Bushfire Assessment Report

Proposed:
Alterations &
Additions

At:
160 Allambie Road
Allambie Heights NSW

Reference Number: 201047

Prepared For: Amit Chakraborty

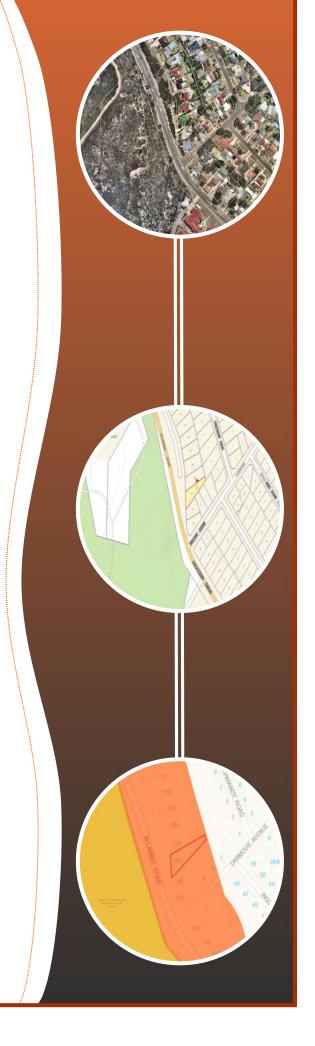
25th February 2020



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

PO Box 124 Berowra NSW 2081 ABN 19 057 337 774





www.bushfirehazardsolutions.com.au

Contents

		Page No.
Copyr	right and Disclosure	2
List of	f Abbreviations	3
1.0	Introduction	4
2.0	Purpose of Report	4
3.0	Scope of Report	4
4.0	Referenced Documents and Persons	4
5.0	Compliance Table and Notes	5 - 6
6.0	Aerial view of the subject allotment	7
7.0	Bushfire Hazard Assessment	8 - 13
8.0	Site and Bushfire Hazard Determination	14 – 15
9.0	Recommendations	16
10.0	Conclusion	17
11.0	Annexure	18
-	List of referenced documents and attachments	
_	Attachments	

Copyright:

Where agreed to by Building Code and Bushfire Hazard solutions Pty. Ltd, this report may only be copied, distributed or forwarded to other parties in its original format. No part of this document including any wording, images, or graphics can be modified, changed or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. (Copyright Act 1968).

Where this document is found to have been used or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. including any wording, images, or graphics, Building Code and Bushfire Hazard Solutions Pty. Ltd. will not be held liable for any incidental or consequential loss or damages, financial or otherwise resulting from the use of the modified document. Building Code and Bushfire Hazard Solutions Pty. Ltd. will if it considers it necessary, seek to advise third parties including authorities of such illegal use or modifications.

Legal status:

This report has been prepared as a submission document in support of a development application to Council and in instances may rely upon information provided by a number of external sources including Councils, State Government Agencies and it is assumed that the information provided was accurate at the time. This report cannot be relied upon for commencement of works or construction until such time as it has been endorsed or otherwise included within the consent conditions issued by Council as part of the DA determination.

S4.14 applications (under the Environmental Planning and Assessment Act 1979) and all infill development applications <u>may</u> be referred by Council to the NSW Rural Fire Service for review and concurrence during the DA process. S100B applications under the Rural Fires Act 1997 (subdivisions and Special Fire Protection Purpose Developments), Flame Zone determinations and Alternate Solutions <u>must</u> be referred by Council to the NSW Rural Fire Service for review and receipt of a Bushfire Safety Authority (BSA) or other such recommended conditions from the NSW Rural Fire Service before the consent can be granted.

The onus is on the applicant to cross reference this document with any conditions of consent issued by Council or any requirements supplied by the NSW Rural Fire Service following development approval. BCBHS can review and cross reference these documents however the onus is on the applicant to provide them to us and request this review – Building Code and Bushfire Hazard Solutions Pty. Ltd. is not in a position to track every DA through Council and we rely upon the applicant to undertake this role as project co-ordinator.

Where any discrepancy between this document and the development approval or the NSW Rural Fire Service requirements is found, the conditions of consent always take precedence until such time as an application to review, amend or vary these conditions is approved.

Disclaimer:

This report has been prepared with due care and diligence by Building Code and Bushfire Hazard Solutions Pty. Ltd and the statements and opinions contained in this report are given in good faith and in the belief on reasonable grounds that such statements and opinions are correct and not misleading bearing in mind the necessary limitations noted in previous paragraphs.

Further, no responsibility is accepted by Building Code and Bushfire Hazard Solutions Pty. Ltd. or any of its officers or employees for any errors, including errors in data which is supplied by a third party, or which Building Code and Bushfire Hazard Solutions Pty. Ltd. is required to estimate, or omissions howsoever arising in the preparation of this report, provided that this will not absolve Building Code and Bushfire Hazard Solutions Pty. Ltd. from liability arising from an opinion expressed recklessly or in bad faith.

Any representation, statement of opinion, or advice expressed or implied in this document is made in good faith on the basis that Building Code and Bushfire Hazard Solutions Pty. Ltd. employees and / or agents are not liable (whether by reason of negligence, lack of care or any other reason) to any person, company or their agents 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.

Version Control				
Version	Date	Author	Details	
1	24/02/2020	Stuart McMonnies BPAD Accreditation No. 9400	Final Release	

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 Northern Beaches 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

NASH National Association of Steel-framed Housing

NCC National Construction Code

NP National Park

NSP Neighbourhood Safer Place

OPA Outer Protection Area

PBP Planning for Bush Fire Protection – 2006

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 a first floor addition to an existing dwelling within an existing residential allotment at 160 Allambie Road, Allambie Heights (Lot 2355 DP 752038).

The subject property has street frontage to Allambie Road to the west and abuts similar residential allotments to the remaining three aspects. The vegetation identified as being the hazard is to the west of the proposed development within Manly Dam Reserve.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing the 100 metre Buffer zone to Category 1 Vegetation, 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 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 NSW *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 - 2009 titled 'Construction of buildings in bushfire-prone areas'.

A company representative has made a site inspection of the subject property and the surrounding area. The site plan by Action Plans, Drawing No. DA02, Revision A, Dated 03/02/2020 have been referenced in the creation of this report.

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	Maintained Curtilages	Maintained Curtilages	Maintained Curtilages	Woodland
Slope	N/A	N/A	N/A	0 - 5 degrees down
Proposed Asset Protection Zone	N/A	N/A	N/A	32 metres
Significant Environmental Features	Neighbouring residential allotments	Neighbouring residential allotments	Neighbouring residential allotments	Allambie Road
Threatened Species	APZ existing	APZ existing	APZ existing	APZ existing
Aboriginal Relics	APZ existing	APZ existing	APZ existing	APZ existing
Bushfire Attack Level	N/A	N/A	N/A	BAL 19
Required Construction Level	BAL 19	BAL 12.5	BAL 19	BAL 19

Asset Protection Zones Compliance

The separation from the hazard interface includes maintained land within the subject property and land "equivalent to an Asset Protection Zone" being Allambie Road.

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 19'. The proposed works are required to comply with section 3 and BAL 19 section 6 under AS 3959 – 2009 and the addendum to Appendix 3 of PBP.

In accordance with section 3.5 of AS3959 – 2009 the eastern elevation of the proposed works can be downgraded to BAL 12.5 due to shielding by the dwelling itself.

Access and Services

Guideline Ref.	Development Determinations	
Property Access (Driveway)	The most distant external point of the subject dwelling is less than 70 metres of a public road supporting a hydrant network and therefore the Property Access requirements detailed in section 4.1.3 (2) of PBP are not applicable.	
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	

6.0 Aerial view of the subject allotment



Image 01: Aerial view of the subject area C/- Nearmap 2020

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 – 2009 'Construction of buildings in bushfire prone areas'.

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 first floor addition 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 s4.14 application under the Environmental Planning and Assessment Act 1979.

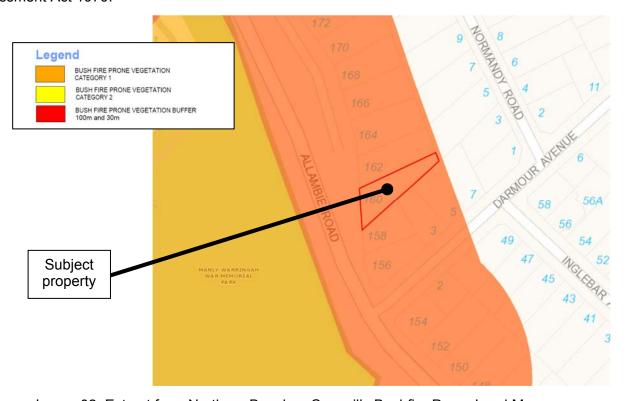


Image 02: Extract from Northern Beaches Council's Bushfire Prone Land Map

7.02 Location

The subject property is known as 160 Allambie Road, Allambie Heights (Lot 2355 DP 752038) and is a residential allotment located within Northern Beaches Councils Local Government Area. The subject property has street frontage to Allambie Road to the west and abuts similar residential allotments to the remaining three aspects. The vegetation identified as being the hazard is to the west of the proposed development within Manly Dam Reserve.



Photograph 01: View east from Allambie Road toward the subject property

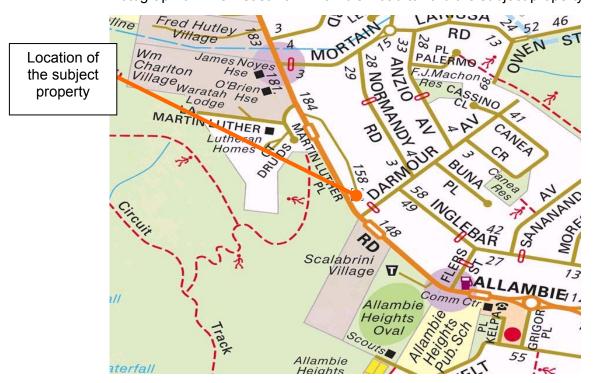


Image 03: Extract from street-directory.com.au

7.03 Vegetation

The vegetation within the subject property and the neighbouring properties was found to be managed land with landscaped gardens and mown lawns. The vegetation identified as being the hazard is to the west of the subject property within Manly Dam Reserve.

The vegetation posing a hazard was found to consist of trees 10 - 30 metres in height with 10 - 30% canopy cover and an understorey of low shrubs and grasses. For the purpose of assessment under *Planning for Bush Fire Protection*, the vegetation posing a hazard has been determined to be Woodland.

The vegetation to the northwest of the subject property was assessed and deemed not to be a hazard in accordance with AS3959 – 2009 2.2.3.2 (d), Strips of vegetation less than 20 metres in width regardless of length and not within 20 metres of the site or each other, or other areas of vegetation. The vegetation to the northwest has been excluded from this assessment



Photograph 02: View along Allambie Road showing managed Vegetation between Allambie Road and the access road to the subject property



Photograph 03: View west from Allambie Road showing managed Vegetation

7.04 Slope and Topography

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

The most significant bushfire impact from the west is expected to be a bushfire travelling up slope toward the subject property.

The slope that would most significantly influence fire behaviour was measured onsite using an inclinometer and verified from topographic imagery of the subject area and found to be:

> 0 - 5 degrees down slope within the hazard to the west



Image 06: Extract from Land and Property Management Authority Spatial Information Exchange

7.05 Asset Protection Zones

The proposed works were found to be located 32 metres from the hazard to the west. The separation from the hazard interface includes maintained land within the subject property and land equivalent to an APZ being Allambie Road.

All grounds within the subject property not built upon are required to be maintained as an Asset Protection Zone (Inner Protection Area) in accordance with Appendix 2 of PBP.



Photograph 04: View north along Allambie Road forming part of the APZ

7.06 Fire Fighting Water Supply

The existing dwelling is connected to the towns water main in Allambie Road for its domestic supply. There are existing hydrants available along Allambie Road and surrounding streets 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.

7.07 Property Access – Fire Services & Evacuation

The subject property has street frontage to Allambie Road to the west. The most distant external point of the building footprint is less than 70 metres from a public through road supporting a hydrant network and therefore the access requirements of section 4.1.3 (2) PBP 2006 are not applicable.

Fire services will have free pedestrian access around the building footprint. Attending fire crews can access the hazard via the Allambie 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:

Western Aspect:

- a) Vegetation Structure Woodland
- b) Slope 0 5 degrees down slope
- c) A 32 metre APZ is available
- d) The Bushfire Attack Level was determined to be 'BAL 19'

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

The 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 standards specify 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 both standards.

8.02 Correlation between bushfire impact and BAL Rating

Bushfire Attack Level	Maximum radiant heat impact (kW/m²)	Level of construction
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 development located at 160 Allambie Road, Allambie Heights was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- a) The proposed water supplies for firefighting purposes are adequate.
- b) Access to the subject property is available via Allambie Road.
- c) Access to the hazard is available via Allambie Road without the need to enter the subject site.
- d) Recommendations for ongoing maintenance of the Asset Protection Zones within the subject property will be included.

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 from Table 2.4.2 of AS3959 – 2009 to be 'BAL 19'. The proposed works are required to comply with section 3 and BAL 19 section 6 under AS 3959 – 2009 and the addendum to Appendix 3 of PBP.

In accordance with section 3.5 of AS3959 – 2009 the eastern elevation of the proposed works can be downgraded to BAL 12.5 due to shielding of the dwelling itself.

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2006. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. That all grounds not built upon within the subject property to 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.

Construction

- That all new roofing and construction facing north, south and west shall comply with section 6 (BAL 19) 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".
- 3. That all new construction facing east 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".

Services

4. Electricity and gas are to comply with section 4.1.3 of Planning for Bush Fire Protection 2006.

Gas:

- Reticulated or 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 used.

Electricity:

- Where practicable, electrical transmission lines are underground.
- Where overhead electrical transmission lines are proposed:
 - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).

10.0 Conclusion

Given that the property is deemed bushfire prone under Northern Beaches Council's Bushfire Prone Land Map any development would need to meet the requirements of Planning for Bush Fire Protection – 2006. 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 Allambie Road to the west and abuts similar residential allotments to the remaining three aspects. The vegetation identified as being the hazard is to the west of the proposed development within Manly Dam Reserve. The vegetation posing a hazard was determined to be Woodland on a 0 - 5 degree down slope.

The proposed works were found to be located 37 metres from the hazard to the west. The Asset Protection Zones include land within the subject property and land "equivalent to an Asset Protection Zone" being Allambie Road.

The highest Bushfire Attack Level to the proposed works was determined from Table 2.4.2 of AS3959 - 2009 to be 'BAL 19'. The proposed works are required to comply with section 3 and BAL 19 section 6 under AS 3959 - 2009 and the addendum to Appendix 3 of PBP. In accordance with section 3.5 of AS3959 - 2009 the eastern façade can be downgraded to BAL 12.5 due to shielding by the dwelling itself.

Existing access and proposed water supply are 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.

Prepared by Building Code & Bushfire Hazard Solutions

Reviewed and endorsed by <u>Building Code & Bushfire Hazard Solutions P/L</u>

Duncan Armour

Stuart McMonnies

G. D. Design in Bushfire Prone Areas. Certificate IV Fire Technology FPA Australia BPAD Level 3 Accredited Practitioner BPAD Accreditation No. BPAD9400



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) 'Northern Beaches Council's Bushfire Prone Land Map'
- e) Site plan by Action Plans, Drawing No. DA02, Revision A, Dated 03/02/2020
- f) Acknowledgements to:

NSW Department of Lands – SIXMaps

Street-directory.com.au

Nearmap

Attachments

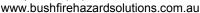
Attachment 01: S4.14 Compliance Certificate



Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774 PO Box 124, Berowra NSW 2081







BUSHFIRE RISK ASSESSMENT CERTIFICATE UNDER PART 4 DIVISION 4.3 SECTION 4.14 OF THE EP&A ACT 1979 NO 203

PROPERTY ADDRESS:	160 Allambie Road, Allambie Heights	
DESCRIPTION OF PROPOSAL:	Alerations and Additions	
PLAN REFERENCE: (relied upon in report preparation)		
BAL RATING:	BAL 19 (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)	
BUSHFIRE ASSESSMENT REPORT REFERENCE:	201047	
REPORT DATE:	25 th February 2020	
CERTIFICATION NO/ACCREDITED SCHEME	BPAD9400	

I Stuart McMonnies of Building Code and Bushfire Hazard Solutions Pty Ltd hereby certify, in accordance with Part 4 Division 4.3 Section 4.14 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 Bushfire Risk Assessment Report the proposed development conforms specifications and requirements of the documents entitled *Planning for Bush Fire Protection* prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other documents as prescribed by Part 4 Division 4.3 Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*.

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*.

Signature: ______ Date: 25th February 2020

