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ARBORIST REPORT

## ARBORICULTURAL IMPACT ASSESSMENT

PREPARED FOR: CORIO SKI CLUB

ADDRESS: 6 DELETITE LANE, MT BULLER  
3723.

TREES INSPECTED: 17<sup>TH</sup> OF JULY 2023.

VERSION 1: 28/07/2023

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## Contents

Executive Summary.....	3
1. Brief.....	5
2. Assessment Methodology.....	5
3. Planning Property Report.....	6
4. Site Map .....	8
5. Observations .....	9
.....	10
6. Tree Details .....	11
6.1 TPZ & SRZ Calculations.....	15
6.1 Discussion.....	16
7. Conclusion.....	17
7.1 Major Encroachment .....	17
7.2 Minor Encroachment .....	22
8. Recommendations .....	25
8.1 Protection Methods During Construction.....	29
9. References .....	32
10. Glossary.....	32
11. Disclaimer.....	39
11.1 Assumptions and Limiting Factors .....	39
11.2 Declaration.....	40
Appendix 1: Tree Photos.....	41

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## Executive Summary

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Darren Cole-Sinclair from dcs design has contracted David Kuronya to provide an Arborist report for trees located at Corio Ski Club, 6 Delatite Lane Mt Buller Vic 3723.

This report will, include identification, dimensions, TPZ (Tree Protection Zone), SRZ (Structural Root Zone), ULE (Useful Life Expectancy), retention value and hazard rating.

Provide specific recommendations in relation to the impacts of the proposed alterations and extensions to the existing trees on site, especially those along the east and south sides of the building.

David J Kuronya attended 6 Delatite Lane Mt Buller Vic 3723 on the 17<sup>th</sup> of July ,2023 and accessed the twenty-six (26) subject trees (see Fig 2).

- Most of the trees are not directly affected by the proposed development of Corio Ski Club these include trees 4 ,5, 6, 7, 8,9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23 & 24.

- Of the twenty-six (26) subject trees only two (2) have minor encroachment these include tree 3 with 6.39% and tree 21 with 5.8%.

- Four (4) trees are directly impacted by the proposed development with major encroachments into their TPZ's these are **T1, T2, T25 & T26**. Care will need to be taken along with some remedial works to ensure the trees remain viable.

- One tree has been recommended for removal T26, as it has Nil retention value, and is not worthy of being a constraint to a development design proposal.

- T1 – requires Canopy Reduction Pruning is done as per the (Australian Standard 4373-2007 Pruning of Amenity Trees Clause 7.3.2 Reduction Pruning). This is to be done by pruning the ends of the branches back to internal lateral branches or stems, by approx. 10 to 15%, with no cuts larger than approx. 75mm. Especially the overextended branch, to the west growing directly over the roof of the lodge, which should be reduced back to the lowest available growth point, as soon as possible.

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- T3 - Canopy Reduction Pruning is done as per the (Australian Standard 4373-2007 Pruning of Amenity Trees Clause 7.3.2 Reduction Pruning). This is to be done by pruning the ends of the branches back to internal lateral branches or stems, by approx. 10 to 15%, with no cuts larger than approx. 75mm. Especially the overextended trunk, growing over the proposed new path to the north.
- Care will need to be taken during construction to prevent soil compaction and mechanical damage to the tree's trunks and branches. See 8. Recommendations and 8.1 Protection Methods During Construction, for details.

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## 1. Brief

Darren Cole-Sinclair from dcs design has contracted David Kuronya to provide an Arborist report for trees located at Corio Ski Club, 6 Delatite Lane Mt Buller Vic 3723.

This report will, include identification, dimensions, TPZ (Tree Protection Zone), SRZ (Structural Root Zone), ULE (Useful Life Expectancy), retention value and hazard rating.

Provide specific recommendations in relation to the impacts of the proposed alterations and extensions to the existing trees on site, especially those along the east and south sides of the building.

A site map showing the location of the trees inspected will be provided, with full photographic evidence of any defects to support all recommendations. All on-site data collected will also be available to the client if required.

## 2. Assessment Methodology

David J Kuronya attended 6 Delatite Lane Mt Buller Vic 3723 on the 17<sup>th</sup> of July ,2023 and accessed the twenty-six (26) subject trees (see Fig 2).

The subject trees were assessed from the ground only using the VTA (Visual Tree assessment) method (Matteck & Breloer, 1994, p118).

All trees inspected were tagged with numbered tags, attached to the southern side of the tree's trunk at approx. 1.5m.

The following equipment has been used for the tree assessment.

- DBH and Metric Measuring tapes
- Rubber mallet
- Wire probe
- iPhone11
- Measuring wheel
- iPad Air 4<sup>th</sup> gen
- Nikon Forestry Pro Laser Range Finder
- Trimble DA2 Receiver
- Trimble Terraflex

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## 3. Planning Property Report

<b>Local Government Authority:</b>	<b>MOUNT BULLER ALPINE RESORT (UNINC)</b>
<b>Planning Zone:</b>	CDZ - Comprehensive Development
<b>Vegetation Protection &amp; Significant Landscape Overlays:</b>	BMO - Bushfire Management Overlay DDO - Design and Development Overlay EMO - Erosion Management Overlay Aboriginal Cultural Heritage
<b>Permit Requirements</b>	A planning permit under Clause 52.17 of the local planning scheme, may be required as per Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17). Guidelines for the removal, destruction or lopping of native vegetation. December 2017

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# PLANNING PROPERTY REPORT



From www.planning.vic.gov.au at 25 July 2023 04:49 PM

## PROPERTY DETAILS

Address: **6 DELATITE LANE MOUNT BULLER 3723**  
 Crown Description: **Allot. 139 Sec. A PARISH OF CHANGUE EAST**  
 Standard Parcel Identifier (SPI): **139-A\PP2370**  
 Local Government Area (Council): **MOUNT BULLER ALPINE RESORT (UNINC)**  
 Council Property Number: **A80104**  
 Planning Scheme: **Alpine Resorts**  
 Directory Reference: **Vicroads 63 J4**

[Planning Scheme - Alpine Resorts](#)

## UTILITIES

Rural Water Corporation: **Goulburn-Murray Water**  
 Urban Water Corporation: **Goulburn Valley Water**  
 Melbourne Water: **Outside drainage boundary**  
 Power Distributor: **AUSNET**

## STATE ELECTORATES

Legislative Council: **NORTHERN VICTORIA**  
 Legislative Assembly: **EILDON**

## OTHER

Registered Aboriginal Party: **Taungurung Land and Waters Council Aboriginal Corporation**

[View location in VicPlan](#)

## Planning Zones

COMPREHENSIVE DEVELOPMENT ZONE (CDZ) (MOUNT BULLER ALPINE RESORT (UNINC))  
 COMPREHENSIVE DEVELOPMENT ZONE (CDZ) (MOUNT BULLER ALPINE RESORT (UNINC)) SCHEDULE 1 (CDZ1) (MOUNT BULLER ALPINE RESORT (UNINC))

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CDZ - Comprehensive Development      PPRZ - Public Park and Recreation      TRZ2 - Principal Road Network

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

Figure 1 Planning Permit, source VicPlan.

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## 5. Observations

### Description of the subject site

The site 1580m above sea level and is moderately treed mainly around the sites boundaries, with the majority of the trees located to the south of the building . Slopping from the south downhill to the north, the site is situated on the northern side of Delatite Lane.

Access is via steel stairs off Delatite Lane, then a rock path with steps which extends down to the main entrance of the lodge. Another stair case extends past the lodge down hill, and to the east of the lodge. Corio Ski Club is a two story property containing a single main building and no onsite carpark. Stone retaining walls and terrising exist around the south and west of the lodge.

All trees on site are *Eucalyptus pauciflora* – *Snow Gums*.

This species is a tree or mallee, that typically grows to a height of 1–20 m and forms a lignotuber, often with multiple trunks.. It has smooth white, grey or yellow bark that is shed in ribbons and sometimes has insect scribbles. However, most trees on site would be no taller than 18m.

Snow gum is amongst the hardiest of all Eucalyptus species, surviving the severe winter temperatures of the Australian Alps. The species regenerates from seed, by epicormic shoots below the bark, and from lignotubers. It is the most cold-tolerant species of eucalyptus.

Many of these trees are growing in close proximity to each other, with interlocking canopies, making photographing individual trees difficult.

The site is partially cleared to gain access to the building and for maintenance access around the building as well.

A walking track traverses the site to the south and is used by people to move through the site to access surrounding lodges, as well as snow play. All trees to the south of this track on the batter, will not be effected by the development, and have not been assessed.

These cleared areas are mown regularly, but due to snow cover on the ground it was not possible the view the ground cover at this point in time.

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- *Approximate property boundary shown in blue.*



Figure 3: Satellite image of . Source VicPlan.

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## 6. Tree Details

The following table shows all tree data collected during the assessment.

- Street trees and trees on neighbouring properties are shaded grey.
- \* = Multi stemmed tree
- Calculated D.B.H is for multi-stemmed trees only.  $DBH = \sqrt{s1^2 + s2^2 + s3^2 + s4^2 + s5^2}$

Tree #	Botanical Name	Common Name	Origin	D.B.H (cm)	DELWP DBH	Calculated D.B.H (cm)	D.A.R.B (cm)	Height (m)	Width (m)	Age	Health	Structure	U.L.E	Retention Value	Hazard rating	Comments
1	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	42*45*25*48	48	82	80	12	16	Mature	Good	Fair	40+	High	Medium	<ul style="list-style-type: none"> <li>• Large, elongated branch growing on the east side of the tree over Lodge requires pruning.</li> <li>• retained stub on the same leader would benefit from removal.</li> </ul>
2	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	29*29	29	41	48	10	12	Semi Mature	High	Fair	20+	High	Low	<ul style="list-style-type: none"> <li>• Minor deadwood, leaning to the northwest.</li> </ul>
3	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	21	21		25	16	16	Semi Mature	High	Poor	20+	High	Medium	<ul style="list-style-type: none"> <li>• Severe lean to the west towards Lodge, no targets under the tree. Epicormic growth along the trunk.</li> </ul>
4	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	14	14		16	6	6	Semi Mature	High	Fair	20+	High	Low	<ul style="list-style-type: none"> <li>• Severe lean of more than 45° to the north</li> </ul>
5	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	14	14		16	8	8	Young	High	Fair	20+	High	Low	<ul style="list-style-type: none"> <li>• Lean of approx. 40° to the North.</li> <li>• Some retained stubs and minor deadwood</li> </ul>
6	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	14	14		16	8	8	Semi Mature	High	Fair	20+	High	Low	<ul style="list-style-type: none"> <li>• Tree leaning to the north approximately 40°</li> </ul>
7	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	11*08	11	14	18	7	6	Young	Low	Poor	10+	Medium	Low	<ul style="list-style-type: none"> <li>• Tree has codominant trunks with the northern</li> </ul>

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Tree #	Botanical Name	Common Name	Origin	D.B.H (cm)	DELWP DBH	Calculated D.B.H (cm)	D.A.R.B (cm)	Height (m)	Width (m)	Age	Health	Structure	U.L.E	Retention Value	Hazard rating	Comments
																trunk, mostly dead, lower part alive with epicormic growth tree leaning to the northeast.
8	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	36	36		44	14	10	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Some Deadwood in the upper canopy to approximately 70 mm</li> </ul>
9	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	12*11*08*07*06	12	20	30	6	6	Semi-mature	Low	Poor	10+	Low	Low	<ul style="list-style-type: none"> <li>Several dead trunks, with epicormic regrowth.</li> <li>excessive Deadwood throughout, leaning to the north-east to the north of the access track.</li> </ul>
10	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	22	22	24	24	12	12	Semi-mature	High	Fair	20+	High	Medium	<ul style="list-style-type: none"> <li>Deadwood throughout the tree over access track.</li> </ul>
11	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	26*30	30	40	60	14	14	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Codominant trunks both with vertical scars on the southern side.</li> <li>some minor Deadwood.</li> </ul>
12	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	37*27*13*15	37	50	80	16	16	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Failed limb, suspended in the canopy tree leaning to the north.</li> </ul>
13	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	16*19	19	25	30	12	9	Semi Mature	Low	Poor	20+	Medium	Medium	<ul style="list-style-type: none"> <li>Western leader has hazard beam cracks in some higher branches.</li> </ul>
14	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	45	45		54	16	15	Mature	High	Fair	40+	High	Medium	<ul style="list-style-type: none"> <li>Multiple trunks x 4</li> <li>some minor deadwood no real issues</li> </ul>
15	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	18*22	18	28	25	12	10	Mature	Dead	Poor	0	Nil	High	<ul style="list-style-type: none"> <li>Tops of both trunks are dead.</li> <li>Deadwood to 100 mm tree, leaning to the north</li> </ul>

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Tree #	Botanical Name	Common Name	Origin	D.B.H (cm)	DELWP DBH	Calculated D.B.H (cm)	D.A.R.B (cm)	Height (m)	Width (m)	Age	Health	Structure	U.L.E	Retention Value	Hazard rating	Comments
																and suppress by neighbouring tree to the west.
16	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	33	33		40	15	14	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Codominant trunks at 2 m with some bulging in the fork, but not compressed tree.</li> <li>leaning to the north towards lodge and staircase.</li> </ul>
17	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	22	22		23	8	10	Mature	High	Fair	20+	High	Medium	<ul style="list-style-type: none"> <li>Dead tree, leaning towards Lodge</li> </ul>
18	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	25	25		27	8	9	Mature	High	Poor	20+	Medium	Medium	<ul style="list-style-type: none"> <li>Large scar and decay on the northwest side of the tree extending up to 1.8 m.</li> <li>Epicormic growth on the northern side at the base of the trunk.</li> <li>some minor deadwood in the upper canopy.</li> <li>numerous pruning events on this tree.</li> </ul>
19	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	15	15		18	10	8	Young	Good	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Tree is leaning more than 45° to the north above neighbouring tree 18.</li> </ul>
20	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	10	10		14	4	2	Young	Low	Poor	20+	Low	Low	<ul style="list-style-type: none"> <li>Leaning to the north towards the Lodge, some minor deadwood.</li> <li>large scar on the northern trunk, where a branch has been removed causing Cambium dieback</li> </ul>

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Tree #	Botanical Name	Common Name	Origin	D.B.H (cm)	DELWP DBH	Calculated D.B.H (cm)	D.A.R.B (cm)	Height (m)	Width (m)	Age	Health	Structure	U.L.E	Retention Value	Hazard rating	Comments
21	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	36*39*40	40	66	78	15	16	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>Tree is leaning to the north with epicormic regrowth at the base.</li> </ul>
22	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	43*36*25*38	43	72	118	18	16	Mature	High	Poor	20+	High	High	<ul style="list-style-type: none"> <li>Extensive Deadwood with epicormic regrowth.</li> <li>tree leaning at a severe angle growing out of rocks.</li> </ul>
23	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	19	19		22	8	7	Semi Mature	Low	Poor	20+	Low	Low	<ul style="list-style-type: none"> <li>Tree is weighted and leaning to the north due to being suppressed by larger trees, surrounding it to the south, possibly phototropic.</li> </ul>
24	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	36	36		39	12	10	Mature	High	Fair	40+	High	Low	<ul style="list-style-type: none"> <li>The southwestern trunk has a codominant fork at 2 m. I would recommend the western branch on that fork be weight reduced.</li> <li>Large piece of deadwood on the western side and eastern stub should be removed.</li> </ul>
25	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	19*34*38*41	41	68	80	18	18	Mature	High	Fair	40+	High	Medium	<ul style="list-style-type: none"> <li>Lean to the northwest.</li> <li>large dead, stub, and epicormic growth.</li> </ul>
26	<i>Eucalyptus pauciflora</i>	Snow Gum	Indigenous	21	21		25	7	3	Mature	Low	Very Poor	<5	Nil	Medium	<ul style="list-style-type: none"> <li>Leaning to the north, suppress by large tree, minor deadwood.</li> <li>previous pruning done.</li> </ul>

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Table 1: Tree Data

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## 6.1 TPZ & SRZ Calculations

The following table shows the TPZ and SRZ calculations for the Twenty-six (26) subject trees.

- All distances are measured from the centre of the trunk.
- Street trees and offsite/neighbouring trees are shaded grey.

Tree #	I.D	TPZ radius (m)	SRZ radius (m)	Total TPZ Area (sqm)	Comments
1	<i>Eucalyptus pauciflora</i>	9.84m	3.01m	304.19m <sup>2</sup>	Major combined encroachment of 51.54% from building and path construction.
2	<i>Eucalyptus pauciflora</i>	4.92m	2.43m	76.05m <sup>2</sup>	Major encroachment with proposed new path of 14.52%
3	<i>Eucalyptus pauciflora</i>	2.52m	1.85m	19.95m <sup>2</sup>	Minor encroachment 6.39%
4	<i>Eucalyptus pauciflora</i>	2m	1.53m	12.57m <sup>2</sup>	No encroachment
5	<i>Eucalyptus pauciflora</i>	2m	1.53m	12.57m <sup>2</sup>	No encroachment
6	<i>Eucalyptus pauciflora</i>	2m	1.53m	12.57m <sup>2</sup>	No encroachment
7	<i>Eucalyptus pauciflora</i>	2m	1.61m	12.57m <sup>2</sup>	No encroachment
8	<i>Eucalyptus pauciflora</i>	4.32m	2.34m	58.63m <sup>2</sup>	No encroachment
9	<i>Eucalyptus pauciflora</i>	2.4m	2.34m	18.1m <sup>2</sup>	No encroachment
10	<i>Eucalyptus pauciflora</i>	2.64m	2.34m	21.9m <sup>2</sup>	No encroachment
11	<i>Eucalyptus pauciflora</i>	4.8m	2.67m	72.38m <sup>2</sup>	No encroachment
12	<i>Eucalyptus pauciflora</i>	6m	3.01m	113.1m <sup>2</sup>	No encroachment
13	<i>Eucalyptus pauciflora</i>	3m	2m	28.27m <sup>2</sup>	No encroachment
14	<i>Eucalyptus pauciflora</i>	5.4m	2.55m	91.61m <sup>2</sup>	No encroachment
15	<i>Eucalyptus pauciflora</i>	3.36m	1.85m	35.47m <sup>2</sup>	No encroachment
16	<i>Eucalyptus pauciflora</i>	3.96m	2.25m	49.27m <sup>2</sup>	No encroachment
17	<i>Eucalyptus pauciflora</i>	2.64m	1.79m	21.9m <sup>2</sup>	No encroachment
18	<i>Eucalyptus pauciflora</i>	3m	1.91m	28.27m <sup>2</sup>	No encroachment
19	<i>Eucalyptus pauciflora</i>	2m	1.61m	12.57m <sup>2</sup>	No encroachment

Tree #	I.D	TPZ radius (m)	SRZ radius (m)	Total TPZ Area (sqm)	Comments
20	<i>Eucalyptus pauciflora</i>	2m	1.5m	12.57m <sup>2</sup>	No encroachment
21	<i>Eucalyptus pauciflora</i>	7.92m	2.98m	197.06m <sup>2</sup>	Minor encroachment of 5.6%
22	<i>Eucalyptus pauciflora</i>	8.64m	3.55m	234.52m <sup>2</sup>	No encroachment
23	<i>Eucalyptus pauciflora</i>	2.28m	1.75m	16.33m <sup>2</sup>	No encroachment
24	<i>Eucalyptus pauciflora</i>	4.32m	2.23m	58.63m <sup>2</sup>	No encroachment
25	<i>Eucalyptus pauciflora</i>	8.16m	3.01m	209.18m <sup>2</sup>	Existing major encroachment of 29.4%
26	<i>Eucalyptus pauciflora</i>	2.52m	1.85m	19.95m <sup>2</sup>	Existing major encroachment of 40.3%

## 6.1 Discussion

David Kuronya attended Corio Ski Club 6 Delatite Lane Mt Buller Vic 3723 on the 17<sup>th</sup> of July 2023 and accessed the twenty-six (26) subject trees (see Fig 2).

The subject trees were all identified as *Eucalyptus pauciflora* Snow Gums.

In general, their health and vigour is high, with fair to poor structure. Many of the trees are multi-trunked growing from a common lignotuber. The trees are leaning primarily to the north, with moderately full canopies, some containing minor to moderate deadwood which is typical for this species. See comments 6. Tree Details – Tree Data Table.

Most of the trees are not directly affected by the proposed development of Corio Ski Club these include trees 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23 & 24.

Of the twenty-six (26) subject trees only two (2) have minor encroachment these include trees 3 with 6.39% and tree 21 with 5.6%.

Four (4) trees are directly impacted by the proposed development with major encroachments into their TPZ's these are T1, T2, T25 & T26. Care will need to be taken along with some remedial works to ensure the trees remain viable.

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## 7. Conclusion

Of the twenty-six (26) subject trees assessed four (4) are directly affected by the proposed development. These include T1, T2, T25 & T26.

### 7.1 Major Encroachment

T1 was identified as *Eucalyptus pauciflora* – Snow Gum.

T1 presented in good health and vigour, with fair structure.

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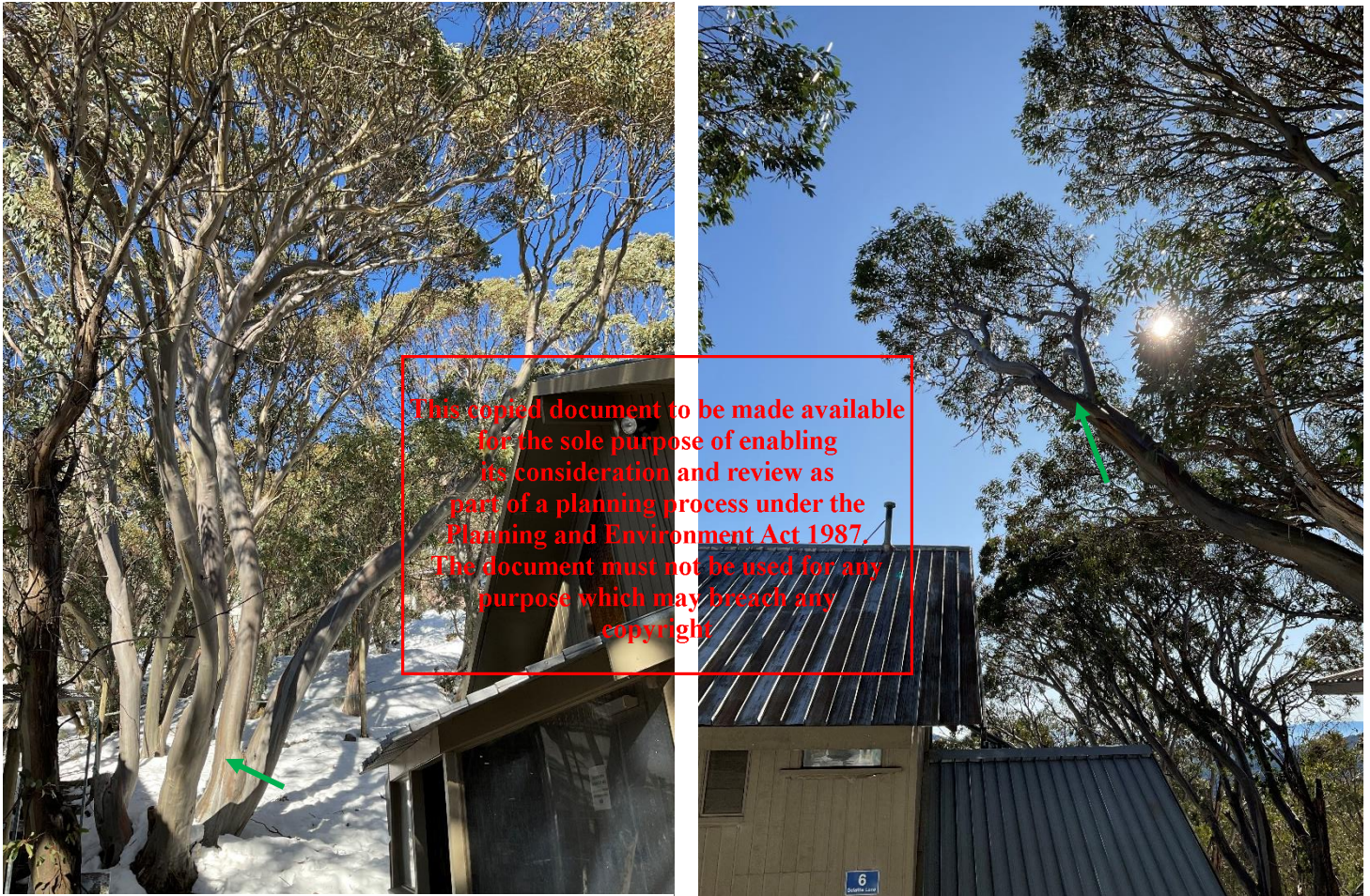


Figure 4 and 5 Shows T1 and overextended branch over lodge.

T1 contains multiple trunks x 3, and has a large, overextended branch to the west growing directly over the roof of the lodge. At present the tree is located only 4.7m from the SE corner of the lodge, with the eastern trunk located directly on the eastern boundary of the site.

With the construction of the proposed new front entrance and access path, a major combined encroachment into the trees TPZ of 51.54% could occur. However, the proposed new access path will be constructed with tree sensitive methods such as “bark” laid on the ground surface which will help reduce compaction from pedestrians and will negate the need to excavate soil completely, so no root damage will occur.



If this were to occur the reduced encroachment into the trees TPZ would be 35.76%. There is already a major encroachment due to the current building and pathway, therefore care will need to be taken not to impact the tree any more than necessary.

Remedial works and pruning may be required to ensure T1 remains viable.

T2 was identified as *Eucalyptus pauciflora* – Snow Gum.

T2 presented in high health and vigour, with fair structure.

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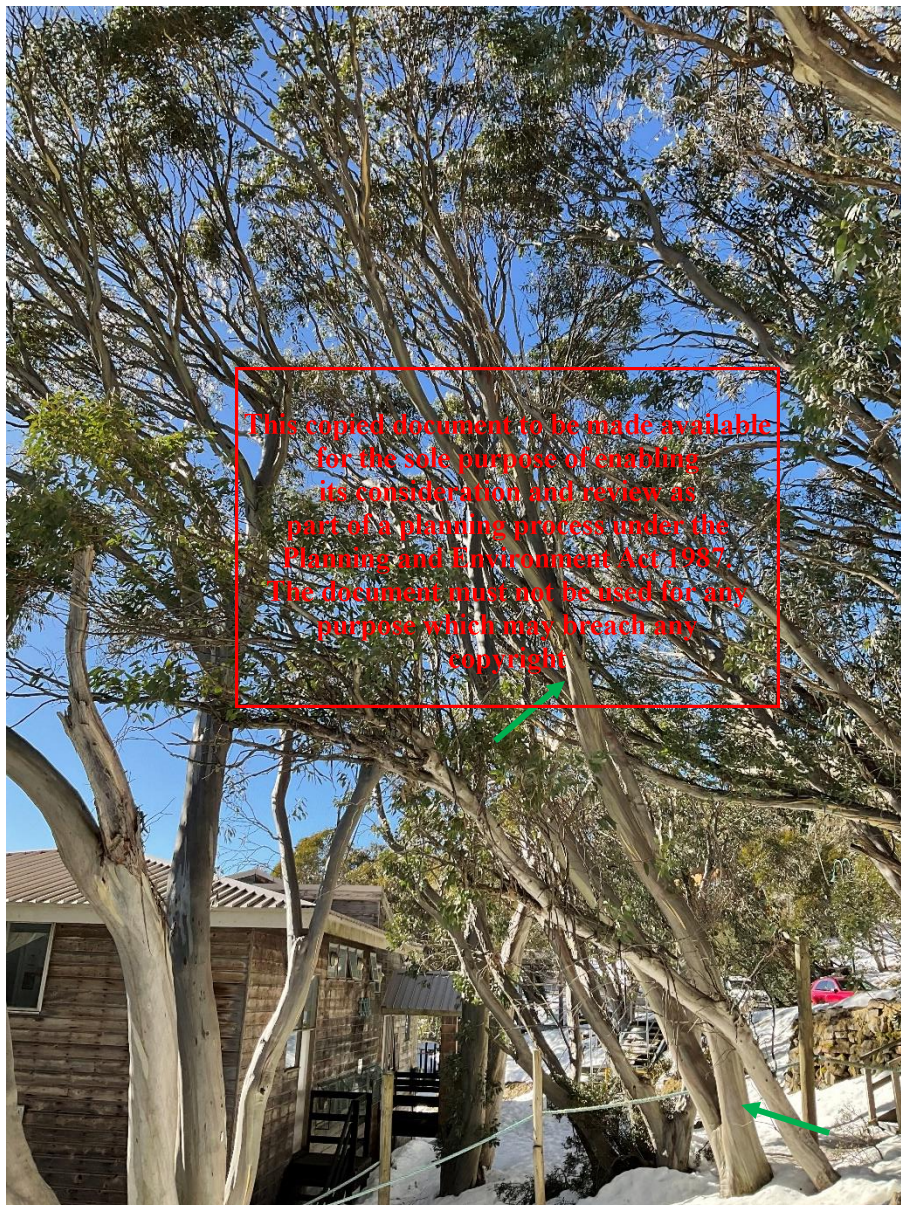


Figure 6 T2 to the south of the proposed new access path.

T2 contains minor deadwood and is leaning to the north. It is situated just off site over the eastern boundary. There will be a major encroachment of 14.52% into its TPZ, due to the new access path

however I believe the tree can still remain viable for the following reasons: the path will be constructed with tree sensitive methods such as “bark” laid on the ground surface which will help reduce compaction from pedestrians and will negate the need to excavate soil completely, so no root damage will occur.

There is also sufficient room for the roots to expand to the south and west continuous with the existing root system.

**T25** was identified as *Eucalyptus pauciflora* – *Snow Gum*.

T25 presented in high health and vigour, with fair structure.

T25 is located on the eastern side of the lodge between the existing veranda and staircase. The tree is leaning to the northwest, with some branches over hanging the lodge. Some deadwood persists, throughout the tree but nothing major.

An existing major encroachment of 29.4% already exists. The new proposed works will not encroach anymore into the trees TPZ, however care will need to be taken during works so the tree is not damaged, especially the tree’s trunk and root system. Some remedial pruning is required to ensure the tree remains viable.

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Figure 7 T25 eastern side of lodge.

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T26 presented in low health and vigour, with very poor structure.



Figure 8 T26 with Nil retention value.

T26 upper canopy is completely dead, with only a narrow strip of conductive tissue being alive on the north side, of the trunk. There are also small epicormic shoots present, which indicates this tree is under stress. Signs have been attached to the tree.

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The tree has been severely impacted already by development, and any further disturbance possibly would lead to this tree's death. T26 has Nil retention value and is not worthy of being a constraint to a development design proposal.

## 7.2 Minor Encroachment

Two (2) trees will incur minor encroachments of less than 10%, and therefore these trees will remain viable as long as care is taken during construction. The two trees are T3 and T21.

**T3** was identified as *Eucalyptus pauciflora* – *Snow Gum*.

T3 presented in high health and vigour and poor structure.

The tree has a severe lean to the northwest towards Lodge. Some minor deadwood and epicormic growth along the trunk are present.

A minor encroachment of 6.39% will occur due to the construction of the proposed new access path, however I believe the tree can still remain viable for the following reasons: the path will be constructed with tree sensitive methods such as "bark" laid on the ground surface which will help reduce compaction from pedestrians and will negate the need to excavate soil completely, so no root damage will occur.

There is also sufficient room for the roots to expand to the south and west continuous with the existing root system.

Some remedial pruning would be a benefit to the tree, as it will be directly over the new access path into the main entrance of the lodge.

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Figure 9 T3 leaning to the north, directly over the proposed new path.

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T21 was identified as *Eucalyptus pauciflora* – **Snow Gum**.

T21 presented in high health and vigour and fair structure.

The tree is weighted and leaning to the north due to being suppressed by larger trees, surrounding it to the south, and possibly phototropic leaning out to the north in search of more available light. There will be a minor encroachment of 5.6%, which is preexisting due to the current building.

Care will need to be taken not to encroach any further and cause damage to the tree.



Figure 10 T21 located on the northeast corner of the lodge.

All other trees onsite are not directly affected by the proposed development with all works being outside their TPZ's and SRZ's.

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## 8. Recommendations

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It is the developer's intention to avoid any tree removal, and to minimise the impact on the subject trees by employing tree sensitive construction methods, such as using 'mulch or bark' to create an informal access path into the lodge.

This will negate the need to do any earthworks, such as leveling the site and digging holes for footings, which will mean no root damage to T1, T2 & T3. The mulch or bark will also help reduce compaction from pedestrian traffic, hold moisture and add nutrient into the soil.

It is recommended that this mulch be laid to a depth of 100mm, and periodically 'topped up', to ensure its effectiveness.

The Australian Standard AS4970-2209 Protection of trees on development sites states that if there is more than a 10% encroachment then the tree is deemed lost, however this is a general recommendation and not a specification. The tree species, location, soil type and available water all need to be taken into consideration in each instance.

This species of trees can be tolerant of incursions of more than 10% if there is enough area to increase the TPZ in other directions. If it is planting up to the remaining root mass. I believe there is more than adequate room to allow for root growth around the trees in other directions, especially with the tree sensitive access path, causing no damage to the tree's root systems.

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**T1** was identified as *Eucalyptus pauciflora* – **Snow Gum**.

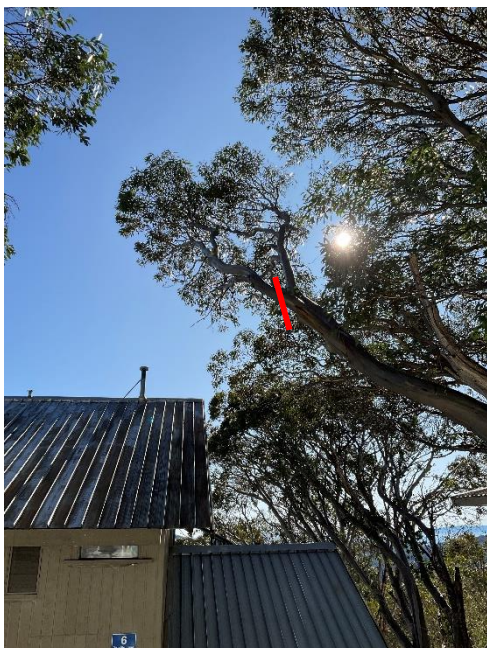
A major encroachment of 35.76%, will occur with the proposed development, and to reduce the impacts of these works it is recommended that any roots revealed during excavation within the TPZ are to be pruned in accordance with AS4372-2007 Pruning of Amenity Trees by a qualified arborist using clean sharp hand tools.

To compensate for the loss of root mass it is recommended that Canopy Reduction Pruning is done as per the (Australian Standard 4373-2007 Pruning of Amenity Trees Clause 7.3.2 Reduction Pruning). This is to be done by pruning the ends of the branches back to internal lateral branches or stems, by approx. 10 to 15%, with no cuts larger than approx. 75mm. Especially the overextended branch, to the west growing directly over the roof of the lodge, which should be reduced back to the lowest available growth point, as soon as possible.



- The trunk and branches of the tree need to be protected from mechanical damage during excavation and erecting of scaffold. This can be done by placing strips of styrofoam packaging and bubble wrap around the tree's trunk and branches that may be damaged, and tying or taping them in place for the duration of the works and removed after the site is reinstated. This protection must be at least 25mm thick and extend to ground level.
- Either fence off around the tree with barrier webbing or lay down mulch to a depth of 75mm to prevent compaction of the soil, (due to the uneven ground and rocks it may be impracticable to lay boards on top of the mulch for added protection). This is to be installed out to the end of the trees TPZ where practical.
- Use non-destructive methods to dig out the footings, such as hand digging, or an air shaped, and direct pipes under the tree's roots where practicable.
- If roots are to be cut then it must be done with a suitably shape tool such as a secateurs, sharp axe or saw, no roots are to be torn or broken off. If this occurs, then the roots must be trimmed back to clean sound undamaged material and would be best done under a qualified Arborists direction.
- Any roots that are exposed must be protected from drying out, during construction, and if construction takes some time, then the roots must be covered with jute matting or mulch until completion of the job.
- Once construction is completed back fill the excavations and mulch around the tree to a depth of 75mm, out past the tree's dripline, and keep moist.

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T1 - Approx location of pruning.

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**T2** was identified as *Eucalyptus pauciflora – Snow Gum*.

A major encroachment of 14.52%, will occur with the proposed development, and to reduce the impacts of these works it is recommended that any roots revealed during excavation within the TPZ are to be pruned in accordance with AS4372-2007 Pruning of Amenity Trees by a qualified arborist using clean sharp hand tools.

To compensate for the loss of root mass it is recommended that Canopy Reduction Pruning is done as per the (Australian Standard 4373-2007 Pruning of Amenity Trees Clause 7.3.2 Reduction Pruning). This is to be done by pruning the ends of the branches back to internal lateral branches or stems, by approx. 10 to 15%, with no cuts larger than approx. 50mm. Especially the overextended trunk over the proposed new access path.

- The trunk and branches of the tree need to be protected from mechanical damage during excavation and erecting of scaffold. This can be done by placing strips of styrofoam packaging and bubble wrap around the tree's trunk and branches that may be damaged, and tying or taping them in place for the duration of the works and removed after the site is reinstated. This protection must be at least 25mm thick and extend to ground level.
- Either fence off around the tree with barrier webbing or lay down mulch to a depth of 75mm to prevent compaction of the soil, (due to the uneven ground and rocks it may be impracticable to lay boards on top of the mulch for added protection). This is to be installed out to the end of the trees TPZ where practical.
- Any roots that are exposed must be protected from drying out, during construction, and if construction takes some time, then the roots must be covered with jute matting or mulch until completion of the job.
- Once construction is completed back fill the excavations and mulch around the tree to a depth of 75mm, out past the tree's dripline, and keep moist.

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**T25** was identified as *Eucalyptus pauciflora – Snow Gum*.

A major encroachment of 29.4%, will occur with the proposed development, and to reduce the impacts of these works it is recommended that any roots revealed during excavation within the TPZ are to be pruned in accordance with AS4372-2007 Pruning of Amenity Trees by a qualified arborist using clean sharp hand tools.

To compensate for the loss of root mass it is recommended that Canopy Reduction Pruning is done as per the (Australian Standard 4373-2007 Pruning of Amenity Trees Clause 7.3.2 Reduction Pruning). This is to be done by pruning the ends of the branches back to internal lateral branches or stems, by approx. 10 to 15%, with no cuts larger than approx. 75mm. Especially the overextended trunk over the proposed new access path.

- The trunk and branches of the tree need to be protected from mechanical damage during excavation and erecting of scaffold. This can be done by placing strips of styrofoam packaging and bubble wrap around the tree's trunk and branches that may be damaged, and tying or taping them in place for the duration of the works and removed after the site is reinstated. This protection must be at least 25mm thick and extend to ground level.
- Either fence off around the tree with barrier webbing or lay down mulch to a depth of 75mm to prevent compaction of the soil, (due to the uneven ground and rocks it may be impracticable to lay boards on top of the mulch for added protection). This is to be installed out to the end of the trees TPZ where practical.
- Use non-destructive methods to dig out the trench and footing, such as hand digging, or an air shaped, and direct pipes under the tree's roots where practicable.
- If roots are to be cut then it must be done with a suitably shape tool such as a secateurs, sharp axe or saw, no roots are to be pulled or broken off. If this occurs, then the roots must be trimmed back to clean sound undamaged material and would be best done under a qualified Arborists direction.
- Any roots that are exposed must be protected from drying out, during construction, and if construction takes some time, then the roots must be covered which jute matting or mulch until completion of the job.
- Once construction is completed back fill the excavations and mulch around the tree to a depth of 75mm, out past the tree's dripline, and keep moist.

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T26 was identified as *Eucalyptus pauciflora* – *Snow Gum*.

Tree has been severely impacted already by development, and any further disturbance possibly would lead to this tree's death. T26 has Nil retention value and is not worthy of being a constraint to a development design proposal.

Remove T26 completely.



There are several trees with branches and trunks that are close the existing veranda, these trees must be protected during scaffolding and construction.

The trunk and branches of these trees need to be protected from mechanical damage during erecting of scaffold and construction. This can be done by placing strips of styrofoam packaging and bubble wrap around the tree's trunk and branches that may be damaged, and tying or taping them in place for the duration of the works and removed after the site is reinstated. This protection must be at least 25mm thick.

**T3 & T21** were both identified as *Eucalyptus pauciflora – Snow Gum*.

As the encroachment of both these trees is less than 10%, the trees should remain viable after the development of the lodge is completed.

Care will need to be taken during construction to prevent soil compaction and mechanical damage to the tree's trunk and branches, The following recommendations must be carried out.

• The trunk and branches of the tree need to be protected from mechanical damage during excavation and erecting of scaffold. This can be done by placing strips of styrofoam packaging and bubble wrap around the tree's trunk and branches that may be damaged, and tying or taping them in place for the duration of the works and removed after the site is reinstated. This protection must be at least 25mm thick and extend to ground level.

• Either fence off around the tree with barrier webbing or lay down mulch to a depth of 75mm to prevent compaction of the soil, (due to the uneven ground and rocks it may be impracticable to lay boards on top of the mulch for added protection). This is to be installed out to the end of the trees TPZ where practical.

### 8.1 Protection Methods During Construction

To maintain viability of the trees on site.

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a. Prior to the commencement of the site's excavation, temporary protection fencing is to be installed around the TPZ of the Trees where practicable. At the very least steel pickets with barrier mesh or tape must be installed at the minimal recommended distance from the tree.

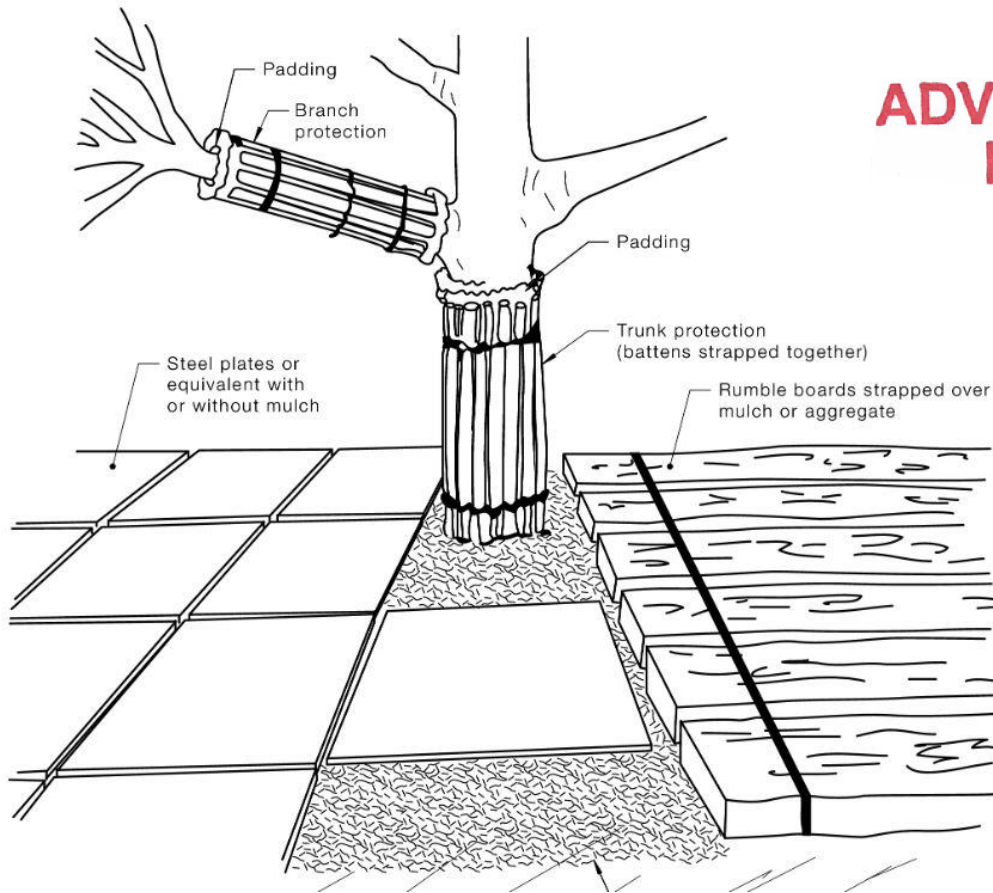
b. Any roots revealed during all excavation within the TPZ of the retained trees are to be pruned in accordance with AS4372-2007 Pruning of Amenity Trees by a qualified arborist using clean sharp hand tools.

Activities listed below should be excluded from the TPZ, but not limited to it.

- Machine excavation including trenching
- Excavation for silt fencing
- Cultivation
- Storage
- 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, and
- Physical damage to the tree.

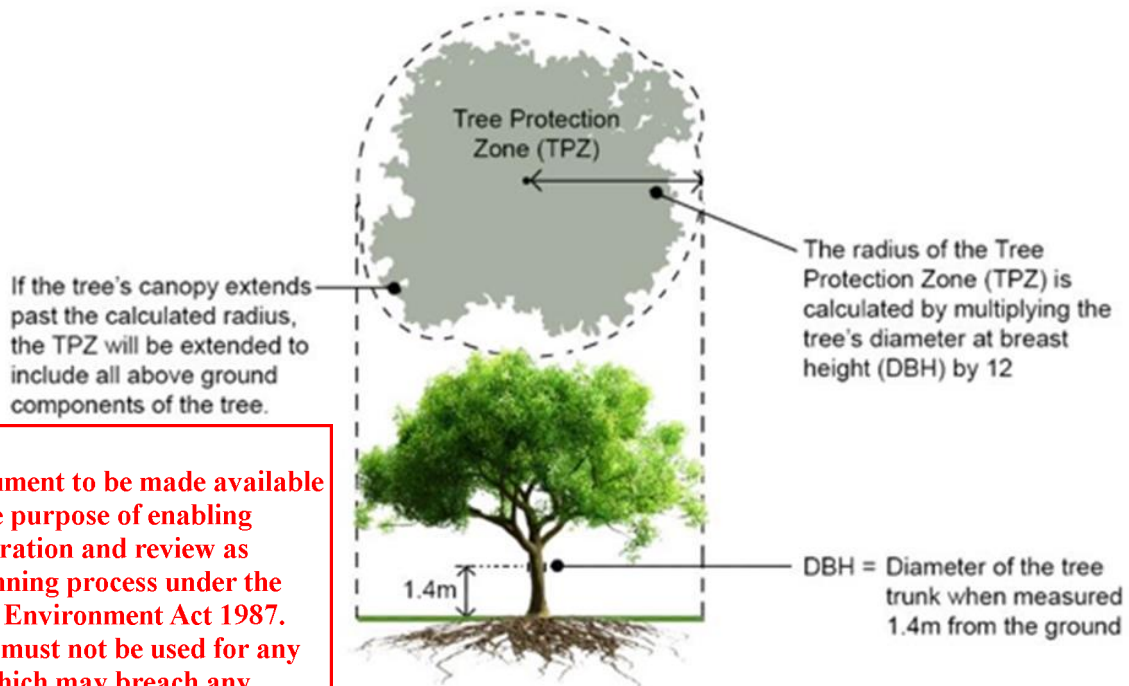
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Figure 11 Source AS4970-2209 Protection of trees on development sites.



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Figure 12 TPZ Diagram.

## 9. References

All photos taken by D Kuronya

Australian Standard AS 4373-2007, Pruning of amenity trees.

Australian Standard AS4970-2209 Protection of trees on development sites.

<https://mapshare.vic.gov.au/vicplan/>

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## 10. Glossary

Glossary of Terms

### Arboricultural Value

The Arboricultural value is given according to the health, structure, form, and useful life expectancy. It only relates to the physical condition of the tree.

Note: Trees may be given a low arboricultural and landscape value but have a high retention value due to an adjoining property or road reserve location.

<b>High Arboricultural Value</b>	Good overall health/vigour and structure with a life expectancy greater than 20 years and will perform well within the landscape.
<b>Medium Arboricultural Value</b>	Good overall health/vigour and structure with a life expectancy between 10 – 20 years and can improve with sound cultural practices.
<b>Low Arboricultural Value</b>	Poor overall health, vigour, and structure with a life expectancy of fewer than ten years will not improve with time.

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### Age Class

Age Most trees have a stable biomass for the major proportion of their life. The estimation of the age of a tree is based on the knowledge of the expected lifespan of the taxa in situ divided into three distinct stages of measurable biomass, when the exact age of the tree from its date of cultivation or planting is unknown and can be categorized as Young, Mature and Over-mature.

<b>Young</b>	Tree aged less than <20% of life expectancy, in situ.
<b>Mature</b>	Tree aged 20-80% of life expectancy, in situ.
<b>Over-Mature</b>	Tree aged greater than >80% of life expectancy, in situ, or senescent with or without reduced vigour, and declining gradually or rapidly but irreversibly to death.

### Calculated DBH

DKTC Arboricultural Impact Assessment V1 – 6 Delatite Lane Mt Buller

Used to calculate the total DBH for multi-stemmed trees only.

Formula used:  $DBH = \sqrt{s1^2 + s2^2 + s3^2 + s4^2 + s5^2}$

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**Condition**

Condition A tree’s crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils), the stability and viability of the root plate, trunk and structural branches (first (1st) and possibly second (2nd) order branches), including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour, and it is possible for a tree to be of good vigour but in poor condition. Condition can be categorized as Good Condition, Fair Condition, Poor Condition and Dead.

<b>Good Condition</b>	Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from or contributed to by vigour.
<b>Fair Condition</b>	Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from or contributed to by vigour.
<b>Poor Condition</b>	Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal

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	phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from or contributed to by vigour.
<b>Dead</b>	Tree is no longer capable of performing any of the following processes or is exhibiting any of the following symptoms. Processes Photosynthesis via its foliage crown (as indicated by the presence of moist, green or other coloured leaves). Osmosis (the ability of the root system to take up water); Turgidity (the ability of the plant to sustain moisture pressure in its cells); Epicormic shoots or epicormic strands in Eucalypts (the production of new shoots as a response to stress, generated from latent or adventitious buds or from a lignotuber) Symptoms Permanent leaf loss. Permanent wilting (the loss of turgidity which is marked by desiccation of stems leaves and roots); Abscission of the epidermis (bark desiccates and peels off to the beginning of the sapwood).

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**Decurrent**

Tree form which develops when the lateral branches grow as fast or faster than the terminal shoot. This results in a tree with a broad spreading form and multiple trunks.

**Defect**

An injury, growth pattern/habit, decay or other conditions that may reduce the tree's structural integrity or affect its health.

**Diameter at Breast Height (DBH)**

The trunk diameter measured at 1.4m above ground level determined from the circumference of the trunk divided by  $\pi$ .

**Diameter at Root Buttress (DARB)**

The trunk diameter measured from the point at which the tree's root buttressing/flare initiates.

**Dieback**

The progressive death of shoots or roots starting at the extremities.

**Dynamic Load**

A force created by a moving load or a load that changes with time and/or motion.

**Encroachment**



An incursion into a tree's TPZ from a proposed development or existing structure or buildings.

### Energy Production

The production of energy resulting from photosynthetic material that converts sunlight into carbohydrates and oxygen which is then used for tree growth, root development, root exudates for soil associates, reproduction, storage and defence.

### Excurrent

Tree form which develops when a dominant leading shoot outgrows the lateral branches. This results in a narrow, cone-shaped crown with a clearly defined central trunk.

### Form

<b>Good</b>	A tree with a typical canopy shape for its species.
<b>Fair</b>	A tree with a canopy presenting with signs of an altered shape such as a minor canopy bias, previous pruning or phototropic growth habit.
<b>Poor</b>	A tree with a significantly atypical or altered shape.

### Vigour

Vigour Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality) e.g. dormant, deciduous or semi-deciduous trees. Vigour can be categorized as Good Vigour, High Vigour, Low Vigour and Dormant Tree Vigour.

<b>Good Vigour</b>	Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
<b>High Vigour</b>	Accelerated growth of a tree due to incidental or deliberate artificial changes to its growing environment that are seemingly beneficial, but may result in premature aging or failure if the favourable conditions cease, or promote prolonged senescence if the favourable conditions remain, e.g. water from a leaking pipe; water and nutrients from a leaking or disrupted sewer pipe; nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard; a tree subject to a stringent watering and fertilising program; or some trees may achieve an extended lifespan from continuous pollarding practices over the life of the tree.
<b>Low Vigour</b>	Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
<b>Dormant Tree Vigour</b>	Determined by existing turgidity in lowest order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Good vigour during dormancy is achieved

	when such growth is evident on a majority of branches throughout the crown.
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**Periods of Time**

Periods of Time The life span of a tree in the urban environment may often be reduced by the influences of encroachment and the dynamics of the environment and can be categorized as Immediate, Short Term, Medium Term and Long Term.

**Short Term** - A period of time less than <1 – 15 years.

**Medium Term** - A period of time 15 – 40 years.

**Long Term** - A period of time greater than >40 years.

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**Load**

A term used to indicate the magnitude of a force.

**Lopping**

The indiscriminate cutting of a tree to reduce its size. (Not regarded as an acceptable practice and does not comply with AS4373-2007 ‘Pruning of Amenity Trees’).

**Nutrient Uptake**

The process in which a tree captures elements that are essential for growth.

**Nutrients**

Molecules that all organisms need to make energy, grow, develop and reproduce.

**Origin**

<b>Indigenous</b>	A species found in a specific region as a result of only natural process with no human intervention.
<b>Native</b>	A species found in a broader region or country.
<b>Exotic</b>	A species that is native to a country other than Australia.

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**Pathogen**

A bacterium, virus or other microorganism that can cause disease or infection.

**Percentage (%) Encroachment**

The calculated level of encroachment into a tree’s TPZ.

**Primary Disorder**

An initial, inhibiting or abnormal condition that impairs the performance of one or more vital functions of a tree.

**Pruning**

The process of removing branches or occasionally roots from a tree using approved arboricultural practices, to achieve a specified objective.

**Secondary Disorder**

A disorder that develops after a tree is stressed by a primary disorder.



**Significance/Retention Value**

<b>High</b>	A mature tree that contributes positively to a site due to its botanical, historical or local significance in combination with good physiological characteristics such as health, form, structure and future development. Significant efforts should be made to retain this tree and it should be considered for retention within a proposed development.
<b>Medium</b>	A semi-mature to mature tree which exhibits fair or good characteristics of health, structure or form and/or may provide some amenity value to the surrounding area or habitat value. Should be considered for retention if possible within a development design proposal and may be modified to allow for construction (eg: canopy pruning, root pruning etc).
<b>Low</b>	A tree that provides minimal contribution to the surrounding landscape and/or may be in poor or declining health. This tree may have a poor structure, poor form, be a noxious/poisonous or listed weed species or a combination of these characteristics. It may be in an inappropriate location. This tree is not worthy of being a constraint to a development design proposal.
<b>Nil</b>	A tree with no landscape significance and its retention is inappropriate. The removal of this tree would be of benefit to the landscape.

**Signs**

Objective physical evidence of a causal agent (eg: insect eggs, borer holes, frass).

**Soil Compaction**

The compression of soil resulting in reduced macropore space and soil volume. This restricts the infiltration of water through the soil profile, impedes the efficiency of nutrient and water uptake, restricts new root development and root exploration and impedes gaseous exchange between root cells and the atmosphere.

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**Static Load**

A constant load exerted by a mass due to its weight.

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**Strain**

The extent to which a material deforms under an applied force or stress.

**Stress**

A factor that negatively affects the health of a tree and stimulates a physiological response.

**Structural Root Zone (SRZ)**

The area around the base of a tree required for stability in the ground. Woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is normally circular with the trunk at its centre and is expressed by its radius in metres.

This zone considers a tree’s structural stability only and not the root zone required to maintain vigour and long-term viability. (*AS4970-2009 Protection of Trees on Development Sites*).

Formula Used:  $SRZ\ radius = (D \times 50)^{0.42} \times 0.64$

D = Trunk Diameter, in meters, measured above the root buttress.

### Structure

<b>Good</b>	A tree with structure that is typical of its species with no defects such as decay, included bark, cracks, splits, tears out. Generally, with a single defined trunk with secondary limbs presenting with good attachments.
<b>Fair</b>	A tree with minor defects in its canopy but is generally free of any significant structural issues. Pruning may be required to fix minor defects. Its canopy will mostly be symmetrical and typical of its species.
<b>Poor</b>	A tree presenting with 1 or more defects such as included bark, co-dominant stems, poor attachments and may also have an atypical or asymmetrical canopy. The defects may be able to be rectified with pruning.
<b>Very Poor</b>	A tree with significant defects related to its primary stem or secondary scaffold limbs that cannot be rectified with pruning or other measures. This removal of this tree may be required in the short term.
<b>Hazardous</b>	A tree with major defects that is likely to fail and should be removed as soon as possible.

### Symptoms

Subjective reactions to a disease or disorder (eg: wilting, dieback, defoliation).

### Tree Protection Zone (TPZ)

A specified area above and below ground and at a given distance from the centre of the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development. (AS4970-2009 Protection of Trees on Development Sites).

Formula Used: TPZ radius = DBH x 12

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### Useful Life Expectancy (ULE)

<b>0 years</b>	A dead, dying or dangerous tree with significant defects, poor health or requires removal in the short term.
<b>&lt;5 years</b>	A poor example of the species that is in decline or will likely die or requires removal within 5 years.
<b>5-10 years</b>	A tree in fair condition that contributes to the amenity of the landscape in which it is growing, can be retained with a tolerable level of management.
<b>10-20 years</b>	A tree in fair-good condition that contributes to the amenity of the landscape in which it is growing and can be retained with an appropriate level of management.
<b>&gt;20 years</b>	A healthy tree in good condition that will contribute to the amenity of the landscape in which it is growing for at least another 20 years with an appropriate level of management.

### Vigour

The overall health, condition and resilience of a tree, reflected in the ability of the whole tree to grow.

### Work(s)

Any physical activity in relation to land that is specified by the determining authority.

### Wound Response

New wood developing in response to a wound.

### Woundwood

Strong woody tissue that grows behind a callus which replaces it in that location.

Woundwood closes wounds, then normal wood continues to form. After wounding, a callus forms around the margins of the wound. Woundwood forms later as the cells become lignified. It is not meristematic but is high in lignin.

## END OF REPORT

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### 11. Disclaimer

#### 11.1 Assumptions and Limitations

1. Every reasonable effort has been made to provide information that is true and correct. However, the author cannot guarantee the accuracy of information provided by others.
2. The loss, damage, or alteration of any part of this report will render the entire report void.
3. Any maps, graphs, diagrams, or sketches contained in this report have been provided as a visual aid only. They have not necessarily been drawn to scale.
4. While this report has been prepared under a contractual arrangement, it has been prepared with neutral and unbiased opinions based on the views of the author and scientific fact. These opinions are not influenced by financial incentives.
5. Every reasonable effort has been made to provide accurate information on the subject of this report based on research and studies available at the time of publication. However, as the subject often involves natural, biological organisms, it is not possible to cover all potential outcomes.
6. The information contained in this document is based on information collected at the precise date and time stated. Any changes occurring since will not form part of this report.
7. This report has been developed specifically for use by the client for the purposes stated. Responsibility will not be accepted for use by parties other than those stated, or for purposes other than those stated.
8. This report has been prepared on the facts requested or required. Other facts in relation to the subject trees may not be included in this report.

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10. The author shall not be required to appear as an expert witness by reason of this report without subsequent contractual arrangements, including the payment of an additional charge for such services.

## 11.2 Declaration

I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld.

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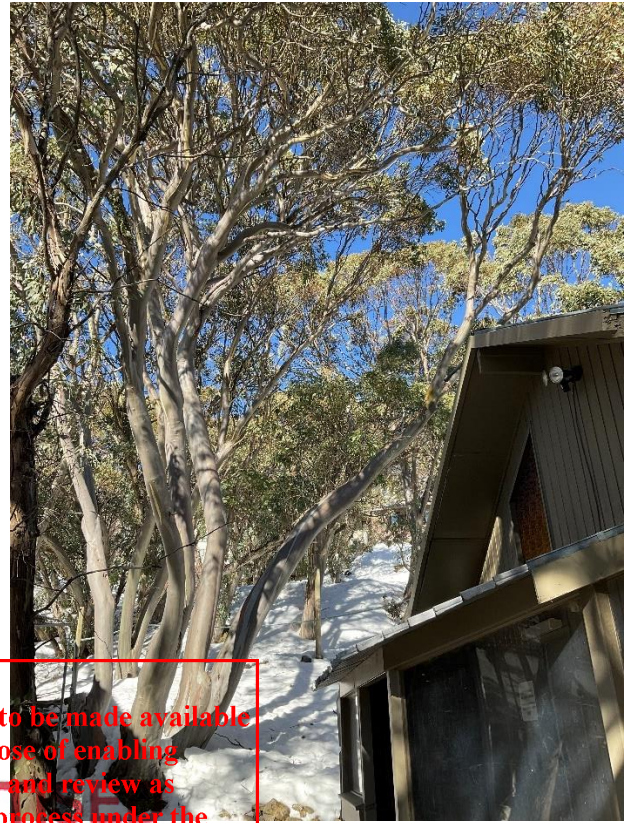
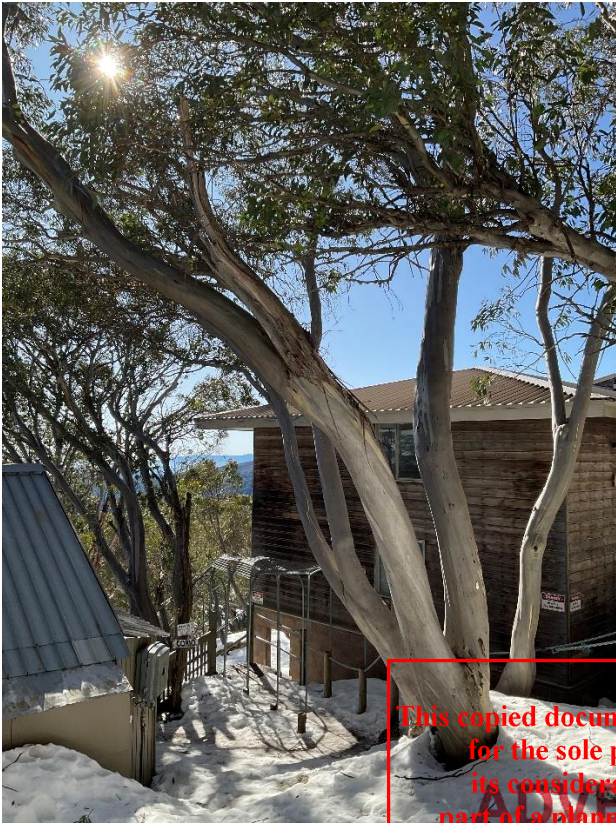
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Appendix 1: Tree Photos

Tree #1

Tree #1



Tree #2

Tree #2

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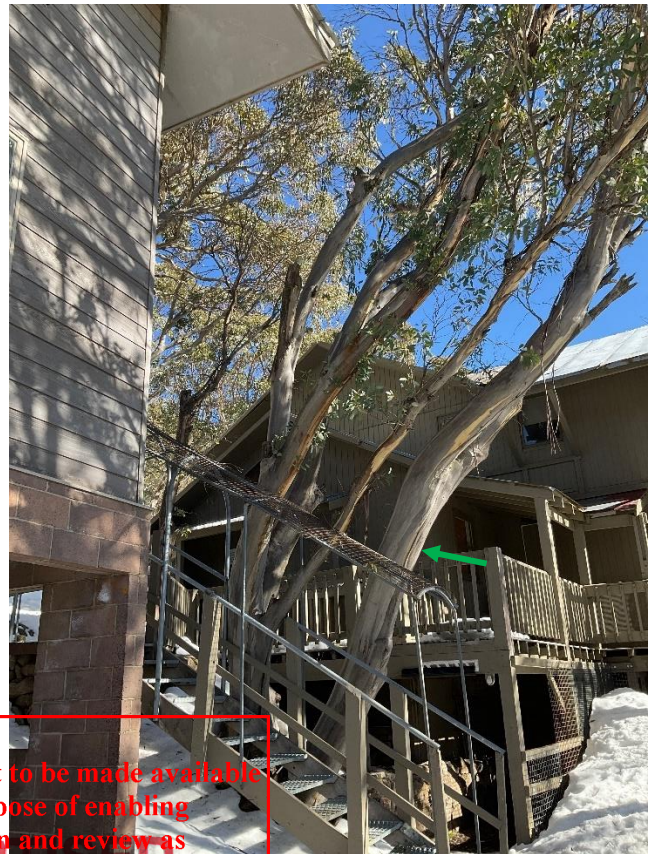




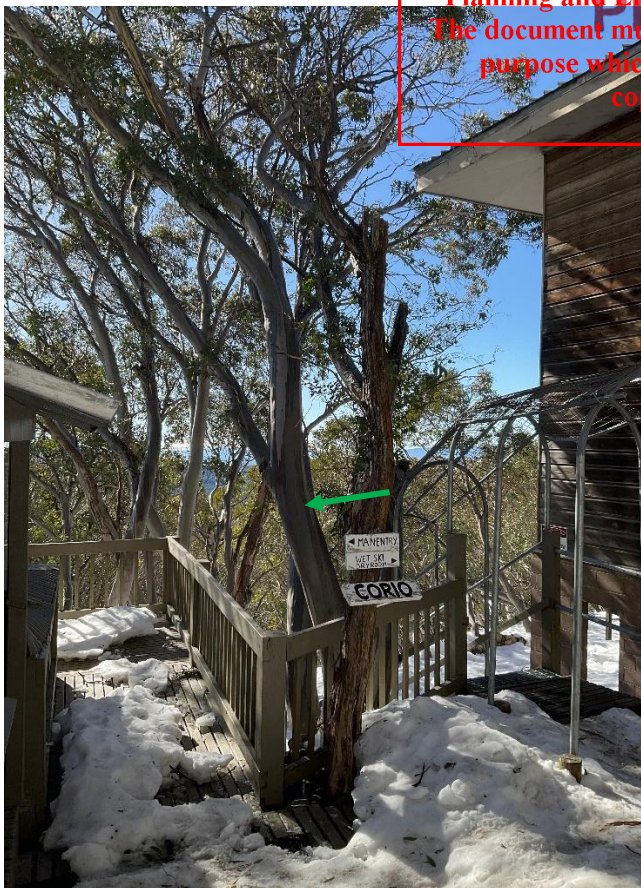
Tree #25



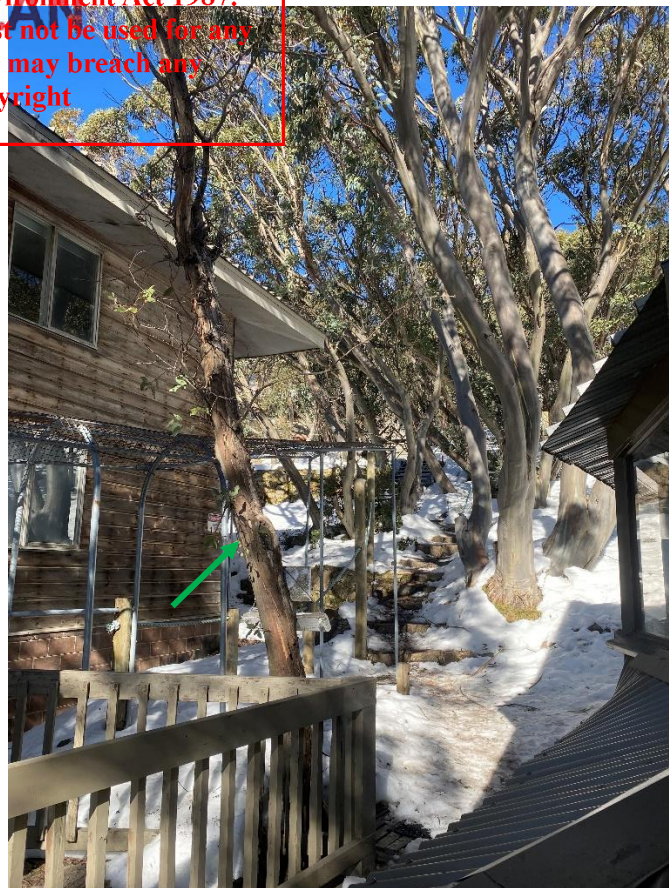
Tree #25



Tree #26



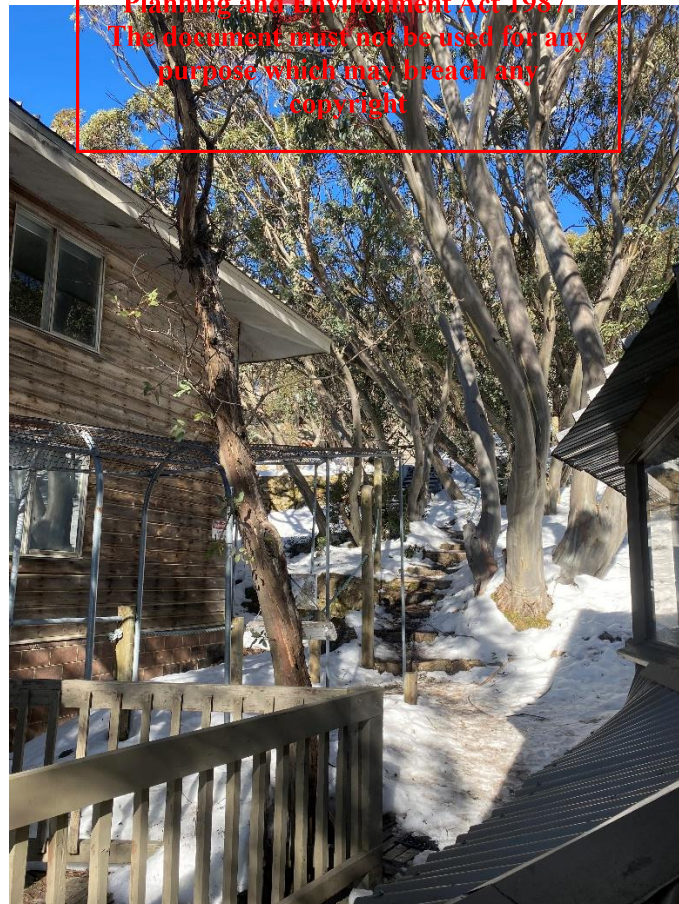
Tree #26



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South of building



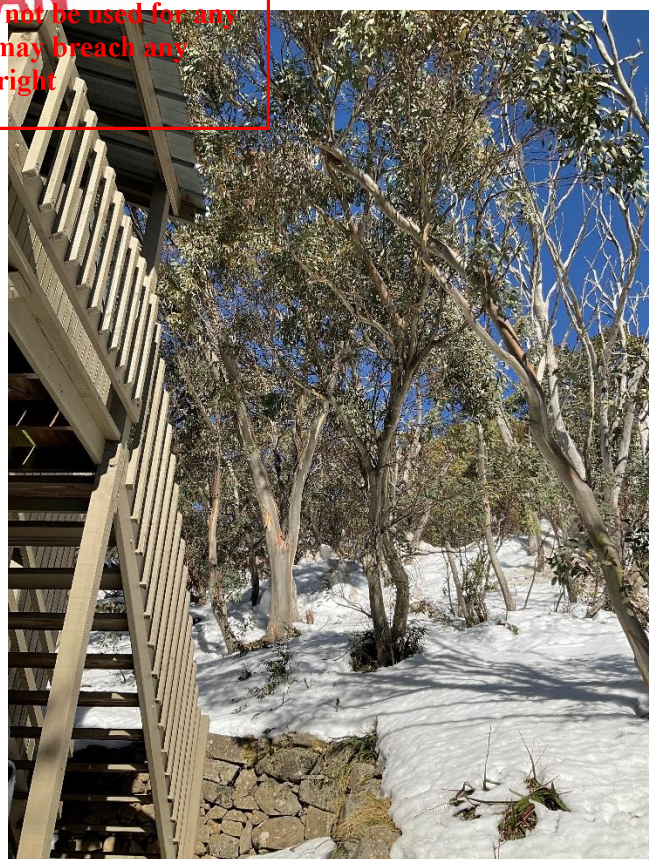
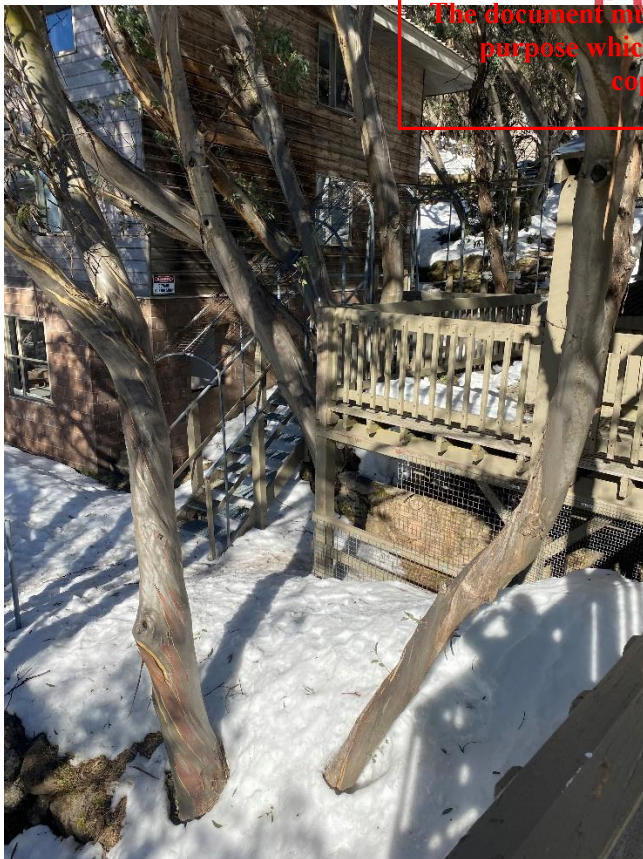


Eastern side of building



Northeast corner Western side of building

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