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Bushfire Protection Assessment

Proposed Alterations

Kosciuszko Alpine Club, Alpenhof Lodge

6 Wheatley Road, Perisher Valley

DOCUMENT TRACKING

Project Name	Bushfire Protection Assessment: Proposed Alterations, Kosciuszko Alpine Club Alpenhof Lodge – 6 Wheatley Road, Perisher Valley
Project Number	23HUS6311
Client Name	Kosciuszko Alpine Club
Project Manager	Susan Courtney FPAA BPAD Accredited Practitioner No. BPAD23573-L2
Prepared by	Susan Courtney FPAA BPAD Accredited Practitioner No. BPAD23573-L2
Reviewed by	Bruce Horkings FPAA BPAD Accredited Practitioner No. BPAD29962-L3
Approved by	Bruce Horkings FPAA BPAD Accredited Practitioner No. BPAD29962-L3
Status	Final
Version Number	2
Last saved on	4 September 2024

This report should be cited as 'Eco Logical Australia. 2024. *Bushfire Protection Assessment: Proposed Alterations, Kosciuszko Alpine Club Alpenhof Lodge – 6 Wheatley Road, Perisher Valley* . Prepared for Kosciuszko Alpine Club.

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd in conjunction with Mammoth Projects Pty Ltd.

LIMITATIONS

The bushfire protection measures recommended in this report do not completely remove the risk to life and property, and they do not guarantee that a development will not be impacted by a bushfire event. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions.

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Abbreviations

Abbreviation	Description
AS 3959	Australian Standard 3959:2018 'Construction of buildings in bushfire-prone areas'
APZ	Asset Protection Zone
BAL	Bushfire Attack Level
BFPL	Bush fire prone land
DA	Development Application
DPHI	NSW Department of Planning, Housing and Infrastructure
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
FDI	Fire Danger Index
IPA	Inner Protection Area
KAC	Kosciuszko Alpine Club
NASH	National Association of Steel-framed Housing
NCC	National Construction Code 2022
NPWS	NSW National Parks and Wildlife Service
PBP	'Planning for Bush Fire Protection 2019' and 'Planning for Bush Fire Protection Addendum November 2022'
RFS	NSW Rural Fire Service
SA	Standards Australia

1. Property and proposal

Table 1 identifies the subject property and outlines the type of development proposed.

Table 1: Subject site and development proposal summary

Street address:	6 Wheatley Road, Perisher Valley
Postcode:	2624
Lot/DP no:	Lot 112 DP 1242013
Local Government Area:	Alpine Resort – NSW Department of Planning, Housing and Infrastructure (DPHI)
Fire Danger Index (FDI)	50
Current land zoning:	C1 – National Parks and Nature Reserves
Type of development proposed:	Alterations

1.1 Description of proposal

The proposal is to reduce the extent and reinstate the balustrades of balconies on the Kosciuszko Alpine Club (KAC) Alpenhof Lodge at 6 Wheatley Road, Perisher Valley (herein referred to as the 'subject land') as shown in the elevation plans in Figure 1.

The proposed development is located on land classified as bush fire prone land (BFPL) on the NSW Planning Portal Spatial View Bushfire Prone Land layer¹ and is located within an existing 'Special fire protection purpose' (SFPP) development within the alpine resort of Perisher Valley.

1.2 Assessment process

The proposal was assessed in accord with 'Planning for Bush Fire Protection 2019' (RFS 2019) and 'Planning for Bush Fire Protection Addendum November 2022' (RFS 2022), herein collectively referred to as 'PBP'.

Under Section 6.5 of PBP, minor 'non-structural' external building alterations including the repair to or replacement of a balustrade are classified as 'Minor development in SFPP facilities'. Minor development in SFPP facilities does not require a Bush Fire Safety Authority (BFSA) from the NSW Rural Fire Service (RFS) as it does not influence potential bushfire impacts or the bushfire protection of buildings.

Although PBP classifies this proposed development as 'Minor development', the NSW Department of Planning, Housing and Infrastructure (DPHI) has requested that the proposal be assessed against the full requirements of Chapter 6 of PBP.

This assessment is based on the following information sources:

- Background documentation provided by Mammoth Projects Pty Ltd and Kosciuszko Alpine Club (KAC) Lodge Managers;
- Information contained within the sketch drawn on KAC Alpenhof Lodge Proposed Plans Job No 06168, Drawing No. A-103 Revision N dated August 2012; and

¹ <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address>

- GIS analysis including online spatial resources (i.e. Google Earth (including Street View), SIX Maps, Nearmap and the NSW Government Planning Portal).

1.3 Significant environmental features

An assessment of significant environmental features, threatened species, populations or ecological communities under the *Biodiversity Conservation Act 2016* that may potentially be affected by the proposed bushfire protection measures has not been undertaken in this report as it is covered by other parts of the development application process.

In the case of the balcony alterations, they are proposed to be located within an existing managed portion of the Perisher Valley Alpine Resort and no additional APZ establishment and/or encroachment onto surrounding NSW National Parks and Wildlife (NPWS) estate will be required to support the proposed development aside from that already managed within Perisher. The DPHI is the determining authority for this development; they will assess more thoroughly any potential environmental issues.

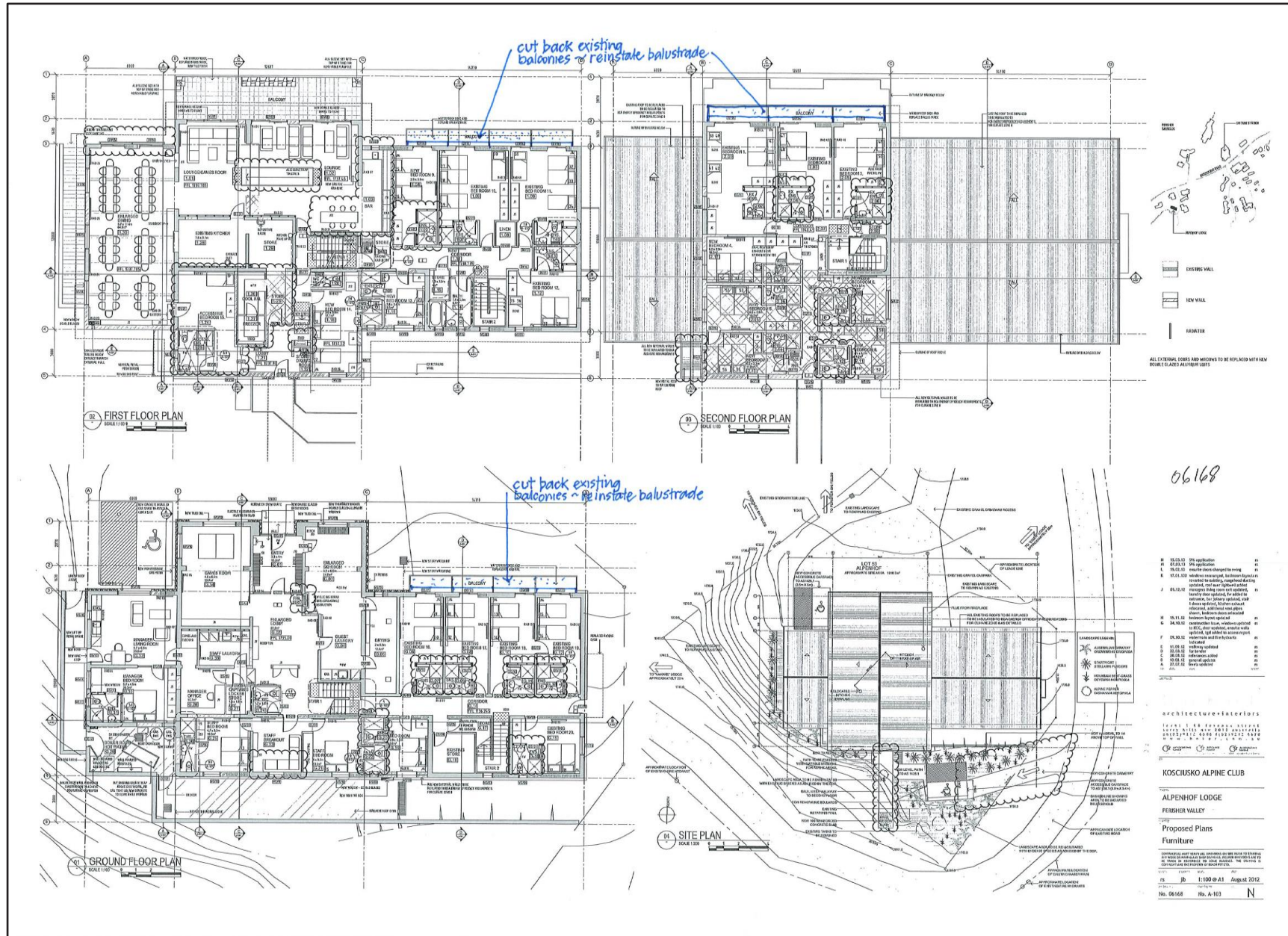


Figure 1: Proposed alterations

2. Bushfire hazard assessment

2.1 Process

The site assessment methodology set out in Appendix 1 of PBP has been utilised in this assessment to determine the required APZ and construction requirements.

Figure 2 and Table 2 show the effective slope and predominant vegetation representing the highest bushfire threat potentially posed to the proposed development from various directions.

2.2 Vegetation assessment

In accordance with PBP, the predominant vegetation formation has been assessed for a distance of at least 140 m from the subject land in all directions.

The predominant vegetation has been determined from a combination of the State Vegetation Type Map (SVTM; DCCEEW 2022) and Google Streetview imagery.

2.3 Slope assessment

In accordance with PBP, the slope that would most significantly influence fire behaviour was determined over a distance of 100 m from the boundary of the existing Alpenhof Lodge under the classified vegetation.

The effective slope has been determined from 10 m contour data.

2.4 Summary of assessment

The vegetation within 140 m of Alpenhof Lodge consists of three primary vegetation types. To the north-west and east of the Lodge is 'Kosciuszko Alpine Wet Heath' and 'Kosciuszko Range Boggy Herbfield' which fall within the 'Alpine Bogs and Fens' vegetation class (Keith 2004) and is classified as 'Alpine Complex' by PBP. The Alpine Complex is on slight downslopes in the PBP slope category '>0-5 degrees downslope'.

To the south of Alpenhof Lodge, there is 'Kosciuszko-Namadgi Alpine Ash Moist Grassy Forest' which falls within the 'Montane Wet Sclerophyll Forests' Keith vegetation class and is classified as 'Forest' by PBP. This vegetation is on upslopes that fall into the PBP slope category 'all upslopes and flat land'.

To the south-west and west of the Lodge, there are small remnants of 'Kosciuszko Alpine Sally Woodland' that falls within the 'Subalpine Woodlands' Keith vegetation class and is classified as 'Grassy Woodlands' by PBP. This woodland vegetation is on upslopes that fall into the PBP slope category 'all upslopes and flat land'.

In all other directions, there are managed lands in the form of other alpine lodges/leases, the Kosciuszko Chalet, Bella Vista Staff Lodge and Charlotte Pass Ski Centre along with ski lift and road infrastructure (roads surround Alpenhof Lodge on three sides).

Table 2: Bushfire hazard assessment, APZ requirements and BALs

Transect #	Slope	Vegetation Formation	Recommended minimum APZ*	Existing APZ	Bushfire Attack Level (BAL)	Comments
1 East	>0° to 5° downslope	Alpine Complex	≥14 m	≥40 m	BAL-12.5	APZ in place within Alpenhof Lodge lease and the surrounding Perisher Valley resort within/between existing leases and road/ski lift infrastructure.
2 South	All upslopes and flat land	Forest	≥30 m	≥70 m	BAL-12.5	
3 South-west	All upslopes and flat land	Grassy and semi-arid woodland	≥17 m	≥28 m	BAL-12.5	
4 South-east	All upslopes and flat land	Grassy and semi-arid woodland	≥17 m	≥35 m	BAL-12.5	
5 North-west	>0° to 5° downslope	Alpine Complex	≥14 m	≥97 m	BAL-12.5	
All other directions	Managed land within resort including other lodges/leases, retail outlets, staff accommodation and ski lift/road infrastructure.					

*PBP does not provide dimensions for minimum SFPP APZs in alpine resort areas and therefore an APZ commensurate with BAL-12.5 from Table A1.12.7 of PBP has been applied.



Figure 2: Bushfire hazard assessment

3. PBP Objectives

3.1 PBP objectives for existing SFPP facilities

Table 3 below outlines how the proposed alterations to Alpenhof Lodge will satisfy the objectives of Section 6.4 of PBP for development of existing SFPP facilities.

Table 3: PBP objectives for existing SFPP facilities (adapted from Section 6.4 of PBP)

No.	Objective	Compliance of Proposed Development	Objective Satisfied
1	Provide an appropriate defensible space.	<ul style="list-style-type: none"> Alpenhof Lodge is surrounded by an appropriate defensible space AND an APZ commensurate with BAL-12.5 construction within its own lease, surrounding roads and other surrounding leases. 	Yes
2	Site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition.	<ul style="list-style-type: none"> No new buildings proposed Alpenhof Lodge surrounded by BAL-12.5 commensurate APZ. 	Yes
3	Provide a better bushfire outcome for existing buildings.	<ul style="list-style-type: none"> Existing building is not constructed to any specific bushfire construction level. All new works are to be constructed to BAL-12.5 in accord with AS 3959:2018 'Construction of buildings in bushfire-prone areas' (SA 2018) and as modified in Section 7.5.2 of PBP. Entire building (excluding new works that are to be BAL-12.5 compliant) is to implement the following ember protection upgrades as follows: <ul style="list-style-type: none"> Screen sub-floor spaces, chimneys/flues (aside from those for gas appliances or servicing enclosed slow combustion heaters), HVAC vents/intakes, eave vents, vents/weepholes and openable windows with aluminium, bronze or corrosion-resistant stainless steel mesh of no greater than 2 mm aperture; and Weather strips/draft excluders to be fitted to all side hung external doors. 	Yes
4	New buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings (unless they can comply with Section 6.8).	<ul style="list-style-type: none"> No new buildings proposed. Existing building is surrounded by BAL-12.5 commensurate APZ. 	Yes
5	Ensure there is no increase in bushfire management and maintenance responsibility on adjoining land owners without their written confirmation.	<ul style="list-style-type: none"> APZs surrounding Alpenhof Lodge are already in place within the existing managed portions of Perisher Valley Alpine Resort both within and surrounding specific Lodge lease areas managed by a combination of lessees and NPWS. There is no increase in bushfire management and maintenance for adjoining land holders beyond the existing. 	Yes
6	Ensure building design and construction enhances the chances of occupant and building survival.	<ul style="list-style-type: none"> New works to be constructed to BAL-12.5 as outlined in Objective 3 (above). Ember protection upgrades outlined in Objective 3 (above) will improve bushfire protection level of Alpenhof Lodge. Alpenhof Lodge is protected by a fire detection system and network of internal fire hose reels and extinguishers supported by external fire hydrants (the two nearest of which are shown in Figure 2). 	Yes

No.	Objective	Compliance of Proposed Development	Objective Satisfied
7	Provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).	<ul style="list-style-type: none"> • If not already in place/current, a Bushfire Emergency Management and Evacuation Plan (BEMEP) is to be prepared for the Alpenhof Lodge consistent with: <ul style="list-style-type: none"> ○ The NSW RFS document: 'A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan' (RFS 2022); and ○ Australian Standard AS 3745:2010 'Planning for emergencies in facilities' (SA 2010). • The BEMEP should include planning for the early relocation of occupants. • The BEMEP needs to consider any requirements or measures in place for the broader Perisher Valley Alpine Resort, Kosciuszko National Park or NPWS directives. • An Emergency Planning Committee (EPC) is to be established to develop/implement an Emergency Procedures Manual. • Detailed plans of all emergency assembly areas (onsite and offsite) as stated in AS 3745:2010 are to be clearly displayed. • An annual emergency evacuation is to be conducted following which the BEMEP is to be reviewed/updated as necessary. 	Yes

3.2 Alpine resorts

Section 6.6 of PBP outlines specific objectives that apply to alpine resort areas and details of how the proposed alterations to Alpenhof Lodge satisfies these are outlined in Table 4.

Table 4: PBP objectives for alpine resorts (adapted from Section 6.6 of PBP)

No.	Objective	Compliance of Proposed Development	Objective Satisfied
1	Provide an appropriate defensible space.	<ul style="list-style-type: none"> Alpenhof Lodge is surrounded by an APZ commensurate with BAL-12.5 construction within its own lease, surrounding roads and other surrounding leases. 	Yes
2	Provide a better bushfire outcome for existing structures.	<ul style="list-style-type: none"> Existing building is not constructed to any specific bushfire construction level. All new works are to be constructed to BAL-12.5 in accord with AS 3959:2018 'Construction of buildings in bushfire-prone areas' (SA 2018) and as modified in Section 7.5.2 of PBP. Entire building (excluding new works that are to be BAL-12.5 compliant) is to implement the following ember protection upgrades as follows: <ul style="list-style-type: none"> Screen sub-floor spaces, chimneys/flues (aside from those for gas appliances or servicing enclosed slow combustion heaters), HVAC vents/intakes, eave vents, vents/weepholes and openable windows with aluminium, bronze or corrosion-resistant stainless steel mesh of no greater than 2 mm aperture; and Weather strips/draft excluders to be fitted to all side hung external doors. 	Yes
3	Ensure new building work complies with the construction standards set out in AS 3959.	<ul style="list-style-type: none"> New building work to comply with BAL-12.5 of AS 3959:2018 as modified in Section 7.5.2 of PBP and the additional ember protection provisions as identified in Objective 2. 	Yes
4	Ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area.	<ul style="list-style-type: none"> APZs surrounding Alpenhof Lodge are already in place within the existing managed portions of Perisher Valley Alpine Resort both within and surrounding specific Lodge lease areas managed by a combination of lessees and NPWS. There is no increase in bushfire management and maintenance for adjoining land holders beyond the existing. 	Yes
5	Written consent from the land manager is provided for all proposed works outside of the sub lease or leasehold area.	<ul style="list-style-type: none"> No new works proposed outside of sub lease/leasehold area. 	Not applicable

No.	Objective	Compliance of Proposed Development	Objective Satisfied
6	Proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity.	<ul style="list-style-type: none"> • No APZs proposed outside of the existing sub lease/leasehold area already managed by lessees and NPWS. 	Yes
7	Ensure building design and construction enhances the chances of occupant and building survival.	<ul style="list-style-type: none"> • New works to be constructed to BAL-12.5 as outlined in Objective 2 (above). • Upgrades (including ember protection) will enhance the bushfire protection level of Alpenhof Lodge. • Alpenhof Lodge is protected by a fire detection system and network of internal fire hose reels and extinguishers supported by external fire hydrants (the two nearest of which are shown in Figure 2). 	Yes
8	Provide for safe emergency evacuation procedures.	<ul style="list-style-type: none"> • If not already in place/current, a Bushfire Emergency Management and Evacuation Plan (BEMEP) is to be prepared for the Alpenhof Lodge consistent with: <ul style="list-style-type: none"> ○ The NSW RFS document: 'A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan'; and ○ Australian Standard AS 3745:2010 'Planning for emergencies in facilities'. • The BEMEP should include planning for the early relocation of occupants. • The BEMEP needs to consider any requirements or measures in place for the broader Perisher Valley Alpine Resort, Kosciuszko National Park or NPWS directives. • An Emergency Planning Committee (EPC) is to be established to develop/implement an Emergency Procedures Manual. • Detailed plans of all emergency assembly areas (onsite and offsite) as stated in AS 3745:2010 are to be clearly displayed. • An annual emergency evacuation is to be conducted following which the BEMEP is to be reviewed/updated as necessary. 	Yes

4. Conclusion

The proposed alterations to Alpenhof Lodge have been assessed against the relevant objectives in 'Planning for Bush Fire Protection 2019' for existing SFPP and Alpine resort developments. As demonstrated in Table 3 and Table 4, the proposed alterations satisfies the applicable objectives of PBP in relation to development of an existing SFPP facility within alpine resort environs, providing that the below recommended bushfire protection measures are implemented.

5. Recommendations

The following bushfire protection measures are recommended:

- i Asset Protection Zones and Landscaping
 - APZ to be maintained as existing to lease boundary in accord with the specifications for an Inner Protection Area (IPA) as outlined in Appendix A;
- ii Bushfire Construction Standards
 - All new construction to be in accord with **BAL-12.5** requirements of AS 3959:2018 (Chapters 3 and 5) and as modified by Section 7.5.2 of PBP;
 - Entire building (excluding new works that are to be BAL-12.5 compliant) is to implement the following ember protection upgrades:
 - Screen sub-floor spaces, chimneys/flues (aside from those for gas appliances or servicing enclosed slow combustion heaters), HVAC vents/intakes, eave vents, vents/weepholes and openable windows with aluminium, bronze or corrosion-resistant stainless steel mesh of no greater than 2 mm aperture; and
 - Weather strips/draft excluders to be fitted to all side hung external doors.
- iii Emergency Management
 - If not already in place/current, a Bushfire Emergency Management and Evacuation Plan (BEMEP) is to be prepared for the Alpenhof Lodge consistent with:
 - The NSW RFS document: 'A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan'; and
 - Australian Standard AS 3745:2010 'Planning for emergencies in facilities';
 - The BEMEP should include planning for the early relocation of occupants;
 - The BEMEP needs to consider any requirements or measures in place for the broader Perisher Valley Alpine Resort, Kosciuszko National Park or NPWS directives;
 - An Emergency Planning Committee (EPC) is to be established to develop/implement an Emergency Procedures Manual;
 - Detailed plans of all emergency assembly areas (onsite and offsite) as stated in AS 3745:2010 are to be clearly displayed; and
 - An annual emergency evacuation is to be conducted following which the BEMEP is to be reviewed/updated as necessary.



Susan Courtney
Senior Bushfire Planner
 FPAA BPAD Certified Practitioner No. BPAD23573-L2




Bruce Horkings
Principal Bushfire Consultant and Technical Lead
 FPAA BPAD Certified Practitioner No. BPAD29962-L3



6. References

- Australian Building Codes Board (ABCB). 2022. *National Construction Code, Volumes 1 and 2*. ABCB, Canberra.
- Keith, D. 2004. *Ocean Shores to Desert Dunes*. Department of Environment and Conservation, Sydney.
- National Association of Steel Framed Housing Inc. (NASH). 2021. *Steel Framed Construction in Bushfire Areas NS 300*. NASH, Melbourne.
- NSW Rural Fire Service (RFS). 2014. *Development Planning – A guide to developing a Bush Fire Emergency Management and Evacuation Plan*. RFS, Sydney.
- NSW Rural Fire Service (RFS). 2019. *Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners - issued December 2019*. RFS, Sydney.
- NSW Rural Fire Service (RFS). 2022. *Planning for Bush Fire Protection Addendum November 2022*. RFS, Sydney.
- Standards Australia (SA). 2010. *Planning for emergencies in facilities*, AS 3745-2010. SAI Global, Sydney.
- Standards Australia (SA). 2018. *Construction of buildings in bushfire-prone areas*, AS 3959:2018. SAI Global, Sydney.

Appendix A - Asset Protection Zone and Landscaping Standards

The Inner Protection Area (IPA) APZ management specifications in Table 5 apply to the Lodge lease area. The subject land is to be maintained in perpetuity and management undertaken as required.

These APZ management specifications should be considered for any future landscaping within and maintenance of the subject land.

Further details on APZ implementation and management can be found on the NSW RFS website (<https://www.rfs.nsw.gov.au/resources/publications>).

Table 5: APZ management specifications

Vegetation Strata	Inner Protection Area (IPA)
Trees	<ul style="list-style-type: none"> • Tree canopy cover should be less than 15% at maturity; • Trees (at maturity) should not touch or overhang the building; • Lower limbs should be removed up to a height of 2 m above ground; • Canopies should be separated by 2 to 5 m; and • Preference should be given to smooth barked and evergreen trees.
Shrubs	<ul style="list-style-type: none"> • Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; • Shrubs should not be located under trees; • Shrubs should not form more than 10% ground cover; and • Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
Grass	<ul style="list-style-type: none"> • Should be kept mown (as a guide grass should be kept to no more than 100 mm in height); and • Leaves and vegetation debris should be removed.

