (TPZ) of Tree 28. However, a detailed reconciliation of the civil requirements reveals a significantly lower actual impact:

- **Primary built form (5.6%):** The footprint of the new residential dwelling accounts for only 5.6% of the TPZ, which is classified as a "Minor Encroachment" under AS 4970-2025.
- **Infrastructure reuse (27.8%):** The remaining theoretical encroachment is attributed to the vehicle crossover and internal driveway. To mitigate root trauma, the project utilizes a "like-for-like" replacement strategy, sitting entirely within the existing footprint of the site's legacy hardscaping.
- **Actual impact determination:** Because these elements utilize previously disturbed ground with zero additional excavation, they are considered "physiologically inert". This reduces the actual encroachment to 5.6%, removing the need for further subterranean investigation provided the driveway construction is limited to surface wear-course replacement.

2.5 Final statement

The proposed development at 12 Callistemon Court is arboriculturally viable, provided that the "Tree Sensitive" construction methodologies and protection mandates detailed in this report are strictly implemented. This strategy successfully balances the objective of increased residential density with the long-term preservation of the local urban forest and neighbourhood character.

TABLE OF CONTENTS

3 INTRODUCTION

3.1 Brief

Prepared by: ATC Land Management

ATC Land Management has been commissioned to prepare a comprehensive Arboricultural Impact Assessment (AIA) Report for the trees located at and adjacent to the site at 12 Callistemon Court, Ocean Grove. This report is a crucial component of the development application, designed to assess and mitigate any potential impacts the proposed works may have on the trees.

3.2 Scope

The primary objectives of this Arboricultural Impact Assessment are to:

- **Tree inventory and condition analysis:** Conduct a detailed site inspection to identify all relevant trees on the property and in the immediate vicinity. For each tree, the report will provide a thorough analysis of its species, age, health, structural condition, and overall viability.
- **Tree Protection Zone determination:** Calculate the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for all trees to be retained, in accordance with the Australian Standard AS 4970-2025. These zones define the minimum area around a tree that must be protected from development-related impacts.
- **Impact assessment:** Evaluate the potential for direct and indirect impacts from the proposed development, including excavation, soil compaction, changes to site levels, and service installations, on the health and stability of the retained trees.
- **Mitigation strategies:** Formulate and recommend best-practice tree protection management strategies to minimize any identified conflicts between the development and the trees.
- **Planning compliance:** The report will be prepared to meet the requirements of the City of Greater Geelong Planning Scheme, which may include specific overlays such as a Vegetation Protection Overlay, and will inform the planning permit application process.

The purpose of this document is to ensure a balanced approach that facilitates the proposed development while protecting valuable tree assets and contributing to the long-term ecological and amenity values of the site and its surrounding landscape.

3.3 Methodology

Site assessed: March 31, 2026

Assessed by: [redacted] for ATC Land Management

3.3.1 Assessment methods:

- **Visual Tree Assessment (VTA):** The trees were assessed from the ground using industry accepted VTA methods, focusing on observable signs of health, structure, and stability.
- **Diameter measurements: Stem** diameters were measured at breast height (DBH), at stem base (DAB), and at other required stem heights using a DBH tape.
- **Limitations:** No aerial assessments (rope and harness, drone) or below-ground investigations (non-destructive root assessment) were conducted.

3.3.2 Tree evaluation:

- **Health and condition:** Tree health, structure, and condition were evaluated using standardized descriptors (refer to **Appendix A** for details).

3.3.3 Industry Standards:

- **AS 4373-2007:** This Australian Standard provided guidance for recommendations regarding acceptable pruning practices for amenity trees.
- **AS 4970-2025:** This standard informs recommendations related to tree protection on development sites.

3.3.4 Site history:

- Information on historical site conditions was gathered from online resources such as Street View (Google Maps) and Nearmap to supplement the on-site assessment.

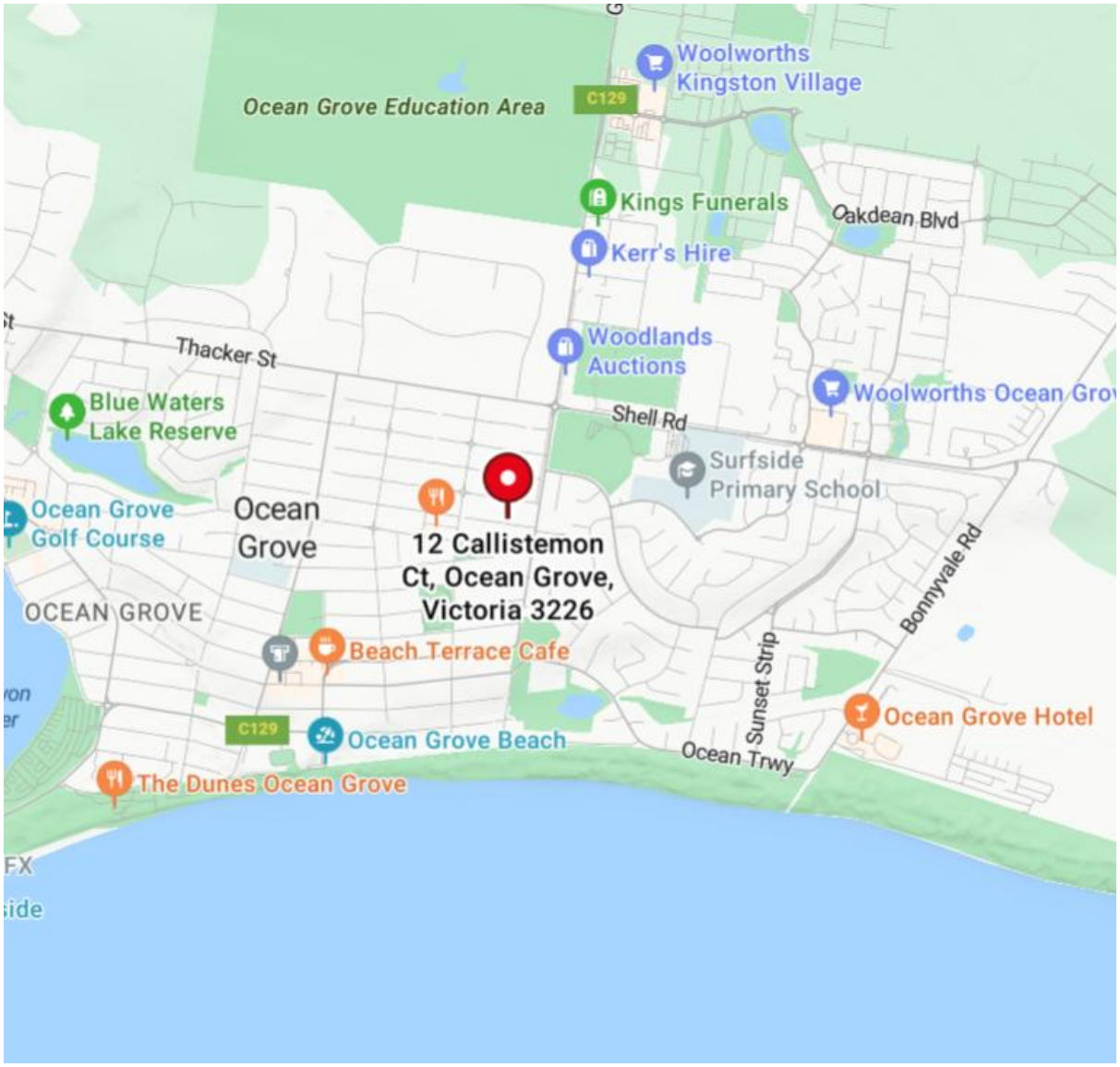
3.3.5 Additional documents:

Architectural plans for the proposed development, prepared by Prestige Plans and dated December 5, 2025, have been provided for review. These plans are included in **Appendix B** of this document for reference.

4 SITE DETAILS

4.1 Site address

The subject site is located at 12 Callistemon Court, Ocean Grove, Victoria, 3226.



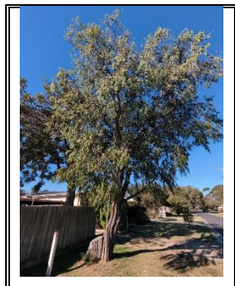
5 TREE DETAILS

5.1 Indicative tree locations

5.2 Table of data

5.2.1 Trees within Council owned nature strip:

Num	ID	Vegetation Controls	Height	Span	Stem diameter @ 1.4 m	Stem circumference @ 1.4 m	Stem diameter @ base	Structural Root Zone (radius)	Tree Protection Zone (radius)	Observations	Health	Structure	Age	Useful Life Expectancy
1	Agonis flexuosa	Council	8 m	9 m	43 cm	135 cm	87 cm	3.1 m	5.2 m		Good	Fair	Mature	Medium
2	Callistemon viminalis	Council	1 m	1 m	2 cm	6 cm	5 cm	1.5 m	2.0 m		Good	Fair	Young	Medium



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5.2.2 Trees within adjacent properties:

Num	ID	Vegetation Controls	Height	Span	Stem diameter @ 1.4 m	Stem circumference @ 1.4 m	Stem diameter @ base	Structural Root Zone (radius)	Tree Protection Zone (radius)	Observations	Health	Structure	Age	Useful Life Expectancy
3	Agonis flexuosa	Third Party	4 m	4 m	-	-	-	1.5 m	2.0 m		Good	Fair	Young	Short
4	Pyrus calleryana	Third Party	5 m	3 m	-	-	-	1.7 m	2.5 m		Good	Fair	Semi-Mature	Short
5	Pyrus calleryana	Third Party	5 m	3 m	-	-	-	1.7 m	2.5 m		Good	Fair	Semi-Mature	Short
6	Pyrus calleryana	Third Party	5 m	3 m	-	-	-	1.7 m	2.5 m		Good	Fair	Semi-Mature	Short
7	Pyrus calleryana	Third Party	5 m	3 m	-	-	-	1.7 m	2.5 m		Good	Fair	Semi-Mature	Short
8	Melaleuca styphelioides	Third Party	3 m	1 m	-	-	-	1.5 m	2.0 m	Lopped	Good	Fair	Semi-Mature	Short

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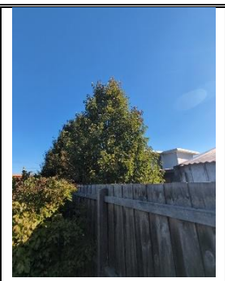

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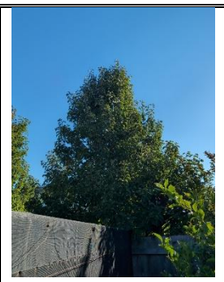

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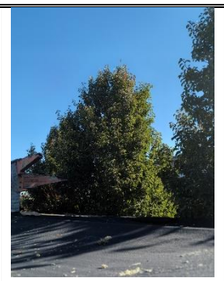

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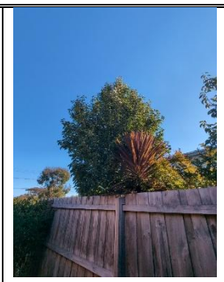

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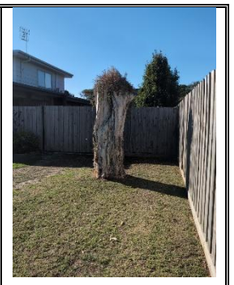

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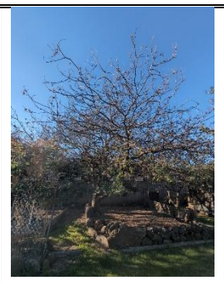
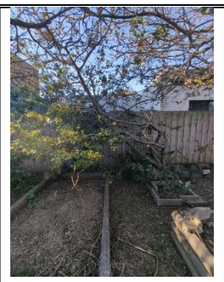
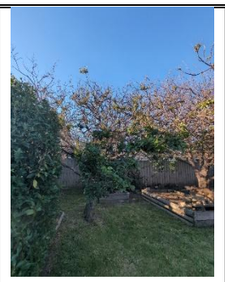
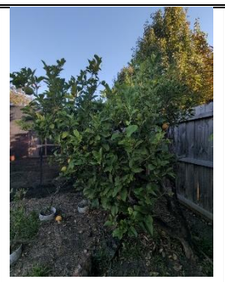
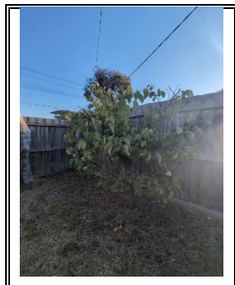
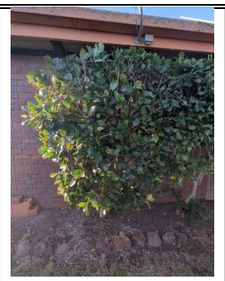
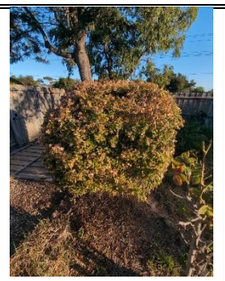
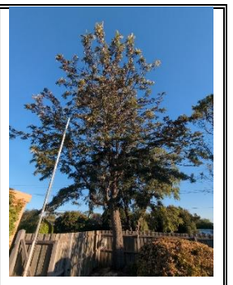
5.2.3 Trees within subject property:

Num	ID	Vegetation Controls	Height	Span	Stem diameter @ 1.4 m	Stem circumference @ 1.4 m	Stem diameter @ base	Structural Root Zone (radius)	Tree Protection Zone (radius)	Observations	Health	Structure	Age	Useful Life Expectancy
9	Cercis siliquastrum	Nil	4 m	5 m	23 cm	72 cm	27 cm	1.9 m	2.8 m	Signs of senescence, history of poor pruning	Fair	Fair	Mature	Short
10	Rosmarinus officinalis	Nil	2 m	2 m	5 cm	16 cm	14 cm	1.5 m	2.0 m	Unable rootplate	Fair	Poor	Mature	Short
11	Pyrus communis	Nil	4 m	5 m	27 cm	85 cm	36 cm	2.2 m	3.2 m	Poor stem attachment	Good	Fair	Mature	Short
12	Quercus robur	Clause 52.37	6 m	9 m	30 cm	94 cm	47 cm	2.4 m	3.6 m	Heavy possum grazing, deadwood throughout canopy	Fair	Fair	Mature	Medium
13	Prunus x domestica	Nil	3 m	4 m	11 cm	35 cm	13 cm	1.5 m	2.0 m	Poor stem attachments	Fair	Fair	Mature	Short
14	Prunus armeniaca	Nil	4 m	8 m	27 cm	85 cm	28 cm	1.9 m	3.2 m	Heavy possum grazing, decay in trunk, poor stem attachment	Poor	Fair	Mature	Short
15	Viburnum tinus	Nil	3 m	2 m	9 cm	28 cm	10 cm	1.5 m	2.0 m	Reshot stump	Good	Poor	Mature	Short
16	Viburnum tinus	Nil	2 m	1 m	5 cm	16 cm	7 cm	1.5 m	2.0 m		Fair	Fair	Mature	Short
17	Citrus x limon	Nil	2 m	2 m	6 cm	19 cm	13 cm	1.5 m	2.0 m	Decay in limbs, mechanical damage at base	Fair	Fair	Mature	Short
18	Vitex agnus-castus	Nil	2 m	2 m	6 cm	19 cm	20 cm	1.7 m	2.0 m	Reshot stump	Good	Fair	Mature	Short

9	10	11	12	13	14	15	16	17	18
									

Num	ID	Vegetation Controls	Height	Span	Stem diameter @ 1.4 m	Stem circumference @ 1.4 m	Stem diameter @ base	Structural Root Zone (radius)	Tree Protection Zone (radius)	Observations	Health	Structure	Age	Useful Life Expectancy
19	Cercis siliquastrum	Nil	1 m	1 m	5 cm	16 cm	14 cm	1.5 m	2.0 m	Reshot trunk	Fair	Poor	Young	Short
20	Cercis siliquastrum	Nil	3 m	1 m	34 cm	107 cm	35 cm	2.1 m	4.1 m		Dead	Poor	Mature	Short
21	Photinia x fraserii 'Robusta'	Nil	2 m	2 m	7 cm	22 cm	9 cm	1.5 m	2.0 m	Reshot stump	Fair	Poor	Mature	Short
22	Pittosporum eugenioides	Nil	3 m	2 m	5 cm	16 cm	10 cm	1.5 m	2.0 m	Reshot stump	Fair	Poor	Mature	Short
23	Callistemon citrinus	Clause 52.37, SLO15	6 m	4 m	21 cm	66 cm	12 cm	1.5 m	2.5 m	Poor stem attachment, canopy dieback	Poor	Poor	Mature	Short
24	Camellia japonica	Nil	2 m	1 m	6 cm	19 cm	8 cm	1.5 m	2.0 m		Fair	Fair	Semi-Mature	Medium
25	Camellia japonica	Nil	2 m	1 m	5 cm	16 cm	9 cm	1.5 m	2.0 m	Poor stem attachment	Good	Poor	Young	Short
26	Rhamnus alaternus	Nil	2 m	2 m	6 cm	19 cm	8 cm	1.5 m	2.0 m	Weed species	Good	Fair	Young	Medium
27	Abelia grandiflora	Nil	2 m	2 m	8 cm	25 cm	8 cm	1.5 m	2.0 m		Good	Fair	Semi-Mature	Medium
28	Grevillea robusta	Clause 52.37, SLO15	10 m	9 m	48 cm	151 cm	62 cm	2.7 m	5.8 m	History of failure, history of poor pruning, dieback in canopy, poor stem attachments	Fair	Fair	Mature	Short

19	20	21	22	23	24	25	26	27	28
									

Num	ID	Vegetation Controls	Height	Span	Stem diameter @ 1.4 m	Stem circumference @ 1.4 m	Stem diameter @ base	Structural Root Zone (radius)	Tree Protection Zone (radius)	Observations	Health	Structure	Age	Useful Life Expectancy
29	Malus x domestica	Nil	4 m	6 m	20 cm	63 cm	21 cm	1.7 m	2.4 m	Large section of dead, decay in main trunk	Fair	Fair	Mature	Short

29

6 SITE CONTEXT

The site at 12 Callistemon Court, Ocean Grove, is currently occupied by a single-story dwelling that is slated for demolition. The property garden is characterized by compact trees and shrubs.

To facilitate the planned redevelopment of the property, the existing building is scheduled for demolition. This will be followed by a full site clearing, which will include the removal of all existing vegetation. The purpose of this comprehensive clearing is to create a blank canvas, allowing for the unhindered construction of two new modern dwellings on the site. This approach ensures that the new development can be constructed efficiently and safely, free from the constraints of the existing building and the garden.

7 VEGETATION CONTROLS

7.1 Trees within Council nature strip

The trees situated within the nature strip at 12 Callistemon Court are under the exclusive ownership and management of the City of Greater Geelong. Consequently, these trees are to be considered for preservation and protection throughout all phases of the proposed development. Any intervention involving the removal of, or significant impact to, these trees must receive explicit approval from the City of Greater Geelong.

7.1.1 List of Council owned trees:

The following trees are located within the Council nature strip:

Num	ID	Vegetation Controls	Height	Span	Structural Root Zone (radius)	Tree Protection Zone (radius)
1	Agonis flexuosa	Council	8 m	9 m	3.1 m	5.2 m
2	Callistemon viminalis	Council	1 m	1 m	1.5 m	2.0 m

7.2 Trees in third party ownership

Trees on neighbouring properties are the assets and responsibility of their respective owners. Our utmost priority during all construction activities on this site is the preservation and protection of these trees.

Any actions that could potentially impact neighbouring trees, including their removal, require explicit written permission from the relevant property owner(s).

7.2.1 Trees within neighbouring properties:

The following trees are located with adjacent properties and are to be retained and protected during the subject property's development:

Num	ID	Vegetation Controls	Height	Span	Structural Root Zone (radius)	Tree Protection Zone (radius)
1	Agonis flexuosa	Council	8 m	9 m	3.1 m	5.2 m
2	Callistemon viminalis	Council	1 m	1 m	1.5 m	2.0 m
3	Agonis flexuosa	Third Party	4 m	4 m	1.5 m	2.0 m
4	Pyrus calleryana	Third Party	5 m	3 m	1.7 m	2.5 m
5	Pyrus calleryana	Third Party	5 m	3 m	1.7 m	2.5 m
6	Pyrus calleryana	Third Party	5 m	3 m	1.7 m	2.5 m
7	Pyrus calleryana	Third Party	5 m	3 m	1.7 m	2.5 m
8	Melaleuca styphelioides	Third Party	3 m	1 m	1.5 m	2.0 m

7.3 Subject property

The subject property is subject to mandatory, dual-layered vegetation controls that directly impact the scope and sequencing of the proposed development works. Comprehensive compliance requires that every tree on the site must be formally assessed against the criteria of both controls:

1. **Significant Landscape Overlay – Schedule 15:** This control requires a permit for the removal or modification of Australian natives, ensuring the long-term amenity of the site.

2. **Clause 52.37 (Canopy Trees):** This state-level control mandates the assessment of specific trees against "Boundary Canopy Tree" criteria (size, location) to determine if they are protected and require a permit for removal.

The arboricultural assessment detailed in this report satisfies the requirement to analyse all subject trees against the specific criteria of these controls to determine their regulatory status and the appropriate permitting pathway.

7.4 Clause 52.37 (Canopy Trees)

All proposed tree works on the subject property, including removal and pruning, are governed by a specific set of requirements and potential exemptions as outlined in Clause 52.37 (Canopy Trees) of the relevant planning controls. This section details the criteria that must be met to ensure compliance.

7.4.1 Meaning of terms:

In clause 52.37:

Canopy Tree means a tree that has:

– a height of more than 5 metres above ground level; and

– a trunk circumference of more than 0.5 metres, measured at 1.4 metres above ground level;

and

– a canopy diameter of at least 4 metres;

Boundary Canopy Tree means a canopy tree if any part of its trunk is within:

– 6 metres of the narrowest street frontage of a lot; or

– 4.5 metres of the rear boundary of a lot;

new Canopy Tree means a Canopy Tree proposed to be planted. It must be a species and type that will, at maturity, have:

– an expected height of at least 6 metres above ground level; and

– an expected canopy diameter of at least 4 metres.

7.4.2 Permit requirement:

A permit is required to remove, destroy or lop a canopy tree in the Mixed Use Zone, Township Zone, Residential Growth Zone, General Residential Zone, Neighbourhood Residential Zone, and Housing Choice and Transport Zone.

This does not apply:

If the table of exemptions in clause 52.37-8 specifically states that a permit is not required. To the removal, destruction or lopping of a Canopy Tree (other than a Boundary Canopy Tree)

identified for assessment in an application to which clause 54, 55, 57 or 58 applies and the tree is not removed, destroyed or lopped until the permit is issued.

To the removal, destruction or lopping of a Canopy Tree (other than a Boundary Canopy Tree) if the site is developed with an existing dwelling.

7.5 Schedule 15 to Clause 42.03 Significant Landscape Overlay

A permit is required to remove, destroy or lop a tree. This does not apply to:

- Australian native trees less than 3 metres in height.
- Exotic trees.
- A tree listed within the incorporated document, *Environmental Weeds*, City of Greater Geelong, September 2008.
- Pruning a tree to improve its health or appearance, provided its normal growth habit is not retarded.
- A tree that presents an immediate risk of personal injury or damage to property, if only that part of the tree which presents the immediate risk is removed, destroyed or lopped.
- Pruning or lopping a tree to remove any branch that overhangs an existing dwelling or is within 2 metres of an existing dwelling.
- A tree that is dead.
- Maintaining a Minor Utility Installation to the minimum extent necessary by the relevant authority.
- Works carried out in accordance with the Geelong Street Tree Policy by or on behalf of the responsible authority.

8 VEGETATION PERMIT REQUIREMENTS

8.1 State Control exemption confirmed

The arboricultural assessment confirms that some trees do meet the technical criteria for protection under the state-level planning instrument:

- **Significant Landscape Overlay – Schedule 15:** Some trees meet the criteria for protection.
- **Clause 52.37 (Canopy Trees):** Some trees meet the criteria to be designated as a "Boundary Canopy Tree."

8.1.1 List of protected trees:

The following specimens have been audited against the Significant Landscape Overlay – Schedule 15 and the Clause 52.37 (Canopy Trees). Based on their biometric data (height, trunk circumference, and canopy spread), these trees meet the criteria for statutory protection.

Num	ID	Significant Landscape Overlay - Schedule 15	Clause 52.37	Height	Span	Stem circumference @ 1.4 m
12	Quercus robur	No	Yes	6 m	9 m	94 cm
23	Callistemon citrinus	Yes	Yes	6 m	4 m	66 cm
28	Grevillea robusta	Yes	Yes	10 m	9 m	151 cm

A Planning Permit or Local Law Permit is a non-negotiable prerequisite for the removal, destruction, or lopping of the specimens listed below. No site works—including demolition or initial clearing—should commence until a formal Permit has been issued by the Responsible Authority.

8.2 Regulatory exemption

Where subject property trees are exempt from all relevant statutory planning controls and local regulations (Clause 52.37 and Local Law), no Planning Permit is mandatory or required from the Council for the removal or modification of these trees. The removal may proceed at the discretion of the property owner, provided it is executed safely and in accordance with standard industry practices.

8.2.1 List of exempt trees:

Num	ID	Significant Landscape Overlay - Schedule 15	Clause 52.37	Height	Span	Stem circumference @ 1.4 m
9	Cercis siliquastrum	No	No	4 m	5 m	72 cm
10	Rosmarinus officinalis	No	No	2 m	2 m	16 cm
11	Pyrus communis	No	No	4 m	5 m	85 cm
13	Prunus x domestica	No	No	3 m	4 m	35 cm
14	Prunus armeniaca	No	No	4 m	8 m	85 cm
15	Viburnum tinus	No	No	3 m	2 m	28 cm
16	Viburnum tinus	No	No	2 m	1 m	16 cm
17	Citrus x limon	No	No	2 m	2 m	19 cm
18	Vitex agnus-castus	No	No	2 m	2 m	19 cm
19	Cercis siliquastrum	No	No	1 m	1 m	16 cm
20	Cercis siliquastrum	No	No	3 m	1 m	107 cm
21	Photinia x fraserii 'Robusta'	No	No	2 m	2 m	22 cm
22	Pittosporum eugenioides	No	No	3 m	2 m	16 cm
24	Camellia japonica	No	No	2 m	1 m	19 cm
25	Camellia japonica	No	No	2 m	1 m	16 cm
26	Rhamnus alaternus	No	No	2 m	2 m	19 cm
27	Abelia grandiflora	No	No	2 m	2 m	25 cm
29	Malus x domestica	No	No	4 m	6 m	63 cm

9 TREE REMOVAL

9.1 Subject property trees

The development plans for the site explicitly indicate the removal of the following trees to accommodate the proposed works:

Num	ID	Significant Landscape Overlay - Schedule 15	Clause 52.37	Height	Span	Stem circumference @ 1.4 m
9	Cercis siliquastrum	No	No	4 m	5 m	72 cm
10	Rosmarinus officinalis	No	No	2 m	2 m	16 cm
11	Pyrus communis	No	No	4 m	5 m	85 cm
12	Quercus robur	No	Yes	6 m	9 m	94 cm
13	Prunus x domestica	No	No	3 m	4 m	35 cm
14	Prunus armeniaca	No	No	4 m	8 m	85 cm
15	Viburnum tinus	No	No	3 m	2 m	28 cm
16	Viburnum tinus	No	No	2 m	1 m	16 cm
17	Citrus x limon	No	No	2 m	2 m	19 cm
18	Vitex agnus-castus	No	No	2 m	2 m	19 cm
19	Cercis siliquastrum	No	No	1 m	1 m	16 cm
20	Cercis siliquastrum	No	No	3 m	1 m	107 cm
21	Photinia x fraserii 'Robusta'	No	No	2 m	2 m	22 cm
22	Pittosporum eugenioides	No	No	3 m	2 m	16 cm
23	Callistemon citrinus	Yes	Yes	6 m	4 m	66 cm
24	Camellia japonica	No	No	2 m	1 m	19 cm
25	Camellia japonica	No	No	2 m	1 m	16 cm
26	Rhamnus alaternus	No	No	2 m	2 m	19 cm
27	Abelia grandiflora	No	No	2 m	2 m	25 cm
29	Malus x domestica	No	No	4 m	6 m	63 cm

10 TREE PROTECTION

10.1 Impact of development on trees

The integration of living trees within development projects requires careful planning and execution due to their intrinsic biological complexity and vulnerability. Trees are intricate organisms that depend on specific environmental conditions for healthy growth and are highly susceptible to stress, damage, and irreversible injury from construction activities. The subterranean root system, often extending far beyond the canopy dripline, is particularly sensitive to disturbance, and damage sustained during development can lead to long-term decline or even tree mortality. Therefore, the implementation of robust preventative measures is paramount for successful tree retention.

Effective tree protection must be considered and applied throughout every stage of the development process, from initial conceptualization to post-construction. Early identification and comprehensive assessment of valuable trees during the preliminary planning phases are crucial. This proactive approach allows for informed decisions regarding tree retention and enables the development design to seamlessly integrate existing vegetation, optimizing site utilization in a tree-sensitive manner. By understanding the extensive nature of tree root systems and canopy spreads, potential conflicts can be identified and mitigated before they become problematic, ensuring minimal negative impact on trees designated for preservation.

10.2 Structural Root Zone (SRZ)

The Structural Root Zone (SRZ) is a fundamental component of the overall Tree Protection Zone, representing the essential area required for a tree's structural stability and anchorage. It is typically modelled as a hypothetical radius around the base of the tree where the majority of critical structural roots are expected to be found. Any proposed impact or encroachment within the SRZ is considered a major disturbance and necessitates rigorous additional investigation by a qualified arborist, often involving non-destructive excavation techniques. The removal or significant severance of tree roots within the SRZ is rarely permissible due to the direct threat it poses to the tree's stability and long-term survival. It is important to note that environmental factors, such as soil type, topography, and previous site disturbance, can significantly influence the actual establishment and distribution of structural roots. The SRZ radius is also measured from the centre of the tree stem at ground level.

10.3 Notional Root Zone

The Notional Root Zone (NRZ) serves as the initial calculation for establishing a tree's critical Tree Protection Zone (TPZ). It provides a preliminary estimate of the minimum area required to support the tree's root system, based on its trunk size.

The radius of the NRZ is determined using a straightforward calculation:

Radius of the NRZ = Stem Diameter @ 1.4m × 12

Here, the stem diameter is measured at a standard height of 1.4 meters above ground level. This measurement point is commonly used in arboriculture for consistency.

The calculated NRZ radius is measured outwards from the true centre of the tree's stem at ground level.

10.3.1 Important constraints for NRZ calculation:

To ensure realistic and practical protection zones, the calculated NRZ radius is subject to specific minimum and maximum limits:

- The NRZ radius shall not be less than 2 meters. This minimum ensures that even small trees receive a basic level of root protection.
- The NRZ radius shall not be greater than 15 meters. This maximum acknowledges that root systems, while extensive, have practical limits, and an overly large protection zone may not always be warranted or feasible in developed areas.

The NRZ is a foundational element, acting as the starting point for determining the more comprehensive Tree Protection Zone (TPZ), which often requires further refinement based on specific site conditions and proposed impacts.

10.4 Tree Protection Zone

Establishing and maintaining a Tree Protection Zone (TPZ) is the most important part of protecting trees during the onsite stages of work (e.g. site establishment, demolition, construction). The TPZ is the zone determined by the project arborist as set out below.

10.4.1 Determining a Tree Protection Zone:

The Notional Root Zone is the starting point for determining the Tree Protection Zone. The TPZ should be determined using the considerations and encroachments as follows:

(a) Location and distribution of the roots.

(b) Potential loss of root mass resulting from encroachment (number of roots and diameter of roots).

(c) Tree species and tolerance to root disturbance.

(d) If the work will result in temporary (e.g. service trench) or permanent (e.g. basement car park loss of available soil volume.

(e) Age, health, current size and projected size of the tree.

(f) Presence of other trees with overlapping NRZ or grafted roots.

(g) Proposed staging and timing of excavation or root cutting.

(h) Proposed maintenance and tree care activities.

(i) Lean and stability of the tree.

(j) Soil characteristics and volume, topography and drainage.

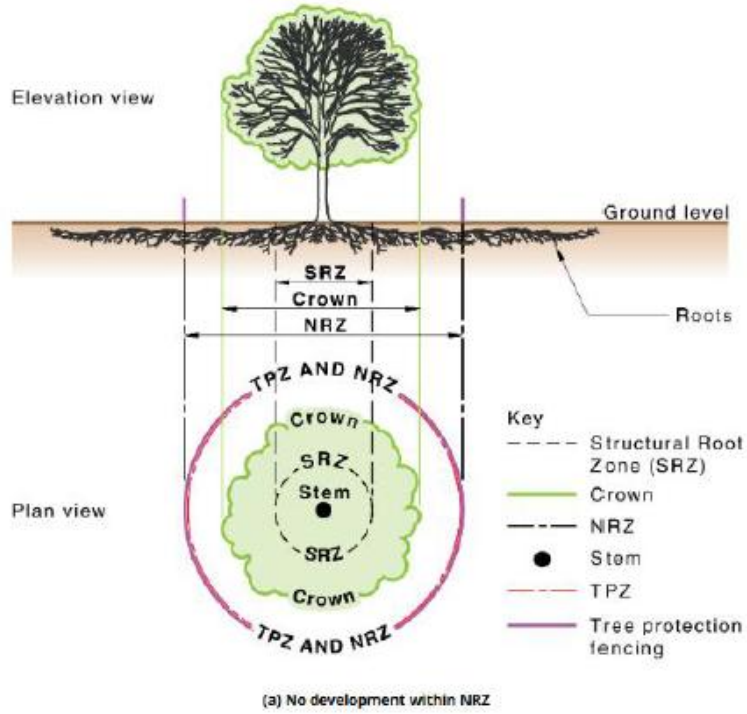
(k) Presence of existing or past structures, obstacles affecting root growth or recent encroachments.

(l) Proposed construction measures that reduce the impact on trees.

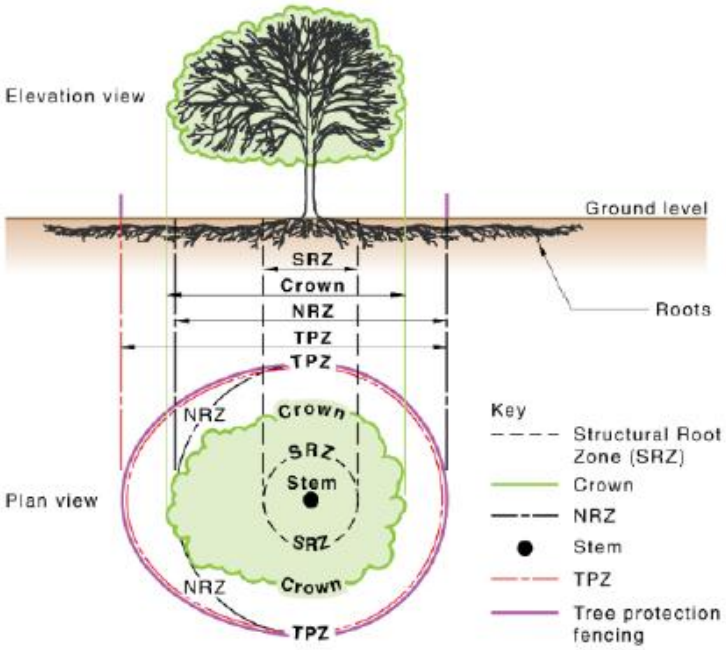
(m) Whether a root investigation is required. The location and distribution of the roots should be determined through minimal destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken and were needed to address geospatial issues; a root map should be prepared.

NOTE 1 Construction measures such as pier and beam, suspended slabs, cantilevered building sections and screw piles can reduce the impact of the encroachment.

NOTE 2 Root damage should be minimised during this process. The roots should only be exposed for as long as required to meet the purposes of the investigation.



(a) No development within NRZ



(b) No development within NRZ but with crown protection required

11 MANAGING PROPOSED ENCROACHMENTS

11.1 Tree Protection Zone encroachments

The management of development within Tree Protection Zones (TPZs) requires a balanced approach that respects both development needs and the imperative of tree preservation. Australian Standard 4970-2025 (Protection of trees on development sites) provides a robust framework for this balance.

11.2 Balancing development needs with tree preservation

Australian Standard 4970-2025 acknowledges that some level of encroachment into a TPZ may be unavoidable in urban development. It generally considers minor encroachments (defined as impacting less than 10% of the total TPZ area and occurring outside the critical Structural Root Zone) as potentially acceptable, provided appropriate mitigation strategies are employed. However, the overarching principle remains to always minimize any direct or indirect impact on trees. The aim is to integrate the built environment with the natural landscape in a way that allows both to thrive.

11.3 Benefits of tree retention

Retaining and protecting trees within development sites offers a multitude of immediate and long-term benefits that significantly enhance the project's value and sustainability:

- **Enhanced aesthetics and amenity:** Trees contribute significantly to the visual appeal of development, softening hardscapes, improving streetscapes, and creating a more pleasant environment for occupants and the broader community.
- **Environmental sustainability:** They provide crucial ecological services such as natural shade (reducing urban heat island effect and energy consumption for cooling), effective stormwater management (reducing runoff and erosion), air quality improvement (filtering pollutants), and carbon sequestration.
- **Increased property value:** Mature trees are consistently linked to higher property values and faster sales.
- **Biodiversity support:** Trees provide vital habitat, food, and shelter for various flora and fauna, contributing to local biodiversity.

- **Long-term value and resilience:** While trees may take decades to reach maturity, their long-term value can be rapidly diminished or lost due to a lack of understanding of their specific needs, particularly concerning the unseen and vulnerable root systems. Proactive, early intervention and consistent protection measures throughout the development lifecycle are therefore absolutely vital for ensuring their successful long-term survival and continued contribution to the site.

11.4 Key points for successful tree protection

Achieving successful tree protection in development hinges on several critical practices:

- **Early identification and planning:** Identifying valuable trees during the initial stages of site assessment and development planning is paramount. This allows project teams to make informed decisions about their retention, potential impacts, and necessary design adjustments, thereby minimizing the likelihood of encountering conflicts with unsuitable trees later in the project lifecycle.
- **Minimal impact design:** The development plan should be meticulously designed to actively minimize any negative impacts on trees designated for preservation. This includes thoughtful consideration of building footprints, underground services, access routes, and construction methodologies to avoid or reduce encroachment into TPZs and SRZs.
- **Consistent monitoring and management:** Effective tree protection requires continuous monitoring by qualified arborists and strict adherence to established tree protection plans throughout all demolition and construction phases.

11.5 Minor encroachments

Encroachments of less than 10% are minor and acceptable in accordance with Australian Standard 4970-2025 (Protection of trees on development sites).

The following trees will experience a minor encroachment:

Num	ID	Structural Root Zone (radius)	Tree Protection Zone (radius)	Encroachment into Tree Protection Zone
1	Agonis flexuosa	3.1 m	5.2 m	7.2%
2	Callistemon viminalis	1.5 m	2.0 m	0%
3	Agonis flexuosa	1.5 m	2.0 m	0%
4	Pyrus calleryana	1.7 m	2.5 m	7.9%

Num	ID	Structural Root Zone (radius)	Tree Protection Zone (radius)	Encroachment into Tree Protection Zone
5	Pyrus calleryana	1.7 m	2.5 m	7.9%
6	Pyrus calleryana	1.7 m	2.5 m	7.9%
7	Pyrus calleryana	1.7 m	2.5 m	7.9%

These trees experience encroachments of less than 10% within their Tree Protection Zones, which is considered a minor impact according to Australian Standard 4970-2025 (Protection of trees on development sites). Therefore, further justification is deemed unnecessary.

11.6 Moderate encroachments

When development encroaches on a tree's Tree Protection Zone (TPZ), the severity of that impact is carefully assessed. According to Australian Standard 4970-2025 (Protection of trees on development sites), an encroachment is considered moderate if it falls between 10% and 20% of the TPZ's area and remains outside the Structural Root Zone (SRZ).

While moderate, such an encroachment requires a thorough review to confirm the tree's continued viability. This assessment must consider a range of crucial factors:

- **Root characteristics:** This includes the exact location and distribution of roots, as well as the potential loss of root mass (both in number and diameter) resulting from the proposed works.
- **Tree biology:** Understanding the specific tree species and its known tolerance to root disturbance is essential. The tree's age, current health, size, and projected growth also play a significant role.
- **Site context:** Factors like existing soil characteristics, volume, topography, and drainage, along with the presence of other trees with overlapping root zones, must be evaluated. Any existing structures, obstacles, or recent encroachments that might have already affected root growth are also important considerations.
- **Work methodology & impact:** The proposed staging and timing of any excavation or root cutting are critical. It's important to determine if the works will result in a temporary (e.g., a service trench) or permanent (e.g., a basement carpark) loss of available soil volume.
- **Proposed mitigation:** A review of planned tree maintenance and care activities, as well as specific construction measures designed to reduce impact, is vital. For instance, using tree-

sensitive footing technologies like pier and beam, suspended slabs, cantilevered building sections, or screw piles can significantly minimize encroachment impact.

To accurately determine root location and distribution, minimally destructive investigation methods may be required. These can include pneumatic or hydraulic excavation, hand digging, or ground-penetrating radar.

Ultimately, minimizing encroachment can be achieved through implementing suitable design measures and construction controls as part of a comprehensive Tree Protection Management Plan. To prevent a net loss of vital soil area and volume, an equivalent area to the encroachment should generally be incorporated into the Tree Protection Zone elsewhere, unless the project arborist can explicitly demonstrate the tree's viability without such compensation.

11.6.1 Table of moderate encroachments:

Num	ID	Structural Root Zone (radius)	Tree Protection Zone (radius)	Encroachment into Tree Protection Zone
8	Melaleuca styphelioides	1.5 m	2.0 m	11.5%

11.7 Major encroachments

According to Australian Standard 4970-2025 (Protection of trees on development sites), a major encroachment into a Tree Protection Zone (TPZ) is defined by two key factors:

1. **Percentage of Tree Protection Zone area affected:** Encroachment exceeding 20% of the total Tree Protection Zone surface area is considered major.
2. **Structural Root Zone impact:** Any encroachment that occurs within the Structural Root Zone, regardless of the overall Tree Protection Zone area affected, is also classified as major.

The Structural Root Zone is a critical zone within the Tree Protection Zone that contains the majority of a tree's vital roots. Encroachment within this area can significantly impact the tree's health and stability.

The consequences for major encroachment can require any of the following:

- **Detailed assessment required:** Major encroachment triggers the need for a more detailed assessment by a qualified arborist. This may involve root mapping to determine the precise location of major roots.

- **Potential design revisions:** Depending on the severity of the encroachment and the tree's health, the development design may need to be revised to minimize impact on the tree.
- **Tree protection measures:** More stringent tree protection measures may be necessary to mitigate potential damage caused by the encroachment.
- **Reduced tree viability:** Major encroachment can significantly increase the risk of tree decline or death.

In summary, any activity that disturbs more than 20% of the Tree Protection Zone area or impacts the Structural Root Zone is considered a major encroachment under AS4970 and requires careful consideration to minimize the risk of harming the tree.

11.7.1 Table of major encroachments:

Num	ID	Structural Root Zone (radius)	Tree Protection Zone (radius)	Encroachment into Tree Protection Zone
28	Grevillea robusta	2.7 m	5.8 m	33.4%

11.8 Strategies for managing encroachments

11.8.1 Encroachment analysis (Tree 8):

The proposed development necessitates an 11.5% encroachment into the Tree Protection Zone (TPZ) of Tree 8. While this technically exceeds the 10% threshold for a "Minor Encroachment" under AS 4970-2025, the impact is considered arboriculturally negligible due to the specimen's unique physiological state and site-specific conditions.

11.8.2 Physiological state & pruning history:

Tree 8 presents as a heavily lopped, truncated stem with a severely compromised canopy architecture.

- **Historical non-compliance:** The specimen has a documented history of "Lopping," a practice strictly prohibited by AS 4373-2007 (Pruning of amenity trees). This has resulted in a tree with significantly reduced photosynthetic mass and a simplified root-to-shoot ratio.
- **Epicormic response:** Current growth is limited to a small number of developing epicormic shoots. Because the tree is not supporting a full, heavy canopy, its biological demand for water and nutrient uptake is drastically lower than that of a healthy, intact specimen.

Consequently, the loss of 11.5% of the peripheral root zone will not cause the physiological "stress" typically associated with such encroachments.

11.8.3 Compensatory ground & contiguous soil volume:

The encroachment occurs on the development side of the property boundary. Crucially, there is ample contiguous soil volume available within the neighbouring property to compensate for this minor loss.

- **TPZ radial offset:** To mitigate the 11.5% impact, the TPZ can be extended contiguously into the neighbouring property's open space. This ensures that the total volume of protected soil remains consistent with the requirements of the Standard, allowing the tree to exploit new soil areas for root expansion.

11.8.4 Mandatory supervision:

To ensure works are executed in accordance with relevant standards, all excavation within the 11.5% encroachment zone must be conducted under the direct supervision of the Project Arborist. Any roots encountered must be managed according to the Tree Protection Specifications to ensure the tree's health remains stable throughout the construction lifecycle.

11.8.5 Encroachment analysis (Tree 28):

Spatial analysis of the proposed development indicates a theoretical encroachment of 33.4% into the Tree Protection Zone (TPZ) of Tree 28. While this figure initially suggests a major disturbance, a detailed reconciliation of the site's civil requirements reveals a significantly lower actual impact:

- **Primary built form (5.6%):** The footprint of the new residential dwelling accounts for 5.6% of the TPZ. This represents a "Minor Encroachment" and is arboriculturally sustainable.
- **Infrastructure reuse (27.8%):** The remaining theoretical encroachment is attributed to the vehicle crossover and internal driveway.

To mitigate the risk of root trauma, the project utilizes a "like-for-like" infrastructure replacement strategy. The proposed vehicle crossover and driveway are designed to sit entirely within the existing footprint of the site's legacy hardscaping.

Because these elements will be constructed over previously disturbed ground with zero additional excavation or grade alterations, they are considered "physiologically inert" in relation to the current root distribution.

When the existing hardscape footprint is reconciled against the new design, the actual encroachment is reduced to 5.6%.

As this adjusted figure remains well below the 10% threshold defined by AS 4970-2025, the impact is classified as Minor. Further subterranean investigation is deemed unnecessary, provided the construction of the driveway involves only the replacement of the surface wear-course without penetrating the underlying soil profile.

12 FINDINGS

12.1 Development feasibility & vegetation removal

The proposed redevelopment necessitates a comprehensive site clearing to establish a viable construction footprint for two modern dwellings. The arboricultural assessment confirms that the majority of internal vegetation consists of compact garden species and shrubs with limited long-term amenity value.

- **Permitted removals:** A total of 18 trees (including Specimens 9–11 and 13–22) are exempt from statutory controls and may be removed at the owner's discretion to facilitate works.
- **Permit-required removals:** Three significant specimens—Tree 12 (*Quercus robur*), Tree 23 (*Callistemon citrinus*), and Tree 28 (*Grevillea robusta*)—meet the criteria for protection under the Significant Landscape Overlay (SLO15) and Clause 52.37. A Planning Permit from the City of Greater Geelong is a mandatory prerequisite before any works affecting these trees can commence.

12.1.1 Protection of third-party and public assets:

A critical constraint for this project is the preservation of vegetation situated on the Council nature strip and adjacent private properties.

- **Council assets:** Trees 1 and 2 within the nature strip must be afforded full protection.
- **Neighbouring assets:** Trees 3–8 must be retained and protected in situ.
- **Encroachment sustainability:** Modelling confirms that encroachments for most neighbouring trees remain "Minor" (<10%). The 11.5% encroachment for Tree 8 (*Melaleuca styphelioides*) is considered arboriculturally sustainable due to its poor physiological history (lopping) and the availability of compensatory soil volume within the neighbouring lot.

12.1.2 Strategic impact reconciliation: Tree 28:

Spatial analysis initially indicates a theoretical encroachment of 33.4% into the Tree Protection Zone (TPZ) of Tree 28. However, a detailed reconciliation of the civil requirements reveals a significantly lower actual impact:

- **Primary built form (5.6%):** The footprint of the new residential dwelling accounts for only 5.6% of the TPZ, which is classified as a "Minor Encroachment" under AS 4970-2025.
- **Infrastructure reuse (27.8%):** The remaining theoretical encroachment is attributed to the vehicle crossover and internal driveway. To mitigate root trauma, the project utilizes a "like-for-like" replacement strategy, sitting entirely within the existing footprint of the site's legacy hardscaping.
- **Actual impact determination:** Because these elements utilize previously disturbed ground with zero additional excavation, they are considered "physiologically inert". This reduces the actual encroachment to 5.6%, removing the need for further subterranean investigation provided the driveway construction is limited to surface wear-course replacement.

12.1.3 Mandatory management controls:

To maintain compliance with AS 4970-2025 and ensure the ongoing viability of retained trees, the following actions are required:

1. **Arborist appointment:** A Project Arborist (AQF Level 5) must be engaged to oversee TPZ installation and monitor site activity.
2. **Tree Protection Fencing (TPF):** Protective barriers must be erected around all retained TPZs prior to demolition.
3. **Statutory approval:** No site clearing involving protected trees should proceed until the formal Planning Permit is secured.

12.2 Final statement

Provided that the protection mandates and "Tree Sensitive" construction methodologies detailed in this report are strictly implemented, the development at 12 Callistemon Court is considered arboriculturally viable. The strategy effectively balances the requirement for increased residential density with the preservation of significant local canopy cover.

13 APPENDICES

13.1 Appendix A – Tree descriptors

AGE	
Young	Juvenile or recently planted approximately 1-7 years.
Semi Mature	Tree actively growing.
Mature Tree	Has reached expected size in situation.
Over Mature	The tree is over mature and has started to decline. (Senescent)

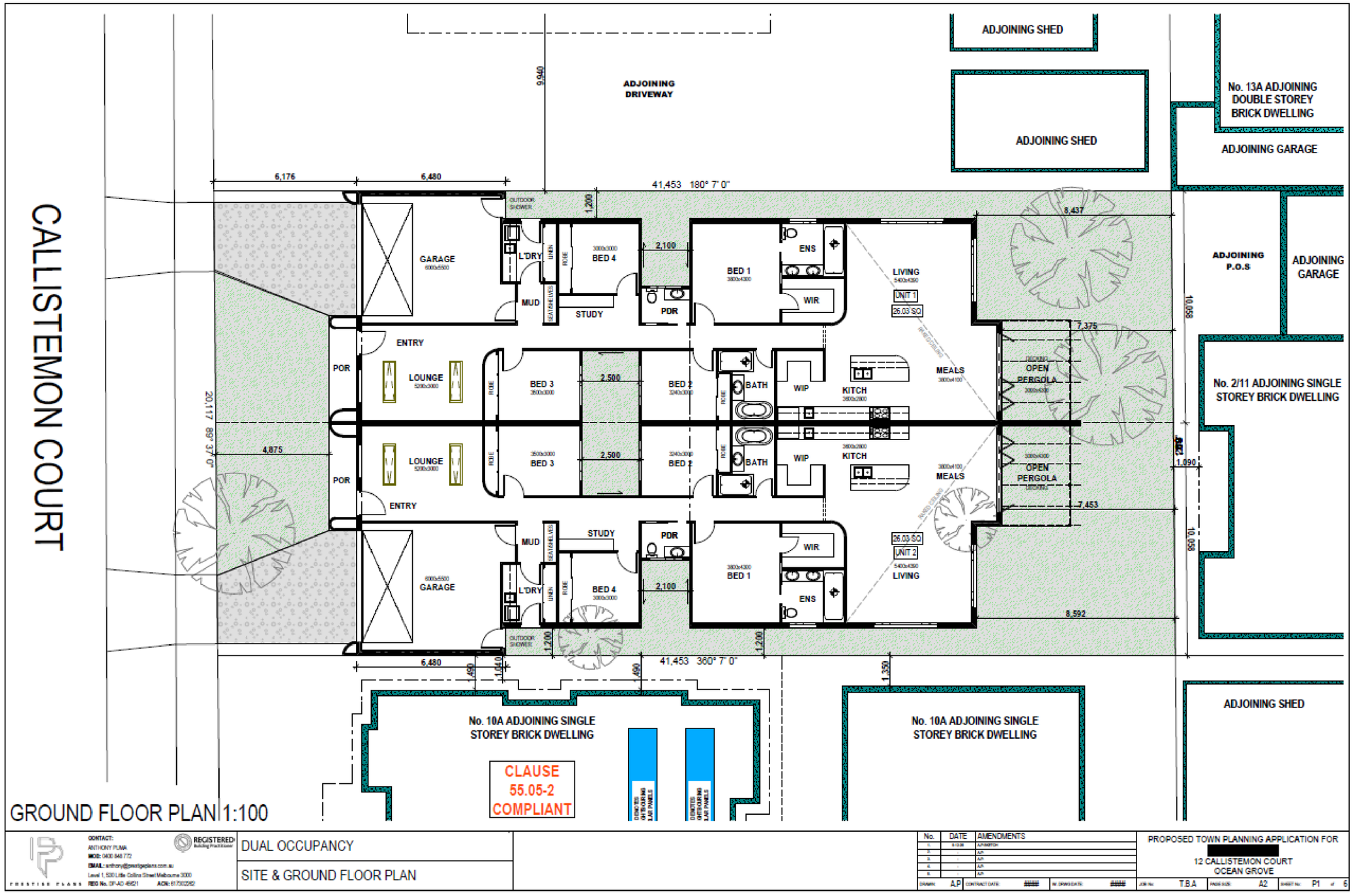
HEALTH	
Good	The foliage of the tree is entire, with good colour, very little sign of pathogens and of good density. Growth indicators are good i.e. Extension growth of twigs and wound wood development. Minimal or no canopy die back (deadwood).
Fair	Tree is showing one or more of the following symptoms; < 25% dead wood, minor canopy die back, foliage generally with good colour though some imperfections may be present. Minor pathogen damage present, with growth indicators such as leaf size, canopy density and twig extension growth typical for the species in this location.
Poor	Tree is showing one or more of the following symptoms of tree decline; > 25% deadwood, canopy die back is observable, discolored or distorted leaves. Pathogens present, stress symptoms are observable as reduced leaf size, extension growth and canopy density.
Dead or dying	Tree is in severe decline; > 55% deadwood, very little foliage, epicormic shoots, minimal extension growth.

STRUCTURE	
Good	Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of the species with a well-developed form showing no obvious root problems or pests and diseases.
Fair	Tree shows some minor structural defects or minor damage to trunk e.g. bark missing, there could be cavities present. Minimal damage to structural roots. Trees could be seen as typical for this species.
Poor	There are major structural defects, damage to trunk or bark missing. Co-dominant stems could be present or poor structure with likely points of failure. Girdling or damaged roots obvious. Tree is structurally problematic.
Hazardous Tree	Is an immediate hazard with potential to fail; this should be rectified as soon as possible.

CONDITION	
Good	Growth is 75-100% of optimum.
Moderate	Growth is 50-75% of optimum.
Moderate Poor	Growth is 25-50% of optimum.
Poor	(a) No recent increase in canopy; size less than 25% of optimum. (b) New growth, but plant less than 10% of optimum. (c) Growth less than 25% of optimum, new leaves but only slight recent increase in canopy size. (d) Growth less than 25% of optimum, major stem resprouting.
Dead	Plant is dead.

USEFUL LIFE EXPECTANCY	
Short	Tree may be dead or mostly dead. Trees may exhibit major structural faults. Tree may be an imminent failure hazard. Excessive infrastructure damage with high-risk potential cannot be remedied. Trees are 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. The tree has outgrown site constraints. The trees is exhibiting chronic decline. Crown density will be less than typical and epicormic growth is likely to be 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.
Medium	Trees do not show symptoms of chronic decline, but growth characteristics are likely to be reduced (bud development, extension growth etc.). The tree may be over-mature and senescing. Trees display normal growth characteristics. Trees may be growing in restricted environment (e.g. Streetscapes) or may be in late maturity. Semi-mature and mature trees exhibiting normal growth characteristics. Juvenile trees in streetscapes.
Long	Generally juvenile and semi-mature trees exhibit 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.

13.2 Appendix B – Development plans



14 REFERENCES

Australian Standard 4970-2025 (Protection of trees on development sites)

Australian Standard 4373-2007 (Pruning of amenity trees)

Vicplan (mapshare.vic.gov.au)

Google Maps

MapBrowser | Nearmap

15 TERMS & LIMITATIONS

Report Integrity:

- This report is a complete and final document prepared by ATC Land Management and must not be altered in any way. Any unauthorized modifications will render the report invalid.

Disclaimer of Liability:

- Trees are living organisms subject to natural processes, environmental changes, and extreme weather events. Our inspection, conducted by qualified personnel, relies on visual assessment of tree health and structure from the ground. While thorough, this method may not detect hidden defects. We cannot guarantee the absolute condition or safety of the trees beyond what's reasonably assessed during the inspection. Regular inspections are recommended, and our staff can advise on the appropriate frequency.

Report Objectivity and Accuracy:

- This report is free from bias and reflects the honest professional opinion of the consulting Arborist, based on the client's provided information and relevant research. All details, information, and recommendations are based on research and referenced where applicable. Without references, determinations are made using the experience and observations of the Certified Arborist who prepared the report.

Limitations of Representation:

- Pictures, diagrams, graphs, and other reference materials within this report are not guaranteed to be perfectly scaled. Measurements and values are made to the best of the Arborist's ability at the time of inspection and report creation.

Interpretation and Discussion:

- Discussions regarding specific points within this report are discouraged as they may be taken out of context. Discussions should focus on the entire report. Similarly, discussions concerning the actions of third parties regarding the trees are not included within the scope of this report.

Governing Law and Dispute Resolution:

- This agreement and the report shall be governed by and construed in accordance with the laws of Victoria, Australia. In the event of a dispute arising from this report, the parties agree to attempt to resolve the dispute amicably through mediation.

Entire Agreement:

- These terms and conditions, together with the Arborist Report, constitute the entire agreement between the parties and supersede all prior or contemporaneous communications, representations, or agreements, whether oral or written.

By accepting this report, the client acknowledges that they have read, understood, and agree to be bound by these terms and conditions.

ATC
LAND MANAGEMENT

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