

# Bush Fire Protection Assessment



STRATEGIC DESIGN

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25/08/2013

This is a Bush Fire Protection Assessment for the proposed construction works on 'Athol Lodge' 7 Diggings Terrace, Thredbo NSW



NSW GOVERNMENT  
Planning & Infrastructure

30 JAN 2014

DEVELOPMENT ASSESSMENT AND  
SYSTEMS PERFORMANCE  
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## Document Tracking

Item	Details
Project	Bush Fire Protection Assessment, Proposed Alterations & Additions, 'Athol Lodge' 7 Diggings Terrace, Thredbo NSW 2627
Version Number	First Edition
File Located	<a href="#">fire_reportREV2.docx</a>
Date Last Saved	October 2013
Author	Libby Pugh
Review by	Nick Wilson
Approved by	Andrew Fairfield-Smith Director

## Citation

This report should be cited as:

Strategic Design, Bushfire Assessment, Proposed Alterations & Additions, Athol Lodge, Thredbo NSW.

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## PART A PROPERTY DETAILS

**Client Name:** 'Athol Lodge' - Dr. Martin Sullivan

**Postal Address:** St Vincent's Clinic - Ste 901 E

438 Victoria St, Darlinghurst, Sydney NSW 2010

**Street or Property Name:** 7 Diggings Terrace, Thredbo NSW

**LOT/DP no:** LOT 756 DP 1119757

**Local Government Area:** NSW Department of Planning & Infrastructure (DoP)

**Identified as Bushfire Prone Land?:** Yes

**Complying Development?:** No

**Type of Area:**  Urban  Rural Residential  Isolated Rural

**Type of Development:**  New Dwelling  Alterations & Additions

Dual Occupancy  Other

**Building Class (BCA):** Class 3 Building

## PART B DESCRIPTION OF PROPOSAL

This development proposal is for additions and alterations to an existing three-story holiday lodge, *Athol Lodge*, in Thredbo NSW. This site is located within the NSW Kosciusko National Park. The scope of works is predominately facial work and involves the demolition of existing balconies and verandahs, the decks will be reinstated, as well as the addition of a third in the location of the existing verandah roof. External painting and the replacement of glazing units in some existing windows will also occur. The landscaping will be improved with better sized car-parks and formalized entrance steps. The number of beds will remain the same, yet the building whilst upgrading to today's accommodation standards. Internal works also include upgrading the Athol 5 fireplace to accommodate an enclosed fire box; providing greater safety for guests. The building is not fitted with an automatic sprinkler system, thus fire proofing will be achieved through construction techniques and systems.

The land has been identified as being within bushfire prone land, and hence as outlined in *Planning for Bushfire Protection – PBP 2006 (NSW RFS 2006)* is considered Special Fire Protection Purpose (SFPP) and is required to obtain a BFSa from the RFS under Section 100B of the RFS Act.

**Figure 1** Aerial Photograph (Red Circle)



**Figure 2** Plan View of Development Site (Greyed Site)



## PART C BUSH FIRE THREAT ASSESSMENT

The subject land is mapped bush fire prone land by Department of Environment & Conservation (DEC). This bushfire assessment has been prepared in consideration of the current legislative requirements and guidelines for assessment of bushfire protection, i.e.:

- Section 100B of the Rural Fires Act 1997;
- Section 91A of the EP&A Act;
- Clause 46 of the Rural Fires Regulation 2002, and;
- NSW Rural Fire Service (2006) Planning for Bushfire Protection, A guide for Councils, Planners, Fire Authorities, Developers and Home Owners (herein called Planning for Bushfire Protection 2006).

The subject building is tourist accommodation and the development is under the 'Special Fire Protection Purpose' (SFPP) development in Section 100B of the Rural Fires Act 1997 and requires a Bush Fire Safety Authority approval from the NSW Rural Fire Service.

The additions are to an existing SFPP building, approved prior to August 2002, and is therefore considered infill development according to the PBP, 2006.

Below is an assessment review list of the site specific considerations in assessing the possible fire dangers.

**Fire Danger Index (FDI):** Based on the weather history for the Monaro Alpine, Snowy River Region, the FDI for this site is **50**.

**Vegetation Type:** The site is located within the Thredbo Village, and therefore surrounded by other buildings and roads, therefore recognised as 'Managed Land'. Of the vegetation scattered between these buildings it would be recognised as '*Semi-Arid Woodlands*' (*Low Woodlands*) (AS3959-1999) or '*Low Woodland*' (AS3959-2009).

**Asset Protection Zone (APZ):** Due to the site being located within NSW National Park Lands (*Alpine Area*), there is no applicable asset protection zone to be kept within this protected environment. The members of the Athol Lodge are committed to maintaining a 8m (or within the site lease boundary) radius asset protection zone and as advised by the OEH.

### **Surrounding Vegetation Status:**

#### **NORTH (Street front elevation)**

Substantial woodlands are located in a North-Westerly direction, down-slope, from the lodge, refer to Figure 4. Yet because this is outside the required Asset Protection Zone, more than 140m away, this vegetation is not considered to be a concern. This vegetation is also managed by National Parks and requires a sustainable environmental approach. Athol Lodge is surrounded wholly by National Park's land and management of this flora will be the main responsibility of National Parks. There is

also a number of public, sealed, roads (acting as a fire break) located inbetween the lodge and this set of North-West woodlands.

### **SOUTH (Rear elevation)**

Conditions in this direction are similar to that in the North, along with other existing lodges and commercial venues in this direction. The sealed road continues in this direction also. There is some scattered trees, yet no significant forest within the 140m zone.

### **EAST & WEST (Side elevations)**

Within this APZ path there are a number of existing lodges, and vegetation conditions are alike to the North and South directions.

Refer to Table 1 for the further assessment of distances between the building and significant surrounding vegetation formations.

### **Emergency / Evacuation Plan**

It is recommended that the client adopt, if not already implemented, a Emergency / Evacuation Plan that is in accordance with the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and comply with Australian Standard AS 3745:2010 'Planning for Emergencies in Facilities' for the proposed design.

### **Emergency Assembly Areas**

It is suggested that the Emergency Assembly Area be located at the front of the lodge on Diggings Terrace. This plan should be clearly displayed and a trial emergency evacuation be conducted annually.





**Figure 4** North-West view from Diggings Terrace displaying predominant vegetation located outside the Asset Protection Zone (Athol Lodge located to left of image).



**Figure 5** North-West view from Diggings Terrace showing Athol Lodge to the left of image.



**Figure 6** South view from Diggings Terrace, showing woodland located approximately 8m upslope. Athol Lodge located to the right of image.



**Figure 7** Eastern view from Diggings Terrace.





**Figure 8** Western elevation displaying the Electrical Switchboard.

## **PART D Bush Fire Attack Level (BAL)**

The purpose of this development is to upgrade the existing building to a standard that meets current accommodation, construction and fire safety standards. The building is sited within Thredbo Village Township, urbanization, and therefore has a low bushfire attack level.

For the Bush Fire Attack Assessment please refer to Table 1.

**It is advised that adherence to AS 3959-2009 Construction for Bushfire Attack Level BAL -19 and be considered in these construction works where viable.**

**Decking – ‘Webforge’ to be installed where a glazed door meets a deck, or where a window is less than 300mm above finished deck level.**

**Windows – Meet construction requirements of BAL-19 by window frames and associated hardware be metal in construction and toughened or annealed glass is used. And the openable portions of windows be screened with a Corrosion-resistant steel, bronze, or aluminium.**

**Doors – Door frames shall be of a solid timber having a minimum thickness of 35mm or be non-combustible. Glazing shall be 5mm toughened glass.**

### **Water Supplies**

There is a fire hydrant outlet located on the North East corner of the site, Refer to Figure 5

There are no water tanks on the site, the site is serviced by reticulated water.

## Gas & Electricity Supplies

There is no known existing gas supplies to the building, or gas storage devices located on the site. Mains gas (LPG) lines are supplied to the building.

Electricity to the dwelling is sourced through underground services, and the electrical sub-board is located within the existing buildings mess room / locker room. The main switchboard is located on the west elevation of the existing lodge. Refer to Figure 8 and Services Plan at end of this report.

**TABLE 1 THREAT ASSESSMENT, APZ and CATEGOR OF BUSHFIRE ATTACK**

Direction from Site	Effective Slope <sup>1</sup>	Vegetation <sup>2</sup>	Proposed APZ <sup>3</sup>	AS3959 Construction Standard <sup>4</sup>	Comment
North	Downslope	Existing Development, Sealed Road, Some Woodland	To site boundary	BAL-19	Established alpine village Significant woodland greater than 8m from dwelling
South	Upslope	Existing Development, Sealed Road, Some Woodland	To site boundary	BAL-19	Established alpine village
East	Upslope/ Flat	Existing Development, Sealed Road, Some Woodland	To site boundary	BAL-19	Established alpine village
West	Downslope	Existing Development, Sealed Road, Some Woodland	To site boundary	BAL-19	The site is well within the established alpine village. Pockets of snowgum woodland in this direction, outside of the APZ

<sup>1</sup>Slope most significantly influencing the fire behavior of the site having regard to vegetation found. Slope classes are according to PBP guidelines.

<sup>2</sup>Predominant vegetation is identified, according to PBP guidelines and “Where mixes of vegetation types exist, the type providing the greater hazard is said to be predominate”.

<sup>3</sup>Proposed APZ according to what the Club can manage.

<sup>4</sup>Assessment according to RFS Bushfire Attack Assessor . Final BAL to be specified by the RFS.

## **PART E ASSET PROTECTION ZONES MAINTENANCE PLAN**

Fuel Management within the APZ is to be as follows:

- The presence of a few shrubs or trees in the APZ is acceptable provided that they:
  - Are well spread out and do not form a continuous canopy;
  - Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
- Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species;
- A minimal ground fuel is to be maintained to include less than 4 tones per hectare of fine fuel (fine fuel means ANY dead or living vegetation of <6mm in diameter e.g. twigs less than a pencil in thickness. 4t/ha is equivalent to a 1cm thick layer of lead litter);
- We have allowed for maintaining a clearing of a 3m perimeter of the woodland area on all elevations of the dwelling. And a clearing and removal of dead timber, limbs and shrubs with in the proposed APZ of 8m.
- Any structures storing combustible materials such as firewood (e.g. sheds) must be sealed to prevent entry of burning debris.

## **PART F PROPERTY ACCESS ROADS and PUBLIC ROAD SYSTEM CAPACITY**

### **PART F.1 Capacity of public roads**

As the proposal is for the improvement of an existing lodge there will be no increased demands placed on the public road system as a result of the proposed development.

### **PART F.2 Access and Egress**

The roads in the locality provide a standard of access appropriate for the development and its bushfire risk. Access to and egress from the development is considered adequate for the following reasons:

- Access to and egress from the allotments will be unobstructed and situated directly onto the adjoining public road via a property access driveway;
- All access roads from the allotments out to Diggings Terrace (public road) have managed grounds on either side and thereby provide a reduced bushfire threat to evacuees and emergency personnel.

## PART G ASSESSMENT OF ENVIRONMENTAL ISSUES

At the time of assessment, there were no known significant environmental features, threatened species or Aboriginal relics identified under the *Threatened Species Conservation Act 1995* or the *National Parks Act 1974* that will affect or be affected by the bushfire protection proposals in this report.

## PART H SUMMARY OF PROTECTION PROVISIONS and CONFORMITY WITH PBP

Table 2 summarises the bushfire protection proposed for the dwelling and its conformity with the PBP guidelines.

**Table 2** Assessment of conformity with PBP Guidelines

Bushfire Protection Zones	Proposal	Conformity with PBP Guidelines
Asset Protection Zones	Table 1 (p.10) indentifies the size of proposed APZ	Complies with PBP
Construction Standards	BAL-19 under AS 3959; see p.8	Complies with PBP
Water Supply	Reticulated water is provided; see p.8	Complies with PBP
Access	See part E & F of this report	Complies with PBP

## SUMMARY

In the author's professional opinion the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed dwelling, a standard that is consistent with the *Planning for Bushfire Protection Guidelines* (RFS 2006). The assessment showed that there is no significant established vegetation within the dwellings 8m asset protection zone, or within the site lease boundary. Yet, due to the established woodlands located directly 8m in a northern direction, from the dwelling, it is advised that all construction measures are adhered to, as clarified in AS 3959-2009, to BAL -19 for all elevations. It is recommended that all existing construction that will remain intact, be upgraded to improve ember protection. The APZ should be maintained in accordance with the recommendations of National Parks.



Libby Pugh

**Graduate Architect**

## References

NSW Rural Fire Service (RFS). 2006. *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities and Developers*. Australian Government Publishing Service, Canberra.

NSW Rural Fire Service (RFS). 2004. *Building in Bush Fire Prone Areas: Guidelines for Subdivision Applications*. Australian Government Publishing Service, Canberra.

Standards Australia 2000. *Construction of buildings in bushfire-prone areas, AS 3959, Second edition 1999 and Amendment 1, 2000*, Standards Australia International Ltd, Sydney.



# Athol Services



<b>HV Power</b>	<b>LV Power</b>	<b>Gas Line</b>	<b>Water Line</b>
★ Point	--- Line	— Line	★ Point
— Line			— Line
<b>Sewer Line</b>	<b>Stormwater Line</b>	<b>Phone Line</b>	<b>Lease Boundary</b>
★ Point	★ Point	★ Point	— Line
— Line	— Line	— Line	□ Region

NB. Due to the age of many of the services in the village these drawings represent their location to the best of our knowledge and we would recommend any excavation be done by hand.