

Bushfire Hazard Assessment Report



Project: Alterations & Addition to Existing Lodge 21 Plum Pine Road, Smiggin Holes NSW Lot 180 DP 756697

DATE: NOVEMBER 2020 REPORT NO: 20112 REVISION: A PREPARED FOR: CLANCY ALPINE LODGE C/- ROBERT MATHER PREPARED BY: COMPLETE TOWN PLANNING PTY LTD

Preparation of Bushfire Reports for Development in Bushfire Prone Areas

- Bushfire Attack Level (BAL) Certificates
- Bushfire Evacuation Plans
- Construction Solutions & Advice for Bushfire Prone Areas





BUSHFIRE HAZARD ASSESSMENT

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ASSESSOR & QUALIFICATIONS

Matthew Stewart FPAA BPAD Accredited Bushfire Practitioner – No 27149

DISCLAIMER

The recommendations provided in the summary of this report are a result of the analysis of the proposal in relation to the requirements of Planning for Bushfire Protection 2019. Utmost care has been taken in the preparation of this report however there is no guarantee of human error. The intention of this report is to address the submission requirements for Development Applications on bushfire prone land. There is no implied assurance or guarantee the summary conditions will be accepted in the final consent and there is no way Complete Town Planning Pty Ltd is liable for any financial losses incurred should the recommendations in this report not be accepted in the final conditions of consent.

This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

EXECUTIVE SUMMARY

This bushfire assessment is for the proposed alterations and addition to an existing Lodge known as Clancy Alpine Lodge located at Lot 180 DP756697, 21 Plum Pine Road, Smiggin Holes NSW 2624.

The alterations to the existing commercial lodge are as follows:

- Replacement of existing timber decking on balcony and install new handrail/balustrade.
- Renovation of ensuites to Bedrooms 1 to 8 including the removal of non-structural dividing walls in ensuites 2, 4, 6 and 8.
- Extension of existing ground floor managers room (extension confined to existing building footprint and to be extended no further than existing side awning).

It is important to note that there is no increase in size to the building footprint.

The land is zoned tourist accommodation and has been identified as being in bushfire prone land, and hence as outlined in *Planning for Bushfire Protection – PBP 2019* (NSW RFS 2019) is considered Special Fire Protection Purpose (SFPP) and is required to obtain a BFSA from the RFS under section 100B of the RF Act.

The required Bushfire Attack Level for the commercial lodge will be:

- Bushfire Attack Level of BAL 40.

Pending compliance with the recommendations outlined in this report. The performance criteria and deemed to satisfy provisions outlined in Section 6.4 and 6.6 of PBP 2019 are found to be satisfied.

ASSET PROTECTION ZONES

An APZ has been established in conjunction with the Office of Environment and Heritage (OEH) to create a defendable space adjoining the building to permit any new work to be constructed to achieve BAL40.

Trees have been removed within the APZ by reducing the attached canopy from adjoining vegetation and overhanging the building. The owners worked closely with OEH to arrange this removal.



Asset protection zones are the most strategically valuable defence against radiant heat and flame, and to lesser extent embers. The landscaped areas of the allotment shall be maintained as an inner protection area in perpetuity.

To allow for emergency service personnel and residents to undertake property protection activities, the defendable space permits unobstructed pedestrian access is to be provided around the building.

The landscaping shall maintain the inner protection area effectively free of available fuel. Landscaping plants may be used in this area so long as they are selected for their low combustibility, by virtue of high moisture content, low volatile oil content, high leaf minerals, large fleshy leaves, absence of shredding bark. They should be placed so as not to provide either vertical or horizontal connectedness of plant material and avoid overhanging roof lines or contact with the building.

CONSTRUCTION

To BAL 40 as per AS3959-2018, with the exception that the construction requirements shall be varied to comply with the requirements of Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of *Planning for Bushfire Protection 2019.*

UTILITIES

The intent of measures is to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities. To achieve this, the following conditions shall apply:

WATER

All above ground water pipes external to the building are to be metal.

Smiggin Holes is serviced by reticulated water. A hydrant system is located along Plum Pine Road. The location and distance to the hydrants will be consistent with the requirements of the PBP 2019.

GAS

If gas is connected to the lodge on the subject land, must perform as per the following criteria:

- Bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. Metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.
- If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.

• Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

EVACUATION AND EMERGENCY MANAGEMENT

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments.

To achieve this, the following conditions shall apply:

A building evacuation diagram, site layout diagram and Statement of Action are to be provided in each building in accordance with the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.

1. PROPOSAL

This Bush Fire Assessment Report has been compiled for submission to the Department of Planning for the purpose of assessment under Section 100B of the RF Act and is also considered "integrated development" under Section 4.46 of *Environmental Planning and Assessment Act 1979* (EP&A Act).

The report has been prepared in accordance with the submission requirements of Appendix 4 of *Planning for Bush Fire Protection* (NSW RFS 2019) and identifies the proposal can meet the appropriate objectives and performance criteria of Section 6.4 and 6.6 *Planning for Bush Fire Protection* (NSW RFS 2019).

The assessment confirms the subject lot is mapped as bushfire prone.

Complete Town Planning was commissioned to provide this bushfire assessment. Accredited bushfire assessor, Matthew Stewart inspected the site on 31 July 2020 and 26 October 2020.

- Figure 1 shows the subject lot location
- Figure 2 provides a broad scale aerial view of the subject site
- Figure 3 shows the proposed plans

FIGURE 1 SITE LOCATION



FIGURE 2 BROAD SCALE AERIAL VIEW OF THE SUBJECT SITE

FIGURE 3 CLOSE UP AERIAL VIEW OF SUBJECT LOT



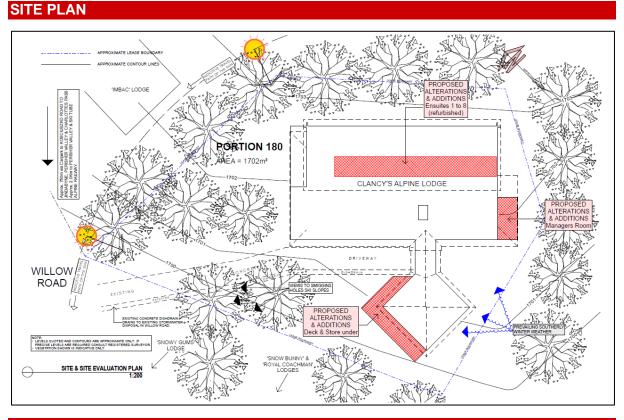
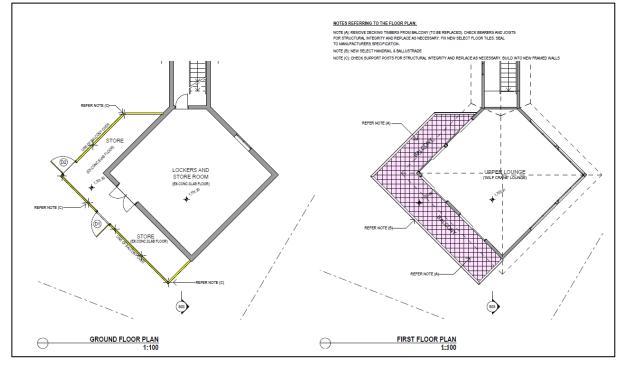
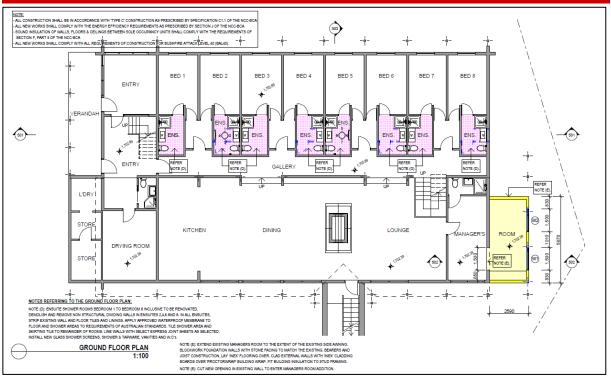


FIGURE 4 PROPOSED PLANS

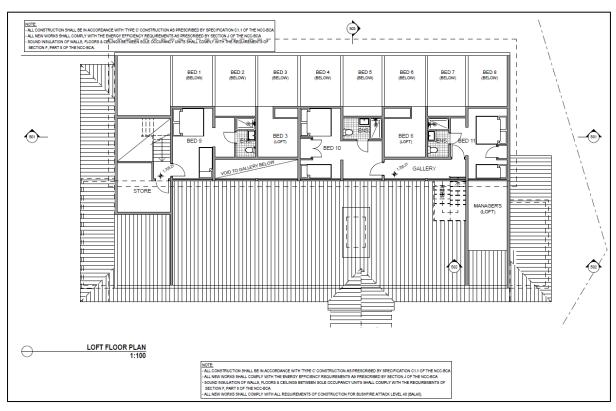
GROUND & FIRST FLOOR PLAN



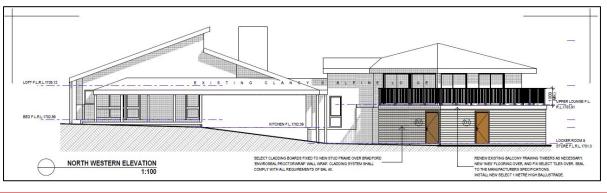




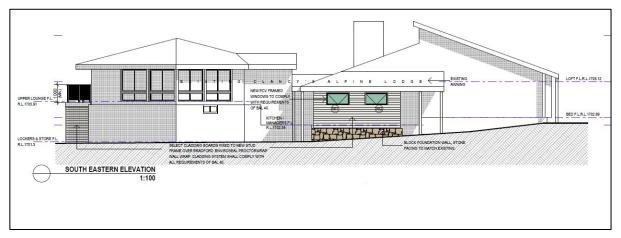
LOFT PLAN



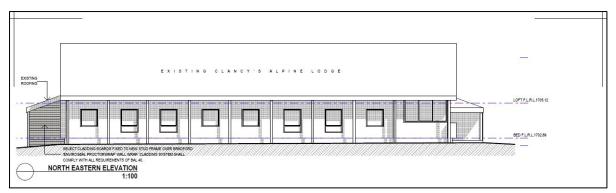
NORTH WEST ELEVATION



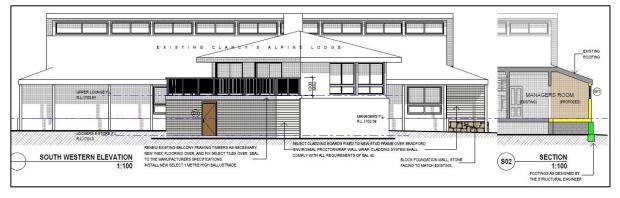
SOUTH EAST ELEVATION



NORTH EAST ELEVATION



SOUTH WEST ELEVATION



2. PLANNING LAYERS

The following planning layers are described in Table 1 and shown in the Figures below:

TABLE 1PLANNING LAYERS

МАР	FIGURE	DESCRIPTION
Bushfire Prone Land Map	5	The subject lot is mapped "Vegetation Category 2"
LEP Zone Map	6	The subject lot is zoned as "E1 – National Parks and Nature Reserves"
Vegetation Mapping	7	The vegetation surrounding the existing lodge, within 140m, has been mapped as: - Sub-alpine Shrub-Grass Woodland - Sub-alpine Wet Herb-Grassland-Bog According to Keith (2004) this formation is classified as "Woodlands".
Biodiversity Values Map	8	Proposed works not identified within an area of high biodiversity values. See Biodiversity and Aboriginal Heritage Assessment provided.

FIGURE 5 BUSHFIRE PRONE MAP



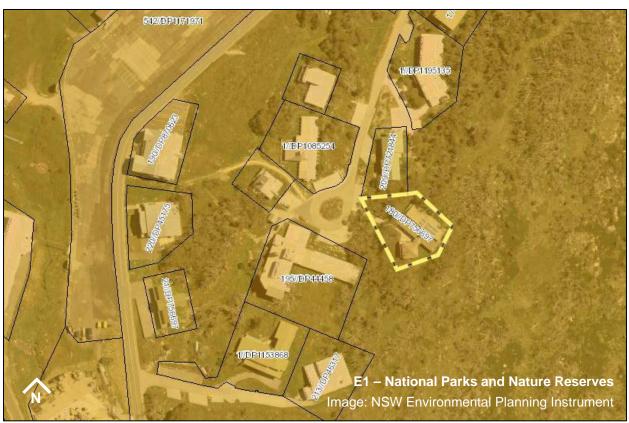
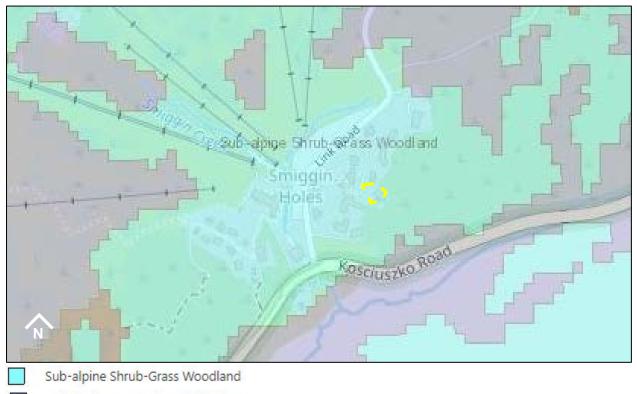


FIGURE 6 LEP MAP

FIGURE 7 VEGETATION MAPPING



Sub-alpine Wet Herb-Grassland-Bog



FIGURE 8 BIODIVERSITY VALUES MAP

3. SITE DESCRIPTION

3.1. Slope and aspect of the site within 100 m of the site

The slope that would most significantly influence fire behaviour was determined to be to the West with *Woodland* vegetation upslope from the Lodge. An APZ outside the lot boundary of 15m has been established with the OEH.

The Australian Standard AS3959-2018 identifies that the slope of the land under the classified vegetation is much more important than the slope between the site and the edge of the classified vegetation.

As can be seen in Figure 9 the land surrounding the existing Lodge exhibits an upwards slope to the West and downslope to the East through managed land of other holiday accommodation properties and Perisher Ski Resort to the Smiggin Holes carpark.

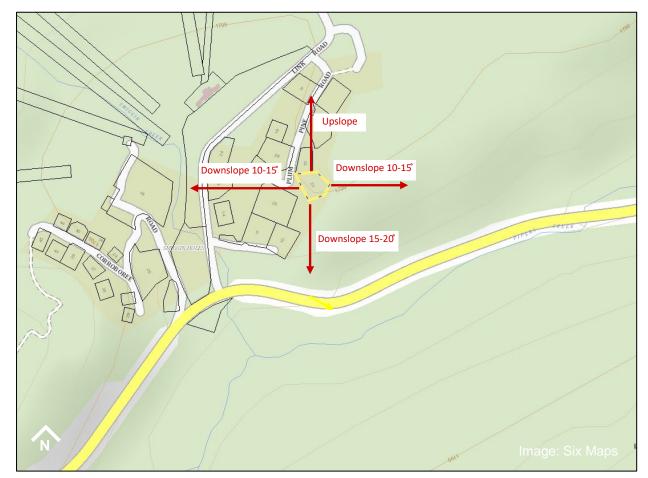


FIGURE 9 SLOPE

3.2. Vegetation formation within 140 m of proposed dwelling

Smiggin Holes is comprised of managed land at the base of the valley. Within 140m of the site, the area is managed land within a ski resort with the majority comprised of other existing lodges and resort carparking as well as Woodland vegetation to the West towards Kosciuszko Road. The vegetation of the area surrounding the Lodge is characterised as sub-alpine shrub-grass woodland and sub-alpine wet herb-grassland-bog. Outside of the 140m, there is a small area of developed sub-alpine herb field.

As seen in Figure 7, within 140m of 21 Plum Pine Road, Smiggin Holes there are one main type of vegetation:

- Sub-alpine Shrub-Grass Woodland

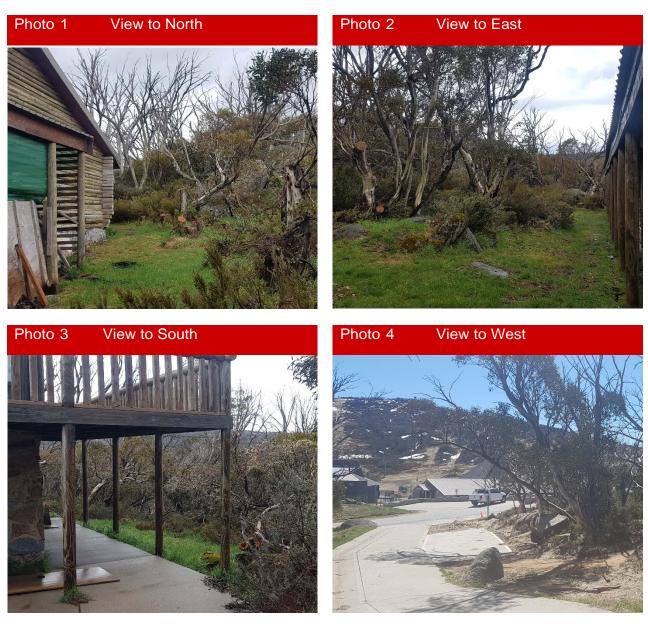
Downslope towards the West is Sub-alpine Shrub-Grass Woodland which is comparable to *Woodlands* classification of *Keith* as it is dominated by an open to sparse layer of eucalypts with the crowns rarely touching as well as diverse ground cover of grasses and herbs with shrubs sparsely distributed.

The majority of the remaining area is comprised of managed land as cleared and maintained for ski runs, holiday accommodation and amenities including the Smiggin Holes carpark. This land is managed by Perisher Blue.

The vegetation formations are described below and summarised in Table 2.

_	Vegetation Formation	Effective Slope	APZ Proposed	Photo
North	Woodland	Upslope	9m (including 5m defendable space)	1
East	Woodland	Downslope	17m (including 15m defendable space)	2
South	Woodland	Downslope	18m (including 15m defendable space)	3
West	Woodland	Downslope	17m (including 15m defendable space)	4

TABLE 2 PREDOMINATE VEGETATION CLASSIFICATION



Note: Further clearing will be undertaken to establish the approved defendable spaces with NPWS during 20/21 summer season.

4. BUSHFIRE THREAT ASSESSMENT

4.1. Asset Protection Zones (APZ)

PBP 2019 Table A1.12.7 has been used to determine the width of the required APZ for the proposed development using the vegetation and slope data identified. An FFDI of 50 was used for this location. The APZ has already been established with the OEH for areas outside of the lot and should be maintained for perpetuity.

The vegetation classification for bushfire purposes for this site is "Woodlands". Woodland vegetation can be managed as an Inner Protection Area (IPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA should provide a tree canopy cover less than 15% and any tree canopies must be located greater than 2 metre from any part of the proposed dwelling roofline. Garden beds of flammable shrubs should not be located under trees and should be no greater than 10m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above ground.

Table 3 below shows the APZ and BAL Determination for proposed alterations & addition.

	NORTH	EAST	SOUTH	WEST
Gradient	Upslope	Downslope 10-15°	Downslope 15-20°	Downslope 10-15°
Vegetation	Woodland	Woodland	Woodland	Woodland
Proposed distance to be provided between edge of building and vegetation	9m (incl. 5m defendable space) Entire Lot to be Managed as IPA	17m (incl. 15m defendable space) Entire Lot to be Managed as IPA	18m (incl. 15m defendable space) Entire Lot to be Managed as IPA	17m (incl. 15m defendable space) Entire Lot to be Managed as IPA
APZ required by PBP 2019 for BAL 40	6-<8 m	9-<12 m	14-<19 m	9-<12 m
BAL Proposed	BAL 40	BAL 40	BAL 40	BAL 40

TABLE 3APZ AND BAL DETERMINATION

4.2. Relevant Construction Standard

The Australian Standard AS 3939 – 2018 is the enabling standard that addresses the performance requirements of both parts 2.3.4 and Part GF5.1 of the Building Code of Australia for the construction of the Class 1, 2 and Class 3 buildings within a designated Bushfire Prone Area.

The following was determined for this site: Relevant fire danger index..... FFDI 50

The applicant proposes alterations and addition to the Lodge to meet BAL 40.

4.3. Safe Operational Access

The Planning for Bushfire Protection requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

The PBP (2019) requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

• Plum Pine Road is a sealed public road. It is a two-wheel drive, all weather road. The widths and design would allow safe access for firefighters while residents are evacuating an area. The capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles.

The access road and turning bay will allow tankers to travel in a forward direction from the allotments.

4.4. Emergency Management

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments.

To achieve this, the following conditions shall apply:

A building evacuation diagram, site layout diagram and Statement of Action are to be provided for the proposed development in accordance with Building Emergency Procedures and Bush Fire Evacuation Plan, the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.

The owners are advised to obtain the NSW Rural Fire Service – "Guidelines for the Preparation of Bush Fire Evacuation Plans" & 'Bush Fire Survival Plan' In the event of emergency, the owners should ensure they are familiar with the RFS Bush Fire Alert Levels and use their Bush Fire Survival Plan.

4.5. Adequate Water and Utility Services

Smiggin Holes is serviced by reticulated water. A hydrant system is located along Plum Pine Road. The location and distance to the hydrants will be consistent with the requirements of the PBP 2019.

Any bottled gas will be installed and maintained in accordance with AS1596 and the requirements of the relevant authority. If gas cylinders need to be kept close to the buildings, the release valves must be directed away from the building and away from any combustible material. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

5. LANDSCAPING

An APZ has been approved and is currently being established in conjunction with the OEH and should be maintained for perpetuity as specified.

When landscaping, vegetation should be located greater than 2 m from any part of the roofline of a dwelling or the shed. Garden beds of flammable shrubs are not to be located under trees or within 10 m of an exposed window or door. Trees should have lower limbs removed up to a height of 2 m above the ground.

Appendix 4 (PBP 2019) provides guidelines for landscaping and Bushfire Provisions within the APZ. To incorporate bushfire protection measures into future development, the owner is advised to consider the following:

- Avoid planting trees species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopy.
- Avoid planting deciduous species that may increase fuel at surface/ground level by the fall of leaves.
- Avoid climbing species to walls and pergolas.
- Locate combustible materials such as woodchips/mulch, flammable fuel stores (LPG gas bottles) away from the building.
- Locate combustible structures such as garden sheds, pergolas and materials such as timber furniture away from the building.
- Ensure any vegetation planted around the house is a suitable distance away so these plants do not come into physical contact with the house as they mature.

The property should be developed to incorporate suitable impervious area surrounding the house, including courtyards, paths and driveways.

6. HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION

DEMONSTRATION COMPLIANCE UNDER SECTION 6.4 – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
provide an appropriate defendable space		APZ with defendable space provided in conjunction with OEH.
 site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition 		APZ established with OEH for areas outside of leasehold area. See approved APZ plan (Appendix II).
 provide a better bush fire protection outcome for existing buildings 		Proposed external works to comply with BAL40 requirements outlined in AS3959-2018.
 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); 		Not applicable. Alterations and addition to existing Lodge.
 ensure there is no increase in bush fire management and maintenance responsibility on adjoining land owners without their written confirmation 	V	Defendable space for APZ established and approved with OEH to comply with BAL 40 infill requirements.
 ensure building design and construction enhances the chances of occupant and building survival 	Ø	Proposed external works to comply with BAL40 requirements outlined in AS3959-2018.
 provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads) 		No change to existing emergency evacuation procedures proposed. An individual evacuation plan will be prepared as described in section 4.4. of this report.

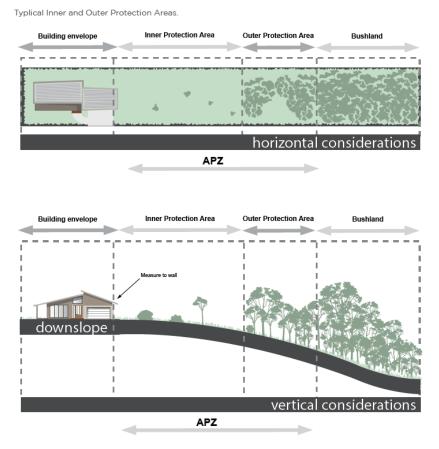
DEMONSTRATION COMPLIANCE UNDER SECTION 6.6 – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

Performance Criteria	Complies	Acceptable solutions		
The intent may be achieved where:				
provide an appropriate defendable space		Defendable space provided in conjunction with OEH.		
 provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures) 		External materials for replacement decking and managers room extension to comply with BAL40 requirements.		
 ensure new building work complies with the construction standards set out in AS 3959 		Proposed external works to comply with BAL40 requirements outlined in AS3959-2018.		
• to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease		APZ established with OEH for areas outside of leasehold area. See approved APZ plan (Appendix II).		
 written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area 		No proposed works outside of leasehold area. APZ already established with OEH to comply with BAL 40.		
 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 		APZ established with OEH for areas outside of leasehold area. See approved APZ (Appendix II).		
 ensure building design and construction standards enhance the chances of occupant and building survival 		Proposed external works to comply with BAL40 requirements outlined in AS3959-2018.		

APPENDIX I DEFINITION OF ASSET PROTECTION ZONES

Vegetation within the APZ should be managed in accordance with APZ specifications for the purposes of limiting the travel of a fire, reducing the likelihood of direct flame contact and removing additional hazards or ignition sources. The following outlines some general vegetation management principles for APZs:

- 1. Discontinuous shrub layer (clumps or islands of shrubs not rows)
- 2. Vertical separation between vegetation stratum
- 3. Tree canopies not overhanging structures
- 4. Management and trimming of trees and other vegetation in the vicinity of power lines and tower lines in accordance with the specifications in "Vegetation Safety Clearances" issued by Energy Australia (NS179, April 2002)
- 5. Maintain low ground covers by mowing / whipper snipper / slashing; and
- 6. Non-combustible mulch e.g. stones and removing stores of combustible materials
- Vegetation to be planted should consist of fire retardant/ less flammable species strategically located to reduce attack from embers (i.e. as ember traps when in small clumps and short wind breaks).



(Planning for Bushfire Protection 2019)

APPENDIX II OEH/NPWS APPROVAL OF APZ OUTSIDE OF LEASEHOLD AREA

Approval given 23/12/2019 by Anthony Evans (Manager, Alpine-Queanbeyan Area, Southern Ranges Branch - NSW National Parks & Wildlife Services).

"In light of the information provided to NPWS, I consider that the proposed works are likely to have minimal environmental impact and are required to provide an Asset Protection Zone for this building. Approval is given under Clause 21 (2) of the National Parks and Wildlife Regulation 2019 for the proposed works. The approval is granted subject to conditions which are set out below:

- 1. If any of the works fall outside of the scope described above, then further consultation with NPWS is required.
- 2. All vegetation must be checked to ensure there are no fauna or fauna habitats prior to felling. If fauna or evidence of fauna is found, then further consultation with NPWS is required.
- 3. This approval is valid for 12 months from the date of this email.
- 4. All works must be conducted by handheld equipment.
- 5. All vegetation should be moved away from the building, so it does not add to the fuel load around the building.
- 6. Tree removal should be undertaken by dismantling piece by piece rather than cutting down whole. If suitable placement areas are not available in the immediate vicinity of the works or if the cut timber would become a hazard then the timber must be either removed from Kosciuszko National Park or cut up and stacked appropriately for use as firewood.
- 7. All works must be in accordance with the RFS Standards for Asset Protection Zones."



Clancys Alpine Lodge APZ Plan

Lease area Lease area APZ area Native Vegetation – wetter area Native Vegetation – drier area

APZ Composition (within pink boundary)

 The APZ boundary is the lease boundary on the Eastern, Southern and Western sides of the building. The APZ boundary is 5 m from the existing East lease boundary, 15m to the Southern existing lease boundary and 10 metres from the Western existing lease boundary. Maximum 20% of the APZ as understory (heath) Maximum 15% of the APZ as canopy (trees) Remainder APZ to have vegetation managed to a height of 100mm ** The maximum amount of native vegetation should be retained where possible (up to the 15 or 20%). ** Where APZ management works leads to bare ground then this area must be planted with native Poa and be maintained until an erosion resistant state is achieved APZ Management

<u>Z Management</u> emoval of fine fuels (leaves, branches, bark)

- Maintenance of grass
- Native shrubs can be retained as clumps or islands.
 Native vegetation removal should be restricted to a minimum in the
- Native vegetation removal should be restricted to a minimum in areas of native vegetation, particularly the wetter areas.
- Vegetation should not touch the building
- Removal of weeds/exotic species and more flammable species first

Plan Name: Clancys Alpine Lodge APZ Management Plan Plan date: 25/11/2019 Drawn by: Owners Site Address: Lot 180 DP 756697 21 Plum Pine Road Smiggin Holes NSW 2624 Other notes: Not to scale. This map is approximate only and all distances should be measured on ground prior to any works.