



Bushfire Attack Level (BAL) Assessment Report

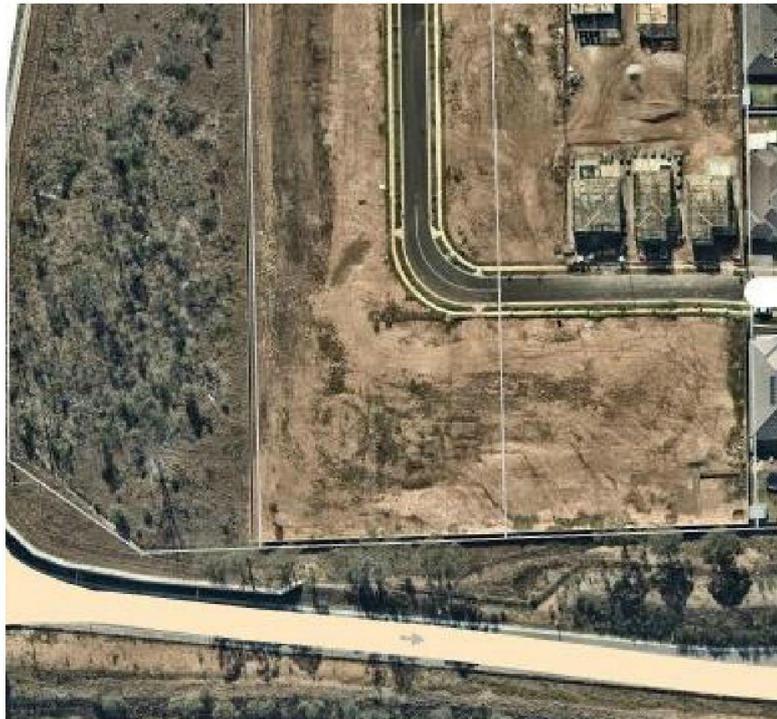
For

64 Doncaster Avenue,
Claremont Meadows, NSW

Shobha Designs

Date 3rd June 2018

Reference Number BAL0618SD



Address of Assessed Property	64 Doncaster Avenue Claremont Meadows
Proposed Construction	Construction of a Childcare Centre
Plan Reference	
Date of Report	5 th June 2018
BAL Rating	12.5
Requirement for referral to NSWRFSS	
Alternate Solutions	

REPORT SUMMARY

Introduction

The information contained in this Bushfire Attack Level Assessment (from hereon known as the BAL) is in relation to a yet to be agreed property development at 64 Doncaster Avenue, Claremont Meadows NSW. This report provides an initial assessment of the land in order to attain a BAL rating.

The property

The property is currently not occupied and the owner plans on developing the site to contain a childcare centre.

Aspect

The property as a whole is situated in a predominantly North – South aspect with the property entrance being on the Northern side.

Bushfire Prone Land

The property has been identified by the Penrith City Council as being in a Bushfire Prone area containing Category 2 vegetation and it's associated 100m buffer zone, as shown in figure 1 below. It has therefore been deemed that an assessment pertaining to Bushfire Attack Levels is required as outlined in Planning for Bushfire Protection 2006.

With this in mind however, due to land clearing, this area would be considered an exclusion under section 7.1.2 of the NSWRFs Guide for Bushfire Prone Land Mapping which states

- Vegetation excluded from being mapped as bush fire prone includes:
- Single areas of vegetation less than 1 hectare in area and greater than 100 metres separation from other areas of Category 1, 2 or 3 vegetation;
- Multiple areas of vegetation less than 0.25 hectares in area and not within 30 metres of each other;
- Strips of vegetation less than 20 metres in width, regardless of length and not within 20 metres of other areas of Category 1, 2 or 3 vegetation;
- Areas of “managed grassland” including grassland on, but not limited to, recreational areas, commercial/industrial land, residential land, airports/airstrips, maintained public reserves and parklands, commercial nurseries and the like;
- Areas of managed gardens and lawns within curtilage of buildings;
- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- Managed botanical gardens;
- Agricultural lands used for annual and/or perennial cropping, orchard, market gardens, nurseries and the likes are excluded;
- Saline wetlands including mangroves.
- Other areas that, due to their size, shape and overall risk are not considered Category 1, 2 or 3 vegetation.



Figure 1. Penrith City Council Bushfire Prone Land

Assessment and Reference

This report has been compiled by a representative of Fire Investigation & Safety Compliance Australia following a site visit and any references will be based on the requirement outlined in the Environmental Planning & Assessment Act 1979 and the Planning for Bushfire Protection 2006, document produced by the NSW Rural Fire Service.

PROFILE & COMPLIANCE TABLE
Asset Protection Zones Compliance

The APZs comprise of maintained land within the subject property.

Construction Compliance

	North	South	East	West
Slope in degrees	Downslope 0 - 5°	Upslope	Upslope	Upslope
Existing APZ	57 – 100m	48 – 100m	48 – 100m	48 – 100m
Significant Environmental Features	Neighbouring Properties	Neighbouring Properties	Neighbouring Properties	Neighbouring Properties
Predominant Vegetation	Forest	N/A	N/A	N/A
Bushfire Attack Level	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5
Required Construction Level	Refer to AS 3959 Section 3 and Section 5	Refer to AS 3959 Section 3 and Section 5	Refer to AS 3959 Section 3 and Section 5	Refer to AS 3959 Section 3 and Section 5
Proposed Construction Level	TBA	TBA	TBA	TBA

The highest BAL rating for this property is BAL **12.5** and as a result of this, there are a number of construction requirements which relate to this development proposal as outlined in Australian Standard 3959 - 2009 Construction of buildings in bushfire prone areas. The highlighted sections of the Standard that relates to this proposal are Sections 3 (Clauses 3.2 to 3.8) and 5 (Clauses 5.2 to 5.8)

The vegetation was assessed to a distance of 140m in all directions as highlighted in the image below. There was very little vegetation to speak of in any direction with the majority of vegetation appearing towards the East at a distance of approximately 70 m and was upslope from the proposed construction site.



Figure 2. 140m vegetation assessment boundary

ACCESS, EGRESS & SERVICES

Access:

In respect of the potential threat of bushfire to the property there are no requirements applicable to access to the property. The property has frontage to Doncaster Avenue. Site inspection determined that there is adequate access for emergency vehicles if required.

Egress:

Emergency evacuation will be via Doncaster Avenue. Further to this, it is advisable that a Bushfire Safety Plan be completed. A template for this can be found at [Bushfire Safety Plan](#)

Water Supply:

The property has a maintained reticulated water supply provided by an underground hydrant system on a public road being Doncaster Avenue, and is located approximately 30m from the proposed development area.

BUSHFIRE HAZARD ASSESSMENT

The determination of a property potentially being affected by bushfire comes by way of local Bushfire Prone Land Maps being made available through relevant Councils or the Rural Fire Service. All property development within affected areas is subject to the conditions detailed in the document 'Planning for Bush Fire Protection - 2006' (PBP).

Set back distances for the purpose of creating Asset Protection Zones (APZs) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 – 2009 'Construction of buildings in bushfire prone areas.

Planning for Bush Fire Protection – 2006, (PBP) formally adopted on the 1st March 2007 provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

All relevant documents provide sufficient guidelines to ensure that developers of new properties or sub-divisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development inside a determined Category 1 or 2 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 bushfire area.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

RECOMMENDATIONS

The following outlines the construction requirements based on a BAL Rating of 12.5

Subfloors	No special construction requirements
Floors	No special construction requirements
External Walls	Parts less than 400 mm above ground or decks etc. to be of noncombustible material, 6 mm fibre cement clad or bushfire resistant/naturally fire-resistant timber
External Windows	4mm Grade A Safety Glass or glass blocks within 400 mm of ground, deck etc. with Openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber
External Doors	Screened with steel, bronze or aluminium mesh or glazed with 5 mm toughened glass, noncombustible or 35 mm solid timber for 400 mm above threshold, metal or bushfire resisting timber framed for 400 mm above ground, decking, etc., tight-fitting with weather strips at base. Door framing can be naturally fire resistant (high density) timber
Roofs	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guard
Verandah's / Decks	Enclosed sub-floor space – no special requirement for materials except within 400 mm of ground. No special requirements for supports or framing. Decking to be non-combustible or bushfire resistant within 300 mm horizontally and 400 mm vertically from a glazed element

CONCLUSION

The property in this report falls within land that has been determined by Penrith City Council as being Bushfire Prone Category 1 and therefore is required to meet any relevant requirements outlined in AS3959-2009 and Planning for Bushfire Protection 2006.

A thorough site inspection of the site was conducted on the 3rd of June 2018 and found that the property is on moderately sloping land with very little vegetation around posing minimal to no threat.

The highest Bushfire Attack Level was deemed to be **12.5**

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is my opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development and also satisfy both the Rural Fire Service's concerns and those of Council in this area.

PROPERTY ADDRESS	64 Doncaster Avenue, Claremont Meadows, NSW
PLAN REFERENCE	N/A - Assessment applies to whole property
REPORT REFERENCE	BAL0618SD
BAL RATING	BAL 12.5
ALTERNATE SOLUTIONS	No
REPORT DATE	5/6/18

REFERENCED DOCUMENTS

- a) Environmental Planning and Assessment Act 1979
- b) Rural Fires Act 1997 as amended
- c) Planning for Bush Fire Protection' - 2006 - NSW Rural Fire Services & Planning NSW
- d) Construction of buildings in bushfire prone areas' - AS 3959 – 2009 (as - amended) – Standards Australia
- e) Penrith City Council's Bushfire Prone Land Map

I, Morgan Cook, MNSWAFI, MNAFI, MIAAI, Churchill Fellow 2012, of Fire Investigation & Safety Compliance Australia, provide this report based on the following skills, experience and completed courses as outlined in the following pages:

Morgan Cook

Morgan Cook

PO Box 389 Galston NSW 2159

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28 years experience within Fire & Rescue NSW.

Secretary of the NSW Association of Fire Investigators. Member of the International Association of Arson Investigators and the National Association of Fire Investigators.

I have attended both Coroner's Court and Local Court as an expert witness to give evidence in regard to my investigations.

I have delivered lectures on fire investigation to the Australian Defence Force Military Police.

I have presented a paper on fire research & investigation at the Australasian Fire & Emergency Services Authorities Council (AFAC) conference in Perth.

I am a Churchill Fellow having travelled internationally studying advancements in fire research and fire investigation.

I have continuously studied within the fire industry in the following disciplines:-

- Fire science
- Fire behaviour
- Fire technology
- Fire Chemistry
- Hazardous materials
- Hazardous environments
- Flammable / combustible liquids
- Explosives
- Fire safety in buildings
- Fire protection of buildings
- Electrical fire cause and origin
- Arson investigation
- Wildfire Investigation
- Building construction and
- Building element behaviour in fire.

FRNSW & External Courses Completed

2009 – Present	Researcher & Fire Investigator conducting research into fire behaviour, both structural and wildfire and human behaviour in fire as well as conducting and managing, factual and forensic investigation for all types of structures, occupancies, marine, and mobile property fire scenes. This includes being the lead investigator into many fatalities both in metropolitan Sydney and Regional NSW. I have also been lead investigator into some of the largest and most complex fires in recent NSW history.
August 2012	Presentation on fire research & investigation at AFAC conference in Perth W.A.
August – November 2012	Churchill Fellowship to Sweden, China, Hong Kong, Canada & USA to explore the advancement of fire research and fire investigation
April 2011	Australian Federal Police Bomb Scene Examination Course Canberra
August 2010	Advanced Structural Fire Investigation Course Batemans Bay
July 2010	NSW Police Forensic Photography Course
November 2009	NSW Police Arson Investigation Course

Academic and Professional Qualifications

- Graduate Certificate in Fire Safety Engineering (WSU)
- Advanced Diploma Fire Investigation (CIT)
- 501B Conduct Fire Investigation and Analysis
- Prescribed Fire Safety Inspector under the E P and Act).
- Certificate IV in Workplace Assessment and Workplace Training. (TAFE)
- Certificate III in Investigation Services
- Certificate IV in Government Investigations

Professional Membership

- Secretary of New South Wales Association of Fire Investigators
- Member National Association of Fire Investigators
- Member International Association of Fire Investigators
- Member Fire Protection Association of Australia

Seminars & Courses Attended

- AAFI 2010 Conference – Sydney NSW
- AAFI 2012 Conference – Melbourne Vic

- AAFI 2014 Conference – Gold Coast QLD
- AAFI Conference 2016 – Sydney NSW
- 20th International Symposium on Forensic Science – 2010
- 2012 Australasian Fire and Emergency Services Authorities Council (AFAC) Perth (presented paper on fire research and investigation)
- Arson Investigation Course – NSW Police Force
- Wildfire Investigation Course
- Advanced Structural Fire Investigation – Dr John DeHann
- Bomb Scene Examination Course – Australian Federal Police

I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection 2006.

Disclaimer:

Quote from Planning for Bush Fire Protection 2006, 'Any representation, statement opinion, or advice expressed or implied in this publication is made in good faith on the basis that the State of New South Wales, the NSW Rural Fire Service, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.'

Similarly the interpretations and opinions provided by Building Code and Fire Investigation & Safety Compliance Australia P/L in regard to bushfire protection are also given in the same good faith.