



BUSHFIRE ASSESSMENT REPORT

ALTERATIONS 'ALPINE SUITE', PERISHER VALLEY HOTEL PERISHER VALLEY KOSCIUSZKO NATIONAL PARK



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Project: 13-16

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 alterations to a suite within an existing hotel, with the external alterations only comprising of the installation of three windows and upgrading of glazing to an existing balcony to be used for a kitchenette.

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 application relates to the 'Alpine Suite' within the Perisher Valley Hotel, located at Lot 208 DP 46288, Perisher Valley within Kosciuszko National Park.

The site comprises the 'Perisher Centre', a mixed use building which incorporates the Perisher Valley Hotel on its upper floors.

Located within the Perisher Valley Hotel, is the 'Alpine Suite', which is now sub-leased from the lessee, Perisher Blue Pty Ltd as part of the sale of the ski resort to Vail Resorts.

The proposed external alterations only comprise of some minor works involving installing two new windows on the eastern elevation of the entry level of the suite, and an additional window on the western elevation at the upper level. The existing external fabric of the enclosed balcony (to be used as a kitchenette) is also proposed to be upgraded with double glazing and additional blockwork.

All of the proposed works are within the existing building footprint, with no additions proposed.

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



Figure 1: Context of the site within the locality



Figure 2: Location of the subject site in relation to the immediate locality

The following photos identify the existing building and surrounding environment:



Figure 3: Photo of the western, ski slope side of the Hotel



Figure 4: Photo of the ski slope, above and to the north-west of the Hotel



Figure 5: Photo of the closest Woodland vegetation to the north, beyond the church



Figure 6: Photo of the ski slope to the west of the Hotel



Figure 7: Photo of the creek and partly disturbed Valley Bog Complex to the east of the Hotel



Figure 8: Photo of the mostly disturbed vegetation to the east of the Hotel

1.3 Bushfire Prone Land

The subject site is mostly located within the buffer area to bushfire prone vegetation as extracted from the NSW Department of Planning & Environment Planning Portal website as shown in figure 9 below. The development is therefore subject to S.100B of the NSW Rural Fires Act, 1997.



Figure 9: Bushfire Prone Land map for Perisher Centre, including Perisher Valley Hotel

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 the Perisher Range Resorts, 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 October 2016, 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.

This vegetation classification was also informed by consulting the plant community maps identified in the *Kosciuszko Resorts Vegetation Assessment 2002*, prepared by Ecology Australia, in association with NGH Environmental, for Planning NSW (now Department of Planning & Environment).

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 & Slope Classification

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

This is further supported by the vegetation mapping undertaken by Ecology Australia in 2002, as shown in figure 10 below which shows that the light yellow areas are highly disturbed (no dominant vegetation communities) and that the green (light and dark) vegetation community to is Tall Alpine Heath with and without Eucalypts, a Sub-alpine Woodland vegetation community.



Figure 10: Vegetation plan showing the location of vegetation communities in relation to the existing building (map source: NSW Dept of Planning)

The light blue vegetation to the east of the subject site is a Valley Bog. In accordance with Keith, 2004, this is classified as an 'Alpine Complex (Sedgeland)'. The AUSLIG 1990 pictorial analysis nominates this as 'Tussock Moorland', see 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 (Sedgeland)	Tussock Moorland
Rainforest	Rainforest
Grassland	Grassland

In relation to slope, the following categories have been identified:

North: Upslope
South: Downslope 0-5 Degrees
East: Downslope 0-5 Degrees
West: Upslope

Therefore the closest unmanaged Woodland vegetation to the subject site is located over 170m to the north and 270m to the south-east.



Figure 11: Aerial view demonstrating the Woodland vegetation to the north and south-east

In relation to the Valley Bog associated with the Perisher Creek (a watercourse, which is also exempt from a BAL), the closest potential vegetation of this description is located 38m from the proposed new windows on the eastern elevation of the upper level, as shown below.



Figure 12: Aerial view demonstrating the distance to the closest potential Valley Bog community from the proposed new windows

5. SIGNIFICANT ENVIRONMENTAL FEATURES

The proposed external alterations comprise of new windows and upgraded glazing only and are located within the existing building footprint with no impact 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 the proposed external alterations are proposed for an existing SFPP Development approved prior to the 1st August 2002, the proposal is considered an 'infill development' in accordance with 4.2.5 of PBP.

An appropriate combination of bushfire protection measures and compliance with the intent and performance criteria of each measure within section 4.3.5 of PBP is required.

However PBP acknowledges that existing circumstances may make the preferred standards difficult to achieve and in such cases, the specific objectives in Section 4.2.3 are to be followed.

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.*

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.

6.1.1 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 external alterations only comprise of new windows and upgraded glazing, with no additional risk created.</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 partly sealed and partly gravel, two-way all-weather road that is easily accessible for two-wheel drive vehicles outside of winter. In winter, the hotel is snowbound.</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 Perisher Valley.</i></p> <p><i>Electricity supply is provided underground throughout Perisher Valley.</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 external alterations 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 and distance of the site to the Valley Bog (Tussock Moorland) located downslope at 0-5 degrees at a distance of approximately 38m; the category of Bushfire Attack in accordance with Table A2.4.4 in AS3959-2009 is 'BAL-12.5'.

Therefore the proposed external alterations are required to be constructed to BAL-12.5 in accordance with AS 3959-2009. As the external alterations only include new windows and upgraded glazing and lower wall, well above 400mm from the ground, the proposed alterations can achieve compliance with the BAL-12.5 construction level requirements.

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.

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

As the proposal will result in only new windows and upgrade façade to the balcony, the proposed development will not result in an increased bushfire risk outcome.

With the installation of new windows and upgraded glazing only, no further building upgrades are considered necessary. This is particularly relevant given that the scope of the proposed works will not result in an increase in size and footprint of the building; the proposed works will not result in any additional capacity for the accommodation of guests on the site; and the costs associated with the proposed ember upgrade for the entire building would negatively impact on the likelihood of the proposed building works proceeding.

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