

BUSHFIRE ASSESSMENT REPORT

REFURBISHMENT OF POOLSIDE TERRACE THREDBO ALPINE RESORT



NOVEMBER 2018

Project: 49-18

Dabyne Planning Pty Ltd

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CONTENTS

Glossary

1	Introduction	3
1.1	Purpose	3
1.2	Site Description & Proposal	3
1.3	Bushfire Prone Land	7
2	Legislation	8
2.1	NSW Environmental Planning and Assessment Act 1979 and Rural Fires Act 1997	8
2.2	Planning for Bushfire Protection 2006	8
3	Methodology	9
3.1	Site Inspection	9
3.2	Vegetation Communities	9
3.3	Slope	9
4	Vegetation Classification and Slope Assessment	10
4.1	Vegetation Classification	10
4.2	Slope Assessment	11
5	Significant Environmental Features	12
6	Bushfire Assessment	13
7	Conclusion	16

GLOSSARY

APZ	Asset Protection Zone
AS 3959-2009	Australian Standard 3959-2009: Construction of buildings in bushfire prone areas
BCA	Building Code of Australia
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
DA	Development Application
EP&A Act	Environmental Planning Assessment Act, 1979
IPA	Inner Protection Area
KNP	Kosciuszko National Park
kW/m²	kilowatts per square metre (being a measure of radiant heat)
PBP	Planning for Bushfire Protection
RF Act	Rural Fires Act 1997
RFS	NSW Rural Fire Service
SFPP	Special Fire Protection Purpose

1. INTRODUCTION

1.1 Purpose

Dabyne Planning Pty Ltd has been engaged to undertake a Bushfire Assessment Report to accompany a Development Application for undertaking refurbishment works to the Poolside Terrace, located on the same site, but not connected directly to the hotel and accommodation part of the Thredbo Alpine Hotel. The property is legally described as Lot 861 DP 1128686.

1.2 Site Description & Proposal

The Thredbo Alpine Hotel is a complex that incorporates hotel accommodation with a separate restaurant, bars, bistro and conference facilities, which are all open to the public.

The poolside terrace is open to the public and not exclusively for hotel guests, meaning that is separately and independently used and is not a subordinate use to the hotel.

The proposal seeks consent to undertake refurbishments to the outdoor terrace by way of covering the existing pool and paving over, removal of existing hot tub and installation of two hot tubs, upgrading lighting, new fixed furniture and associated works.

The subject site is illustrated in context with the locality in figures 1 & 2 below:



Figure 1: Aerial view of the subject site in context of the locality

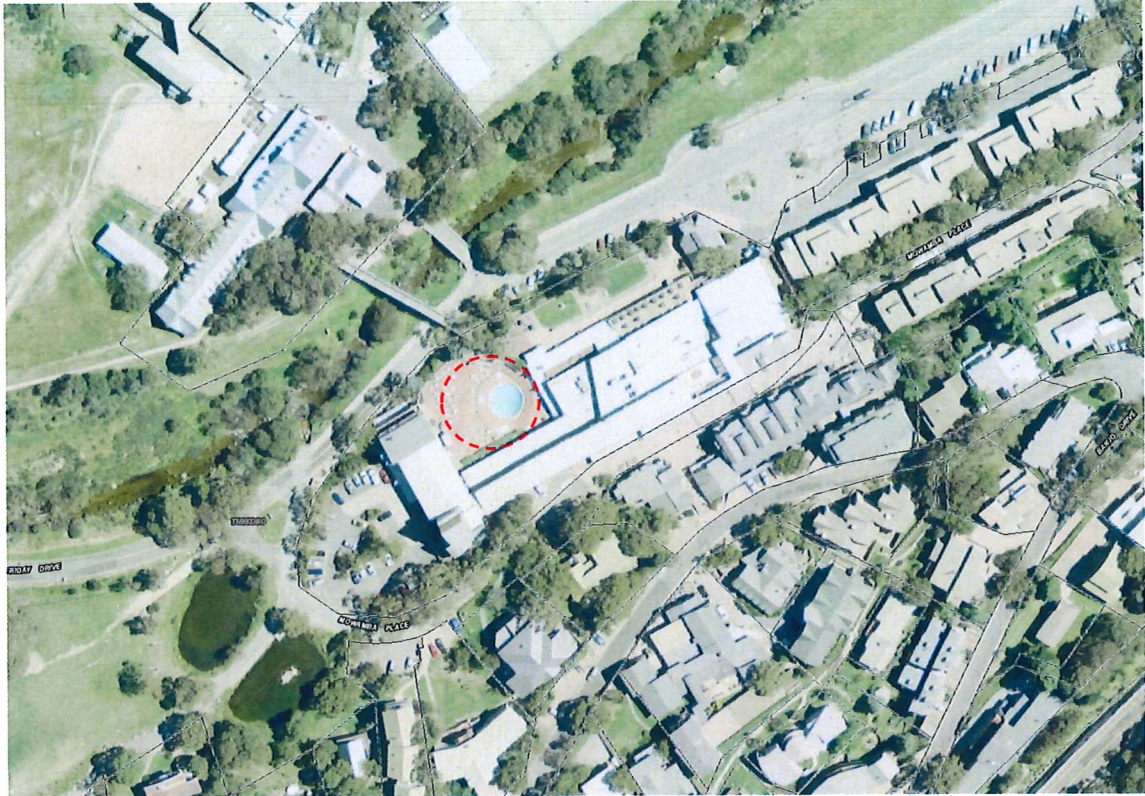


Figure 2: Aerial view of the subject site

The following photos identify the existing site and location of the proposed works:



Figure 3: Photo of the existing pool to be covered and paved



Figure 4: Photo of the poolside terrace

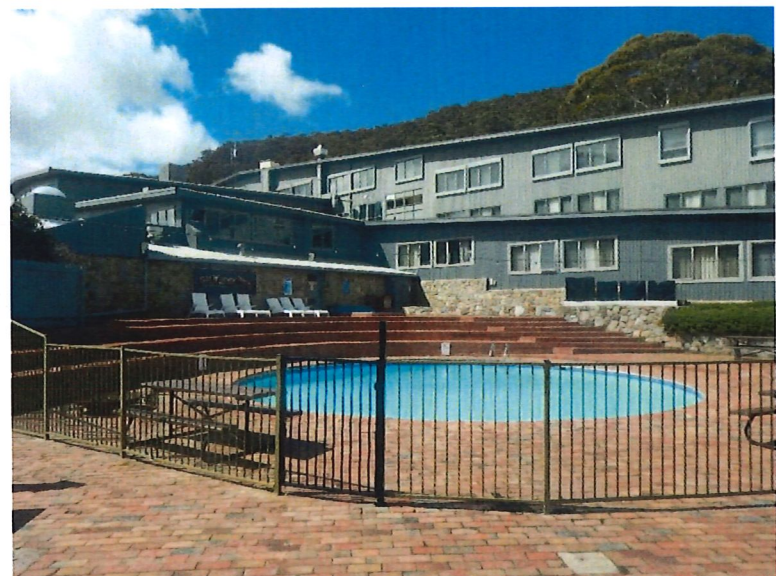


Figure 5: Photo of the pool to be covered and hot tub on elevated paved area to be replaced



Figure 6: Photo of the poolside terrace



Figure 7: Photo of the pool to be covered

1.3 Bushfire Prone Land

The subject site is located within the buffer area to bushfire prone land located to the west as extracted from the NSW Department of Planning & Environment Planning Portal website as shown in figure 8 below.

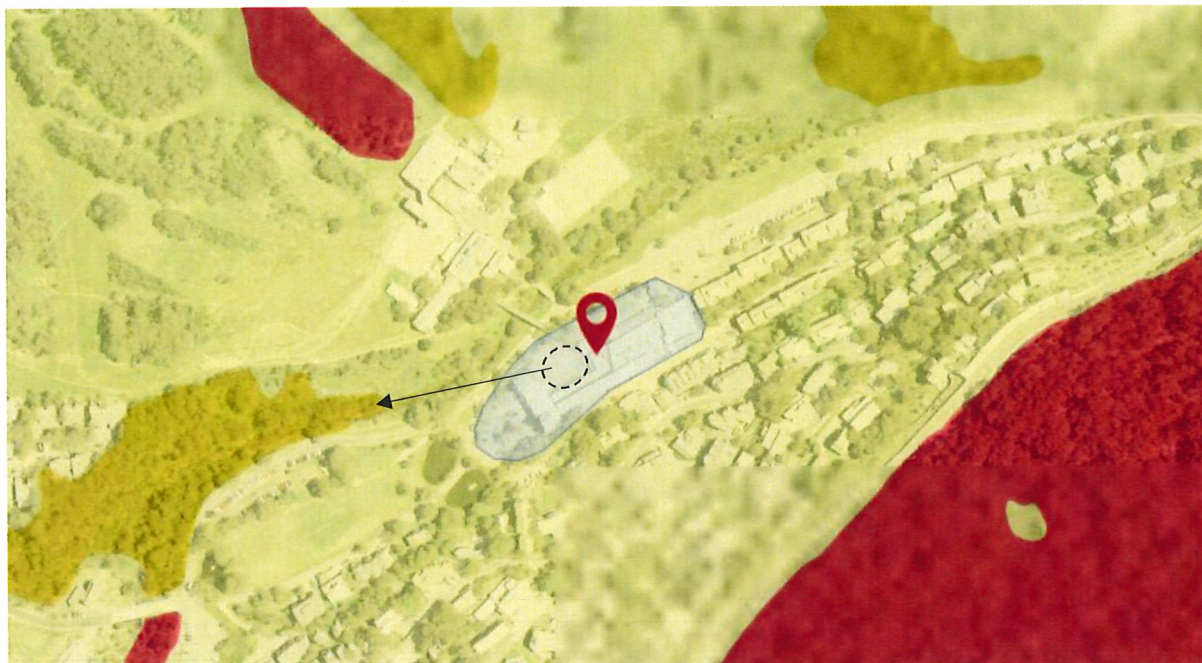


Figure 8: Bushfire Prone Land map

2. LEGISLATION

2.1 NSW Environmental Planning and Assessment Act 1979 and Rural Fires Act 1997

As identified above, the subject site is located within a designated bushfire-prone area.

The development is not for the purposes of a 'Special Fire Protection Purpose' as it comprises of refurbishment works to the poolside terrace which is a licensed premises and does not provide overnight accommodation.

Pursuant to section 100B(5)(a1) of the NSW Rural Fires Act, 1997 and empowered by clause 45 of the NSW Rural Fires Regulations, 2013, the development is excluded from the operation of section 100B as the development is for the purposes of a 'licensed premises that does not provide overnight accommodation'.

This exclusion was specifically incorporated to apply to hotels where development occurs with regards to licenced premises and those areas are not associated with overnight accommodation.

2.2 Planning for Bushfire Protection 2006

The NSW Rural Fire Service 'Planning for Bushfire Protection, 2006: A Guide for Councils, Planners, Fire Authorities and Developers' has been considered in regards to the proposed development including the recently adopted Appendix 3 Addendum.

The subject site is located within Thredbo Alpine Resort, which is located within the NSW Alpine Resorts as discussed on page 31 of PBP.

Under PBP, a 1:50 fire weather scenario has been determined for the Alpine Resorts, being FDI 50.

3. METHODOLOGY

3.1 Site Inspection

A site inspection was undertaken by Dabyne Planning Pty Ltd in November 2018, to determine the potential bushfire risks associated with the site. The guidelines for bushfire risk assessment as set out in PBP were used to determine these potential bushfire risks.

3.2 Vegetation Communities

The vegetation and plant communities within 140m of the site were determined by undertaking a site inspection and consulting PBP and the vegetation types identified in *'Ocean Shores to Desert Dunes'*, by Kieth (2004).

The classification under David Keith's *'Ocean Shores to Desert Dunes'* (used in PBP) were then converted to the 'Sprect' classifications using Table A3.5.1 in the Appendix 3 Addendum.

3.3 Slope

The slope assessment has been based on the topographical contour lines sourced from the Department of Lands mapping and on-site assessment.

Slope over a distance of at least 100m from the building footprint on the development site towards the vegetation communities that constitute the predominant hazard has been considered.

The gradient that will most significantly influence the fire behaviour will be used for the bush fire attack assessment.

4. VEGETATION CLASSIFICATION & SLOPE ASSESSMENT

4.1 Vegetation Classification

The predominant vegetation formation in all directions around the resort and within the wider locality is Sub-alpine Woodland, which is classified under *Keith, 2004* as Grassy woodlands (Woodlands) formation.

The AUSLIG (1990) Pictorial Analysis confirms that the vegetation on site is Woodlands as also converted from Keith below:

David Keith's <i>Ocean Shores to Desert Dunes</i>	AUSLIG (1990) Pictorial Analysis (AS3959-2009)
Forests (Wet & Dry Sclerophyll)	Forest
Pine Plantations	
Forested Wetlands	Woodland
Woodlands (Grassy, Semi-Arid)	
Tall Heath (Scrub)	Scrub
Freshwater Wetlands	
Short Heath (Open Scrub)	Shrubland
Arid Shrubland	Mallee/Mulga
Alpine Complex (Sedgelands)	Tussock Moorland
Rainforest	Rainforest
Grassland	Grassland

The vegetation to the west as illustrated in figure 9 below is considered to have the most influence in the event of a bushfire, due to the topography, wind direction and existing built environment around the village. This is supported by the bushfire prone land mapping (see figure 8 above) which confirms that the closest bushfire prone vegetation is located to the west.

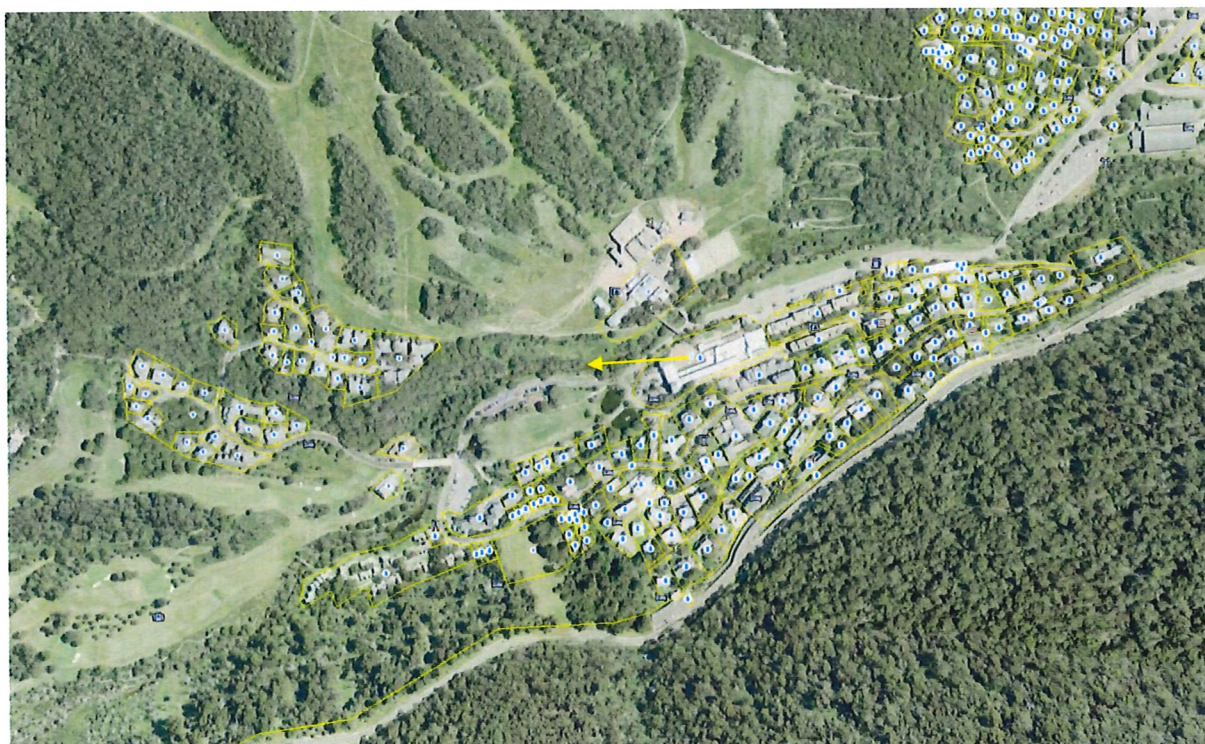


Figure 9: Aerial view demonstrating the location of the vegetation that would have the most influence in the event of a bushfire

The vegetation to the west is located adjacent to Thredbo River, located upslope and over 100m from the location of the proposed works as illustrated in figure 10 below.

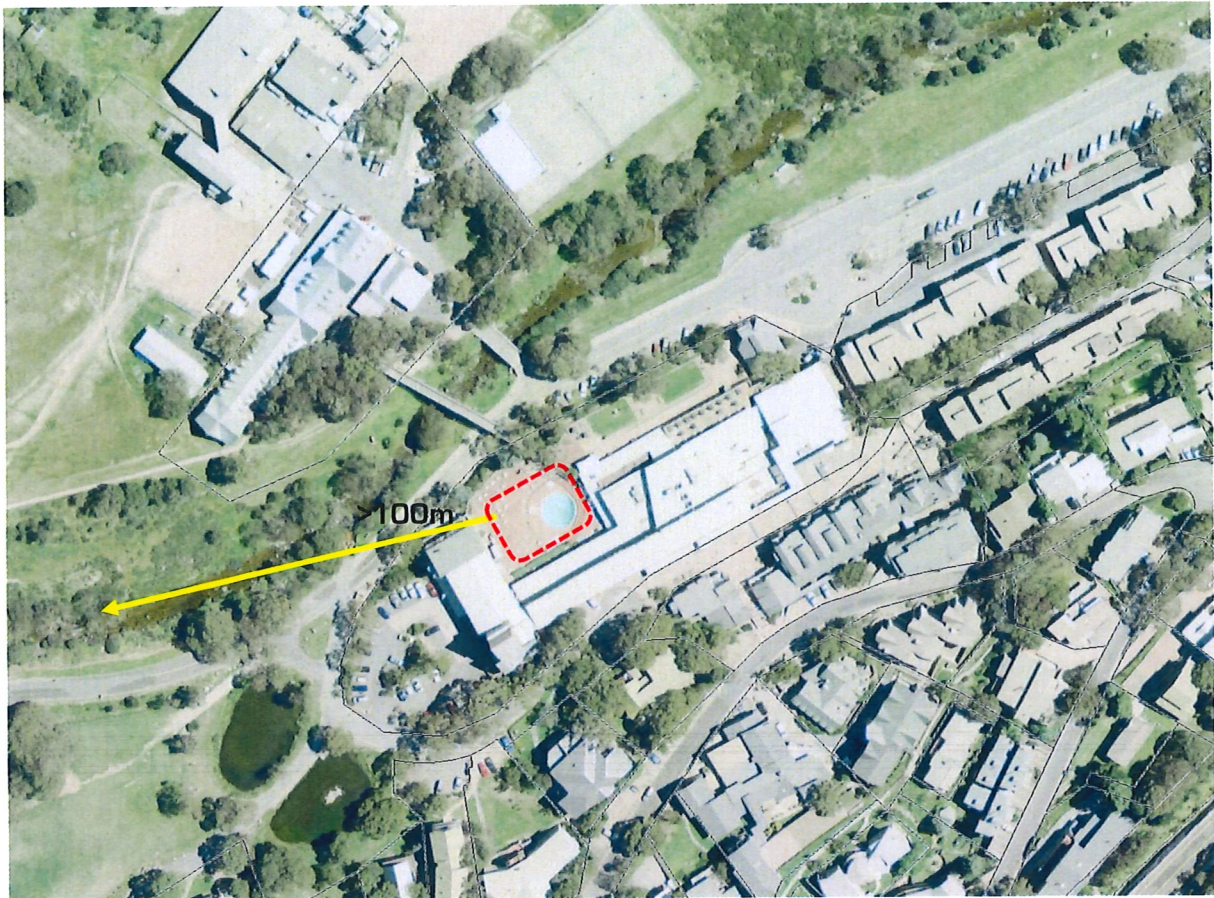


Figure 10: Aerial view demonstrating the distance to other vegetation that would have the most influence in the event of a bushfire

Located within this setback are existing buildings and individual Eucalypt trees with scattered ground cover (Sub-alpine Woodland) however they do not form a continuous canopy.

Furthermore, the vegetation associated with the Thredbo River, to the north of the subject site is managed as an Asset Protection Zone as part of the Thredbo Bushfire Preparation Map, endorsed by the NSW RFS.

4.2 Slope Assessment

The effective slope, being the slope that will have the greatest influence on the bushfire behaviour (where the vegetation is located as depicted in figure 10 above) is upslope.

5. SIGNIFICANT ENVIRONMENTAL FEATURES

The proposed works are located within a hard stand area and therefore an assessment in respect to threatened species, populations, endangered ecological communities or critical habitat is not required to be undertaken. Furthermore an assessment of Aboriginal heritage is also not warranted.

6. BUSHFIRE ASSESSMENT

An assessment of the proposal in accordance with the performance criteria and acceptable solutions contained within section 4.3.5 of PBP have been provided below.

Performance Criteria	Acceptable Solutions	Can Comply?	Comments
The intent may be achieved where:			
in relation to Asset Protection Zones: <ul style="list-style-type: none"> • a defensible space is provided onsite. • an asset protection zone is provided and maintained for the life of the development. 	<ul style="list-style-type: none"> • APZ determined in accordance with Appendix 2. 	✓	<i>See discussion below.</i>
in relation to siting and design: <ul style="list-style-type: none"> • buildings are sited and designed to minimise the risk of bush fire attack. 	<ul style="list-style-type: none"> • buildings are designed and sited in accordance with the siting and design principles in this section (see also figure 4.7). 	✓	<i>The proposed works will not alter the siting or overall design of the building.</i>
in relation to construction standards: <ul style="list-style-type: none"> • it is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact. 	<ul style="list-style-type: none"> • construction determined in accordance with Appendix 3 and the Requirements for attached garages and others structures in this section. <p><i>Note: provisions in relation to Class 10a buildings may also apply.</i></p>	✓	<i>The proposed works are not required to be constructed in accordance with any BAL construction under AS3959-2009.</i>
in relation to access requirements: <ul style="list-style-type: none"> • safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire, [satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7]. 	<ul style="list-style-type: none"> • compliance with section 4.1.3 for property access roads. • compliance with section 4.2.7 for access standards for internal roads. 	✓	<i>The existing access comprises of a sealed, two-way all-weather road that is easily accessible for two-wheel drive vehicles.</i>

<p>in relation to water and utility services:</p> <ul style="list-style-type: none"> adequate water and electricity services are provided for firefighting operations gas and electricity services are located so as not to contribute to the risk of fire to a building. 	<ul style="list-style-type: none"> compliance with section 4.1.3 for services - water, electricity and gas. 	<p>✓</p>	<p><i>Reticulated water supply with fire hydrants are provided throughout Thredbo Village.</i></p> <p><i>Electricity and gas supply is provided underground throughout Thredbo Village.</i></p>
<p>in relation to landscaping:</p> <ul style="list-style-type: none"> it is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions. 	<ul style="list-style-type: none"> compliance with Appendix 5. 	<p>✓</p>	<p><i>The proposed works will not affect the existing landscaping on the site.</i></p>

Asset Protection Zones (APZs)

An Asset Protection Zone (APZ) is to be provided in accordance with the relevant tables provided in Appendix 2 of PBP.

The minimum specifications for APZs for Special Fire Protection Purposes in bushfire prone areas are set out in Table A2.6 in Appendix 2 of PBP. The table specifies that the Alpine Resorts does not contain any minimum specifications and refers to Table A3.5. As Appendix 3 within PBP has been replaced by the new Appendix 3 (2010 Addendum) the new Appendix 3 refers to Table A2.4.4 in AS3959-2009. This is provided below:

**TABLE 2.4.4
DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL) – FDI 50 (1090 K)**

Vegetation classification	Bushfire Attack Levels (BALs)				
	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
	Distance (m) of the site from the predominant vegetation class				
	All upslopes and flat land (0 degrees)				
A. Forest	<12	12-<16	16-<23	23-<32	32-<100
B. Woodland	<7	7-<10	10-<15	15-<22	22-<100
C. Shrubland	<7	7-<9	9-<13	13-<19	19-<100
D. Scrub	<10	10-<13	13-<19	19-<27	27-<100
E. Mallee/Mulga	<6	6-<8	8-<12	12-<17	17-<100
F. Rainforest	<5	5-<6	6-<9	9-<14	14-<100
G. Tussock Moorland	<7	7-<9	9-<14	14-<20	20-<100
	Downslope >0 to 5 degrees				
A. Forest	<14	14-<19	19-<27	27-<38	38-<100
B. Woodland	<9	9-<12	12-<18	18-<26	26-<100
C. Shrubland	<7	7-<10	10-<15	15-<22	22-<100
D. Scrub	<11	11-<15	15-<22	22-<31	31-<100
E. Mallee/Mulga	<7	7-<9	9-<13	13-<20	20-<100
F. Rainforest	<6	6-<8	8-<12	12-<17	17-<100
G. Tussock Moorland	<8	8-<10	10-<16	16-<23	23-<100
	Downslope >5 to 10 degrees				
A. Forest	<18	18-<24	24-<34	34-<46	46-<100
B. Woodland	<11	11-<15	15-<23	23-<32	32-<100
C. Shrubland	<8	8-<11	11-<17	17-<25	25-<100
D. Scrub	<12	12-<17	17-<24	24-<35	35-<100
E. Mallee/Mulga	<7	7-<10	10-<15	15-<23	23-<100
F. Rainforest	<7	7-<10	10-<15	15-<22	22-<100
G. Tussock Moorland	<9	9-<12	12-<18	18-<26	26-<100
	Downslope >10 to 15 degrees				
A. Forest	<22	22-<30	30-<41	41-<56	56-<100
B. Woodland	<14	14-<19	19-<28	28-<40	40-<100
C. Shrubland	<9	9-<13	13-<19	19-<28	28-<100
D. Scrub	<14	14-<19	19-<28	28-<39	39-<100
E. Mallee/Mulga	<8	8-<11	11-<18	18-<26	26-<100
F. Rainforest	<9	9-<13	13-<19	19-<28	28-<100
G. Tussock Moorland	<10	10-<13	13-<20	20-<29	29-<100
	Downslope >15 to 20 degrees				
A. Forest	<28	28-<37	37-<51	51-<67	67-<100
B. Woodland	<18	18-<25	25-<36	36-<48	48-<100
C. Shrubland	<10	10-<15	15-<22	22-<31	31-<100
D. Scrub	<15	15-<21	21-<31	31-<43	43-<100
E. Mallee/Mulga	<9	9-<13	13-<20	20-<29	29-<100
F. Rainforest	<12	12-<17	17-<25	25-<35	35-<100
G. Tussock Moorland	<11	11-<15	15-<23	23-<33	33-<100

Based on the slope, distance of the site to the predominant vegetation class, being >100m to Woodlands (with a continuous canopy), located upslope; the category of Bushfire Attack in accordance with Table A2.4.4 in AS3959-2009 is 'BAL-LOW'.

7. CONCLUSION

As identified above, the proposed development is not for the purposes of a Special Fire Protection Purpose and is exempt from requiring a Bushfire Safety Authority.

Notwithstanding this, the development can achieve compliance with all of the performance criteria standards set out in PBP for 'infill' development located within the Alpine Resorts.

With the proposed roof located over 100m from the closest unmanaged vegetation (as per the Thredbo Bushfire Preparation Map), the required construction level is BAL-LOW, therefore not requiring any construction level in accordance with AS 3959.

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