



BUSHFIRE ASSESSMENT REPORT

**EXTERNAL ALTERATIONS
GRANITE PEAKS 6
LOT 588, SUMMIT WAY, WOODRIDGE, THREDBO**



JUNE 2015

Dabyne Planning Pty Ltd

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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 external alterations to an existing chalet that is used for purposes of tourist accommodation within Thredbo Alpine Village, Kosciuszko National Park.

The report has been prepared in accordance with Section 91A of the Environmental Planning and Assessment Act, 1979 (EP&A Act, 1979), and Section 100B of the NSW Rural Fires Act, 1997 (RF Act, 1997) and based on the published Planning for Bushfire Protection 2006 Guidelines (PBP).

1.2 Site Description & Proposal

The subject site is known as Granite Peaks 6 and is located at Lot 588 Summit Way, Woodridge, in Thredbo Village. The building is attached to Granite Peaks 7 and adjacent to Granite Peaks 1, 2, 3, 4 and 5 with all the chalets constructed at the same time as part of one development.

The existing property is a one bedroom and loft semi-detached chalet and is licensed to contain a maximum of two (2) beds for the purpose of tourist accommodation. The property is directly accessible from Summit Way.

The closest unmanaged native vegetation with a continuous canopy is located to the west with vegetation around the building comprising of managed lawns and individual or small groups of Eucalypts.

The proposal seeks consent to undertake external alterations to the existing chalet including a larger window in the living area and a new sliding door opening to the deck on the eastern elevation.

The proposed alterations are being completed to increase the amount of light in the living area and will be entirely within the existing footprint of the building.

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 building and surrounding environment:



Figure 3: Photo of the existing building and location of the alterations on the eastern side



Figure 4: Photo of the managed lawns to the north of the building



Figure 5: Photo of the managed lawns to the east



Figure 6: Photo of Summit Way a sealed all weather access road



Figure 7: Photo of the managed lawns to the north-west of the building



Figure 8: Photo of the managed lawns to the west of the site



Figure 9: Photo of the area to the west, between lots 604 and 587, which does not comprise of unmanaged vegetation

1.3 Bushfire Prone Land

The NSW Department of Planning & Environment has advised that the subject site is located within a designated bushfire prone area and is therefore subject to S.100B of the NSW Rural Fires Act, 1997.

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 and as the development is for the purpose of 'tourist accommodation', the development is classed as being for a 'Special Fire Protection Purpose'.

The development application is therefore categorised as an Integrated Development under S.91 of the EP&A Act, 1979 and therefore requires a Bushfire Safety Authority from the NSW Rural Fire Service under S.100B of the RF Act, 1997.

Clause 46 of the Rural Fires Regulation 2002 sets out the matters that must be assessed in an application for a Bush Fire Safety Authority including a description of the property, classification of the vegetation, slope assessment, identification of significant environmental features, and details of threatened species and Aboriginal relic or place.

Clause 46(1)(g) of the Rural Fires Regulation 2002 specifies that a bushfire assessment for a proposed development must address the following matters:

- (i) the extent to which the development is to provide for setbacks, including asset protection zones,*
- (ii) the siting and adequacy of water supplies for fire fighting,*
- (iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,*
- (iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,*
- (v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,*
- (vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,*
- (vii) the construction standards to be used for building elements in the development, and*
- (viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development.'*

This Bushfire Assessment Report has been undertaken in accordance with the requirements stipulated above, where considered relevant in context of the proposed development.

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' applies 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 different 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 February 2015 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 this area of the resort and within the wider locality is Woodland, particularly Montane Woodland which has been confirmed in the Ecology Australia 'Kosciuszko Resorts Vegetation Assessment' mapping undertaken in 2002 as well as more recent fauna and flora assessments, including those undertaken for the Thredbo Stage 1A Mountain Bike Trail project.

The Rural Fire Service however have advised otherwise, mapping the area to the west of Woodridge as 'Forest', contrary to the ecological mapping and fieldwork undertaken.

The vegetation to the west 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, as illustrated in figure 10 below.



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

The vegetation located to the west beyond Lot 588, which the subject building sits within comprises of the closest unmanaged vegetation to the subject site, with a continuous canopy.

This is further shown in figure 11 below.



Figure 11: Aerial view demonstrating the closest unmanaged vegetation with a continuous canopy to the subject building

The small strip of land located between lots 587 and 604, shown in figure 11 above and 12 below, comprising of part the head lease area has had its vegetation and particularly its understorey removed as shown in figure 9 above.

The closest unmanaged vegetation (with a continuous canopy), shown by the white arrow in figure 12 below, is located within 50m (at its closest point) to the subject building's proposed alterations.

Even if the distance to the edge of the sub-lease boundary was taken as the closest unmanaged vegetation (excluding the disturbed head lease area), this would be 35m to the proposed alterations, as shown by the black arrow in figure 12 below.

Located between the subject site and this vegetation is a combination of managed lawns and individual or small groups of Eucalypts that do not form a continuous canopy.



Figure 12: Aerial view demonstrating the distance between the closest unmanaged vegetation with a continuous canopy to the proposed external alterations

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 12 above) is upslope.

5. SIGNIFICANT ENVIRONMENTAL FEATURES

The proposed works include alterations located entirely within the building footprint. The proposal will therefore have no impacts on native vegetation 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

6.1 Special Fire Protection Purpose Developments

As stated above, the proposed development consists of alterations to an existing chalet to be used for the purposes of tourist accommodation.

6.1.1 Specific Objectives for Special Fire Protection Purpose Developments

The specific objectives for special fire protection purpose developments are to:

- *provide for the special characteristics and needs of occupants. Unlike residential subdivisions, which can be built to a construction standard to withstand the fire event, enabling occupants and firefighters to provide property protection after the passage of fire, occupants of SFPP developments may not be able to assist in property protection. They are more likely to be adversely affected by smoke or heat while being evacuated.*
- *provide for safe emergency evacuation procedures. SFPP Developments are highly dependent on suitable emergency evacuation arrangements, which require greater separation from bush fire threats. During emergencies, the risk to firefighters and other emergency services personnel can be high through prolonged exposure, where door-to-door warnings are being given and exposure to the bush fire is imminent.*

These objectives have been considered and addressed below.

6.1.2 SFPPs as infill (Alpine Resorts)

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	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 alterations will not alter the siting or design of the building.</i>

<p>in relation to construction standards:</p> <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>	✓	<p><i>The proposed external alterations are required to be constructed in accordance with BAL-12.5 construction under AS3959-2009.</i></p>
<p>in relation to access requirements:</p> <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. 	✓	<p><i>The existing access comprises of a sealed, two-way all-weather road that is easily accessible for two-wheel drive vehicles (refer to figure 6 above).</i></p>
<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><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><i>The proposed works do not warrant any significant changes to 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.

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

This is provided below:

Based on the slope, distance of the site to the predominant vegetation class, being approximately 50m to Forest to the west (with a continuous canopy), located upslope; the category of Bushfire Attack in accordance with Table A2.4.4 in AS3959-2009 would be 'BAL-12.5'.

Even at 35m distance, the BAL level would be 12.5 in accordance with Table A2.4.4 in AS3959-2009.

7. CONCLUSION

As identified above, the proposed development can achieve compliance with all of the performance criteria standards set out in PBP for a special fire protection purpose 'infill' development located within the Alpine Resorts.

As identified above, the proposed development can achieve compliance with all of the performance criteria standards set out in PBP for a special fire protection purpose 'infill' development located within the Alpine Resorts.

Given the distance of the proposed alterations to the Forest vegetation located upslope, the level of construction for the proposed works is required to be BAL-12.5 under AS 3959-2009.

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