

Bushfire Assessment Report

Proposed: **Alterations & Additions**

At:
**7A Iluka Road,
Palm Beach NSW**

Reference Number: 200009

Prepared For:
Rodger Morton
C/- Passer Architects

27th February 2020



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

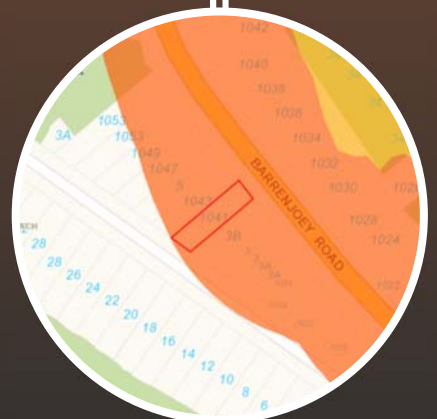
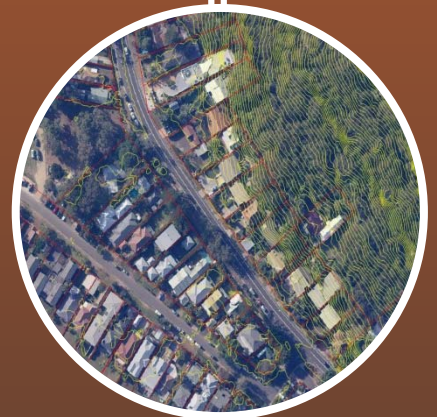
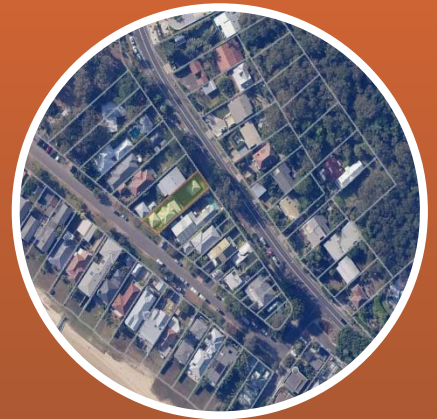
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**SILVER
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S4.14 applications (under the Environmental Planning and Assessment Act 1979) and all infill development applications *may* be referred by Council to the NSW Rural Fire Service for review 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 *must* 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.

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Version Control				
Version	Date	Author	Reviewed by	Details
1	27/02/2020	Duncan Armour	David McMonnies BPAD Accreditation No. 2354	Final Release

List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 as amended.
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Northern Beaches Council
DA	Development Application
ELVIS	Elevation and Depth Foundation Spatial Data – Geoscience Australia
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire & Rescue NSW
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection - 2006
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 of an existing sole occupancy dwelling within an existing residential allotment located at 1041 Barrenjoey Road, Palm Beach (Lot 89 DP 14682).

The subject property is a residential allotment which has street frontage to Barrenjoey Road to the northeast, Iluka Road to the southwest and abuts private residential allotments to northwest and southeast. The vegetation identified as being the hazard is within McKay Reserve to the northeast of the subject property.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing designated 100 metre buffer zone associated with 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 hazard 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 AS3959 – 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

Company representatives have made several site inspections of the subject property and the surrounding area.

The site plan by Passer Architects, Project No. 1915, Issue A, Dated February 2020 has been referenced in the preparation of this report.

5.0 Compliance Tables & Notes

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

	Northeast	Northwest	Southeast	Southwest
Vegetation Structure	Forest	Maintained Curtilages	Maintained Curtilages	Maintained Curtilages
Slope	0 degrees and up	N/A	N/A	N/A
Asset Protection Zone	>70 metre	N/A	N/A	N/A
Significant Environmental Features	Barrenjoey Road	Neighbouring private residential allotments	Neighbouring private residential allotments	Iluka Road
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	N/A	N/A	N/A
Recommended Construction Level	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.05
Construction Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.05
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.07
Water Supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.06
Gas and Electrical Supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.0

Asset Protection Zones Compliance

The available Asset Protection Zone was measured to be >70 metres from the hazard interface to the northeast. The APZs consists of maintained grounds within the subject property and land equivalent to an Asset Protection Zone being neighbouring properties and Barrenjoey 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 12.5'. The proposed dwelling is required to comply with section 3 and BAL 12.5 section 5 under AS 3959 – 2009 and the Addendum to Appendix 3 under PBP 2006.

Alternatively new construction shall comply with Sections 1 – 5 & BAL 12.5 construction as detailed within the *NASH Standard for steel framed construction in bushfire areas 2014*.

Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access (Driveway)	The most distant external point of the subject dwelling is less than 70 metres from a public through road supporting a hydrant system and therefore access requirements are not applicable to this development.
Water Supply	The most distant external point of the building footprint will be 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	Existing supply provided.

6.0 Aerial view of the subject allotment



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

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

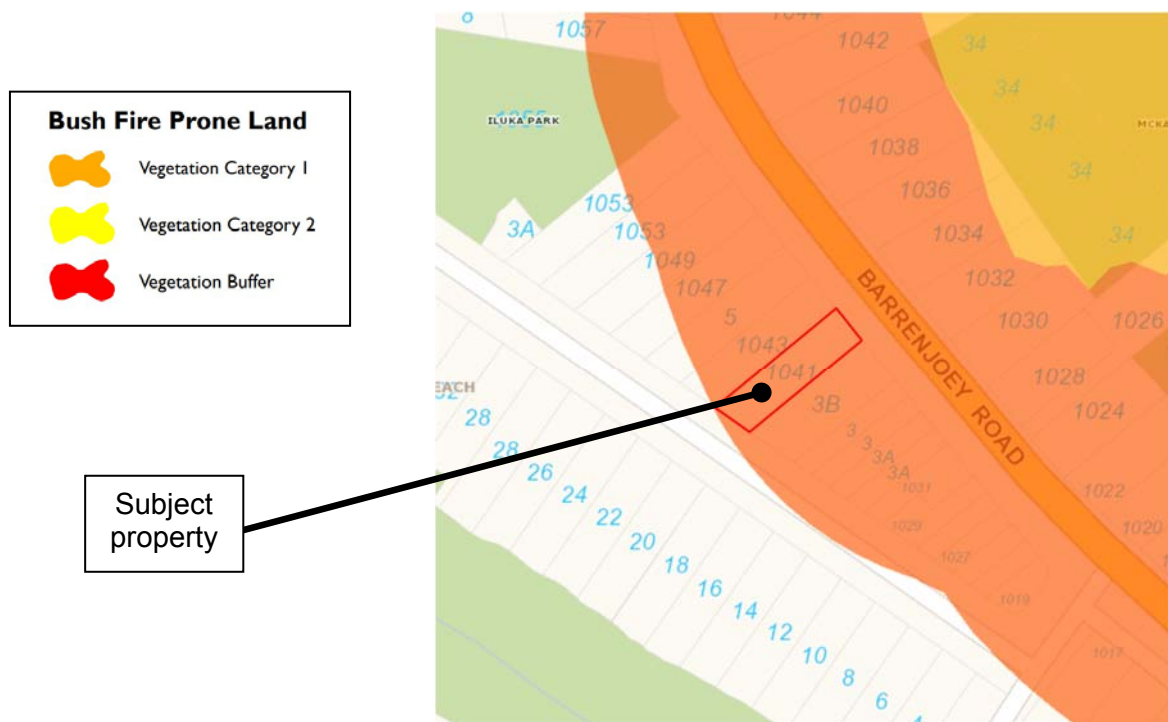


Image 02: Extract from Northern Beaches Council's Bushfire Prone Land Map

7.02 Location

The subject property is known as 1041 Barrenjoey Road, Palm Beach and is a residential allotment located within Northern Beaches Councils Local Government Area. The subject property is a residential allotment which has street frontage to Barrenjoey Road to the northeast, Iluka Road to the southwest and abuts private residential allotments to northwest and southeast.

The vegetation identified as being the hazard is within McKay Reserve to the northeast of the subject property.



Subject property

Photograph 01: View from Barrenjoey Road toward the subject property



Location of the subject property

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

7.03 Vegetation

The vegetation identified as being the hazard is within McKay Reserve to the northeast of the subject property. The vegetation posing a hazard was found to consist of trees 10 - 20 metres in height with 50 - 70% foliage cover, the understorey consisted of low trees and shrubs.

For the purpose of assessment under PBP we have determined the vegetation posing a hazard to the northeast to be Forest.

McKay Reserve



Photograph 02: View along Barrenjoey Road from in front of the subject property

Subject property



Photograph 03: View from Iluka Road toward the subject property

7.04 Slope and Topography

The slope that would most significantly influence bushfire behaviour must be assessed for a distance of 100 metres from within the hazard. The most significant bushfire impact from the northeast is expected to be a fire travelling down slope toward the subject property.

The slope that would **most significantly** influence bushfire impact was determined onsite using an inclinometer and verified from topographic imagery to be:

- 0 degrees and up within the hazard to the northeast



Image 04: Extract ELVIS - Geoscience (1 metre contours)

7.05 Asset Protection Zones

The available Asset Protection Zone was measured to be >87 metre to the hazard interface to the southeast. The APZs consists of maintained grounds within the subject property and land equivalent to an Asset Protection Zone being neighbouring properties and Whale Beach Road.

All grounds within the subject property not built upon are to be maintained in accordance with an Asset Protection Zone as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

McKay
Reserve



Photograph 04: View from the subject property across Barrenjoey Road toward McKay Reserve

7.06 Property Access – Fire Services & Evacuation

The subject property has street access to Barrenjoey Road to the northeast and Iluka Road to the southwest. Persons seeking to egress from the subject property will be able to do so via the existing access drive and public roads.

The most distant external point of the building footprint will be less than 70 metres from a public road supporting a hydrant network and therefore the Property Access requirements detailed in section 4.1.3(2) of PBP are not required.

Access to the hazard is available via Barrenjoey Road and neighbouring allotments for hazard reduction for fire suppression activities.

7.07 Fire Fighting Water Supply

Hydrants are available throughout Barrenjoey Road, Iluka Road and surrounding streets for the replenishment of fire service vehicles. The most distant external point of the subject dwelling is within 70 metres of a public road that supporting a hydrant network and therefore a Static Water Supply is not required.

The existing water supply is considered adequate and is not being altered as part of this development.

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:

Northeastern aspect:

- a) Vegetation Structure Forest
- b) Slope 0 degrees and up
- c) A >70 metre APZ is available
- d) 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 1041 Barrenjoey Road, Palm Beach was assessed against the requirements of Planning for Bush Fire Protection 2006 noting the following:

- a) Water supplies for firefighting purposes are adequate.
- b) Access to the subject property is available from Barrenjoey Road and Iluka Road.
- c) Fire services can access the hazard without the need to access the subject property.
- d) Recommendations to maintain 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 12.5'. The proposed dwelling is required to comply with section 3 and BAL 12.5 section 5 under AS 3959 – 2009 and the Addendum to Appendix 3 under PBP 2006.

Alternatively new construction shall comply with Sections 1 – 5 & BAL 12.5 construction as detailed within the *NASH Standard for steel framed construction in bushfire areas 2014*.

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. That all grounds within the subject property not built upon be maintained as an Asset Protection Zone 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

2. That all construction shall comply with BAL 12.5 under section 5 of Australian Standard A53959-2009 "Construction of buildings in bush fire-prone areas"

Landscaping

3. That any new landscaping is to comply with Appendix 5 'Landscaping and Property Maintenance' under *Planning for Bush Fire Protection* 2006.

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 and of the construction requirements of AS3959 – 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 is a residential allotment within an area of similar properties. The vegetation identified as being the hazard is within McKay Reserve northeast of the subject allotment. The vegetation posing a hazard was determined to be Forest on 0 degrees & up slope to the southeast.

The proposed works was found to provide a >70 metre Asset Protection Zone (APZ) to the northeast. The APZ consists of maintained grounds within the subject property and land equivalent to an Asset Protection Zone being neighbouring properties and Barrenjoey Road.

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 dwelling is required to comply with section 3 and BAL 12.5 section 5 under AS 3959 – 2009 and the Addendum to Appendix 3 under PBP 2006.

The existing water supply and access provisions are considered adequate in this instance and will not be altered as part of this development.

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



Duncan Armour
Bushfire Consultant

Reviewed and endorsed by
Building Code & Bushfire Hazard Solutions



David McMonnies, AFSM. / M I Fire E
Masters of Const. Mgt. / G. D. Design in
Bushfire Prone Areas
Managing Director.
FPA Australia BPAD Level 3 Accredited Practitioner
BPAD Accreditation No. BPAD2354



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 Passer Architects, Project No. 1915, Issue A, Dated February 2020
- f) Acknowledgements to:
 - NSW Department of Lands – SIXMaps
 - Street-directory.com.au
 - Geoscience Australia

Attachments

Attachment 01: s4.14 Compliance Certificate



Building Code & Bushfire Hazard Solutions

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

PROPERTY ADDRESS:	1041 Barrenjoey Road, Palm Beach
DESCRIPTION OF PROPOSAL:	Alterations & additions
PLAN REFERENCE: (relied upon in report preparation)	Site plan by Passer Architects, Project No. 1915, Issue A, Dated February 2020
BAL RATING:	BAL 12.5 <small>(If the BAL rating is FZ the application is to be referred to NSW RFS for assessment)</small>
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES <input checked="" type="radio"/> NO <input type="radio"/> <small>(Circle the relevant response)</small> <small>(If YES the application is to be referred to NSW RFS for assessment)</small>
BUSHFIRE ASSESSMENT REPORT REFERENCE:	200009
REPORT DATE:	27 th February 2020
CERTIFICATION NO/ACCREDITED SCHEME	BPAD2354

I David 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: 27th February 2020

