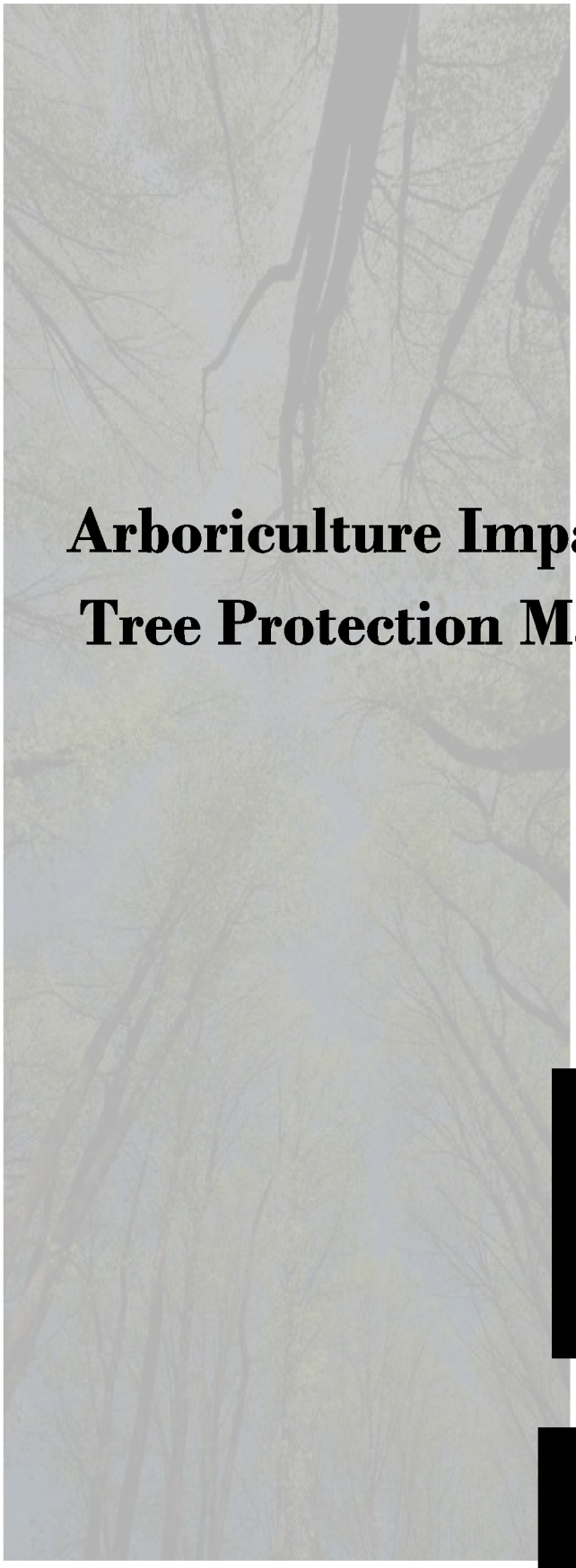


[redacted]

Arboriculture Impact Assessment & Tree Protection Management Plan.

11 Gotemba Road, Bell Post Hill.

December, 2025

Assessment & Report Commissioned By:

[redacted]

Assessment & Report Prepared By:

[redacted]

Contents

[redacted]

[redacted]

Introduction

This **Arboriculture Impact Assessment (AIA) and Tree Protection Management Plan (TPMP)** has been commissioned by [redacted] in relation to Planning Permit Applications for development at 11 Gotemba Road, Bell Post Hill.
This report has been commissioned to provide information regarding the construction of the proposed development, specifically addressing its potential impact on a single verge tree.

For the purposes of submitting a removal application, details pertaining to *Clause 52.37 Tree Canopy* for trees located within the property are required.

Key Objectives

Provide data on tree including:

- Species Identification;
- Estimate age (e.g. juvenile, semi-mature, mature, over mature);
- Safe Useful life expectancy;
- Health;
- Structure;
- Arboricultural Significance;
- Notional Root Zone (NRZ)
- Structural Root Zone (SRZ);
- Tree Protection Zone (TPZ);
- Recommended Design Response for surrounding areas proposed for landscaping;
- Images / photos;

TREE INSIGHT
ARBORICULTURE CONSULTING

PO Box 73, Leopold
Victoria, 3224
ABN: 12754274007

Jay Pritchard
0488 677 998
treeinsight@outlook.com

• Proposed protection fencing locations.

- Assess the development impact of the trees on site as identified within the provided site plan in Appendix 1, as per **AS 4970-2025 The protection of trees on development sites**.

- Provide recommendations regarding potential problems resulting from major impact on Trees Protection Zones if applicable.

Clause 52.37 Canopy Trees

The clause requires a planning permit to remove, destroy or lop a canopy tree in specific circumstances. The requirement applies to all residential zones (except for Low Density Residential Zone).

Clause 52.37 requires a permit to remove, destroy or lop a canopy tree. A 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 (NRZ of .16 (m)), measured at 1.4 metres above ground level; **and**
- a canopy diameter of at least 4 metres.

Stages of Development and the Tree Management Process

The below table represents a guide for all parties involved in construction works within a particular site to ensure the long term health and vigor of trees involved.
Some stages within this process may not be deemed applicable by the governing bodies or other site representatives.

Stage of Development	Tree Management Process		Site Status	Sign Off & Date
Planning	**Matters for consideration**	**Actions and Certification**		
Detail surveys	Council plans and policies Planning instruments and controls Heritage Threatened species	Existing trees accurately plotted on survey plan	Complete	
Preliminary tree assessment	Hazard/risks Tree retention value	Evaluate trees suitable for retention and mark on plan Provide preliminary arboricultural report and indicative TPZs to guide development layout	NA	
Preliminary development design	Condition of trees proximity to buildings Location of services Roads Level changes Building operations space Long-term management	Planning selection of trees for retention. Design review by proponent. Design modifications to minimize impact to trees.	Complete	
Development submission	Identify trees for retention through comprehensive arboricultural impact assessment of proposed construction. Determine tree protection measures Landscape design	Provide arboricultural impact assessment including tree protection plan (drawing) and specification	In Progress	
Development approval	Development controls Conditions of consent	Review consent conditions relating to trees	To be determined	

Stage of Development	Tree Management Process		Site Status	Sign Off & Date
Pre-Construction				
Initial site preparation	State based OHS requirements for tree work Approved tree retention/removal Refer to AS 4373 for the requirements on the pruning of amenity trees Specifications for tree protection measures	Compliance with conditions of consent. Tree removal/tree retention/transplanting. Tree pruning. Certification of tree removal and pruning. Establish/delineate TPZ. Install protective measures. Certification of tree protection measures.	Certified 3 Arborist Cert 5 Arborist Building Contractor	
	Construction			
Site establishment	Temporary infrastructure Demolition, bulk earthworks, hydrology	Locate temporary infrastructure to minimize impact on retained trees. Maintain protective measures. Certification of tree protection measures.	Building contractor and Project Arborist	
Construction work	Liaison with site manager, compliance Deviation from approved plan	Maintain or amend protective measures. Supervision and monitoring	Project Arborist	
Implement hard and soft landscape works	Installation of irrigation services Control of compaction work Installation of pavement and retaining walls	Remove selected protective measures as necessary. Remedial tree works Supervision and monitoring.	Project Arborist and Building Contractor	
Practical completion	Tree vigour and structure	Remove all remaining tree protection measures Certification of tree protection	Project Arborist	

[redacted]

Methodology

For the preparation of this AIA and TPMP, Architectural drawings (Proposed Conditions – Ground Floor. DRWG:775-TP-01A. Dec 2025) Appendix 1 & (Features Plan) Appendix 2 have been provided of the proposed development site which portrays the following.

- Proposed 2 dwelling construction.
- Proposed 2 new concrete driveways and crossovers.

Notional Root Zones (NRZ) and Structural Root Zones (SRZ), if applicable, have been overlaid onto provided drawings (Appendix 1) to scale to identify impact percentages and encroachments for this report.

- **Notional Root Zone (NRZ)**, which is calculated by measuring the diameter of trunk at 1.4m above ground level (unless stated otherwise) and multiplying by 12, then measuring as a radius from the tree base.

- **Structural Root Zone (SRZ)** which is measured at base of tree and implemented into the formula. SRZ radius = (D*50) .42 *0.64. This SRZ data will only come into consideration if a dramatic encroachment was to develop.

- NRZ information resulting in proposed impacts will be overlaid onto the drawings shown in Appendix 1. These overlays are to scale when determining the data discussed in Table 2 below.
  This scale may have been altered whilst importing into this document.

- Descriptors relating to health and structure of the tree which are detailed in *Table 1* are situated within Appendix 4.

[redacted]

Tree Encroachment Categories:

The following categories will help to define the extent of recommendations to avoid damaging the tree's root system when implementing the proposed works.

Percentages of encroachment that relate to either Minor, Moderate or Major encroachment categories are determined through the total TPZ area of the tree and the area calculated from encroachment of development.

- **Minor NRZ encroachments** If the proposed encroachment is less than or equal to 10% of the area of the NRZ and is outside the SRZ, detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the NRZ.

- **Moderate NRZ encroachment** The proposed encroachment is considered moderate if it is greater than 10 % and less than or equal to 20 % of the area of the NRZ and is outside of the SRZ. A project arborist shall be engaged to review the proposed impact and undertake any other necessary investigation to address the factors listed in Clause 3.3.2 to demonstrate how the tree will remain viable. This may be through the implementation of suitable design measures and construction controls to mitigate impacts during the development process as part of a TPS and TPP. To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ, unless the project arborist otherwise demonstrates that the tree will remain viable.

- **Major encroachments** The proposed encroachment is considered major if it is greater than 20 % of the area of the NRZ or inside the SRZ. The project arborist shall be engaged to explore alternative designs with the design team and/or demonstrate that the tree will remain viable. Relevant factors listed in Clause 3.3.2 should also be considered. For assessment of major encroachment a more detailed investigation is necessary. This can include research such as root investigation, soil analysis, historical records of the tree or site, relevant literature and examples of similar

encroachments. A TPS and TPP should be prepared to support the retention of the tree. To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ, unless the project arborist otherwise demonstrates that the tree will remain viable.

When determining the potential impacts of encroachment into TPZ, the Project Arborist will consider the requirements as per **AS 4970-2025** ***3.3.2 TPZ encroachment considerations***. Appendix 3.

[redacted]

Observations

The Consulting Arborist received a site drawing of the proposed development at 11 Gotemba Road, Bell Post Hill.

1 verge tree situated on Gotemba Road requires impact assessment for crossover installation (T1).

Information required for Clause 52.37 Canopy Trees to support the tree removal (Tree 2,3,4,5,6) permit application is outlined in Table 1 below.

Table 1. Tree Data:

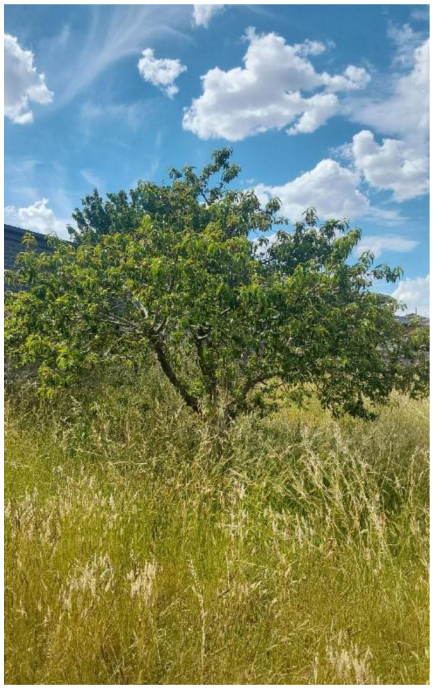
Tree No.	Genus	Species	Common Name	Origin	Age	Height	Structure	Health	ULE	Arboriculture Significance	Buttress Diameter (m)	DSH stem 1 (m)	DSH stem 2 (m)	DSH Stem 3 (m)	Canopy Spread	Canopy M^2	Clause 52.37 Canopy Trees Y/N	DSH @ 1.4m (Single)	DSH @ 1.4m (Multi)	TPZ (m radius)	SRZ Radius (m)	Comments
1	Pyrus	ussuriensis	Manchurian pear	Exotic	Semi Mature	7	Fair	Good	Long (b)	Moderate	0.30						NA		0.25	3.00	2.00	DSH: 19,13,9,10 (cm)
2	Prunus	dulcis	Almond Tree	Exotic	Mature	3	Poor	Good	Med (c)	Low	0.21	0.12	0.1	0.09	4	12.6	N		0.18	2.16	1.72	Proposed to be removed
3	Prunus	armeniaca	Apricot	Exotic	Mature	3.5	Fair	Good	Med (c)	Low	0.31	0.18	0.15	0.1	4	12.6	N		0.25	3.06	2.02	Proposed to be removed
4	Pyrus	sp	Pear Tree	Exotic	Mature	4.5	Good	Good	Med (c)	Low	0.28	0.12	0.13	*	4	12.6	N		0.18	2.12	1.94	Proposed to be removed
5	Malus	sp	Apple Tree	Exotic	Mature	4.5	Fair	Good	Med (c)	Low	0.27	0.09	0.08	0.09	3	7.1	N		0.15	1.80	1.91	Proposed to be removed
6	Malus	sp	Apple Tree	Exotic	Mature	4	Fair	Good	Med (c)	Low	0.25	0.10	0.09	0.09	4	12.6	N		0.16	1.94	1.85	Proposed to be removed

City of Greater Geelong assets

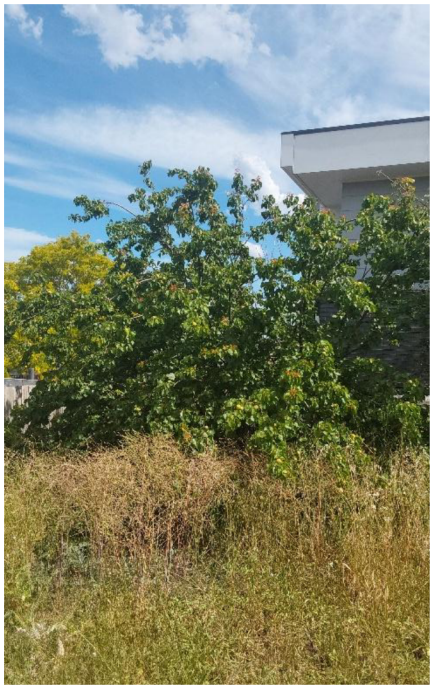
[redacted]

Tree Photos

Tree 1:



Tree 2:



Tree 3:

Tree 4:

Tree 5:

Tree 6:

Impact Assessment

Discussion

Architectural drawings of the proposed site have been provided to the Consulting Arborist to analyze a single verge tree to be retained on council verge.

Measurements of the tree to be retained were taken to determine the Notional Root Zones (NRZ) and Structural Root Zones (SRZ), and overlayed onto the provided plans.

The data below in Table 2 has been assessed for impacts on a single verge tree (T1) associated with the construction of a multiple crossovers, driveways and pedestrian access into proposed dwellings 1 & 2.

5 trees (Tree 2,3,4,5,6) have been assessed in relation to Clause 52.37 Canopy Trees for proposed removal. All 5 trees assessed have not been deemed as canopy tree status.

NO Encroachments as per Australian Standards **AS: 4970-2025 The protection of trees on development sites** apply to this site on Tree 1.

Table 2. Encroachment Evaluation

	Total TPZ Area m^2	Encroachment Area m^2	Encroachment %
Tree 1	28.2	0	Nil

Table 2 shows that NO encroachment into the Notional Root Zone of trees associated with the proposed site have occurred.

Tree 1

As per AS4970-2025 Protection of trees on development sites, NO impacts have been measured on Tree 1 through the construction activity proposed. This confirms that the proposed works will not affect the health or stability of Tree 1.

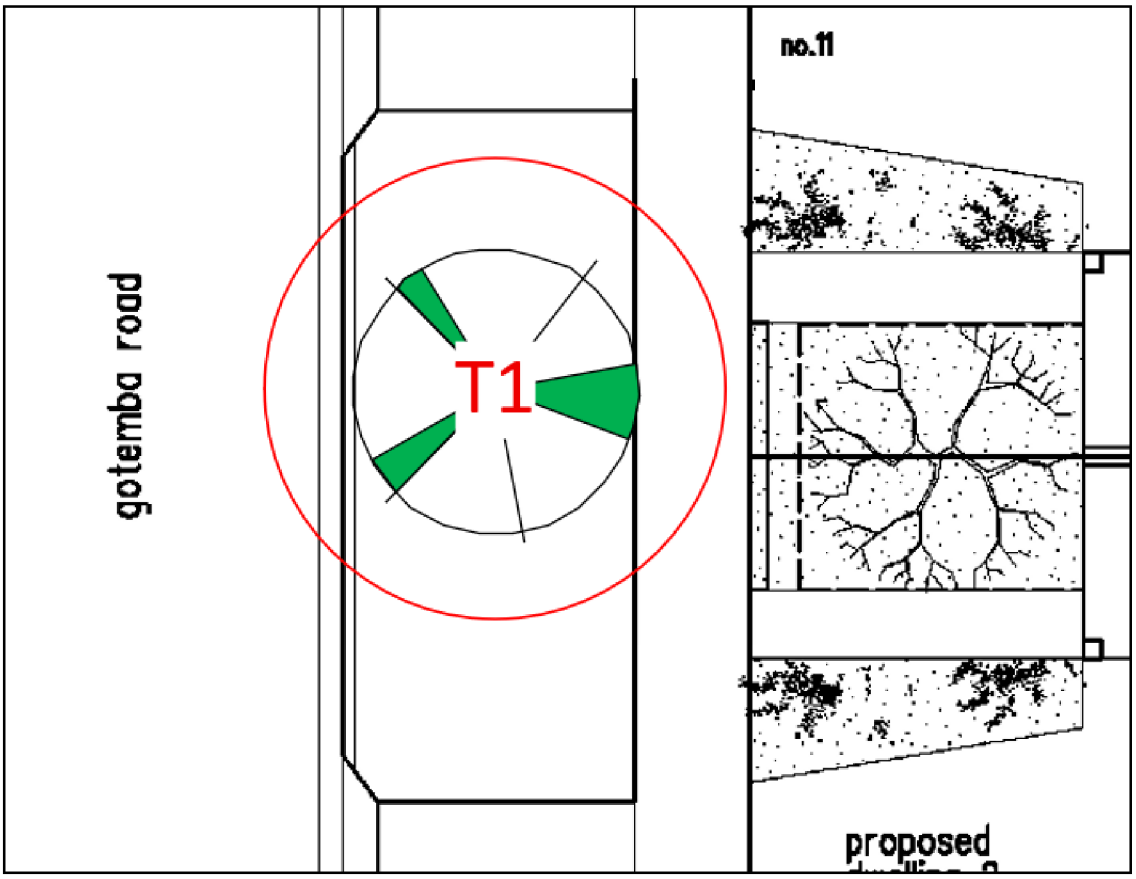


Figure 1.

Tree Management Plan

Tree Protection Measures

Tree protection measures are a way of protecting trees either on a development site or on neighbouring properties. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the trees remain viable.

TPZ fencing is to be installed within the verge around Tree 1. This measure will isolate the TPZ of the verge tree in accordance with AS4970-2025.

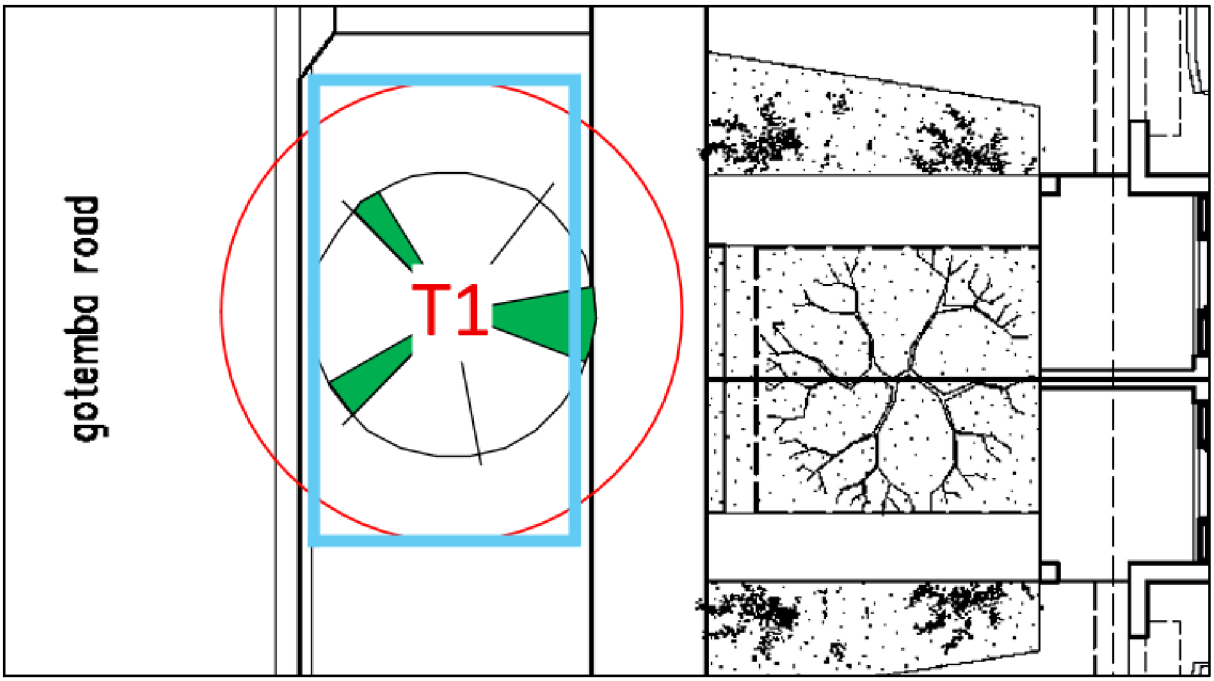


Figure 3. TPZ fence construction (blue line) within the verge around Tree 1.

Tree protective fence construction shall be constructed within the verge and to a dimension of 6m long by 3m wide. This ensures adequate isolation of the TPZ and complies with the recommended protection standards for Tree 1.

Activities restricted within the TPZ

Activities generally excluded from the TPZ include but are not limited to—

machine excavation including trenching;

excavation for silt fencing;

cultivation;

storage;

preparation of chemicals, including preparation of cement products;

refuelling;

dumping of waste;

wash down and cleaning of equipment;

placement of fill;

lighting of fires;

temporary or permanent installation of utilities and signs, and

physical damage to the tree.

Tree Protection Fence Specifications.

The temporary fencing below will be required to be used on site for TPZ fencing.

The construction of all TPZ fences and ground protection on site shall be erected 2 weeks before any works commence on site and maintained until works are completed to the satisfaction of the responsible authority.

Erecting of TPZ fencing shall be carried out to the satisfaction of the Responsible Authority and overseen by suitably trained and qualified Arboriculture staff.

Any construction works that are required within the nominated Tree Protection Zones must be overseen by a suitably qualified, Level-5 Arborist.

Tree Management Plan and TPZ restrictions are to be advised to all trades on site with no storage of materials or access into TPZ's without the authority of the overseeing Arborist. Adherence to *Australian Standard 4970-2025 Protection of trees on development sites* is required by all construction workers on site.

Appendix 5 shows a Tree Protection Zone sign that is required to be placed on all tree protection fences.

Summary

The calculations of the NRZ were used to determine if root disturbance would affect the proposed development.

NO encroachments, as per *AS 4970-2025 Protection of trees on development sites*, were identified on a single verge tree (Tree 1).

The construction of the TPZ fences on the shall be erected **2 weeks** before any works commence on site and to the satisfaction of the responsible authority and must remain maintained until the landscaping works on site are required to be performed within the TPZ fences.

TPZ fencing surrounding the verge trees shall remain in place for the duration of the construction process.

The construction of the TPZ fences shall be erected to the scope described in Tree Protection Measures above and locations advised by Consulting Arborist.

Arborist supervision is required for installation of TPZ fencing to ensure correct placement.

Appendix 5 shows a Tree Protection Zone sign that is required to be placed on all tree protection fences.

Tree Management Plan and TPZ restrictions are to be advised to all trades on site with no storage of materials or access into TPZ's without the authority of the overseeing Arborist. Adherence to *Australian Standard 4970-2025 Protection of trees on development sites* is required by all construction workers on site.

At the conclusion of the works and before seeking Statement of Compliance, the Project Arborist must submit a written statement to the responsible authority that certifies that the above points have been addressed.

References

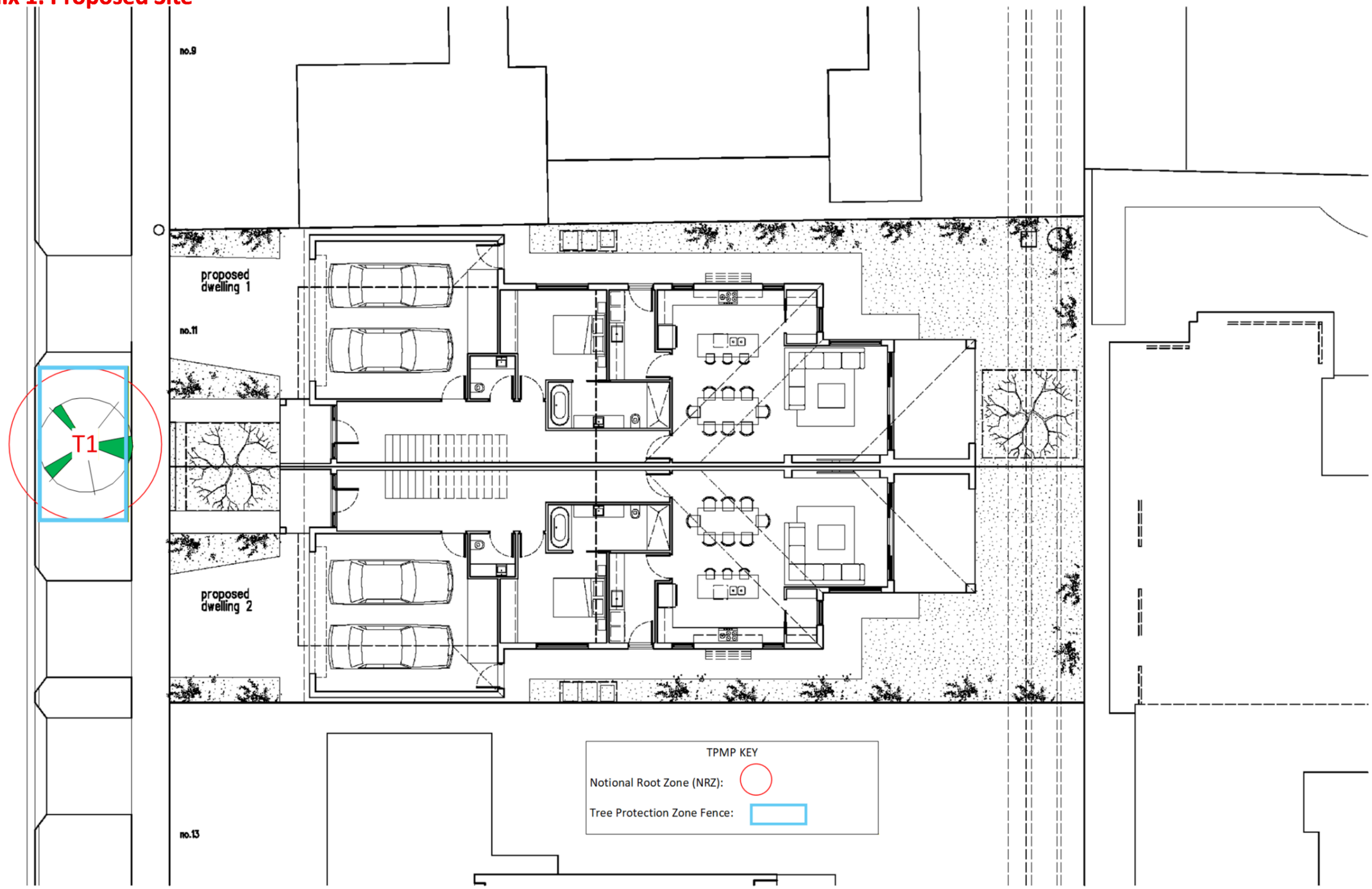
Council of Australian Standards (2025), *Australian Standard; Protection of trees on development sites; AS 4970-2025,* Standards Australia, Sydney Australia.

[redacted]

Report Assumptions:

[redacted]

Appendix 1. Proposed Site



proposed conditions - ground floor level

proposed two x two storey dwellings
11 gotemba road, bell post hill

SCALE: 1:100 @ A2
DATE: DECEMBER 2025
DRWG 775-TP-01-A

north

proposed dwelling 1		
dwelling gfl	86.5m2	(9.3sq)
dwelling ffl	56.6m2	(6.1sq)
verandah	20.7m2	(2.2sq)
garage	39.6m2	(4.3sq)
total	203.4m2	(21.9sq)

proposed dwelling 2		
dwelling gfl	63.0m2	(6.8sq)
dwelling ffl	69.0m2	(7.4sq)
verandah	18.1m2	(1.9sq)
garage	36.9m2	(4.0sq)
total	187.0m2	(20.1sq)

[redacted]

Appendix 2. Existing Site

GOTEMBA ROAD

TBM RIVET
AHD 59.38m

BACK OF CONCRETE KERB

CONC PATH

CONC DRIVE

PALINGS

NOT FENCED

PIN IN POST

NAIL IN POST

GATE

DOUBLE STORY DWELLING

DOUBLE STORY BRICK DWELLING

BALCONY

VERANDA

BRICK DWELLING

No. 9 GOTEMBA ROAD

No. 11 GOTEMBA ROAD

No. 13 GOTEMBA ROAD

96°48' 18.60

6°48' 36m

185°56'40" 36m

276°48' 19.13

60m

59m

E-1

GOTEMBA ROAD BUILDING OFFSETS

No. 17 VACANT | No. 15 VACANT | No. 13 | 5.68 | No. 11 VACANT | No. 9 | 4.95 | No. 7 | 5.82 | No. 5 | 6.05

NAIL AT 1m OFFSET IN BOTTOM RAIL

NAIL AT 1m OFFSET IN TOP RAIL

GROUND FLOOR WINDOWS

SPOUT

CONC BK WALL

MGA 2020 ZONE 55

[redacted]

OFFICE USE ONLY

NOTATIONS

LAND SUBJECT TO EASEMENT
E–1: DRAINAGE AND SEWERAGE 3m WIDE

Property Address: 11 GOTEMBA ROAD,
BELL POST HILL 3215
Date of Survey 28/4/2025
PRINCIPAL: ZDENKP TABAK

OTHER NOTATIONS

HEIGHTS ARE TO AUSTRALIAN HEIGHT DATUM

CONTOUR INTERVAL IS 0.2m

CERTIFICATION BY SURVEYOR

I, [redacted]
OF.
certify that this plan correctly represents the results of the survey effected under my direction and supervision and marked on the ground in accordance with the Surveying Act 2004, that the survey accuracy accords with that required for LEVEL LAND as defined in regulation 7 (1) of the Surveying (Cadastral Surveys) Regulations 2015 and that this plan correctly represents the adopted boundaries and the related features existing on 28/4/2025

Date:

Licensed Surveyor,
Surveying Act 2004

THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARK NOS. 34, 439, 440
IN PROCLAIMED SURVEY AREA NO. –

THE LAND IN THE SURVEY IS SHOWN ENCLOSED BY CONTINUOUS THICK LINES
TITLE REF: 10293/068
LAST PLAN REF: 27/PS348452W

PLAN OF SURVEY

COUNTY GRANT
PARISH MOORPANYAL
CROWN ALLOTMENT 93 (PART)

NUMBER OF SHEETS 1
SHEET NOS 1

SCALE 2 0 2 4 6 8
LENGTHS ARE IN METRES

ORIGINAL
SCALE 1:200
SHEET SIZE A3

OFFICE USE ONLY

Appendix 3.

3.3.2 Considerations in determining the TPZ

When determining a TPZ the following factors should be considered where relevant:

(a) Location and distribution of the roots.

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

(c) Tree species and tolerance to root disturbance.

(d) If the works will result in a temporary (e.g. service trench) or permanent (e.g. basement carpark) 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 tree 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 minimally destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken and, where 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 encroachment.

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

Appendix 4.

TREE DESCRIPTOR

AGE

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

HEALTH

Good	Foliage of tree is entire, with good colour, very little sign of pathogens and of good density. Growth indicators are good ie. 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, discoloured 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, possibly 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 eg. bark missing, there could be cavities present. Minimal damage to structural roots. Tree 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.

ARBORICULTURE SIGNIFICANCE

Low; Trees that offer little in terms of contributing to the future landscape for the reasons of poor health or structural condition, species suitability in relation to unacceptable growth habit, noxious, poisonous or weed species or ULE, or a combination of these characteristics. Should be considered for removal.

Moderate; Trees with some beneficial attributes that may benefit the site in relation to botanical, horticultural, historical or local significance but may be limited to some degree by their future growth potential at the site by maintenance requirements now or in the future. These trees should be considered for retention if possible within the development design, they may be modified to allow for construction. (eg. pruning, etc;)

High; Trees with the potential to positively contribute to the site due to their botanical, horticultural, historical or local significance in combination with good characteristics of structure, health and future development. Should be considered for inclusion within development plans.

SAFE USEFUL LIFE EXPECTANCY

1:Long SULE:

Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.

(a) Structurally sound trees located in positions that can accommodate future growth.

(b) Trees that could be made suitable for retention in the long term by remedial tree care.

(c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.

2: Medium SULE:

Trees that appeared to be retainable at the time of assessment for 15–40 years with

an acceptable level of risk.

(a) Trees that may only live between 15 and 40 more years.

(b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.

(c) Trees that could live for more than 40 years but may be removed to prevent interference with

more suitable individuals or to provide space for new planting.

(d) Trees that could be made suitable for retention in the medium term by remedial tree care.

3: Short SULE:

Trees that appeared to be retainable at the time of assessment for 5–15 years with an acceptable level of risk.

(a) Trees that may only live between 5 and 15 more years.

(b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.

(c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.

(d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.

4: Remove:

Trees that should be removed within the next 5 years.

(a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.

(b) Dangerous trees because of instability or recent loss of adjacent trees.

(c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.

(d) Damaged trees that are clearly not safe to retain.

(e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.

(f) Trees that are damaging or may cause damage to existing structures within 5 years.

(g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f).

(h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.

5: Small, young or regularly pruned:

Trees that can be reliably moved or replaced.

(a) Small trees less than 5m in height.

(b) Young trees less than 15 years old but over 5m in height.

(c) Formal hedges and trees intended for regular pruning to artificially control growth

Appendix 5. TPZ Sign