Molloy Arboriculture Pty Ltd

Arboricultural Impact Assessment Report

Tuesday, 17 January 2023

Site Address:

Cerini Centre, Warburton

Prepared for:

Warburton Advancement League Inc

Prepared by:

Simon Molloy
Arboricultural Consultant
P.O. Box 95 Ringwood East 3135
simon.molloy@bigpond.com
0418 443 554
ABN: 17 155 421 837

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The purpose of this report is to provide the findings of an assessment of one hundred and sixty (160) trees on and adjacent the subject site and to determine the impact of proposed works on the long-term vigour of the trees to be retained. The report is to recommend tree protection measures, alternative construction measures, and modification to the design as required enabling successful retention of trees on neighbouring properties or of high value on the subject site. *AS 4970-2009, Protection of Trees on Development Sites* has been referenced and all measurements are based on the standard.

Site visits were conducted on Tuesday, 29 November, Wednesday, 30 November, and Thursday, 1 December 2022 for the purposes of data collection and to assess tree and site conditions.

Proposed works are for the removal of vegetation, construction of new roadways and several dwellings with attached carports and car parking areas.

The trees on the site surveyed are a mix of planted exotics, self-sown exotic weed species, planted natives, and naturally occurring indigenous trees.

Works to construct the roadways require significant earthworks and removal of trees with no alternative construction methodology available. Minor adjustment of the alignment is recommended to reduce the impact on large neighbouring trees with supervision also required.

The proposed dwellings are to be constructed on piers and are lightweight structures that would generally allow for retention of trees. Due to the Bushfire Management Overlay, all trees within 25 metres of the dwellings require removal of any overhanging branches and canopies to be separated by a minimum of 5 metres.

A large number of weed species are present with all on the site recommended to be removed. Additionally a number of planted native, exotics, and self-sown indigenous trees are required to be removed to allow for works.

Due to the nature and extent of works, a Tree Prote4ction Management Plan is recommended to manage works adjacent retained trees

2. SCOPE AND REPORT OBJECTIVES

This report is prepared at the request of David Pratt, Vice President Warburton Advancement League to prepare an Arboricultural Impact Assessment Report incorporating an Arboricultural Assessment in accordance with *Australian Standard AS4970-2009 Protection of Trees on Development Sites* as part of supporting documentation for works to develop the site into medium density housing.

The report covers in detail one hundred and sixty (160) significant tree features on and adjacent the subject site that may be impacted by proposed works.

The report objectives are:

- To number and identify to Genus/Species any significant tree features on and adjacent the subject site likely to be affected by proposed works;
- To assess the vigour, structure and overall condition of the surveyed trees;
- To provide an arboricultural value based on observed characteristics;
- To provide recommendations for tree retention or removal based on observed characteristics;
- To determine the impact of the proposed works on retained trees in accordance with *AS4970-2009* and provide general tree protection guidelines;
- Provide recommendations for alternative construction techniques or modification to the design as required; and
- Provide management methodology to ensure the ongoing viability of retained trees.

3. FACTS, MATTERS AND ASSUMPTIONS

- It is assumed that the root distribution of all trees on site is largely symmetrical unless otherwise stated and that no previous root damage has occurred where none is currently visible;
- It is assumed that the growing conditions for the subject trees does not manifestly change over the time prior, during or after the proposed development takes place other than as a result of proposed works;
- It is assumed that all drawings and their contents used in preparation of this report are true and correct; and
- Any Feature survey and landscape plans are included for illustrative purposes only.

4. SITE ANALYSIS AND SURVEY METHODOLOGY

4.1. Site Analysis

The subject site is comprised of six separate lots, which are all directly adjacent to each other with the total area over 4000m^2.

The majority of the lots are not occupied by any buildings or structures with a gravel driveway entering the site from Park Road. An existing building sits at the south eastern extent of the site and is currently not in use.

A small drainage channel runs from south to north along the eastern side with the Four Mile Creek running on the western side. The site slopes gently up from Riverside Drive end with steep slopes adjacent the Four Mile Creek.

4.2. Planning and Local Regulations

The subject site is located at Cerini Centre, Warburton within the Shire of Yarra Ranges. The site is covered by a *Schedule Low Density Residential Zone* (LDRZ), *Bushfire Management Overlay* (BMO), *and Significant Landscape Overlay – Schedule 22* (SLO22) with no other planning overlays found.

Vegetation removal on and adjacent the subject site is subject to the controls contained within the SLO22 and Clause 52.17 *Native Vegetation*. Various species are exempt as listed within the Yarra Ranges Council List of Environmental Weeds 2019.

4.3. Survey Methodology

Simon Molloy of Molloy Arboriculture Pty Ltd conducted a site visit on Friday, 2 September 2022 for the purposes of data collection and to assess tree and site conditions. Detailed data is contained within the Tree Data table in section 8 and tree numbers correspond to the plan located at section 10.

- The subject trees were identified to Genus/Species in the field and is considered as common with no samples taken for further identification;
- The subject trees were assessed from observations made as viewed from ground level with no trees climbed to conduct an upper canopy inspection. Assessment was limited only to parts of the trees visible with defects not visible from the ground excluded from any discussion or recommendations;

- A digital camera was used at ground level to gather photographic evidence. No alterations have been made to any photographs;
- Tree data was recorded digitally using a hand held PDA and converted to an Excel® spreadsheet;
- Height has been measured using a Nikon Forestry Pro hypsometer with canopy width paced out on site. Canopy width is the widest point of the canopy in a single direction;
- Trunk diameter was measured at 1.4 metres (nominal) above ground level using a Yamayo diameter tape. Where access to the tree was not available an estimate has been made using reference points;
- Data has been collected to calculate the Tree Protection Zone (T.P.Z.) in accordance with *AS4970-2009 Protection of Trees on Development Sites*;
- No soil, plant material or pest and disease samples were taken for further assessment;
- Species listed within the Yarra Ranges Council List of Environmental Weeds 2019 have been provided a numerical identifier and identified to Genus, species and common name only;
- Limited data has been collected for dead natives to allow for determination of permit requirements.

4.4.Documents Viewed

The following documents have been viewed during the preparation of this report:

- Plans prepared by Warburton Advancement League Inc dated December 2022;
- Preliminary Bushfire Planning Advice prepared by Terramatrix dated November 2022;
- Department of Environment, Land, Water And Planning (2018) Planning Property Report, Cerini Centre, Warburton [accessed from http://mapshare.maps.vic.gov.au/vicplan/ , on 29/11/2022];
- Aerial imagery of the site

5. OBSERVATIONS

One hundred and sixty (160) individual tree was assessed in detail on and adjacent the subject site. Detailed tree data for the surveyed trees is contained within the table at section 8.

- Forty-one (41) individuals are considered exempt weed species with the predominate species Sweet Pittosporum and Sycamore Maple. (8, 10, 11, 12, 17, 18, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 40, 43, 46, 47, 50, 51, 52, 53, 55, 61, 62, 94, 101, 103, 114, 122, 137, 138, 140, 142, 150, 151, 152, 157 & 158).
- Ten (10) dead indigenous species where identified with seven (7) requiring a permit under clause 52.17 (56, 59, 72, 120, 125, 153 & 160).
- Fifty-three (53) individuals are exotic species. (1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 43, 46, 47, 51, 52, 53, 55, 62, 63, 67, 68, 69, 82, 83, 95, 98, 100, 105, 104, 106 & 122)
- Eleven (11) planted native trees are present. (81, 92, 93, 96, 97, 99, 101, 102, 107, 118 & 121)
- Seventy-eight (78) trees, excluding Sweet Pittosporum, are considered self-sown indigenous trees with the most common of these Blackwood. (26, 29, 38, 39, 41, 42, 44, 45, 48, 49, 54, 56, 57, 58, 59, 60, 64, 65, 66, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 84, 85, 86, 87, 88, 89, 90, 91, 108, 109, 110, 111, 112, 113, 115, 116, 117, 119, 120, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 139, 141, 143, 144, 145, 146, 147, 148, 149, 153, 154, 155, 156, 159 &160)

The majority of the trees surveyed displayed the typical vigour of the species with no serious pest or disease infestations noted. Several of the Acacia species had thinning foliage cover indicating that they are entering the senescent stage of their lifecycle as is typical.

The structure of the majority of trees was generally as per the species however, some individuals have had significant failures. The most notable trees to have had previous failures were 56, 76, and 83. Several large indigenous trees had basal decay with evidence of previous fire damage with these located at the western side of lot 1 PS 319998K adjacent Four Mile Creek.

The arboricultural value of the tree assessed relates to a combination of factors including tree vigour, structure, and age and amenity value. The amenity of the tree relates to a trees functional, aesthetic and biological characteristics in an urban context and does not relate any conservation or ecological values as place on trees by other professions.

Arboricultural Value	No. of Trees	Tree numbers
Moderate	82	1, 7, 9, 16, 19, 26, 29, 38, 39, 41, 42, 44, 45, 48, 49, 54, 57, 58, 60, 64, 65, 66, 67, 69, 70, 71, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 92, 100, 102, 105, 104, 106, 107, 108, 109, 110, 112, 113, 115, 116, 118, 119, 121, 123, 124, 126, 127, 129, 130, 131, 132, 133, 134, 135, 139, 141, 143, 144, 145, 147, 148, 149, 154, 155, 156 & 159
Low	78	2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 17, 18, 20, 21, 22, 23, 24, 25, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 40, 43, 46, 47, 50, 51, 52, 53, 55, 56, 59, 61, 62, 63, 68, 72, 76, 90, 91, 93, 94, 95, 96, 97, 98, 99, 101, 103, 111, 114, 117, 120, 122, 125, 128, 136, 137, 138, 140, 142, 146, 150, 151, 152, 153, 157, 158 & 160

Table 5-1: Arboricultural Value of surveyed trees

Moderate value trees generally exhibited fair vigour, are juvenile, or had some minor defects that will respond to arboricultural treatments and are expected to be medium to long-term features of the landscape. These trees should generally be retained and protected with removal to occur only if the design or the proposed works cannot be undertaken if the trees were retained. Moderate rated trees in neighbouring properties must be protected during all works on the subject site where these works may affect their vigour and structure.

Low value trees are generally small juvenile trees, exhibit significant structural defects, exhibit poor vigour or are considered an environmental weed species. Low value trees within adjacent private and public properties must be protected.

The proposed dwellings are considered lightweight buildings, which sit on screw piles and are generally prefabricated off site and then lifted onto the pre-installed footings.

The roadway, paths, and carports are to be constructed using typical construction methodologies.

6. IMPACT ASSESSMENT

A desktop assessment of the level of encroachment into the calculated T.P.Z. of retained trees was made using a dwg file of a concept plan prepared by David Pratt. Consideration was given to the site topography, the location of any current structures and use of the site. The following points have been considered when determining those trees included in this section:

- All weed species within the subject site are assumed removed
- All trees within the footprint of proposed works are considered removed
- All trees within 1m of proposed structures are considered removed.
- All self-sown weed species have been excluded from assessment
- No tree removal for defendable space requirements have been considered within this section of the report
- Encroachment shown as red is where all root mass is considered lost with green colouring indicative potential root retention due to construction methodology.

The impact of the proposed works has been calculated by determining the Tree Protection Zone and Structural Root Zone (radial measurement from the centre of the trunk) for each tree in accordance with *AS4970-2009 Protection of Trees on Development Sites*. A "Minor" encroachment is considered under 10% with a "Major" encroachment more than 10% or any encroachment into the Structural Root Zone. The following table provides the T.P.Z., S.R.Z., the area in m² of the T.P.Z., encroachment expressed in m² and as a percentage.

Tree #	Botanical Name	Common Name	DBH (cm)	TPZ	TPZ m²	TPZ loss m²	TPZ loss %
1	*Quercus robur*	English Oak	124	14.88	695.59m²	184.29m²	26.49%
16	*Quercus robur*	English Oak	127	15	706.85m²	242.67m²	34.33%
19	*Quercus robur*	English Oak	167	15	706.85m²	244.37m²	34.57%
29	*Eucalyptus obliqua*	Messmate	165	15	706.85m²	257.97m²	36.50%
39	*Acacia melanoxylon*	Blackwood	28	3.36	35.46m²	9.18m²	25.89%
48	*Eucalyptus viminalis*	Manna Gum	118	14.16	629.90m²	34.64m²	5.50%
49	*Eucalyptus viminalis*	Manna Gum	130	15	706.85m²	158.21m²	22.38%

Tree #	Botanical Name	Common Name	DBH (cm)	TPZ	TPZ m²	TPZ loss m²	TPZ loss %
58	*Acacia melanoxylon*	Blackwood	44	5.28	87.58m²	27.43m²	31.32%
60	*Acacia melanoxylon*	Blackwood	31	3.72	43.47m²	11.10m²	25.53%
62	*Salix babylonica*	Willow	60	7.2	162.86m²	33.55m²	20.60%
66	*Acacia melanoxylon*	Blackwood	38	4.56	65.32m²	16.14m²	24.71%
67	*Quercus robur*	English Oak	55	6.6	136.84m²	7.70m²	5.63%
69	*Quercus robur*	English Oak	46/85 (97)	11.64	425.65m²	35.86m²	8.42%
70	*Acacia melanoxylon*	Blackwood	39	4.68	68.80m²	3.53m²	5.13%
75	*Acacia melanoxylon*	Blackwood	19	2.28	16.33m²	0.92m²	5.63%
76	*Eucalyptus viminalis*	Manna Gum	260	15	706.85m²	196.20m²	27.76%
78	*Acacia melanoxylon*	Blackwood	54	6.48	131.91m²	1.77m²	1.34%
80	*Acacia melanoxylon*	Blackwood	21	2.52	32.16m²	6.21m²	19.31%
83	*Quercus robur*	English Oak	94	11.28	399.73m²	206.00m²	51.53%
90	*Acacia dealbata ssp. dealbata*	Silver Wattle	20	2.4	18.09m²	1.65m²	9.12%
91	*Acacia dealbata ssp. dealbata*	Silver Wattle	23	2.76	23.93m²	3.19m²	13.33%
92	*Eucalyptus delegatensis*	Woollybutt	90	10.8	366.43m²	25.79m²	7.04%
102	*Banksia marginata*	Old man Banksia	75	6.48	131.91m²	47.71m²	36.17%
105	*Quercus robur*	English Oak	24	2.88	221.67m²	6.58m²	2.97%
106	*Quercus robur*	English Oak	75	9	254.46m²	24.73m²	9.72%
108	*Eucalyptus viminalis*	Manna Gum	47	5.64	99.93m²	13.93m²	13.94%
113	*Acacia dealbata ssp dealbata*	Silver Wattle	31	3.24	32.97m²	2.50m²	7.58%
126	*Eucalyptus obliqua*	Messmate	95	11.4	408.28m²	28.46m²	6.97%
127	*Eucalyptus obliqua*	Messmate	81	9.72	296.81m²	2.68m²	0.90%
130	*Eucalyptus viminalis*	Manna Gum	134	15	706.85m²	37.54m²	5.31%
156	*Eucalyptus obliqua*	Messmate	120	14.4	651.44m²	14.16m²	2.17%

Tree #	Botanical Name	Common Name	DBH (cm)	TPZ	TPZ m²	TPZ loss m²	TPZ loss %
160	*Acacia dealbata ssp. dealbata*	Silver Wattle	74	8.88	508.30m²	137.43m²	27.04%

#Note: *DBH (Diameter at Breast Height) is measured at 1.4m (nominal) from natural ground level, T.P.Z. is the Tree Protection Zone in metres in a radius from the centre of the tree trunk, and S.R.Z. is the Structural Root Zone in metres in a radius from the centre of the tree trunk. These measurements and distances are calculated in accordance with AS4970-2009 Protection of Trees on Development Sites.*

The proposed new roadway into the site encroaches into the TPZ of trees 1, 16, and 19 by a significant amount with encroachment in the SRZ of tree 1. Significant impacts to the vigour of all three trees is expected based on typical road construction methodologies.

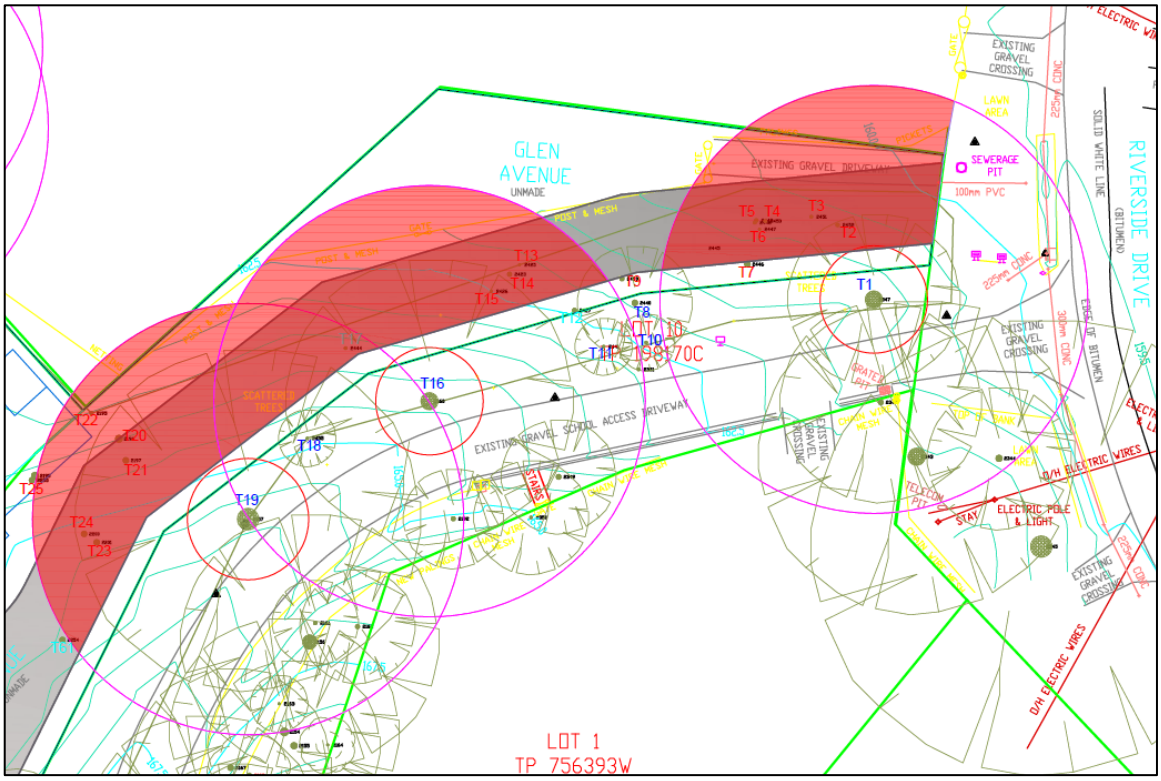


Figure 1: Encroachment into the TPZ of trees 1, 16, and 19.

Trees 29, 39, 48, and 49 have encroachment by works of 36.50%, 25.89%, 5.50%, and 22.38% respectively with no long-term impact to tree vigour or stability expected subject to protection, management during works and lightweight construction methodologies. Trees 58 and 60 have encroachment into the TPZ by 31.32% and 25.53% respectively with the type of works being undertaken impacting tree vigour and stability.

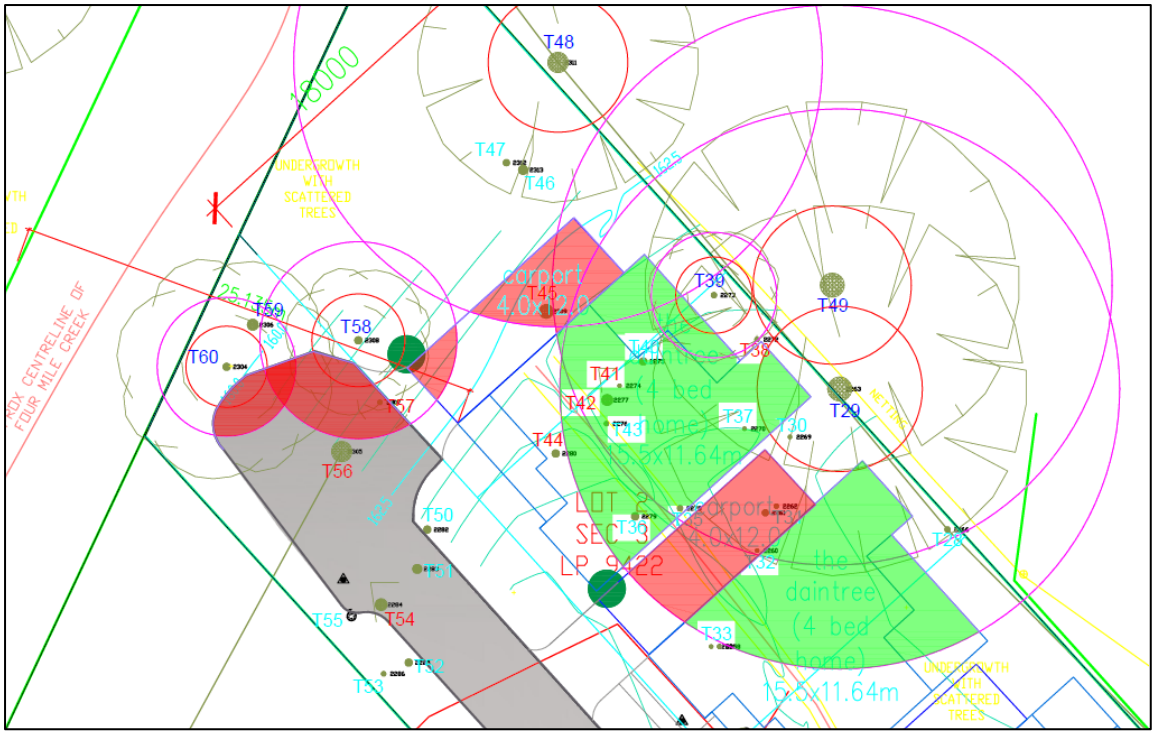


Figure 3: Encroachment by dwellings and roadways into the TPZ of trees 29, 39, 48, 49m 58 and 60

The proposed roadway encroaches into the TPZ of tree 62 and 66 by a major amount (20.60% & 24.71%) with possible impacts to the vigour of tree 66. Tree 62 is not expected to be impacted due to the species high tolerance of root loss. Tree 67 has a minor encroachment, 5.63%, by the roadway into the TPZ with no impact expected subject to tree protection measures during works

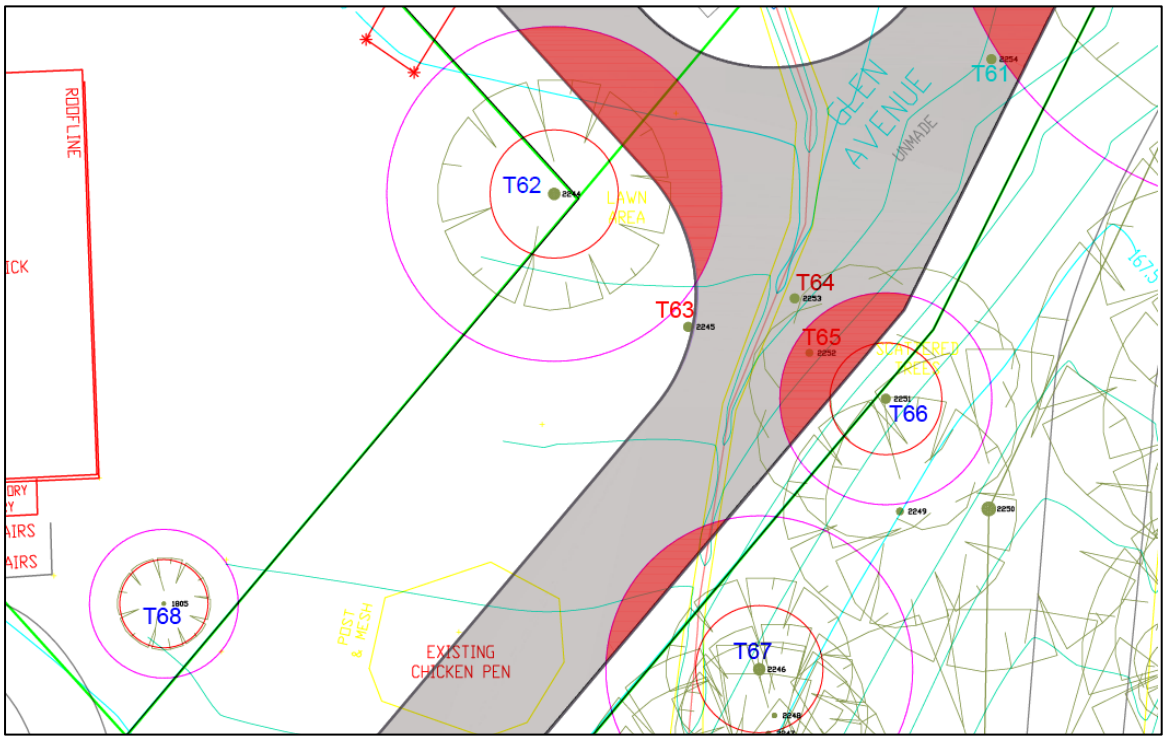


Figure 2: Construction of new roadway adjacent trees 62, 66, 67 and 68

No new works occur within the TPZ of tree 68 and subject to tree protection measures being implemented during works no impact to tree vigour or stability will occur.

Works adjacent trees 69, 70, 75, 76, 78, 80, 83, 90 91 and 92 encroachment by varying amounts with impacts expected to be detrimental to tree vigour for trees 75, 80 and 83 because of loss of roots within the SRZ. Trees 69, 70, 76, 90, 91 and 92 will not be impacted due to construction type and the minimal extent of encroachment.

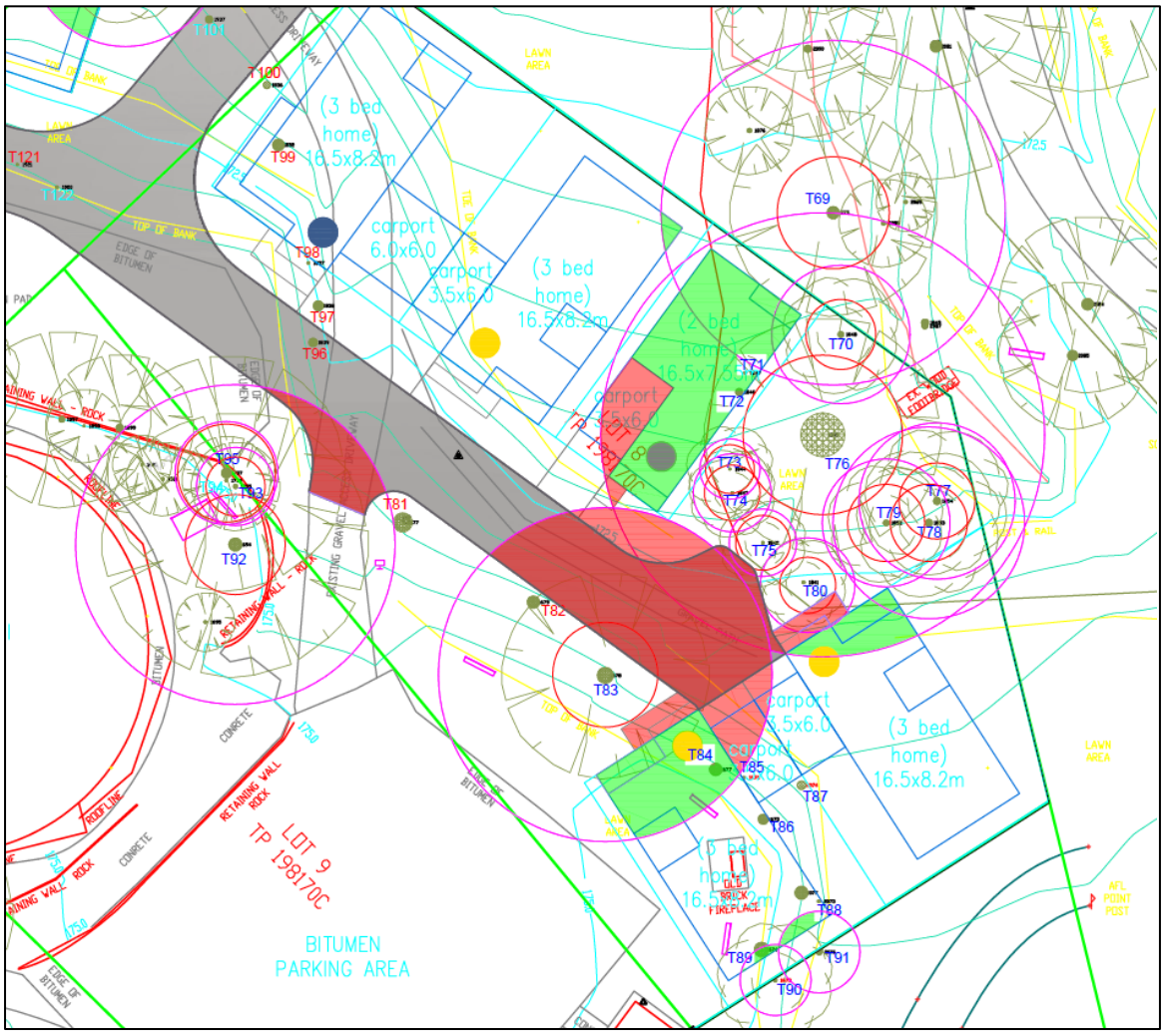


Figure 4: Works adjacent trees 69 – 100.

All encroachment into the TPZ of trees 102, 105, 106 and 108 consists to the lightweight dwellings with no impact to tree vigour or stability subject to management during all excavation works adjacent the trees

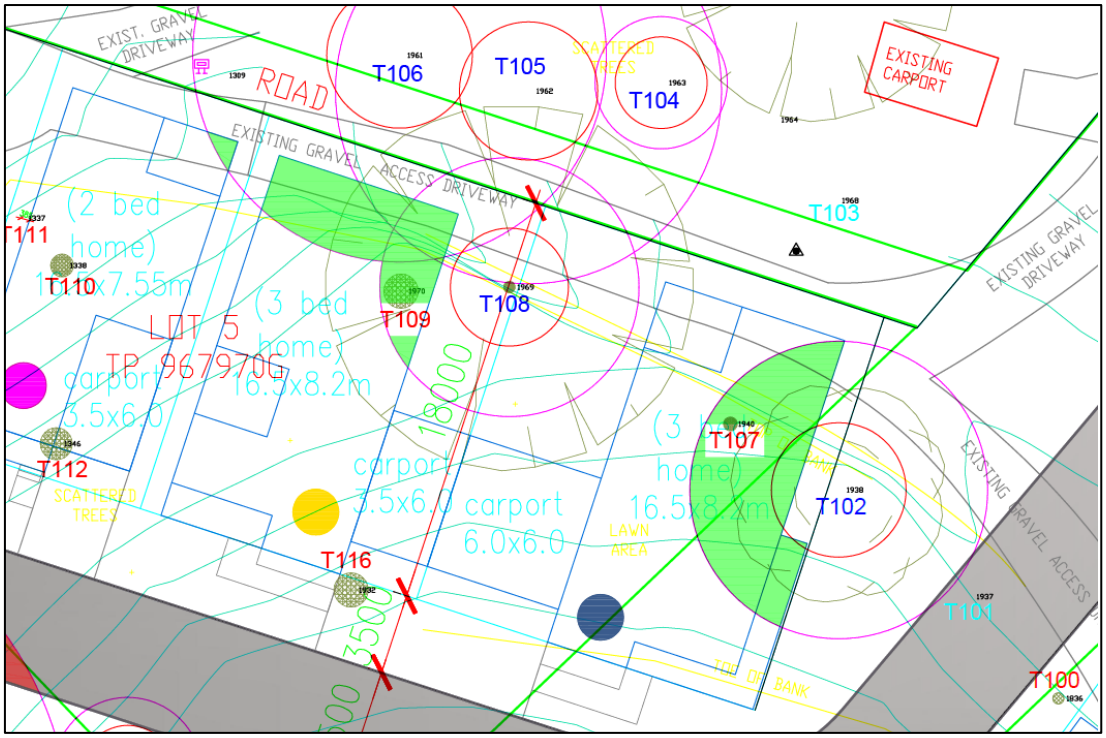


Figure 5: Proposed works adjacent trees 102, 105, 106 and 108

A proposed dwelling encroaches into the TPZ of trees 113, 126, and 127 by amounts considered minor with the lightweight construction methodology reducing impacts to the trees further. Trees 126 and 127 will not be impacted subject to care being taken during works. The road works adjacent tree 113 are likely to affect the trees vigour with decline expected over the long term.

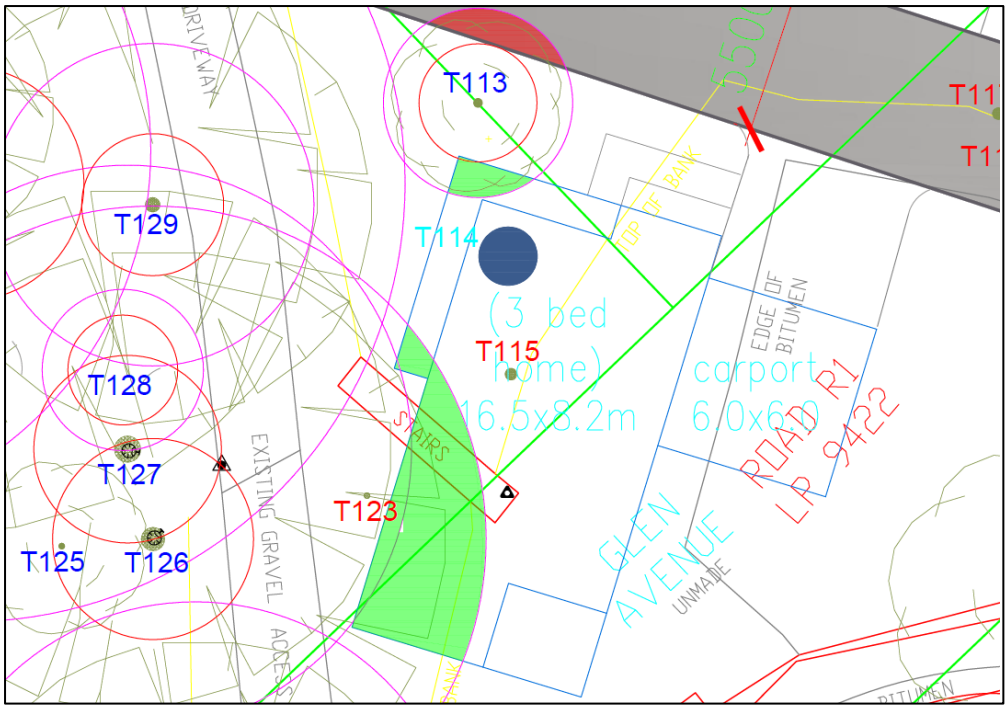


Figure 6: Proposed works adjacent trees 113, 126 and 127

Upgrades to the existing driveway from Park Road encroach into the TPZ of trees 130, 156 and 160. Encroachment will not affect the long-term vigour of trees 130 and 156 with tree 160 dead.

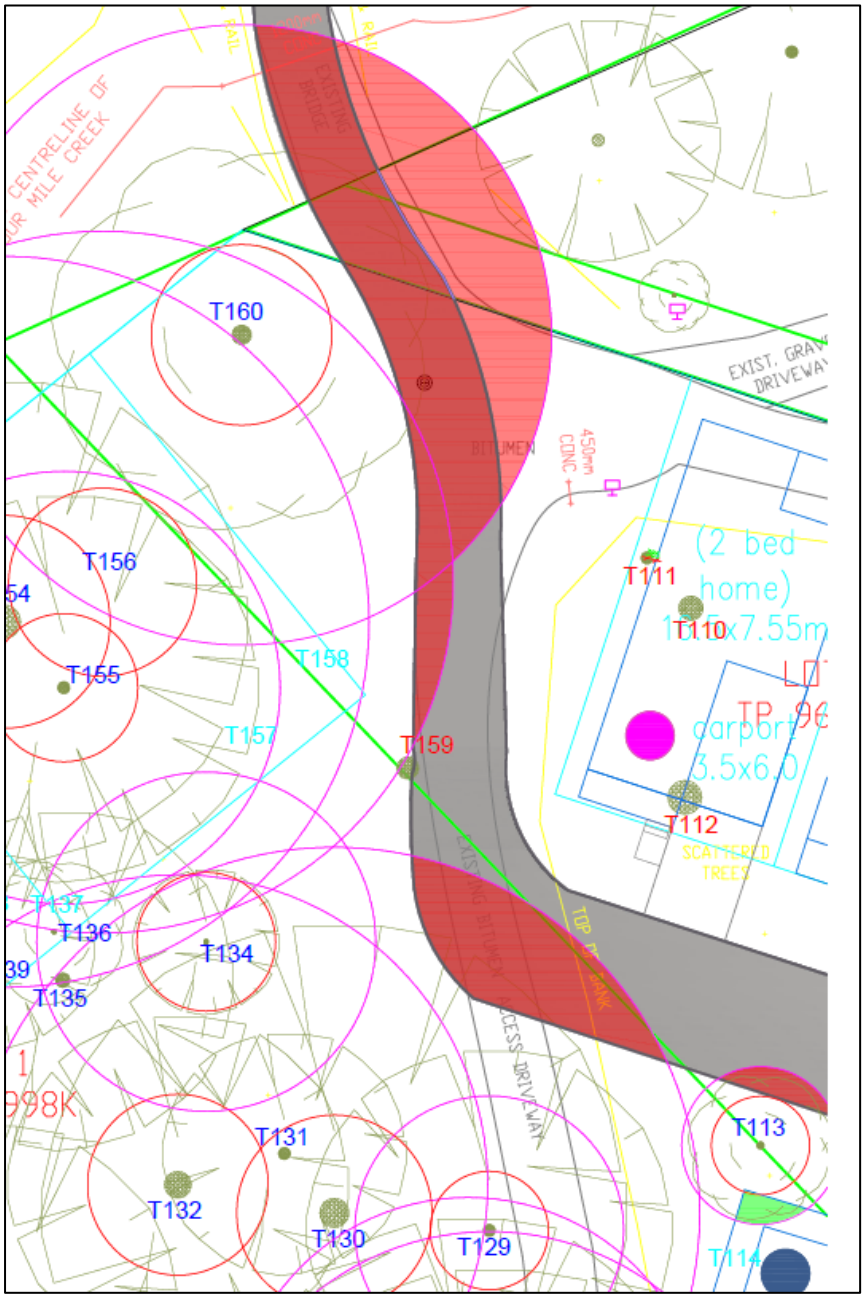


Figure 7: Upgraded entrance within the TPZ of tree 130, 156, and 160

Based on an assessment of the impacts of proposed works trees 1, 58, 60, 75, 80, 83, 113 will require removal.

7. DEFENDABLE SPACE

The Preliminary Bushfire Planning Advice prepared by Terramatrix provides recommendations for vegetation separation from proposed dwellings and between retained trees for a distance of 25 metres from the proposed dwellings in accordance with a BAL 29 rating.

- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Based on the above recommendations trees not removed due to works are to be either pruned or removed to meet the requirement of the BMO.

Trees 39, 70, 73, 74, 78, 79, 127, 128, 130, 131, 131, 135, 136, 139, 140, 155, and 166 are required to be removed to achieve suitable canopy separation.

Removal of weed species contributes significantly to achieving defendable space requirements.

Significant pruning of remaining trees on the site will be required particularly in the south west portion adjacent the Four Mile Creek.

Pruning of trees 102 and 108 is likely to lead to removal of the trees due to the extent of canopy loss and, subject to final design of the dwellings and location of windows, may need to be removed.

8. CONCLUSIONS AND RECOMMENDATIONS

The subject site is large and contains a range of trees from self-sown exotic weed species to large remnant indigenous trees. Due to the extent of works and the requirements of the BMO, the majority of trees surveyed are required to be removed.

Weed species across the site are recommended to be removed to reduce seed source and prevent further spread with these not requiring a permit for removal.

Removal of a number of indigenous trees is required with a permit under the provisions of clause 52.17 required. Non-indigenous trees to be removed require a permit under the provisions of the SLO22.

The proposed works may affect three large neighbouring Oaks with some realignment of the driveway recommended. Additional management during works is also recommended to alleviate stress due to works.

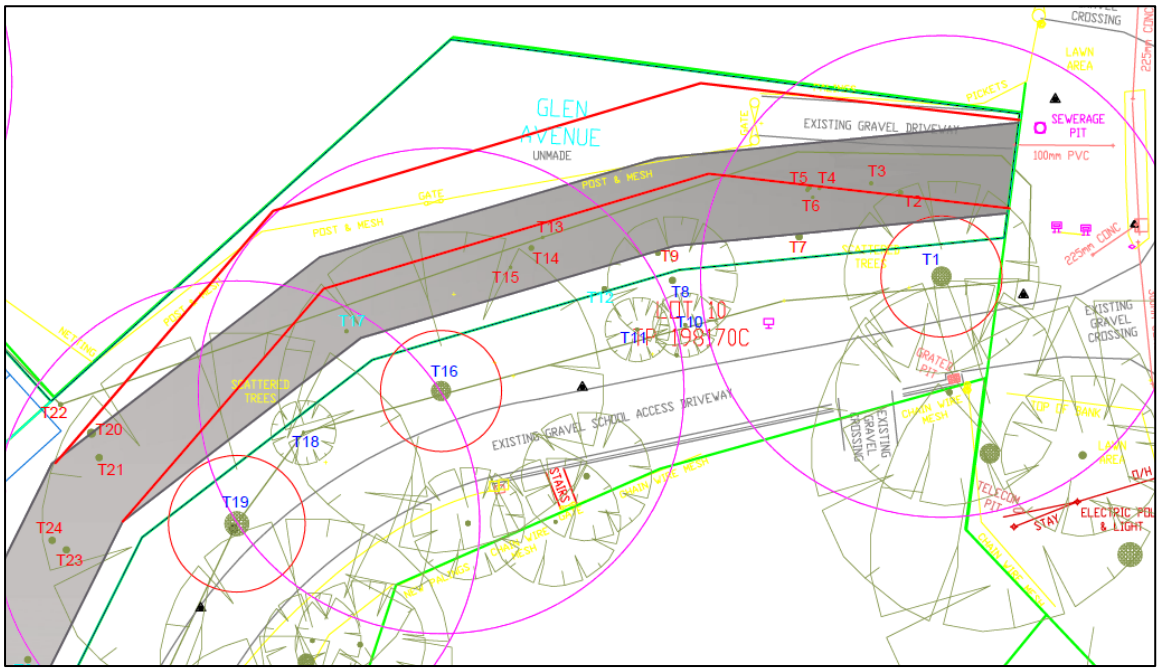


Figure 8: Red lines indicating realigned driveway to reduce impact to neighbour Oaks.

The footing design of the dwellings is considered root sensitive in manner and retained trees adjacent to them are not likely to be impacted. Management during footing construction will be required including some hand digging where footings are inside the SRZ.

A number of trees will require pruning to achieve canopy separation with all work to be undertaken by qualified persons in accordance with AS4373-2007 *Pruning of Amenity*

Trees.

8.1. General Tree Protection Guidelines

The natural ground level as per the original feature survey must be maintained in the area of the TPZ of retained trees where occurring within the subject site and outside of the footprint of approved structures.

Retained trees must be adequately fenced during all works on the site including tree removal, excavation, and construction with fencing generally to be in accordance with section 4.3 of AS4970-2009 *Protection of Trees on Development Sites*.

The following recommendations are general in nature and provide advice for further protection of retained trees.

Activities generally excluded from the T.P.Z. include but are not limited to:

- machine excavation including trenching
- excavation for silt fencing
- cultivation
- storage of materials
- preparation of chemicals, including preparation of cement products
- parking of vehicles and plant
- refuelling
- dumping of waste
- wash down and cleaning of equipment
- placement of fill
- lighting of fires
- soil level changes
- temporary or permanent installation of utilities and signs
- physical damage to the tree

Due to the extent of works, a comprehensive Tree Protection Management Plan (TPMP) is recommended to guide works and protect retained trees.

9. TREE DATA

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
1	*Quercus robur*	English Oak	19.4	15	124	134	Fair	Fair	20+	Exotic	Mature	Moderate	14.88	3.74
2	*Quercus robur*	English Oak	7	5	10/15 (18)	22	Good	Fair	20+	Exotic	Juvenile	Low	2.16	1.75
3	*Quercus robur*	English Oak	12	6	22	28	Good	Fair	20+	Exotic	Juvenile	Low	2.64	1.94
4	*Quercus robur*	English Oak	12	5	17	23	Good	Fair	20+	Exotic	Juvenile	Low	2.04	1.79
5	*Quercus robur*	English Oak	12	8	22/16 (27)	25/18 (31)	Good	Fair	20+	Exotic	Juvenile	Low	3.24	2.02
6	*Quercus robur*	English Oak	12	4	13	18	Good	Fair	20+	Exotic	Juvenile	Low	2	1.61
7	*Quercus robur*	English Oak	14	12	39	50	Good	Good	20+	Exotic	Juvenile	Moderate	4.68	2.47
8	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
9	*Quercus robur*	English Oak	14	6	26	32	Good	Good	20+	Exotic	Juvenile	Moderate	3.12	2.05
10	*Ilex aquifolium*	Holly	Exempt weed species											
11	*Ilex aquifolium*	Holly	Exempt weed species											

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
12	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
13	*Quercus robur*	English Oak	10	8	16	22	Good	Fair	20+	Exotic	Juvenile	Low	2	1.75
14	*Quercus robur*	English Oak	14	8	22	26	Good	Fair	20+	Exotic	Juvenile	Low	2.64	1.88
15	*Quercus robur*	English Oak	10	10	15	18	Good	Fair	20+	Exotic	Juvenile	Low	2	1.61
16	*Quercus robur*	English Oak	23.8	24	127	138	Good	Fair	20+	Exotic	Mature	Moderate	15	3.79
17	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
18	*Prunus lusitanica*	Portuguese Laurel	Exempt weed species											
19	*Quercus robur*	English Oak	25	25	167	178	Good	Good	20+	Exotic	Mature	Moderate	15	4.22
20	*Quercus robur*	English Oak	12	10	24	31	Good	Fair	20+	Exotic	Juvenile	Low	2.88	2.02
21	*Quercus robur*	English Oak	18	12	44	53	Good	Fair	20+	Exotic	Juvenile	Low	5.28	2.53
22	*Quercus robur*	English Oak	18	10	32/18 (37)	38/18 (42)	Good	Fair	20+	Exotic	Juvenile	Low	4.44	2.3
23	*Quercus robur*	English Oak	18	10	29	37	Good	Fair	20+	Exotic	Juvenile	Low	3.48	2.18

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
24	*Quercus robur*	English Oak	18	10	29	35	Good	Fair	20+	Exotic	Juvenile	Low	3.48	2.13
25	*Quercus robur*	English Oak	17	12	32	41	Good	Poor	20+	Exotic	Juvenile	Low	3.84	2.28
26	*Acacia melanoxylon*	Blackwood	18	15	41	55	Good	Fair	20+	Indigenous	Mature	Moderate	4.92	2.57
27	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
28	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
29	*Eucalyptus obliqua*	Messmate	22	19	165	200	Good	Poor	10-20	Indigenous	Mature	Moderate	15	4.43
30	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
31	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
32	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
33	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
34	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
35	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
36	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
37	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
38	*Acacia melanoxylon*	Blackwood	18	8	23	31	Good	Good	20+	Indigenous	Mature	Moderate	2.76	2.02
39	*Acacia melanoxylon*	Blackwood	115	10	28	32	Good	Fair	20+	Indigenous	Mature	Moderate	3.36	2.05
40	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
41	*Acacia melanoxylon*	Blackwood	19	8	21	22	Fair	Good	20+	Indigenous	Mature	Moderate	2.52	1.75
42	*Acacia melanoxylon*	Blackwood	25	15	47	58	Fair	Good	20+	Indigenous	Mature	Moderate	5.64	2.63

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
43	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
44	*Acacia melanoxylon*	Blackwood	19	15	43	53	Good	Good	20+	Indigenous	Mature	Moderate	5.16	2.53
45	*Acacia melanoxylon*	Blackwood	19	18	65	78	Good	Good	20+	Indigenous	Mature	Moderate	7.8	2.98
46	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
47	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
48	*Eucalyptus viminalis*	Manna Gum	35	20	118	134	Good	Good	20+	Indigenous	Mature	Moderate	14.16	3.74
49	*Eucalyptus viminalis*	Manna Gum	35	20	130	180	Fair	Fair	20+	Indigenous	Mature	Moderate	15	4.24
50	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
51	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
52	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
53	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
54	*Acacia melanoxylon*	Blackwood	19	15	68	82	Good	Fair	20+	Indigenous	Mature	Moderate	8.16	3.04
55	*Acer pseudoplatanus*	Sycamore Maple	Exempt weed species											
56	*Eucalyptus viminalis*	Manna Gum	20	3	120	n/a	Dead	Failed	10-20	Indigenous	Mature	Low	14.4	n/a
57	*Acacia melanoxylon*	Blackwood	18	10	29	34	Good	Fair	10-20	Indigenous	Mature	Moderate	3.48	2.1
58	*Acacia melanoxylon*	Blackwood	18	15	44	51	Good	Fair	10-20	Indigenous	Mature	Moderate	5.28	2.49
59	*Eucalyptus sp.*	Gum	10	2	110	n/a	Dead	Poor	5-10	Indigenous	Senescent	Low	13.2	n/a
60	*Acacia melanoxylon*	Blackwood	22	14	31	37	Good	Good	20+	Indigenous	Mature	Moderate	3.72	2.18
61	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
62	*Salix babylonica*	Willow	13.2	13	60	65	Good	Fair	20+	Exotic	Mature	Low	7.2	2.76
63	*Pinus canariensis*	Canary Island Pine	16.2	9	58	57	Good	V. Poor	10-20	Exotic	Mature	Low	6.96	2.61
64	*Acacia melanoxylon*	Blackwood	13.8	10	20/39/19 (48)	60	Good	Fair	20+	Indigenous	Mature	Moderate	5.76	2.67
65	*Acacia melanoxylon*	Blackwood	13.8	10	36/20 (41)	50	Good	Fair	20+	Indigenous	Mature	Moderate	4.92	2.47
66	*Acacia melanoxylon*	Blackwood	13.2	8	38	47	Good	Fair	20+	Indigenous	Mature	Moderate	4.56	2.41
67	*Quercus robur*	English Oak	16.8	13	55	64	Good	Fair	20+	Exotic	Mature	Moderate	6.6	2.74
68	*Pyrus comunis*	Pear	6	6	24	28	Good	Fair	20+	Exotic	Mature	Moderate	2.88	1.94
69	*Quercus robur*	English Oak	26.6	20	46/85 (97)	138	Good	Good	20+	Exotic	Mature	Moderate	11.64	3.79
70	*Acacia melanoxylon*	Blackwood	18.4	12	39	45	Good	Good	20+	Indigenous	Mature	Moderate	4.68	2.37
71	*Acacia melanoxylon*	Blackwood	13	6	20	24	Good	Good	20+	Indigenous	Mature	Moderate	2.4	1.82
72	*Acacia dealbata ssp dealbata*	Silver Wattle	10	1	52	n/a	Dead	V.Poor	0-5	Indigenous	Mature	Low	6.24	n/a

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
73	*Acacia melanoxylon*	Blackwood	13	4	17	19	Good	Good	20+	Indigenous	Mature	Moderate	2.04	1.65
74	*Acacia melanoxylon*	Blackwood	13.2	5	22	26	Good	Good	20+	Indigenous	Mature	Moderate	2.64	1.88
75	*Acacia melanoxylon*	Blackwood	12	7	19	25	Good	Good	20+	Indigenous	Mature	Moderate	2.28	1.85
76	*Eucalyptus viminalis*	Manna Gum	29.6	18	260	320	Good	V. Poor	10-20	Indigenous	Mature	Low	15	5.39
77	*Acacia melanoxylon*	Blackwood	28	10	44	55	Good	Good	20+	Indigenous	Mature	Moderate	5.28	2.57
78	*Acacia melanoxylon*	Blackwood	20	12	54	57	Good	Good	20+	Indigenous	Mature	Moderate	6.48	2.61
79	*Acacia melanoxylon*	Blackwood	18	8	33/15 (36)	57	Good	Good	20+	Indigenous	Mature	Moderate	4.32	2.61
80	*Acacia melanoxylon*	Blackwood	13	7	21	28	Good	Good	20+	Indigenous	Mature	Moderate	2.52	1.94
81	*Eucalyptus globulus subsp globulus*	Blue Gum	22.2	16	118	139	Good	Good	20+	Native	Mature	Moderate	14.16	3.8

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
82	*Quercus robur*	English Elm	16.8	14	82	80	Good	Poor	20+	Exotic	Mature	Low	9.84	3.01
83	*Quercus robur*	English Elm	20.8	23	94	118	Good	Failed	20+	Exotic	Mature	Low	11.28	3.55
84	*Eucalyptus viminalis*	Manna Gum	30.5	18	94	108	Fair	Poor	20+	Indigenous	Mature	Low	11.28	3.42
85	*Acacia dealbata ssp dealbata*	Silver Wattle	7	7	9/10/7 (15)	28	Good	Fair	10-20	Indigenous	Mature	Moderate	2	1.94
86	*Eucalyptus viminalis*	Manna Gum	28	18	69	89	Good	Poor	20+	Indigenous	Mature	Low	8.28	3.15
87	*Acacia dealbata ssp dealbata*	Silver Wattle	13	15	45	45	Good	Poor	10-20	Indigenous	Mature	Low	5.4	2.37
88	*Acacia dealbata ssp dealbata*	Silver Wattle	13	8	14/17 (22)	35	Good	Poor	10-20	Indigenous	Mature	Low	2.64	2.13
89	*Eucalyptus viminalis*	Manna Gum	35	18	95	110	Fair	Poor	20+	Indigenous	Mature	Low	11.4	3.44
90	*Acacia dealbata ssp dealbata*	Silver Wattle	12	5	20	n/a	Dead	V. Poor	0-5	Indigenous	Senescent	Low	2.4	n/a
91	*Acacia dealbata ssp dealbata*	Silver Wattle	13	8	23	n/a	Dead	V. Poor	0-5	Indigenous	Senescent	Low	2.76	n/a

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
92	*Eucalyptus delegatensis*	Woollybutt	25.2	19	90	105	Good	Fair	20+	Indigenous	Mature	Moderate	10.8	3.38
93	*Syzygium paniculatum*	Lilly Pilly	12	6	22	30	Good	Fair	5-10	Native	Mature	Low	2.64	2
94	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
95	*Ficus carica*	Common Fig	8	10	18/10/12/ 15/8 (29)	100	Good	Fair	5-10	Exotic	Mature	Low	3.48	3.31
96	*Melaleuca linariifolia*	Flax Leaved Paperbark	10.2	7	30/22/20/ 18 (46)	80	Good	Poor	10-20	Native	Mature	Low	5.52	3.01
97	*Agonis flexuosa*	Willow Myrtle	12	13	Multi-stemmed	140	Good	Poor	5-10	Native	Mature	Low	7	3.81
98	*Thuja plicata*	Western Red Cedar	7.8	5	17	24	Good	Good	20+	Exotic	Juvenile	Low	2.04	1.82
99	*Melaleuca linariifolia*	Flax Leaved Paperbark	10.6	8	55/38 (67)	65	Good	Poor	10-20	Native	Mature	Low	8.04	2.76
100	*Thuja plicata*	Western Red Cedar	11.6	0	42	58	Good	Good	20+	Exotic	Mature	Moderate	5.04	2.63
101	*Hakea salicifolia*	Willow Hakea	Exempt weed species											

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
102	*Banksia marginata*	Old man Banksia	12.4	10	54	75	Good	Good	20+	Native	Mature	Moderate	6.48	2.93
103	*Pittosporum undulatum*	Sweet Pittosporum	Exempt weed species											
104	*Quercus robur*	English Oak	12.2	9	24	30	Good	Good	20+	Exotic	Mature	Moderate	2.88	2
105	*Sequoia sempervirens*	Redwood	21.8	9	70	80	Good	Good	20+	Exotic	Juvenile	Moderate	8.4	3.01
106	*Quercus robur*	English Oak	22.6	17	75	90	Good	Good	20+	Exotic	Mature	Moderate	9	3.17
107	*Angophora costata*	Smooth Barked Apple	17.4	14	62	73	Good	Good	20+	Exotic	Mature	Moderate	7.44	2.9
108	*Eucalyptus viminalis*	Manna Gum	17	13	47	55	Good	Fair	20+	Indigenous	Mature	Moderate	5.64	2.57
109	*Eucalyptus obliqua*	Messmate	32	25	140	160	Good	Fair	20+	Indigenous	Mature	Moderate	16.8	4.03
110	*Eucalyptus viminalis*	Manna Gum	32	18	96	114	Good	Fair	20+	Indigenous	Mature	Moderate	11.52	3.5
111	*Acacia melanoxylon*	Blackwood	15	12	53	58	V. Poor	V. Poor	0-5	Indigenous	Senescent	Low	6.36	2.63

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
112	*Eucalyptus viminalis*	Manna Gum	34	18	125	140	Good	Poor	20+	Indigenous	Mature	Moderate	15	3.81
113	*Acacia dealbata ssp dealbata*	Silver Wattle	16	12	27	31	Good	Good	20+	Indigenous	Mature	Moderate	3.24	2.02
114	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
115	Eucalyptus viminalis	Manna Gum	26.2	12	54	68	Good	Good	20+	Indigenous	Mature	Moderate	6.48	2.81
116	Eucalyptus obliqua	Messmate	28	22	145	160	Good	Fair	20+	Indigenous	Mature	Moderate	15	4.03
117	Eucalyptus obliqua	Messmate	12	10	33	38	Good	Poor	20+	Indigenous	Juvenile	Low	3.96	2.2
118	Ceratabelum gummiferum	Christmas bush	10	8	17	22	Good	Fair	20+	Native	Mature	Moderate	2.04	1.75
119	Acacia melanoxylon	Blackwood	14	8	18	22	Good	Good	20+	Indigenous	Mature	Moderate	2.16	1.75
120	Acacia dealbata ssp dealbata	Silver Wattle	18	17	76	n/a	Dead	Poor	5-10	Indigenous	Mature	Low	9.12	n/a
121	Ceratabelum gummiferum	Christmas bush	7	5	12	16	Good	Good	20+	Native	Mature	Moderate	2	1.53

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
122	Prunus luscitania	Portuguese Laurel	Exempt weed species											
123	Acacia dealbata ssp dealbata	Silver Wattle	12	8	24	30	Good	Fair	20+	Indigenous	Mature	Moderate	2.88	2
124	*Eucalyptus viminalis*	Manna Gum	30	16	77	85	Good	Poor	20+	Indigenous	Mature	Moderate	9.24	3.09
125	*Eucalyptus obliqua*	Messmate	12	2	120	n/a	Dead	Poor	10-20	Indigenous	Mature	Low	14.4	n/a
126	*Eucalyptus obliqua*	Messmate	30	20	95	110	Good	Fair	20+	Indigenous	Mature	Moderate	11.4	3.44
127	*Eucalyptus obliqua*	Messmate	28	20	81	93	Good	Good	20+	Indigenous	Mature	Moderate	9.72	3.21
128	*Acacia dealbata ssp dealbata*	Silver Wattle	11	5	23	26	Fair	Failed	0-5	Indigenous	Senescent	Low	2.76	1.88
129	*Eucalyptus obliqua*	Messmate	18	10	46	48	Fair	Fair	20+	Indigenous	Mature	Moderate	5.52	2.43
130	*Eucalyptus viminalis*	Manna Gum	35	20	134	158	Good	Fair	20+	Indigenous	Mature	Moderate	15	4.01
131	*Eucalyptus obliqua*	Messmate	24	15	48	52	Good	Fair	20+	No Value	Mature	Moderate	5.76	2.51
132	*Eucalyptus viminalis*	Manna Gum	30	18	106	131	Good	Poor	20+	Indigenous	Mature	Moderate	12.72	3.71

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
133	*Eucalyptus obliqua*	Messmate	30	18	131	160	Good	Poor	20+	Indigenous	Mature	Moderate	15	4.03
134	*Eucalyptus obliqua*	Messmate	25	18	58	70	Good	Poor	20+	Indigenous	Mature	Moderate	6.96	2.85
135	*Eucalyptus obliqua*	Messmate	28	18	62	70	Good	Poor	20+	Indigenous	Mature	Moderate	7.44	2.85
136	Acacia dealbata ssp dealbata	Silver Wattle	12	8	18	n/a	Dead	Poor	5-10	Indigenous	Mature	Low	2.16	n/a
137	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
138	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
139	Eucalyptus obliqua	Messmate	28	12	39	45	Good	Good	20+	Indigenous	Mature	Moderate	4.68	2.37
140	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
141	Eucalyptus obliqua	Messmate	25	15	35	39	Good	Good	20+	Indigenous	Mature	Moderate	4.2	2.23
142	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
143	Eucalyptus obliqua	Messmate	28	15	47	52	Good	Good	20+	Indigenous	Mature	Moderate	5.64	2.51

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
144	Eucalyptus viminalis	Manna Gum	35	20	190	223	Good	Good	20+	Indigenous	Mature	Moderate	15	4.63
145	Eucalyptus obliqua	Manna Gum	30	20	123	140	Good	Good	20+	Indigenous	Mature	Moderate	14.76	3.81
146	Eucalyptus obliqua	Messmate	12	8	27	29	Good	Good	20+	Indigenous	Juvenile	Low	3.24	1.97
147	Eucalyptus obliqua	Messmate	25	15	53	63	Good	Good	20+	Indigenous	Mature	Moderate	6.36	2.73
148	Eucalyptus obliqua	Messmate	12	4	33	39	Good	Good	20+	Indigenous	Mature	Moderate	3.96	2.23
149	Eucalyptus obliqua	Messmate	22	15	45	52	Good	Good	20+	Indigenous	Mature	Moderate	5.4	2.51
150	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
151	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
152	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
153	Eucalyptus obliqua	Messmate	8	2	75	n/a	Dead	Poor	10-20	Indigenous	Mature	Low	0	n/a
154	Eucalyptus viminalis	Manna Gum	35	25	175	194	Good	Good	20+	Indigenous	Mature	Moderate	15	4.37
155	Eucalyptus obliqua	Messmate	25	16	74	82	Fair	Fair	20+	Indigenous	Mature	Moderate	8.88	3.04

Tree #	Botanical Name	Common Name	Height (m)	Width (m)	D.B.H. (c.m.)	DAB (cm)	Vigour	Structure	ULE	Origin	Age Class	Arb Rating	T.P.Z. (m)	SRZ (m)
156	Eucalyptus obliqua	Messmate	25	20	120	144	Fair	Fair	20+	Indigenous	Mature	Moderate	14.4	3.86
157	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
158	Pittosporum undulatum	Sweet Pittosporum	Exempt weed species											
159	Eucalyptus obliqua	Messmate	28	18	98	110	Good	Fair	20+	Indigenous	Mature	Moderate	11.76	3.44
160	Acacia dealbata ssp dealbata	Silver Wattle	15	16	74	n/a	Dead	Poor	0-5	Indigenous	Mature	Low	8.88	n/a

Table 9-1: Tree data

10.PHOTOGRAPHIC CATALOGUE

Photograph 1: Proposed entrance from Riverside Drive

Photograph 2: Trees 3, 4 and 5

Photograph 3: Trees 20, 21 and 22

Photograph 4: Looking north to Trees 27, 31- 34

Photograph 5: Trees 29 and 49

Photograph 6: Tree 62

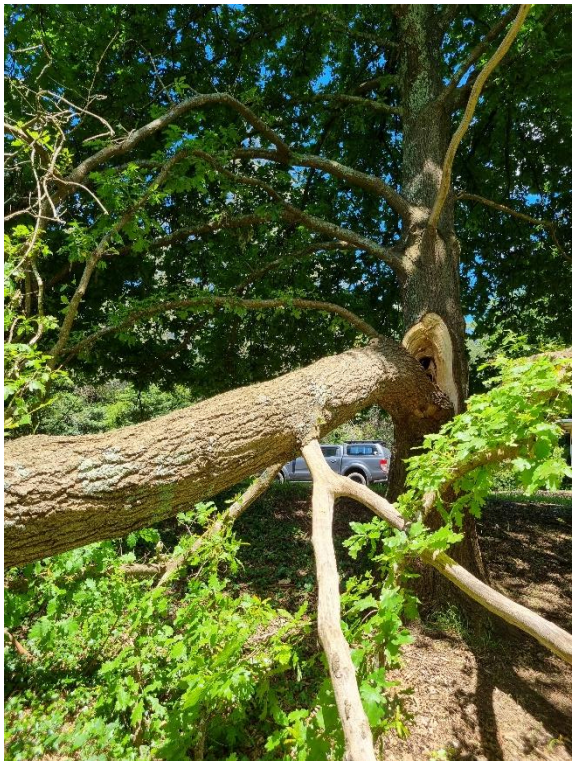
Photograph 7: Trees 63, 64, 65 and 66

Photograph 8: Looking north adjacent tree 103

Photograph 9: Tree 76 with smaller trees at base

Photograph 10: Hollow at base of tree 76

Photograph 11: Trees 82 and 83



Photograph 12: Large limb failure trees 83

Photograph 13: Looking west towards trees 84 - 91

Photograph 14: Trees 92, 93, 94 and 95

Photograph 15: Trees 96 and 97

Photograph 16: Trees 98, 99, 100 and 101

Photograph 17: Trees 102, 108 with canopy of trees 109, 110 and 112 in background

Photograph 18: Looking south towards tree 111

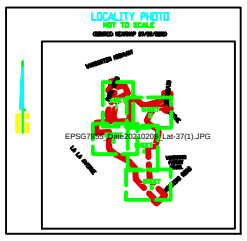
Photograph 19: Trees 112

Photograph 20: Trees 117-122

Photograph 21: Trees 126- 129

Photograph 22: Tree 160 with tree 154 in background

11. SITE PLAN



NOT IN SURVEY

LOT 1 TP 957969Q

NOT IN SURVEY

NOT IN SURVEY

LOT 2 SEC 3 LP 9422

GLEN AVENUE

RIVERSIDE DRIVE

LOT 10 TP 198170C

LOT 1 TP 111973B NOT IN SURVEY

LOT 1 TP 894899P (PARK RESERVE)

LOT 1 TP 756393W NOT IN SURVEY

LOT 2 TP 111973B NOT IN SURVEY

LOT 1 TP 579574D NOT IN SURVEY

GLEN AVENUE

LOT 2 TP 957970S

LOT 10 TP 198170C

LOT 1 PS 319998K

ROAD R1 LP 9422

GLEN AVENUE

LOT 2 PS 319998K NOT IN SURVEY

LOT 9 TP 198170C

LOT 10 TP 198170C

RESERVE No1 LP 9422

LOT 9 TP 198170C

RESERVE No1 LP 9422

LOT 4 TP 198170C

LOT 3 TP 198170C

LOT 2 TP 198170C

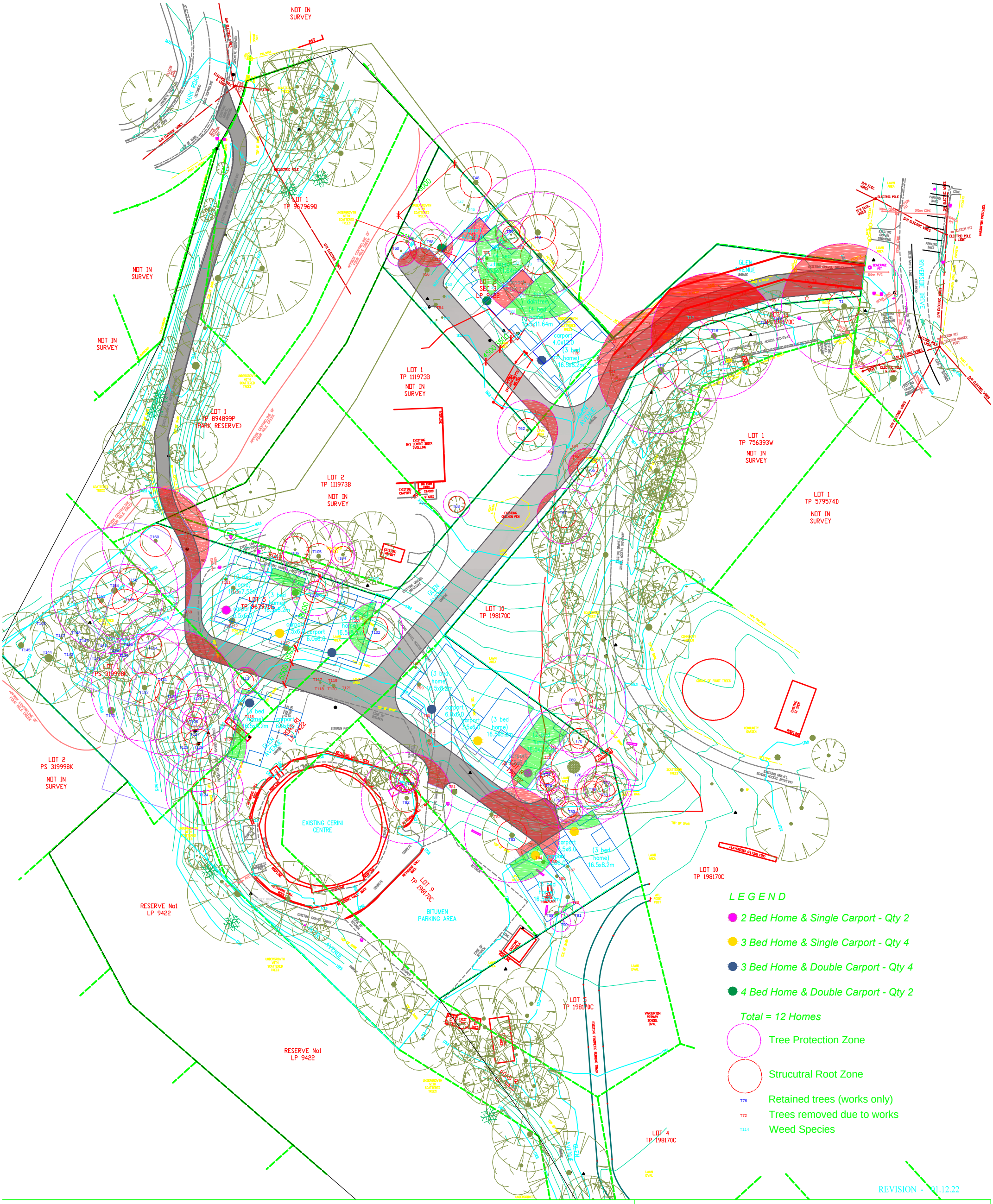
LOT 1 TP 198170C

GLEN AVENUE

LOT 13 SEC3 LP 9422 NOT IN SURVEY

HORNER ROAD

12. PROPOSED WORKS



LEGEND

- 2 Bed Home & Single Carport - Qty 2
- 3 Bed Home & Single Carport - Qty 4
- 3 Bed Home & Double Carport - Qty 4
- 4 Bed Home & Double Carport - Qty 2

Total = 12 Homes

- Tree Protection Zone
- Strucutral Root Zone
- T76 Retained trees (works only)
- T72 Trees removed due to works
- T114 Weed Species

REVISION - 01.12.22

PRELIMINARY SITE PLAN

AFFORDABLE SOCIAL HOUSING PROJECT
CERINI CENTRE - PARK AVENUE WARBURTON

DATE: 01.12.22

SCALE: 1:500 @A3

13.BIBLIOGRAPHY

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14.QUALIFICATIONS AND EXPERIENCE OF AUTHOR

This Arborist Report is written by Simon Molloy of Molloy Arboriculture Pty Ltd.

I have a Diploma of Applied Science Horticulture (Arboriculture) from University of Melbourne (1997) and have 20 years of practicing and consulting in the arboricultural industry. I have provided expert witness at VCAT and in law courts in Melbourne, Victoria and in British Columbia, Canada.

I have thorough arboricultural training, extensive experience, and the necessary expertise in arboricultural knowledge and practices to make determinations in regards to tree health, retention value, and structural stability and positioning of trees.

15.DEFINITION OF TERMS

- DBH – The total diameter of the tree trunk at 1.4 m from ground level.
- Where there is a multi- stemmed tree the assessor will calculate a D.B.H. as per the method described in AS4970-2009.
- T.P.Z.: The calculated area of root zone to be protected to allow for continued vigorous growth of the tree. All measurements are expressed as a radius
- S.R.Z.: The calculated area of root mass required for stability of the tree. This amount of root mass is not adequate for continued vigorous growth of the tree. All measurements are expressed as a radius

Tree Vigour

Good: The tree is demonstrating good or exceptional growth for the species. The tree should exhibit a full canopy of foliage and have only minor pest or disease problems. Foliage colour size and density should be typical of a health specimen of that species.

Fair: The tree is in reasonable condition and growing well for the species. The tree should exhibit an adequate canopy of foliage. There may be some dead wood in the crown, some grazing by insect or animals may be evident, and/or foliage colour, size, or density may be atypical for a healthy specimen of that species.

Poor: The tree is not growing to its full capacity. Extension growth of the laterals may be minimal. The canopy may be thinning or sparse. Large amounts of dead wood may be evident throughout the crown, as well as significant pest and disease problems. Other symptoms of stress indicating tree decline may be present.

Very poor: The tree appears to be in a state of decline, and the canopy may be very thin and sparse. A significant volume of deed wood may be present in the canopy, or pest and disease problems may be causing a severe decline in tree health.

Dead: The tree is dead.

Structure

- Good
- Fair
- Poor
- Very poor
- Failed

The definition of structure is the likelihood of the tree to fail under normal condition. A tree with good structure is highly unlikely to suffer any significant failure, while a tree with poor to very poor structure is likely or very likely to fail.

Good: The tree has a well-defined and balanced crown. Branch unions appear to be strong, with no defects evident in the trunks or the branches. Major limbs are well defined. The tree would be considered a good example for the species. Probability of significant failure is highly unlikely.

Fair: The tree has some minor problems in the structure of the crown. The crown may be slightly out of balance at some branch unions or branches may be exhibiting minor structural faults. If the tree has a single trunk, this may be on a slight lean, or be exhibiting minor defects. Probability of significant failure is low.

Poor: The tree may have a poorly structured crown, the crown may be unbalanced, or exhibit large gaps. Major limbs may not be well defined; branches may be rubbing or crossing over. Branch unions may be poor or faulty at the point of attachment. The tree may have suffered major root damage. Probability of significant failure is moderate.

Very poor: The tree has a poorly structured crown. The crown is unbalanced, or exhibits large gaps. Major limbs are not well defined. Branch unions may be poor or faulty at the point of attachment. A section of the tree has failed, or is in imminent danger of failure. Active failure may be present, or failure is probably in the immediate future.

Failed: A significant section of the tree or the whole tree has failed.

Useful Life Expectancy (ULE)

- 0 years
- Less than 5 years
- 5 to 10 years
- 10 to 20 years
- 20 +

Useful life expectancy is approximately how long a tree can be retained safely and usefully in the landscape providing site conditions remain unchanged and the recommended works are completed.

It is based on the principals of safety and usefulness in the landscape and should not reflect personal opinions on species suitability.

Unsafe or 0 years:	The tree is considered dangerous in the location and/or no longer provides any amenity value.
Less Than 5 years:	The tree under normal circumstances and without extra stress should be safe and have value of maximum of 5 years. The tree will need to be replaced in the short term. Replacement plants should be established as soon as possible if there is efficient space, or consideration should be given to the removal of the tree to facilitate replanting.
5 to 10 Years:	The tree under normal circumstances and without extra stress should be safe and have value of maximum of 10 years. Trees in this category may require regular inspections and maintenance particularly if they are large specimens. Replacement plants should be established in the short term if there is sufficient space, or consideration should be given to the removal of the tree to facilitate replanting.
10 to 20 Years:	The tree under normal circumstances and without extra stress should be safe and of value of up to 20 years. During this period, regular inspections and maintenance will be required.
20 + Years:	The tree under normal circumstances and without extra stress should be safe and of value of more than years. During this period, regular inspections and maintenance may be required.

Origin

- Refers to the natural distribution of the plant.
- Native refers to plants naturally occurring on mainland and all islands of Australia.
- Indigenous refers to plants that naturally occur in the particular geographic area in question
- Exotic refers to plants that do not occur naturally on mainland Australia or all islands

Age Class

- Juvenile plants are those that still exhibit juvenile foliage and characteristics such as narrow vertical form for large spreading trees and are expected to continue vigorous growth
- Semi mature plants are those that exhibit typical mature form and foliage but are still vigorously growing. Vigorous growth and further increase in size is expected
- Mature plants are those that are at the expected largest size for the plant and exhibit some growth. These plants are expected to maintain themselves without significant increase in size
- Senescent plants are those that exhibit dead sections in the canopy or have areas of significant decay. There may be some decrease in the overall size of the plant and failure of structural limbs for trees. Plant is not expected to be a long term component of the landscape dependent on species

Arboricultural Value

Relates to the combination of previous tree condition factors, including vigour, structure, and U.L.E. and also conveys an amenity value.

Category Description

High

- Tree of high quality in good to fair condition. Generally a prominent Arboricultural feature. Tree is capable of tolerating changes in its environment. These trees have the potential to be a medium to long-term component of the landscape if managed appropriately. Retention of these trees is highly desirable.

Moderate

- Tree of moderate quality, in fair or better condition. Tree may have a condition, and or structural problem that will respond to Arboricultural treatment. Tree is capable of tolerating changes in its environment. These trees have the potential to be a medium to long-term component of the landscape if managed appropriately. Retention of these trees is generally desirable.

Low

- Tree of low quality and/or little amenity value. Tree in poor health and/or with poor structure. Tree unlikely to respond positively to changes in its environment and does not warrant design modification to preserve it.
- Tree is not significant for its size and/or young. These trees are easily replaceable.
- Tree (species) is functionally inappropriate to specific location and would be expected to be problematic if retained.
- Retention of such trees may be considered if not requiring a disproportionate expenditure of resources for a tree in its condition and location.

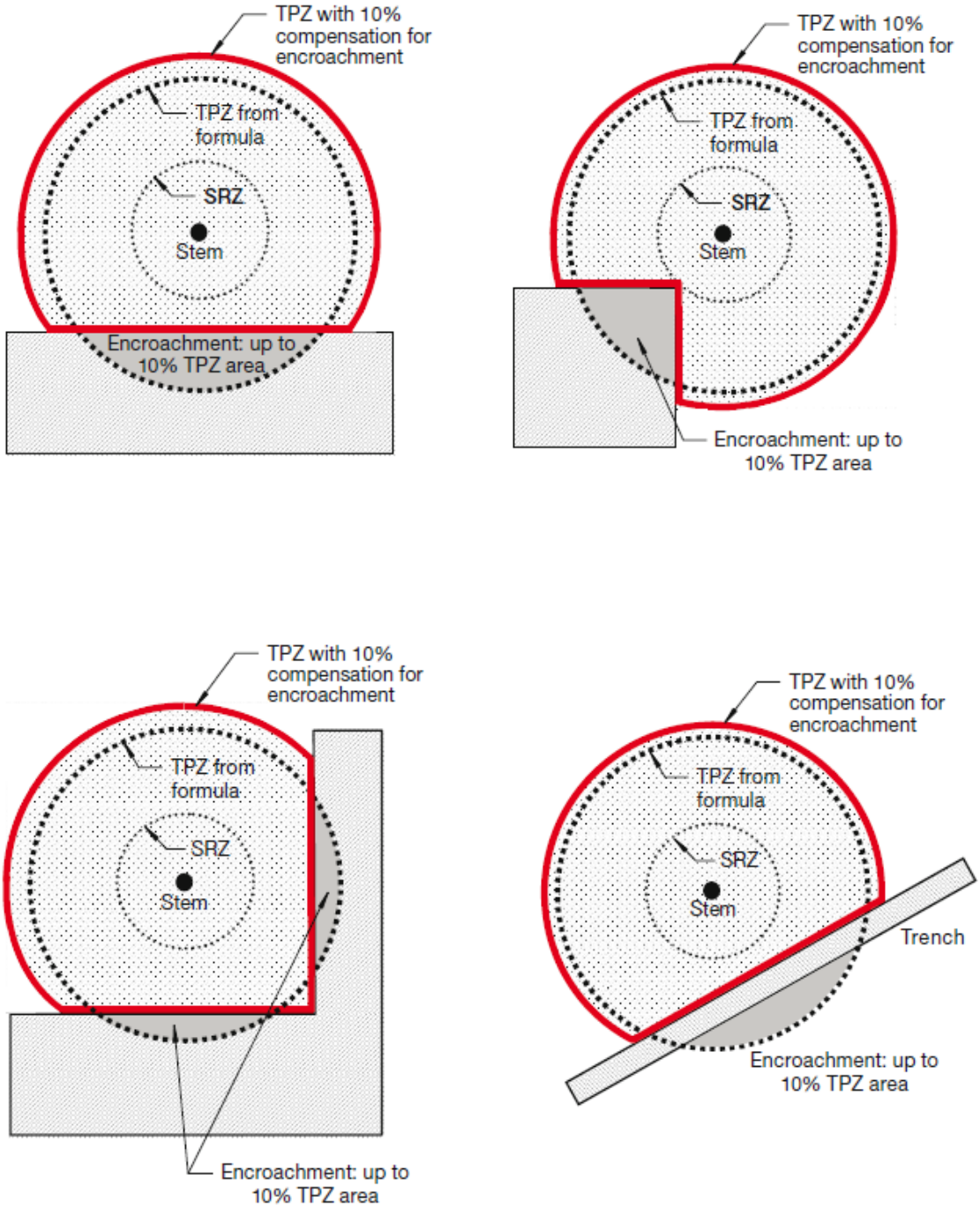
None

- Tree has a severe structural defect and/or health problem that cannot be sustained with practical Arboricultural techniques and the loss of tree would be expected in the short-term.
- Tree whose retention would be unviable after the removal of adjacent trees (includes trees that have developed in close spaced groups and would not be expected to acclimatise to severe alterations to surrounding environment – removal of adjacent shelter trees)
- Tree has a detrimental effect on the environment, for example, the tree is a woody weed.

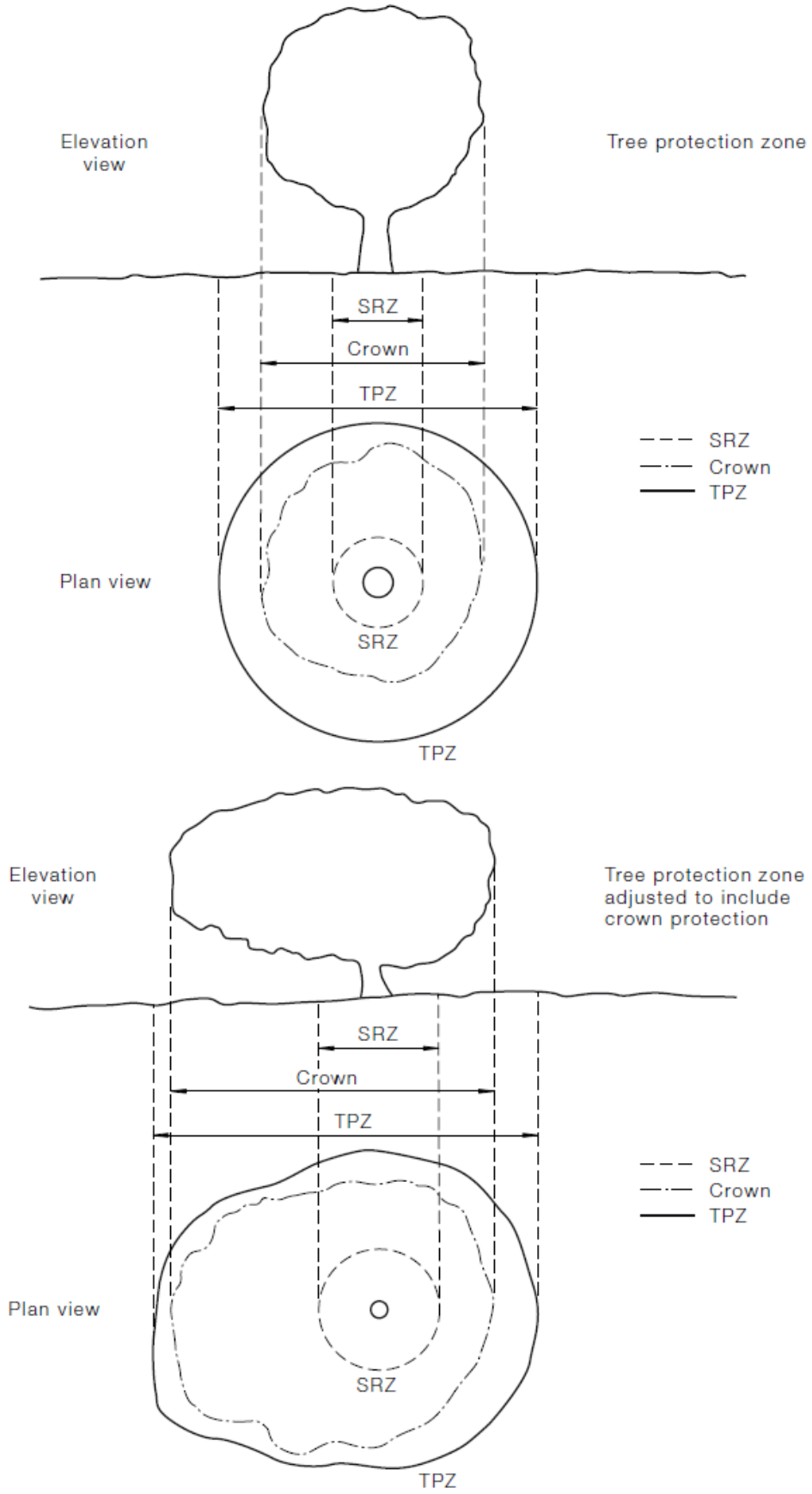
Encroachment into Tree Protection Zone

(Informative)

Encroachment into the tree protection zone (T.P.Z.) is sometimes unavoidable.



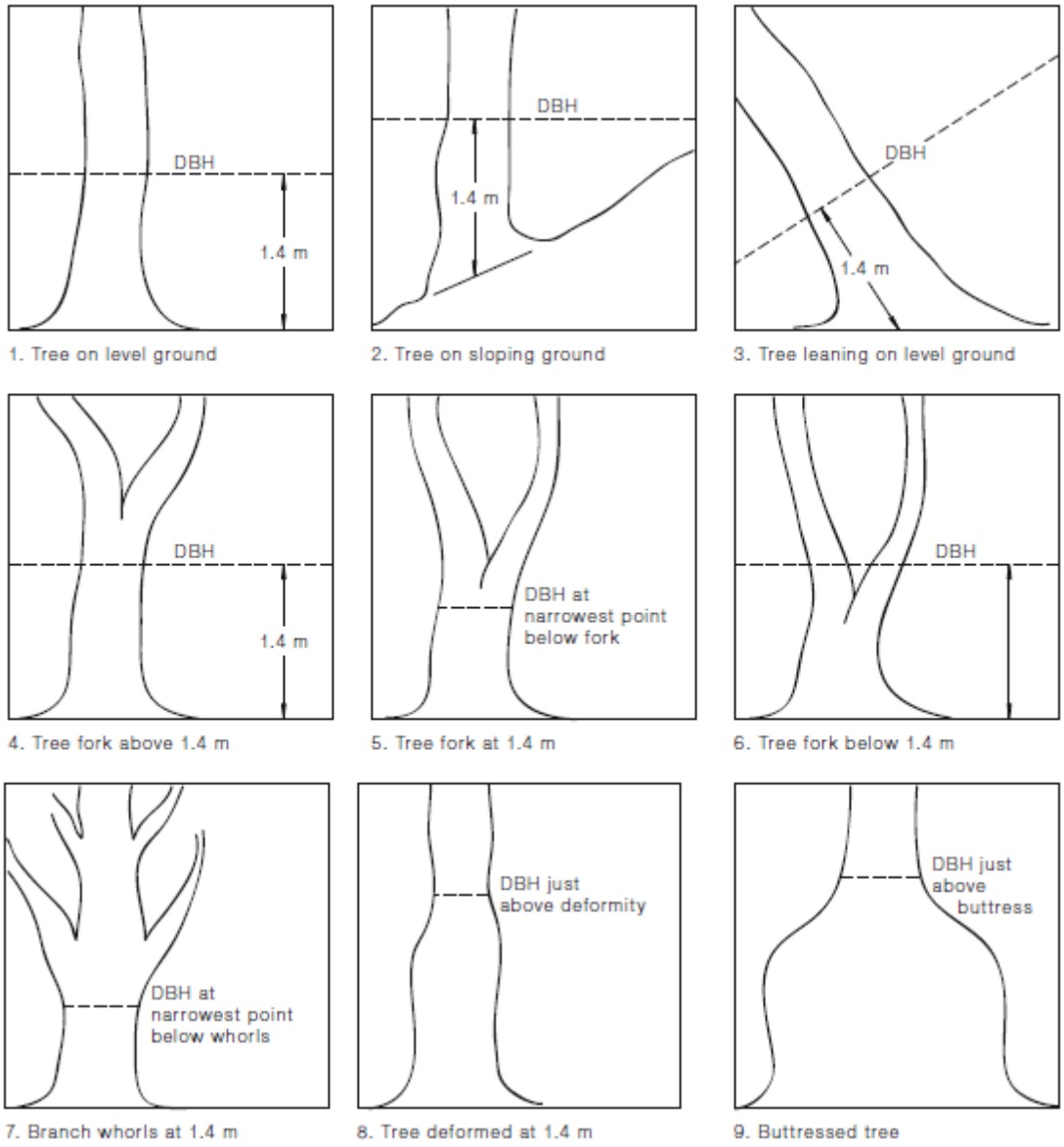
Indicative Tree Protection



DIAMETER AT BREAST HEIGHT (DBH)

(Informative)

The diversity of trunk shapes, configurations and growing environments requires that DBH be measured using a range of methods to suit particular situations.



NOTE: For example 6, the combined stem DBH may be calculated using the formula

$$\text{Total DBH} = \sqrt{(\text{DBH}_1)^2 + (\text{DBH}_2)^2 + (\text{DBH}_3)^2}$$

16.LIMITATION OF LIABILITY

Molloy Arboriculture use their qualifications, education, knowledge, training, diagnostic tools and experience to examine trees and recommend measures. Clients may choose to accept or disregard the recommendations of this assessment and report.

Molloy Arboriculture cannot detect every condition that could possibly lead to the structural failure of a tree. Conditions are often hidden within trees and below ground. Unless otherwise stated observations have been made from ground level and limited to accessible components without dissection, excavation, or probing. Molloy Arboriculture cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of Molloy Arboriculture services, such as property boundaries and ownership, disputes between neighbours, sight lines, landlord-tenant matters, and related incidents. Molloy Arboriculture cannot consider such issues unless complete and accurate information is given prior to or at the time of site inspection. Likewise, Molloy Arboriculture cannot accept responsibility for the authorisation or non-authorisation of any recommended treatment or remedial measures undertaken.

In the event that Molloy Arboriculture recommends retesting or inspection of trees at stated intervals or installs any cable/s, bracing systems and support systems Molloy Arboriculture must inspect the system installed at intervals not greater than 12 months unless otherwise specified in written reports. It is the client's responsibility to arrange with Molloy Arboriculture to conduct the re-inspection.

Information contained in this report covers those items that were examined and reflect the condition of those items at the time of inspection. There is no warranty or guarantee expressed or implied that the problems or deficiencies of the trees or property in question may not arise in the future.

All written reports must be read in their entirety, at no time shall part of the written assessment be referred to unless taken in full context of the completely written report.

If this written report is to be used in a court of law or any legal situation, Molloy Arboriculture must be advised in writing prior to the written assessment being presented in any form to any other party.

To the extent permitted by law, you agree that Molloy Arboriculture Pty Ltd is not liable to you or any other person or entity for any loss or damage caused or alleged to have caused (including loss or damage resulting from negligence), either directly or indirectly, by your use of the information (including by way of example, arboricultural advice) made available to you in this report. Without limiting this disclaimer, in no event will Molloy Arboriculture Pty Ltd be liable to you for any lost revenue or profits, or for special, indirect, consequential or incidental damage (however caused and regardless of the theory of liability) arising out of or related to your use of that information, even if Molloy Arboriculture Pty Ltd has been advised of the possibility of such loss or damage.