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PO Box 363 Balgowlah, NSW, 2093

Bush Fire Assessment Report

In relation to the proposed development on:

50 Condover Street, North Balgowlah, NSW

This assessment has been prepared and	111
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BPAD certified practitioner	
FPAA Accreditation No: BPAD31642	
Report No: 50Con-03 Date: 20/07/2021	
Architectural plans provided by:	McGregor + Coxall
	Project No: DA001
	Dated: 12.07.2021 (Issue A)

Table of Contents

Executive Summary	3
1. Description of the subject property	4
2. Development Proposal and Building Classification	5
3. Classification of the Vegetation on and surrounding the site	6
4. Assessment of effective slope	8
5. Access and Egress	8
6. Adequacy of water supply	8
7. Features that may mitigate the impact of a high intensity bushfire	9
8. Environmental impact of any proposed bushfire protection measures	9
9. Bushfire Risk Assessment	9
10. The extent to which the proposal conforms or deviates from Chapter 5 of 'Planning Bushfire Protection 2019'	
11. Recommendations	13
12. Summary	. 14
13. References	15
Appendix 1: Performance criteria and acceptable solutions as per Table 7 <i>Planning for</i> bushfire Protection 2019	16
Appendix 2: 7.5.2 NSW State Variations under G5.2(a)(i) and 3.10.5.0(c)(i) of the NCC	17
Appendix 3: Northern Beaches Council Bushfire Certificate	18

Executive Summary

The purpose of the report is to determine appropriate bush fire protection measures for the proposed 1 into 2 lot subdivision and construction of a two Class 1a dwellings at No. 50 Condover Street, North Balgowlah, NSW.

In accordance with Section 146 of the environmental Assessment Legislation Act, 2007 [EP&A Act] the subject site has been identified as bushfire prone land and the legislative requirements for building and development on bushfire prone lands are applicable. This report has been prepared in accordance with the format of Clause 44 of the Rural Fire Regulation 2008 for consideration of a Bushfire Safety Authority under section 100B of the Rural Fires Act 1997.

This assessment includes an analysis of the hazard, threat and subsequent risk to the development proposal and provides recommendations that satisfy the Objectives and Performance requirements of the Building Code of Australia, Planning for Bushfire Protection 2019 and AS3959-2018 Construction of buildings in bushfire prone areas.

Following a site assessment, it was determined the asset protection zone of the development will exceed minimum requirements and keep radiant heat levels below 29kW/m2. Therefore, with the recommendations stated in this report, can achieve the requirements for the issue of a Bushfire Safety Authority.

1. Description of the subject property

Property address: Lot 4 DP 30205, 50 Condover St, North Balgowlah

Local Government Area: Northern Beaches

The development site is a residential block with access to both Condover Street and Kimo Street. The following sections 4-8 describe in detail the vegetation, slope, access and egress, availability of water supplies and environmental considerations for the site.



Figure 1: Location of the subject site

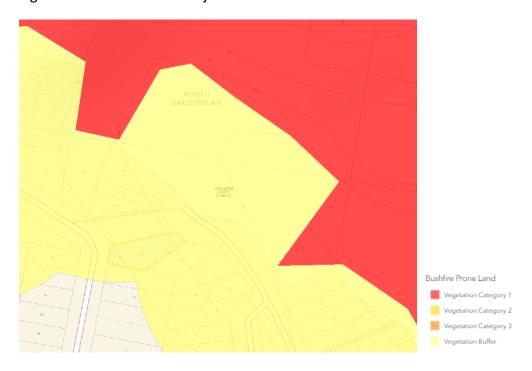


Figure 2: Bushfire prone land map showing the location of the subject site.

2. Development Proposal and Building Classification

The development proposal is for a 1 into 2 lot subdivision and construction of two Class 1a dwellings.

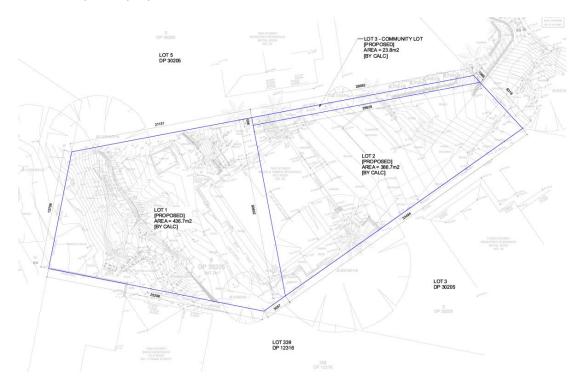


Figure 3: Subdivision plan

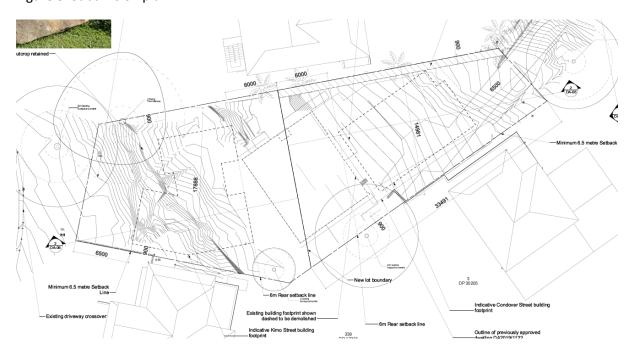


Figure 4: Site plan.

3. Classification of the Vegetation on and surrounding the site

For the purpose of a Bush Fire Risk Assessment, vegetation within 140m of the site is assessed and classified. In this instance there are two areas of vegetation within this area.

- 1. There is an area of Category 1 vegetation that lies to the north of the site. The vegetation formation within this area consists of Sydney Coastal Dry Sclerophyll Forest (Refer to Figure 5), and for the purpose of this assessment will be classified as 'Forest'.
- 2. There is an area of Category 1 vegetation that lies to the east of the site that surrounds a watercourse that lies in between Condover Street reserve and existing residential blocks. The vegetation formation within this area is largely weeds and exotics. With reference to Part A1.9 of PBP 2019, for the purpose of this assessment, the vegetation will be classified as 'Rainforest'.



Figure 5: Aerial photo showing the location of the new dwelling and distance to surrounding vegetation.



Figure 6: Aerial photo showing vegetation formations surrounding the subject site (Source: NSW Government Central Resource for Sharing and Enabling Environmentla Data)

4. Assessment of effective slope



Legend:



Figure 7: Contour map.

Transect Line	Effective slope
T1	Upslope
T2	Downslope >0-5 degrees

5. Access and Egress

The site has direct access to both Condover Street and Kimo Street, which are public roads. Access and egress for emergency vehicles appears adequate.

6. Adequacy of water supply

The area has reticulated water supply and hydrants are spaced at a regular distance along both Condover Street and Kimo Street.

7. Features that may mitigate the impact of a high intensity bushfire

There are no significant features on or adjoining the site that may mitigate the impact of a high intensity bushfire on the proposed development.

8. Environmental impact of any proposed bushfire protection measures.

The scope of this assessment has not been to provide an environmental assessment. However, the bushfire protection measures that are proposed will have no adverse environmental effects. All protection measures are either within the boundaries of the allotment or part of the constructed building.

9. Bushfire Risk Assessment



Figure 8: Aerial photo showing the location of the site and distance to surrounding vegetation.

Table 1: Reference to *Planning for Bushfire Protection 2019* Table A1.12.2, minimum specifications for asset protection zones (m) for residential and rural residential subdivision.

Direction	FDI	Vegetation classification	Effective slope	Minimum required APZ a per Table A1.12.2	Actual distance to vegetation
T1	100	Forest	Upslope	24m	73.85m
T2	100	Rainforest	Downslope >0-5 degrees	14m	57.65m

<u>Summary:</u> Asset protection zones can be provided for in excess of the requirements of Table A1.12.2 of PBP.

Table 2; Determination of the category of bushfire attack for the site, and subsequent required building standards. Reference to *Planning for Bushfire Protection 2019* Table A1.12.5

Distance to classified vegetation	Vegetation Classification	Assessment of effective slope	FDI	Bushfire Attack Level
73.85	Forest	Upslope	100	BAL-12.5
57.65	Rainforest	Downslope >0-5	100	BAL-12.5
	classified vegetation 73.85	classified Classification vegetation 73.85 Forest	classified vegetation vegetation Forest Upslope	classified vegetation 73.85 Forest Upslope 100 57.65 Rainforest Downslope >0-5 100

<u>Summary:</u> Based upon the relevant provisions of PBP the anticipated maximum radiant heat attack for the site is <12.5kW/m2 and the subsequent minimum construction standard is BAL-12.5 AS 3959-2018.

10. The extent to which the proposal conforms or deviates from Chapter 5 of 'Planning for Bushfire Protection 2019'.

Performance Criteria	How this development meets acceptable solutions
The intent may be achieved where:	
In relation to APZ's: -Potential building footprints will not be exposed to radiant heat levels exceeding 29kW/m2 on each proposed lotAPZ's are managed and maintained to prevent the spread of fire towards the buildingThe APZ is provided in perpetuityAPZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised Landscaping is managed to minimise flame contact, reduce radiant heat levels, minimise embers and reduce the effect the effect of smoke on residents and fire fighters.	- APZ's are provided in accordance with Tables A1.12.2 based on FDIAPZ's are managed in accordance with the requirements of Appendix 4 of PBP APZ's are wholly within the boundaries of the development site and by adjoining residential properties and roadsAPZ's are located on lands with a slope less than 18 degrees.
In relation to access requirements: Safe operational access is provided [and maintained] for emergency service personnel in suppressing a bushfire while residents are seeking to relocate, in advance of a bushfire.	This site has direct access to public roads, and the access and egress for emergency vehicles and evacuation appears to be adequate.
In relation to water supply -There is appropriate access to water supply.	The area has reticulated water supply and the nearest street hydrant is within the minimum required distance from the most distant point of the subject site in accordance with the requirements of PBP and AS 2419.1 2005.
In relation to landscaping: It is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignition.	The subject site, where not built on, is considered part of the Asset Protection Zone (APZ) for the dwelling. Appendix 4 of <i>Planning for Bushfire Protection 2019</i> outlines the requirements for landscaping and property maintenance.
In relation to electricity services: The location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	- Where practicable, electrical transmission lines are underground.

In relation to gas services: -the location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	 Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used. All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard size. Connections to and from gas cylinders are metal. polymer-sheathed flexible gas supply lines are not used. above-ground gas service pipes are metal, including and up to any outlets.
In relation to emergency and evacuation planning	It is advised the residents should complete a <i>Bushfire Survival Plan</i> as formulated by the NSW Rural Fire Service and Fire and Rescue NSW.

11. Recommendations

The following recommendations are made for the bushfire protection measures for the proposed 1 into 2 lot subdivision and construction of two Class 1a dwellings at No 50 Condover Street, North Balgowlah, NSW and are based upon the relevant provisions of the NSW RFS guideline entitled *Planning for Bushfire Protection 2019*.

1) Construction requirements	All new construction shall comply with a minimum standard of section 3 [construction general] and section 5 (BAL-12.5), AS3959-2018 and Chapter 7 of Planning for Bushfire Protection 2019.
2) <u>Asset Protection</u> <u>Zones</u>	At the commencement of building works and in the perpetuity, APZ's shall be managed as an Inner Protection Area as outlined within PBP and the NSW RFS document 'Standards for asset protection zones'.
3) Emergency Risk Management	It is advised the residents should complete a <i>Bushfire Survival Plan</i> as formulated by the NSW Rural Fire Service and Fire and Rescue NSW. An emergency evacuation is not recommended as a condition of consent.
4) Water supplies	Reticulated water supply is located on the adjoining road at regular intervals and is easily accessible. No additional water supplies have been recommended.
5) Fences and gates	All fences in bush fire prone areas should be made from either hardwood or non-combustible material. However, in circumstances where the fence connects directly to the dwelling, or in areas of BAL-29 or greater, they should be made of non-combustible material.
6) Electrical services	- Where practicable, electrical transmission lines are underground.
7) Gas supply	 Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used. All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard size. Connections to and from gas cylinders are metal. polymer-sheathed flexible gas supply lines are not used. above-ground gas service pipes are metal, including and up to any outlets.
8) Adjacent Structures [class 10a & 10b]	Where Class 10a & 10b structures are within 6m from a dwelling in bush fire prone areas it must be built in accordance with the NCC.

12. Summary

This report consists of a bushfire risk assessment for the proposed 1 into 2 lot subdivision and construction of two Class 1a dwellings at No 50 Condover Street, North Balgowlah

The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development of bushfire prone areas are applicable.

This report has considered all of the elements of bushfire attack and provided the proposed development is carried out in accordance with the recommendations of Section 11 of this report, it is my considered opinion that the development satisfies the Objectives and Performance requirements of the *Building Code of Australia, Planning for bushfire Protection 2019 and Australian Standard AS3959, 2018.*

Note: Not with standing the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand a bushfire attack on every occasion. This report is a Bushfire Hazard Assessment that provides the required information to assist Local Councils and the Rural fire Service in determining compliance in accordance with Planning for Bushfire Protection 2019 and AS3959, 2018. The local Council is the final consenting authority and the construction of the building must comply with the recommendations included in the council's conditions of consent.

Mh.

Matthew Toghill- Bushfire Consultant

Accreditation No: BPAD31642

Grad Cert in Bushfire Protection, UWS 2012

Certificate IV Building and Construction

Certificate III in Public Safety (firefighting and emergency operations)



13. References

Australian Building Codes Board

Building Code of Australia

Volume 1 & 2

Canprint

Australian Building Codes Board [2001]

Fire Safety Engineering Guidelines

Edition 2001

ABCB Canberra

D. Drysdale D. [1998]

Introduction to Fire Dynamics 2nd Edition

John Wiley & Sons Ltd

NSW Government Environmental Planning and Assessment Act [1979]

Part 79BA-Consultation and development consent- Certain bushfire prone land

NSW Government Printer

Planning for Bushfire Protection 2019

A guide for Councils, Planners, Fire Authorities and Developers

This document provides the necessary planning considerations when developing areas for residential use in residential, rural residential, rural and urban areas when development sites are in close proximity to areas likely to be affected by bushfire events and replaces Planning for Bushfire Protection 2006.

This document is essential reading. Download a copy from the RFS website or purchase a copy through the NSW Government online shop or phone 9228 6333.

Ramsay C & Rudolph L [2003]

Landscape and building design for bushfire prone areas

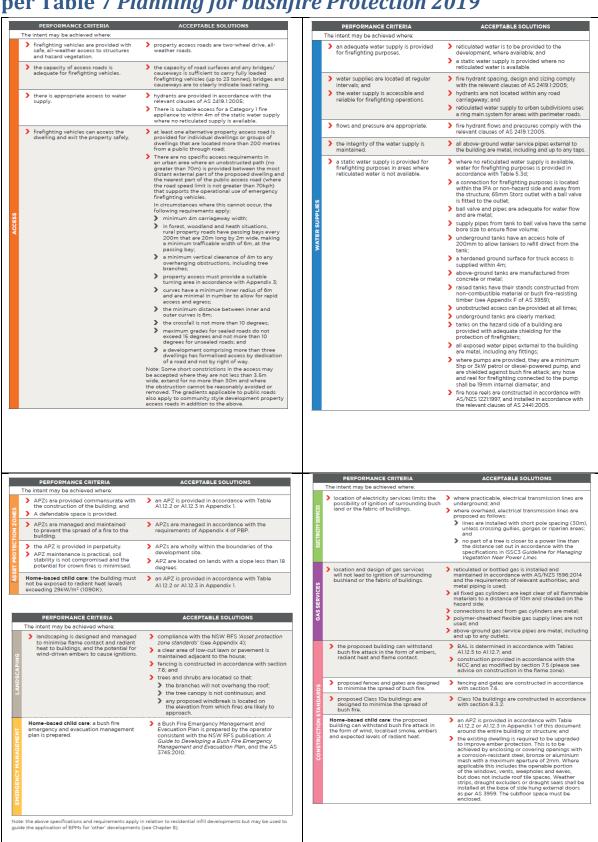
CSIRO Publishing

Standards Australia [2018]

Australian Standards 3959

Australian Building Code Board

Appendix 1: Performance criteria and acceptable solutions as per Table 7 *Planning for bushfire Protection 2019*



Appendix 2: 7.5.2 NSW State Variations under G5.2(a)(i) and 3.10.5.0(c)(i) of the NCC

Certain provisions of AS 3959 are varied in NSW based on the findings of the Victorian Bush Fires Royal Commission and bush fire industry research.

The following variations to AS 3959 apply in NSW for the purposes of NSW G5.2(a)(i) of Volume One and NSW 3.10.5.0(c)(i) of Volume Two of the NCC; clause 3.10 of AS 3959 is deleted and any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 shall:

- be non-combustible; or
- comply with AS/NZS 4200.1, be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2; and
- clause 5.2 and 6.2 of AS 3959 is replaced by clause 7.2 of AS 3959, except that any wall
 enclosing the subfloor space need only comply with the wall requirements for the respective
 BAL; and
- clause 5.7 and 6.7 of AS 3959 is replaced by clause 7.7 of AS 3959, except that any wall
 enclosing the subfloor space need only comply with the wall requirements for the respective
 BAL; and
- fascias and bargeboards, in BAL-40, shall comply with:
- clause 8.4.1(b) of AS 3959; or
- clause 8.6.6 of AS 3959.

The interpretation of this variation is:

<u>Enclosed subfloors</u>: For subfloor supports there are no requirements for supporting posts, columns, stumps, stringers piers and poles for subfloor supports for BAL 12.5 and BAL 19 when the subfloor space is enclosed with a wall that complies with the determined BAL level for the site.

<u>Unenclosed subfloors</u>: For unenclosed subfloor supporting posts, columns, stumps, stringers piers and poles the requirements are upgraded from BAL 12.5 and BAL 19 to BAL 29 level.

<u>Enclosed verandas</u>: There are no requirements for supporting posts, columns, stumps, stringers piers and poles for verandas, decks, steps and landings when the subfloor space is enclosed with a wall that complies with the determined BAL level for the site.

<u>Unenclosed verandas</u>: The requirements for supporting posts, columns, stumps, stringers piers and poles for verandas, decks, steps, and landings are upgraded from BAL 19 and BAL 12.5 to BAL 29 level.

For unenclosed subfloors of the main building or verandas, decks, steps and landings for BAL 12.5, 19 and BAL29 supporting posts, columns, stumps, stringers piers and poles shall be:

- 1. A non-combustible material; or
- 2. A Bushfire resistant timber; or
- 3. A combination of 1 and 2

Acceptable timber species:

Black-butt, Turpentine, Silver Top Ash, Spotted Gum, Red Iron Bark, Kwila, Red River Gum

Sarking: To comply with the NSW State variation any sarking used for BAL 12.5 shall:

- Be Non-combustible; or
- Comply with AS/NZ 4200.1 be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS1530.2

Appendix 3: Northern Beaches Council Bushfire Certificate.

BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 4.14 1(b) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 NO 203

PROPERTY ADDRESS:	50 Condover St North Balgowlah
DESCRIPTION OF PROPOSAL:	Subdivision & construction of two new dwellings
PLAN REFERENCE: (relied upon in report preparation)	McGregor + Coxall Project No. DAGOI Dated: 12.07.21 (19MB A)
BAL RATING:	(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 (Circle the relevant response) (If YES the application is to be referred to NSW RFS for assessment)

1	Mathew Toghill	of	Bushcon	Australia	PH	Ltd.
	(Print Name)		(Tradin	g or Company Na	L/sima	

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 2 of Planning for Bushfire Protection 2019 together with recommendations as to how the relevant specifications and requirements are to be achieved.

REPORT REFERENCE:	50 Con-03
REPORT DATE:	20.07.2021
CERTIFICATION NO/ACCREDITED SCHEME:	SPAD 31642

I hereby certify, in accordance with Section 4.14 of the Environmental Planning and Assessment Act 1979 No 203:

- That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire
 risk assessment; and
- 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 Northern Beaches 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 2019.

SIGNATURE:	MM.	DATE:	20.01.21.	

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 Section 4.14 of the EP&A Act 1979 No 203.

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