

Bushfire Hazard Assessment Report

Proposed:
Alterations and Additions

At:
**54 Attunga Road
Newport**

Reference Number: 160706

Prepared For:
Mike Smit Constructions

26th February 2016



Prepared By:
**Building Code & Bushfire
Hazard Solutions Pty Limited**

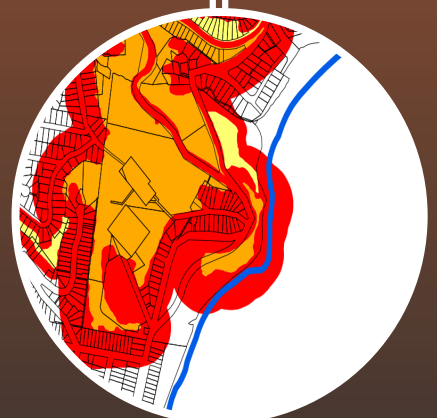
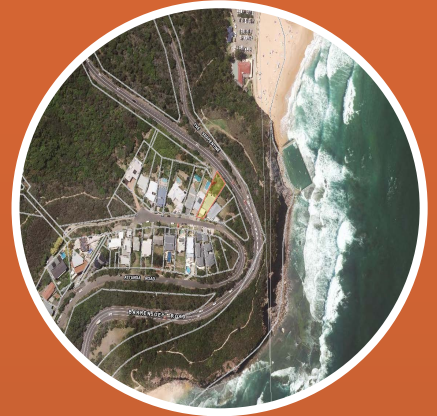
Tel: (02) 9457 6530
Fax: (02) 9457 6532

PO Box 124
Berowra NSW 2081
ABN 19 057 337 774

www.bushfirehazardsolutions.com.au



**SILVER
MEMBER**
Fire Protection
Association Australia



Contents

	<u>Page No.</u>
List of Abbreviations	2
1.0 Introduction	3
2.0 Purpose of Report	3
3.0 Scope of Report	3
4.0 Referenced Documents and Persons	3
5.0 Compliance Table and Notes	4 - 5
6.0 Aerial view of the subject allotment	5
7.0 Bushfire Hazard Assessment	6 - 10
8.0 Site and Bushfire Hazard Determination	11 - 13
9.0 Recommendations	14
10.0 Conclusion	15 - 16
11.0 Annexure	16
- List of referenced documents and attachments	
- Attachments	

List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 as amended
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Pittwater Council
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2006</i>
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

1.0 Introduction

The development proposal relates to the alterations and additions to an existing sole occupancy dwelling within an existing residential allotment located at 54 Attunga Road, Newport.

The subject property has street frontage to Attunga Road to the south, abuts private residential allotments to the east and west, and Barrenjoey Road to the north. The vegetation identified as being the hazard is associated with unmanaged reserves to the north, east, south and west of the subject dwelling.

Pittwater Council's Bushfire Prone Land Map identifies the subject property as containing the designated buffer zone from Category 1 vegetation and therefore the application of *Planning for Bush Fire Protection* 2006 (PBP) must apply in this instance.

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide the owners, builders and Council with an independent bushfire hazard determination together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject Development Application.

3.0 Scope of this Report

The scope of this report is limited to providing a bushfire assessment and recommendations for the subject property. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject property.

Where Council considers a bushfire risk is associated with surrounding private lands or lands owned by an authority, Council could seek to issue notice under Section 66 of the Rural Fires Act on any or all surrounding properties for the purposes of reducing and maintaining safe levels of vegetation and thus reducing the possibility of bushfire impact to the subject property and any adjoining properties.

4.0 Referenced Documents and Persons

Comments provided are based on the requirements of the *Environmental Planning and Assessment Act* 1979 (EP&A Act), the RFS document known as '*Planning for Bush Fire Protection* 2006' for the purposes of bushfire hazard determination and *Australian Standard* 3959 '*Construction of buildings in bushfire-prone areas*' 2009 as amended for building/structural provisions.

A company representative has made a site inspection of the subject property and the surrounding area. The Site Plan prepared by Alanna Smit Structural Interiors; Project No. SMIT4, Page: A01 Rev: A; Dated: 4.12.15 has been relied upon for this assessment.

5.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection 2006*.

	North	East	South	West
Vegetation Structure	Scrub	Remnant	Remnant	Scrub
Slope	10 – 15 degrees down	0 degrees across slope	0 – 5 degrees down	0 degrees and up
Asset Protection Zone	40 metres	23 metres	34 metres	58 metres
Significant Environmental Features	Barrenjoey Road	Neighbouring residential allotments	Attunga Road	Neighbouring residential allotments
Threatened Species	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Aboriginal Relics	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Bushfire Attack Level	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5
Required Construction Level	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5

Asset Protection Zones Compliance

The proposed works were found to be within the existing pattern of development.

The separation from the hazard interface includes maintained land within the subject property, both Attunga Road and Barrenjoey Road reserves and neighbouring private residential allotments.

Construction Level Compliance

The highest Bushfire Attack Level to the proposed works was determined from Table 2.4.2 of AS3959 – 2009 to be 'BAL 12.5'. The proposed works are required to comply with Section 3 and BAL 12.5 Section 5 under AS 3959 – 2009 and Appendix 3 under PBP 2006.

A copy of these requirements has been provided to the applicant.

Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access (Driveway)	The most distant external point of the building footprint is less than 70 metres from a public road supporting a hydrant network and therefore the Property Access requirements are not applicable. The existing access provisions are considered adequate.
Water Supply	The most distant external point of the building footprint is less than 70 metres from a public road supporting a hydrant network and therefore a Static Water Supply is not required.
Evacuation	Evacuation is possible by utilising existing road infrastructure. It is encouraged that the occupants complete a Bush Fire Safety Plan addressing "Prepare, Act, Survive" as advocated by the NSW RFS http://www.rfs.nsw.gov.au/ under publications / bushfire safety.
Electrical Supply	Supply provided.

6.0 Aerial view of the subject allotment

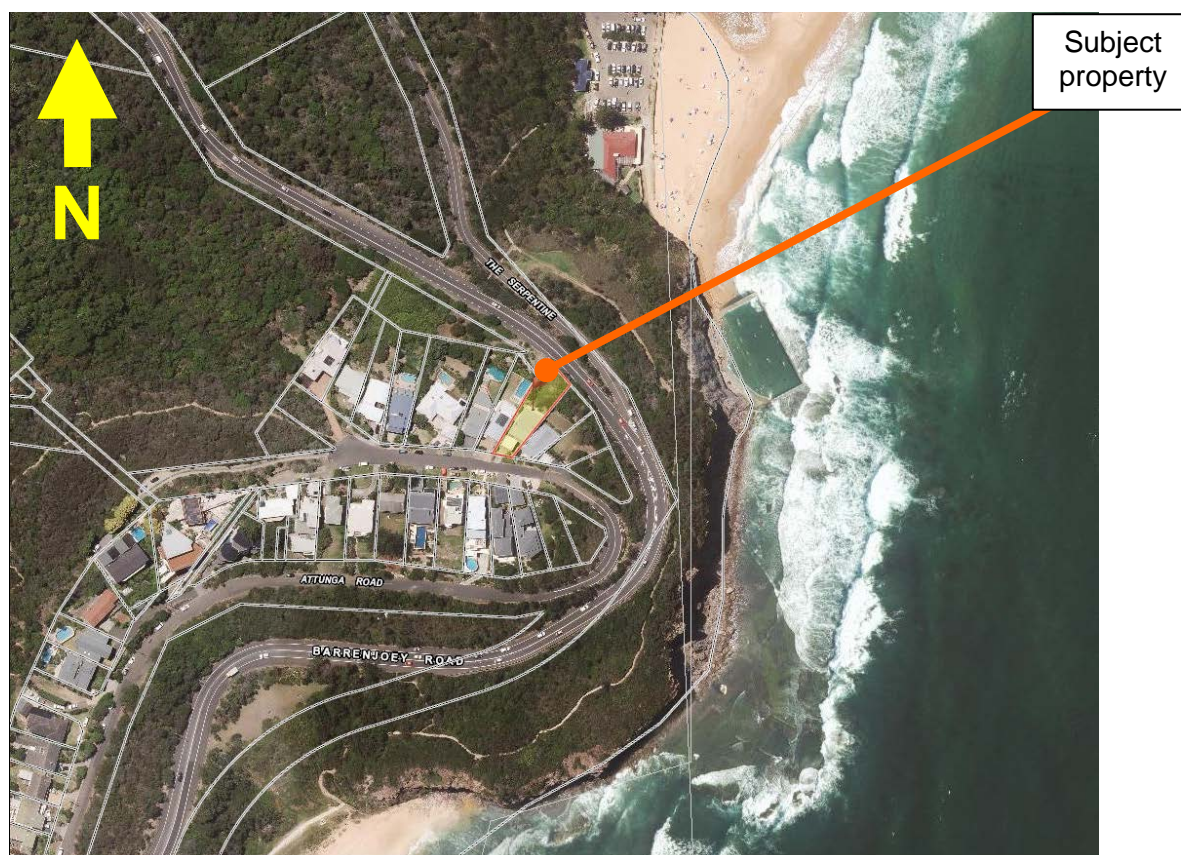


Image 01: Aerial view of the subject area Land and Property Management Authority 2016

7.0 Bushfire Hazard Assessment

7.01 Preface

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and 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 (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 'Construction of buildings in bushfire prone areas' 2009.

Planning for Bush Fire Protection 2006, (PBP) formally adopted on the 1st March 2007 and amended May 2010 (Appendix 3) provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

The thrust of the document is 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.

The subject development relates to the alterations and additions to an existing sole occupancy dwelling within an existing residential allotment. To accord with PBP the development is classified as infill development and assessed as a 79ba application under the Environmental Planning and Assessment Act 1979.

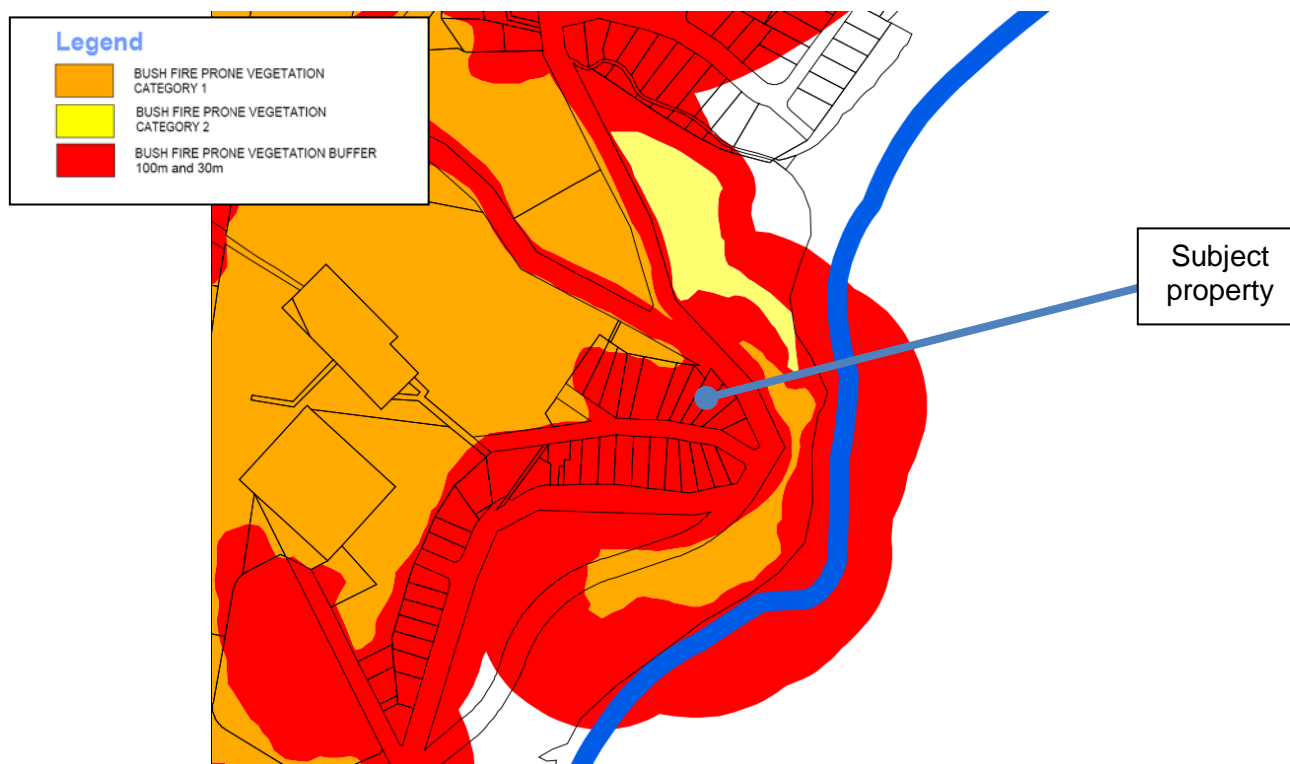


Image 02: Extract from Pittwater Council's Bushfire Prone Land Map

7.02 Location

The subject property is known as 54 Attunga Road, Newport (Lot 115 DP 752046) and is a residential allotment located within Pittwater Councils Local Government Area. The subject property has street frontage to Attunga Road to the south, Barrenjoey Road to the north and abuts private residential allotments to the east and west.

The vegetation identified as being the hazard is located within unmanaged reserves to the north, south, east and west of the subject dwelling.



Photograph 01: View north from the Attunga Road towards the subject property



Image 03: Extract from street-directory.com.au

7.03 Vegetation

The predominate vegetation found within the subject property and most neighbouring private residential allotments was found to consist of built upon areas surrounded by maintained gardens and urban landscaping.

The vegetation posing a hazard to the subject dwelling is located to the north, south, east and west within unmanaged reserves. The vegetation posing a hazard was found to consist of shrubs 2-4 metres in height with a >70% foliage cover with a limited understorey of low shrubs and ground covers.

The vegetation to the east and south beyond Barrenjoey and Attunga Roads was found to provide a fire run of less than 50 metres towards the subject site and therefore has been assessed as a remnant hazard. The vegetation to the north and west has been assessed as Scrub.

The vegetation immediately to the east within private allotments was found to be less than 20m in width in accordance with the NSW RFS Guidelines for Bushfire Prone Land Mapping section 7.1.2 "Exclusions" Vegetation defined below is **excluded** from being mapped as bush fire prone:

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;

and as such has been deemed not a hazard to the subject site.

For the purpose of assessment under 'Planning for Bush Fire Protection' the vegetation posing a hazard to the north and west has been determined to be Scrub and the vegetation posing a hazard to the south and east has been determined to be of no hazard.

7.04 Slope and Topography

The slope that would most significantly influence bushfire behaviour must be assessed for a distance of 100 metres from the proposed works.

The effective slope was measured onsite using an inclinometer and verified from topographic imagery of the subject area and found to be:

- 15 – 20 degrees down within the hazard to the north
- 0 degrees and up within the hazard to the west
- Across slope to the east
- 0 – 5 degrees down to the south

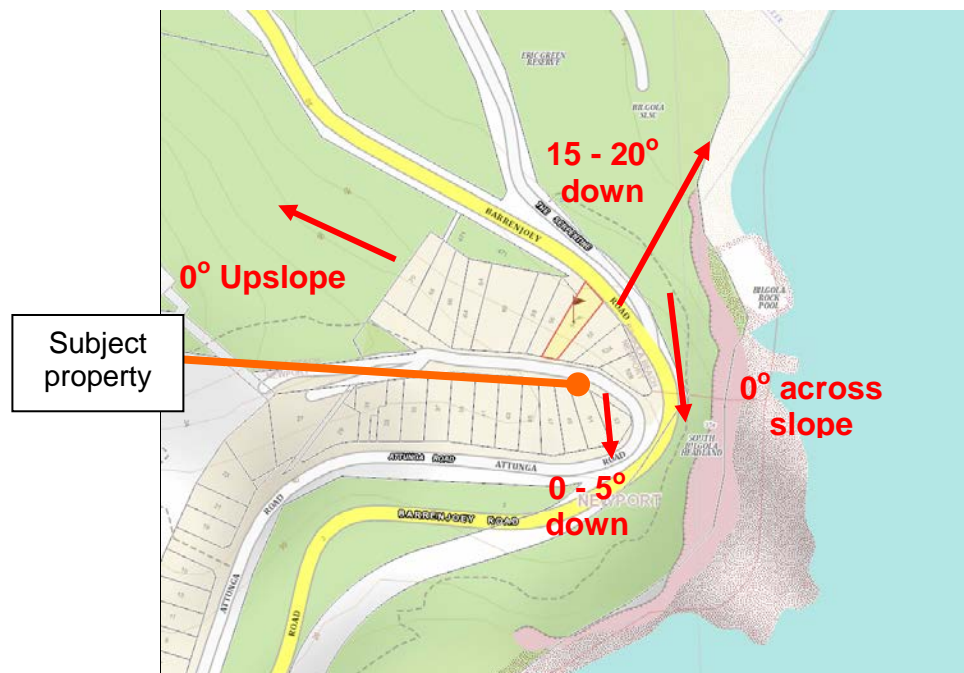


Image 04: Extract from Land and Property Management Authority Spatial Information Exchange

7.05 Asset Protection Zones

The proposed works are within the existing pattern of development and extend no closer to the bushfire hazard than neighbouring dwellings. The proposed works were found to be located 40 metres from the hazard interface to the north, 58 metres from the hazard interface to the west, 23 metres from the hazard to the east and 34 metres from the hazard to the south.

The subject property was found to have landscaped gardens, and urban landscaping around the existing dwelling. The separation from the hazard interfaces includes maintained land within the subject property and neighbouring private residential allotments.

All grounds within the subject property are required to be maintained as an Inner Protection Area (IPA) in accordance with Appendix 2 of PBP and the NSW Rural Fire Service document 'Standards for Asset Protection Zones'. This will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering no more than 20% of the area.

7.06 Fire Fighting Water Supply

The subject dwelling is connected to the reticulated town's water main in Attunga Road for its domestic needs. Existing in ground hydrants are available along Attunga Road for the replenishment of attending fire services.

The most distant external point of the building footprint is less than 70 metres from a public road supporting a hydrant network and therefore a Static Water Supply is not required.

The existing water supply is considered adequate for the replenishment of attending fire services.



Photograph 02: View west along Attunga Road toward the subject site.

7.07 Property Access – Fire Services & Evacuation

The subject property has street frontage to Attunga Road to the south. Persons seeking to egress the subject dwelling are able to do so via the existing access drive and road infrastructure.

The most distant external point of the building footprint is less than 70 metres from a public road supporting a hydrant network and therefore the Property Access requirements are not applicable.

Attending fire services have pedestrian access around the subject dwelling. Furthermore attending fire services can access the hazard interface via the subject property, neighbouring private allotments, Attunga Road and Barrenjoey Road for hazard reduction or fire suppression activities without the need to enter the subject site.

Access for fire services and opportunities for occupant evacuation are considered adequate for this property.

8.0 Site & Bushfire Hazard Determination

8.01 Planning for Bush Fire Protection - 2006

Planning for Bush Fire Protection – 2006 (PBP) is applicable to those lands determined as being within a 'bushfire prone area' in accordance with a local Bushfire Prone Land Map as provided by the Rural Fire Service and Council.

The most appropriate method of determining site bushfire hazard under the terms of PBP is to consider the site in a singular form.

Bushfire prone areas are defined as those areas;

- *within or within 100m of high or medium bushfire hazards; or*
- *within or within 30m of low bushfire hazards.*

In this instance the subject property has been identified as being bushfire prone land therefore it is appropriate to apply PBP as follows:

Northern Aspect:

- a) Vegetation Structure Scrub
- b) Slope 10 – 15 degrees downslope
- c) A 40 metre APZ is available
- d) The Bushfire Attack Level was determined to be 'BAL 12.5'

Western Aspect:

- a) Vegetation Structure Scrub
- b) Slope 0 degrees and upslope
- c) A 58 metre APZ is available
- d) The Bushfire Attack Level was determined to be 'BAL 12.5'

Eastern Aspect:

- e) Vegetation Structure Remnant
- f) Slope 0 degrees across slope
- g) A 23 metre APZ is available
- h) The Bushfire Attack Level was determined to be 'BAL 12.5'

Western Aspect:

- i) Vegetation Structure Remnant
- j) Slope 0 - 5 degrees downslope
- k) A 34 metre APZ is available
- l) The Bushfire Attack Level was determined to be 'BAL 12.5'

8.02 Australian Standard AS 3959 – 2009 ‘Construction of buildings in bushfire –prone areas’

Australian Standard 3959 – 2009 ‘Construction of buildings in bushfire-prone areas’ provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. The Australian Standard 3959 specifies construction standards for buildings within various Bushfire Attack Levels as determined by the *Planning for Bush Fire Protection – 2006* document. The NSW Rural Fire Service will not accept deemed to satisfy provisions for BAL Flame Zone and therefore have a NSW variation to the listed standard provisions of BAL FZ under AS3959 - 2009.

8.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2009
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	12.6 to 19.0	BAL - 19
29	19.1 to 29.0	BAL - 29
40	29.1 to 40.0	BAL - 40
Flame Zone	>40.0	BAL FZ No deemed to satisfy provisions

8.04 Site Specific Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed development located at 54 Attunga Road, Newport was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- Existing water supplies for firefighting purposes are adequate.
- Access to the subject property is available from Attunga Road and the existing access drive.
- The proposed development is within the existing pattern of development.
- Recommendations to maintain the Asset Protection Zones within the subject property will be included.
- Access to the hazard is available without the need to enter the subject site.

8.05 Viable Construction Method

The objectives of *Planning for Bush Fire Protection – 2006* are for the protection of life including fire fighters. Provided these objectives can be met the construction of buildings is feasible and both the Rural Fire Service and Council should be in a position to consider such applications.

The highest Bushfire Attack Level to the proposed works was determined to be ‘BAL 12.5’. The proposed works are required to comply with Section 3 and BAL 12.5 Section 5 under AS 3959 – 2009 and Appendix 3 under PBP 2006.

8.06 Risk Rating

In assessing the bushfire threat to the site and its structures it is important to have a holistic approach and assess the risk of a bushfire occurring and impacting the subject property. It is also important to include the risk the site poses to neighbouring properties.

Table 01 is an overview of risk to the subject dwelling. This model takes a holistic approach and assesses the risk of a bushfire occurring and impacting the site. This risk level can be reduced by either an increase in preparedness by the owners/occupants of the dwelling (e.g. good house-keeping, maintained lawns & bushfire awareness) and/or hazard reduction activities by local fire agencies. Alternatively this risk level can increase if the preparedness level decreases and/or hazard reduction activities are neglected for the area.

The below matrix is for risk only, it does not reflect the Bushfire Attack Level determined within PBP 2006. Note: All new work will comply with the requirements of *Planning for Bush Fire Protection* 2006.

		CONSEQUENCE			
		Minor	Moderate	Major	Catastrophic
L I K E L I H O O D	Almost Certain	High	Very High	Extreme	Extreme
	Likely	Medium	High	Very High	Extreme
	Possible	Low	Medium	High	Very High
	Unlikely	Low	Low	Medium	High

Table 01: Risk Matrix

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with *Planning for Bush Fire Protection* 2006 and *Australian Standard 3959 'Construction of buildings in bushfire-prone areas'* 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. All grounds within the subject property be maintained as an Asset Protection Zone (Inner Protection Area) as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 2 of *Planning for Bush Fire Protection* 2006.

Landscaping

2. That any new landscaping comply with Appendix 5 'Landscape and Property Maintenance' of *Planning for Bush Fire Protection* 2006

Construction

3. New construction shall comply with section 5 (BAL 12.5) Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush Fire Protection".

10.0 Conclusion

Given that the property is deemed bushfire prone under Pittwater Council's Bushfire Prone Land Map any development would need to meet the requirements of '*Planning for Bush Fire Protection*' 2006 and of the construction requirements of *Australian Standard 3959 'Construction of buildings in bushfire-prone areas'* 2009. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area and its possible impact to the subject property.

The subject property has street frontage to Attunga Road to the south, Barrenjoey Road to the north and abuts private residential allotments to the east and west. The vegetation identified as being the hazard is associated with unmanaged reserves located to the north, south, east and west of the subject dwelling.

The vegetation posing a hazard to the north and west was determined to be Scrub on a 10-15° downslope and 0° and upslope respectively and Remnant to the south and east on a 0-5° downslope and a 0° and upslope respectively.

The proposed works are within the existing pattern of development and extend no closer to the bushfire hazard than neighbouring dwellings.

The highest Bushfire Attack Level to the proposed works was determined from Table 2.4.2 of AS3959 - 2009 to be 'BAL 12.5'. The proposed alterations and additions are required to comply with BAL 12.5 as detailed within Section 3 and Section 5 of AS 3959 – 2009 and the addendum to Appendix 3 of PBP 2006.

The existing access and water supply is considered adequate.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our 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.

We are therefore in support of the development application.

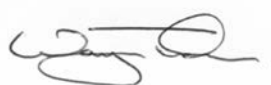
Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions



Glyn Bickford

Reviewed by
Building Code & Bushfire Hazard Solutions P/L



Wayne Tucker

G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Ass Dip Applied Science
Manager - Bushfire Section
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Certification number – BPD – PA-09399



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 Bushfire Hazard Solutions in regard to bushfire protection are also given in the same good faith.

11.0 Annexure 01

List of Referenced Documents

- a) Environmental Planning and Assessment Act - 1979
- b) 'Planning for Bush Fire Protection'- 2006 - NSW Rural Fire Services & Planning NSW
- c) 'Construction of buildings in bushfire prone areas' - AS 3959 – 2009 (as - amended) – Standards Australia
- d) 'Pittwater Council's Bushfire Prone Land Map'
- f) Site Plan prepared by Alanna Smit Structural Interiors; Project No. SMIT4, Page: A01
Rev: A; Dated: 4.12.15
- f) Acknowledgements to:
NSW Department of Lands – SIXMaps
Street-directory.com.au

Attachments

Attachment 01: 79BA Certificate

BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 79BA 1(b) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 NO 203

PROPERTY ADDRESS:	54 ATTUNGA ROAD, NEWPORT
DESCRIPTION OF PROPOSAL:	ADDITIONS AND ALTERATIONS TO AN EXISTING SOLE OCCUPANCY DWELLING
PLAN REFERENCE: (relied upon in report preparation)	Site Plan by Alanna Smit Structural Interiors; Project no. SMIT4, Page: A01, Rev: A; Dated 4.12.15
BAL RATING:	BAL 12.5 (If the BAL rating is FZ the application is to be referred to NSW RFS for assessment.)
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES <input type="radio"/> NO <input checked="" type="radio"/> (Circle the relevant response) (If YES the application is to be referred to NSW RFS for assessment.)

I WAYNE TUCKER of Building Code and Bushfire Hazard Solutions
(Print Name) (Trading or Company Name)


have carried out a bushfire risk assessment on the above mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in *Appendix 4 of Planning for Bushfire Protection 2006* together with recommendations as to how the relevant specifications and requirements are to be achieved.

REPORT REFERENCE:	160706
REPORT DATE:	26 th February 2016
CERTIFICATION No/ACCREDITED SCHEME:	BPD - PA - 09399

I hereby certify, in accordance with *79BA of the Environmental Planning and Assessment Act 1979 No 203*:

1. That I am a person recognised by the *NSW Rural Fire Service* as a qualified consultant in bushfire risk assessment; and
2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements

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 Pittwater 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*.

SIGNATURE:  DATE: 26th February 2016

Note: this certificate must be completed and signed by a person recognised by the *NSW Rural Fire Service* as a qualified consultant in bush fire risk assessment in accordance with *79BA of the EP&A Act 1979 No 203*.

This form has been prepared by Pittwater Council for attachment to the Bushfire Assessment Report.