

BUSHFIRE ASSESSMENT REPORT

REDEVELOPMENT OF BLACK BEAR INN LOT 794, DIGGINGS TERRACE THREDBO ALPINE RESORT



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Project: 27-19

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 the redevelopment of the Black Bear Inn Lodge located at Lot 794, Diggings Terrace, Thredbo within the Kosciuszko National Park. The legal description of the property is Lot 794 DP 1119757.

The site currently comprises of the existing Black Bear Inn Lodge and has a current approval (DA 33-7-2007) to demolish the existing lodge and replace it with eighteen (18) apartments plus a caretakers residence over six (6) levels. This approval included a Bushfire Safety Authority (BFSA) issued without conditions by the NSW Rural Fire Service (RFS) on the 28 August 2007.

This DA has been physically commenced and has therefore been activated.

The proposal is for six (6) 'duel key' self-contained apartments which allow for each of these apartments to be split into two (2) apartments or let as one (1) larger apartment, providing up to twelve (12) apartments. On the top floor, two traditional two (2) bedroom apartments are proposed, bringing the maximum total of apartments proposed to fourteen (14).

The development will comprise of a total of forty (40) beds used for the purposes of tourist accommodation.

The development also includes a restaurant with its fit-out subject to a future DA.

The report has been prepared in accordance with Section 4.46 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

The subject site is known as 'Black Bear Inn' located at Lot 794, Diggings Terrace, Thredbo within the Kosciuszko National Park. The legal description of the property is Lot 794 DP 1119757.

The building is located adjacent to Candlelight Lodge to the east and Sashas Apartments to the west and Mowamba Apartments to the north.

The existing property comprises of a commercial lodge, restaurant and bar and is licensed to contain a maximum of thirty-six (36) beds for the purpose of tourist accommodation. The property is directly accessible from Diggings Terrace.

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 lodge and surrounding environment:



Figure 3: Photo of the front of the lodge



Figure 4: Photo of Diggings Terrace and the lodge to the left



Figure 5: Photo of the lodge from the pedestrian plaza and path below



Figure 6: Photo of Diggings Terrace and the lodge on the right

1.3 Bushfire Prone Land

The subject site is located within the buffer area to bushfire prone land located to the south as extracted from the NSW Department of Planning, Industry & Environment Planning Portal website as shown in figure 7 below. The development is therefore subject to S.100B of the NSW Rural Fires Act, 1997.

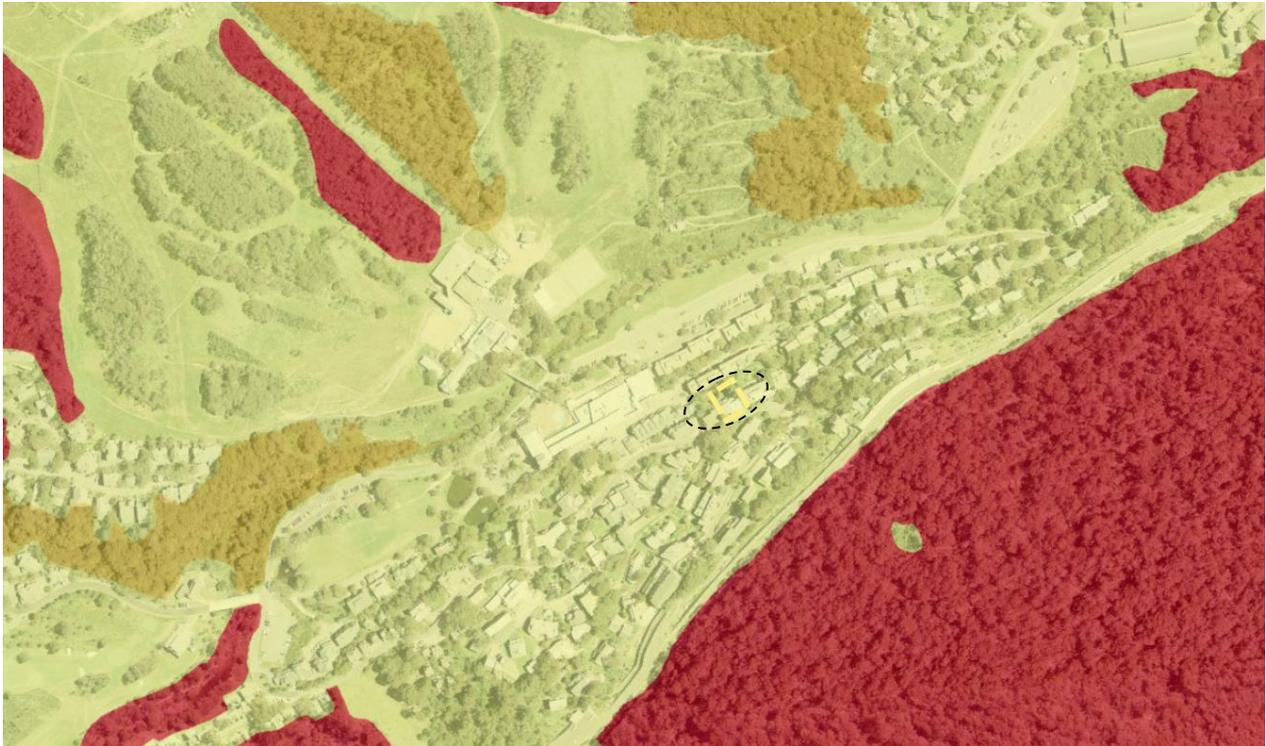


Figure 7: Bushfire Prone Land map with the subject site identified

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.4.46 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 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 July 2019, 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 Woodland, particularly Montane Woodland which has been confirmed in the Ecology Australia 'Kosciuszko Resorts Vegetation Assessment' mapping undertaken in 2002.

The Rural Fire Service however have advised otherwise, suggesting the vegetation is 'Forest', contrary to the ecological mapping and fieldwork undertaken.

The vegetation to the south as illustrated in figure 8 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 7 above) which confirms the bushfire prone vegetation is located to the south.



Figure 8: Aerial view demonstrating the location of the vegetation that would have the most influence in the event of a bushfire

This is further illustrated in figure 9 below.



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

The vegetation located to the south, on the opposite side of the Alpine Way, being vegetation closest to the subject building is considered upslope and is over 100m from the closest boundary of the subject site.

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

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 9 above) is upslope.

5. SIGNIFICANT ENVIRONMENTAL FEATURES

The proposed redevelopment of the lodge has already been approved and the new development will be mostly located within highly disturbed areas or impervious surfaces with the only impacts on native vegetation associated being minimal.

Accordingly, the proposal will have minimal impact with respect to threatened species, populations, endangered ecological communities or critical habitat as well as Aboriginal heritage as addressed in the Statement of Environmental Effects.

6. BUSHFIRE ASSESSMENT

6.1 Special Fire Protection Purpose Developments

As stated above, the proposed development consists of the redevelopment of an existing lodge with self-contained apartments plus a restaurant, used for short-term 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)

Although the proposal is not for additions and alterations to an existing building, it is a replacement of an existing building and therefore an infill development, which has already been previously approved.

An assessment of the proposal has therefore been undertaken 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 development is similar in scale and location as to the already approved development on the site.</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>✓</p>	<p><i>The proposed development is located more than 100m from the closest unmanaged Forest vegetation and therefore recommended to be BAL-LOW 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>✓</p>	<p><i>The existing access comprises of a sealed, two-way all-weather road that is easily accessible for two-wheel drive vehicles.</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>✓</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 removal of the exotic mature trees including birch, pines and cedar trees and replacement with native trees and shrubs will improve the bushfire risk outcome for 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 over 100m to Forest (with a continuous canopy), located upslope; the category of Bushfire Attack in accordance with Table A2.4.4 in AS3959-2009 is 'BAL-LOW'.

This is consistent with the BFSA issued by the RFS for the current approved DA for demolition and construction of eighteen (18) apartments (DA 33-7-2007) which was issued without conditions.

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.

The current DA under DA 33-7-2007 for demolition of the lodge and construction of eighteen (18) self-contained apartments, plus caretaker's residence over six (6) levels was issued a BFSA without conditions.

This DA has been physically commenced and therefore activated.

The proposal seeks to replace this approval with a more refined design with inclusion of an additional level for car parking and a restaurant as well as up to fourteen (14) self-contained apartments in the same location as the current approval.

With the subject site located over 100m from the closest unmanaged Forest vegetation to the south, the required Bushfire Attack Level is BAL-LOW.

The development will however provide an improved bushfire risk outcome when compared to the current building on site, with the replacement of a mostly combustible cladding with minimal bushfire protection and mature exotic vegetation with a more refined and mostly non-combustible development with an improved native landscaped outcome.

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