Bushfire Assessment Report

Proposed:Sole Occupancy
Dwelling

At:
70A Willandra Road
Oxford Falls

Reference Number: 181164B

Prepared For:
Altre Holdings Pty Ltd

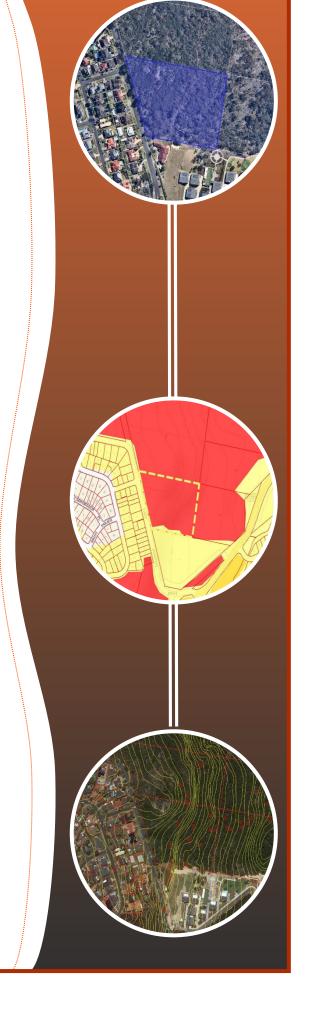
30th November 2021



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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.

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Version Control				
Version	Date	Author	Reviewed by	Details
1	29/07/2019	Andrew Muirhead	Stuart McMonnies BPAD Accreditation No. 9400	Draft Report
2	25/09/2019	Andrew Muirhead	Stuart McMonnies BPAD Accreditation No. 9400	Final Report
3	30/11/2021	Duncan Armour	Stuart McMonnies BPAD Accreditation No. 9400	Update Report

List of Abbreviations:

APZ Asset Protection Zone

AS3959 Australian Standard 3959 – 2018

BAL Bushfire Attack Level

BPMs Bushfire Protection Measures

BPLM Bushfire Prone Land Map

Council Northern Beaches Council

DA Development Application

ELVIS Elevation and Depth Foundation Spatial Data

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 – November 2019

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 construction of a new sole occupancy dwelling within an existing allotment located at 70A Willandra Road, Oxford Falls (Lot 808 DP 752038).

The subject property has street frontage to Lady Penrhyn Drive to the southwest, abuts private neighbouring allotments to the south and vegetated allotments to the north and east.

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 - 2019' (PBP).

PBP formally adopted on the 1st March 2020 provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing Category 1 Vegetation and the associated 100 metre buffer zone therefore the application of PBP must apply in this instance.

The subject development relates to the construction of a new dwelling within an existing allotment. The development is classified as infill development and assessed as a s4.14 application under the Environmental Planning and Assessment Act 1979 and section 7 'Residential Infill Development' of PBP applied.



Figure 01: Extract from Northern Beaches Council's Bushfire Prone Land Map

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide the owner and Council with an independent bushfire assessment 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.

4.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection* – 2019.

	North	Northeast	East	Southwest
Vegetation Structure	Tall Heath	Tall Heath	Tall Heath	Maintained grounds
Slope	0 - 5 degrees down	0 - 5 degrees down	10 - 15 degrees down	N/A
Asset Protection Zone	23 metres	23 metres	13 metres	N/A
Significant Landscape Features	Vegetated allotment	Neighbouring private allotments	Vegetated allotment	Lady Penrhyn Drive
Threatened Species	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Aboriginal Relics	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Bushfire Attack Level	BAL 29	BAL 29	BAL FZ	N/A
Required Construction Level	BAL 29	BAL 29	BAL FZ	BAL 29

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure (s7.4 PBP)	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	×		7.02
Construction Standard			7.03
Access			7.04
Water Supply			7.05
Gas and Electrical Supplies			7.05

Asset Protection Zones

The proposed Asset Protection Zones (APZs) are 23 metres to the north, 23 metres to the northeast and 13 metres to the east. The eastern APZ is limited due to the presence of an Endangered Ecological Community. The APZs consist of land entirely within the subject allotment.

Construction Level

The highest Bushfire Attack Level to the proposed dwelling was determined from Table A1.12.5 of PBP19 to be 'BAL FZ'. The proposed southern building module is required to comply with section 3 and BAL FZ section 9 under AS 3959 – 2018 and the additional construction requirements under section 7.5 of PBP.

The proposed pool and surrounds are situated within the APZ for the dwelling and will need to be constructed from non-combustible.

Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access (Driveway)	The most distant external point of the subject dwelling will be within 70 metres of a public road supporting a hydrant network and therefore the Property Access requirements detailed in Table 7.4a of PBP are not applicable.
Water Supply	The most distant external point of the building footprint is <90 metres from an operational hydrant, therefore a Static Water Supply is not required. Regardless the proposed swimming pool provides a static water supply within the subject site.
Evacuation	Evacuation is possible by utilising existing road infrastructure. It is encouraged that the occupants complete a Bush Fire Survival Plan.
Electrical Supply	Existing underground supply provided.
Gas Supply	New connections must comply with Table 7.4a of PBP 19.

5.0 Aerial view of the subject allotment

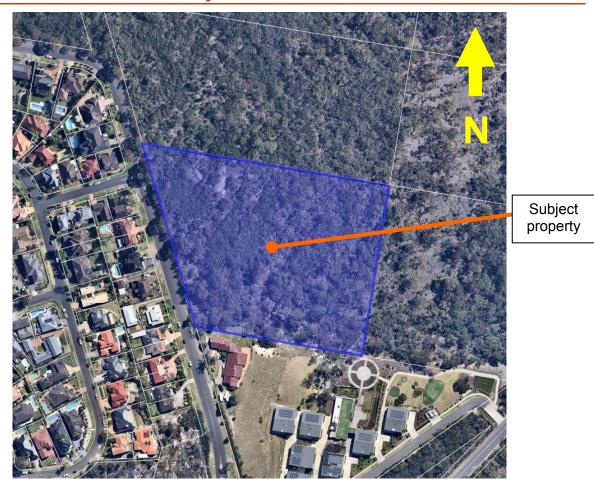


Figure 02: Aerial view of the subject area C/- Nearmap - October 2021

6.0 Site Assessment

6.01 Location

The subject property is known as 70A Willandra Road, Oxford Falls (Lot 808 DP 752038) and is an allotment (zoned DM: Deferred Matter) located within Northern Beaches Councils Local Government Area.

The subject property has street frontage to Lady Penrhyn Drive to the southwest, abuts private neighbouring allotments to the south and vegetated allotments to the north and east.

The vegetation identified as being the potential bushfire hazard is located to the north, south and east within the subject property and neighbouring properties.



Photograph 01: View from Lady Penrhyn Drive toward the subject property

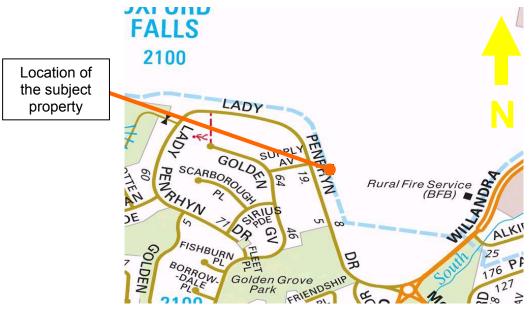


Figure 03: Extract from Street Directory.com

6.02 Vegetation

The vegetation identified as being the potential bushfire hazard is located to the north, south and east within the subject property and neighbouring properties.

The vegetation posing a hazard to all aspects was found to consist of trees and shrubs to 2 metres in height. The vegetation to the southeast of the proposed dwelling within the subject property is a listed Endangered Ecological Community and has a 20 metre buffer zone around which restricts the proposed APZ.

For the purpose of assessment under PBP we have determined the vegetation posing a hazard to all aspects to be Tall Heath.



Photograph 02: View into the vegetation within the subject property



Photograph 03: View into the vegetation within the subject property

6.03 Slope and Topography

The slope that would most significantly influence bushfire behaviour must be assessed for a distance of 100 metres from within the bushfire hazards. The most significant bushfire impact from the north, northeast and east is expected to be a bushfire travelling up slope toward the subject dwelling.

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

- \triangleright 0 5 degrees down slope within the hazard to the north
- \triangleright 0 5 degrees down slope within the hazard to the northeast
- > 10 15 degrees down slope within the hazard to the east

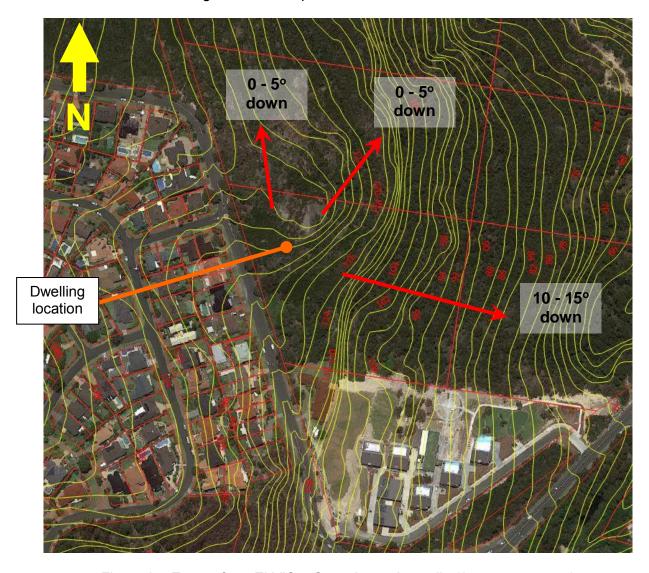


Figure 04: Extract from ELVIS – Geoscience Australia (2 metre contours)

7.0 Bushfire Protection Measures

7.01 Planning for Bush Fire Protection - 2019

Planning for Bush Fire Protection – 2019 (PBP) is applicable to development located on land determined as being 'bushfire prone' in accordance with the local Bushfire Prone Land Map.

Bushfire prone land are defined as those areas;

- containing or within 100m of Category 1 Vegetation; or
- containing or within 30m of Category 2 or 3 Vegetation.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing Category 1 Vegetation and the associated 100 metre buffer zone therefore the application of PBP must apply in this instance.

The application of Planning for Bush Fire Protection requires satisfactory demonstration of the aim and objectives and the following bushfire protection measures (BPMs):

- Asset Protection Zones
- Building construction, siting & design
- Access arrangements
- Water supply & utilities
- Emergency management arrangements
- Landscaping

As the proposal relates to the construction of a new dwelling within an existing allotment the proposal must comply with the bushfire protection measures detailed within aim & objectives and Chapter 7 'Residential Infill Development' of PBP.

7.02 Asset Protection Zones

The vegetation identified as being the potential bushfire hazard is located to the north, south and east within the subject property and neighbouring properties.

The available Asset Protection Zones were measured to be 23 metres to the north and northeast and 13 metres to the east.

The vegetation to the southeast of the proposed dwelling within the subject property is a listed Endangered Ecological Community and has a 20 metre buffer zone which restricts the proposed eastern APZ.

The proposed APZ are to be maintained in accordance with an Inner Protection Area (IPA) as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

The pool and surrounds are located within the APZ of the dwelling and will need to be constructed entirely from non-combustible materials.

7.03 Building construction, siting & design

Australian Standard 3959 – 2018 'Construction of buildings in bushfire-prone areas' (AS3959) specifies construction standards for buildings within various Bushfire Attack Levels as determined by Planning for Bush Fire Protection – 2019.

AS3959 provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ.

Bushfire Attack Level	Maximum radiant heat impact (kW/m²)	Level of construction under AS3959-2018	
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	

Table 01: Correlation between bushfire impact and AS3959

The highest Bushfire Attack Level to the proposed dwelling was determined from Table A1.12.5 of PBP19 to be 'BAL FZ'. The proposed southern building module is required to comply with section 3 and BAL FZ section 9 under AS 3959 – 2018 and the additional construction requirements under section 7.5 of PBP.

The proposed pool and surrounds are situated within the APZ for the dwelling and will need to be constructed from non-combustible.

7.04 Property Access

The subject property has street access to Lady Penrhyn Drive to the west. Persons seeking to egress from the subject property are able to do so via the proposed access drive and public roads.

The most distant external point of the proposed footprint is <70 metres from a public road supporting the operational use of fire fighting vehicles and therefore the Access requirements detailed in Table 7.4a of PBP are not applicable.

Fire services will have free pedestrian access around the building footprint. Attending fire crews can access the hazard via Willandra Road, Lady Penrhyn Drive and neighbouring private allotments for hazard reduction or fire suppression activities.

The access provisions are considered adequate for of fire services.

7.05 Water Supply & Utilities

The proposed dwelling will be connected to the existing towns water main in Lady Penrhyn Drive for its domestic supply. There are existing hydrants available along Lady Penrhyn Drive for the replenishment of attending fire services. The most distant external point of the building footprint is <90 metres from an operational hydrant satisfying the requirement of AS2419.1 – 2017 (Appendix E, Figure E7).

Regardless the proposed pool provides a Static Water Supply within the subject property.

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

The proposed dwelling will be connected to the existing electrical network.

Any new gas connections must comply with Table 7.4a of PBP.



Photograph 04: View of the hydrant adjacent the subject property

7.06 Emergency management arrangements

Evacuation is possible by utilising existing road infrastructure.

It is encouraged that the occupants complete a Bush Fire Survival Plan. The template for this plan is available at https://www.rfs.nsw.gov.au/resources/bush-fire-survival-plan.

7.07 Landscaping

Any new landscaping must comply with Section 3.7 'Landscaping' of *Planning for Bush Fire Protection* 2019.

7.08 Aim & Objectives of PBP

The following table details the aim and objectives of Planning for Bush Fire Protection 2019 and the proposals ability to comply.

Aim / Objective

Comment

The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment. With the inclusion of the recommendations made herein it is of our opinion that the aim of PBP has been satisfied.

(i) afford buildings and their occupants protection from exposure to a bush fire;

The proposed works will be constructed to BAL FZ under AS3959 – 2018, being the relevant Bushfire Attack Level.

(ii) provide for a defendable space to be located around buildings;

The proposed APZs will provide a defendable space.

(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;

The proposed dwelling being constructed to the relevant Bushfire Attack Level will minimise potential material ignition.

(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;

The subject property has street frontage to Lady Penrhyn Drive.

(v) provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and

All grounds indicated as an APZ on the proposed site plan will be maintained in accordance with an Asset Protection Zone as detailed in Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service publication 'Standards for Asset Protection Zones'.

Any new landscaping is to comply with the provisions of Table 7.4a and Appendix 4 of PBP – 2019.

Aim / Objective

Comment

(vi) ensure that utility services are adequate to meet the needs of firefighters.

Hydrants are available throughout Lady Penrhyn Drive for the replenishment of fire service vehicles.

The most distant external point of the building footprint is <90 metres from an operational hydrant.

It is therefore of our opinion that the proposal can satisfactorily comply with the aim and objectives of Planning for Bush Fire Protection 2019.

8.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2019 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas - 2018. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. That all grounds indicated as an APZ on the proposed site plan prepared by Saturday Studio, Project No. 18016, Revision A, Dated 12/12/19 are 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 4 of *Planning for Bush Fire Protection* 2019. The outer 25 metres of the APZ to the south may be managed as an Outer Protection Area (OPA) in accordance with Table A1.12.4 of PBP.

Construction

- 2. That all new construction shall comply with Australian Standard AS3959-2018 "Construction of buildings in bush fire-prone areas" Sections 3 & 9 (BAL FZ) & Section 7.5 of *Planning for Bushfire Protection 2019*.
- 3. That the proposed pool and surrounds are constructed entirely from non-combustible materials.

Landscaping

4. That any new landscaping is to comply with Section 3.7 'Landscaping' under *Planning for Bush Fire Protection* 2019.

Emergency management

5. That the occupants of the subject dwelling complete a Bush Fire Survival Plan.

9.0 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 – 2019 and of the construction requirements of AS3959 – 2018. 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 Lady Penrhyn Drive to the southwest, abuts private neighbouring allotments to the south and vegetated allotments to the north and east. The vegetation identified as being the potential bushfire hazard is located to the north, south and east within the subject property and neighbouring properties. For the purpose of assessment the vegetation posing a bushfire hazard to all aspects was determined to be Tall Heath.

The highest Bushfire Attack Level to the proposed dwelling was determined from Table A1.12.5 of PBP to be 'BAL FZ'. The proposed southern building module is required to comply with section 3 and BAL FZ section 9 under AS 3959 – 2018 and the additional construction requirements under section 7.5 of PBP.

The proposed pool and surrounds are situated within the APZ for the dwelling and will need to be constructed from non-combustible.

The existing water supply and proposed access provisions 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.

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

Reviewed and endorsed by Building Code & Bushfire Haz

Building Code & Bushfire Hazard Solutions P/L

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

10.0 Annexure 01

List of Referenced Documents

Australian Building Codes Board (2019). National Construction Code Volume Two - Building Code of Australia. ABCB

ELVIS -Elevation -*Foundation Spatial Data*. Elevation.fsdf.org.au. Available at: http://elevation.fsdf.org.au/

Keith, D. (2004). "Ocean Shores to Desert Dunes" Department of Environment and Conservation, Sydney

NSW Department of Planning and Environment (2019). *Planning Portal*. Accessed at: https://www.planningportal.nsw.gov.au/

NSW Rural Fire Service (2019). *Planning for Bush Fire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*.

Rural Fire Service NSW (2005). Standards for Asset Protection Zones

Site Plan prepared by Saturday Studio, Project No. 18016, Revision A, Dated 12/12/19

Standards Australia (2018). AS3959 Construction of buildings in bushfire-prone areas.

Standards Australia (2014). AS/NZS 1596 The storage and handling of LP Gas

Acknowledgements to:

Geoscience Australia NSW Department of Lands – SIXMaps Google.com.au/maps Nearmap.com

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:	70A Willandra Road, Oxford Falls		
DESCRIPTION OF PROPOSAL:	Sole Occupancy Dwelling		
PLAN REFERENCE: (relied upon in report preparation)	Site Plan prepared by Saturday Studio, Project No. 18016, Revision A, Dated 12/12/19		
BAL RATING:	BAL FZ		
BUSHFIRE ASSESSMENT REPORT REFERENCE:	181164B		
REPORT DATE	30 th November 2021		
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 Bush Fire Protection 2019*.

Signature: ______ Date: 30th November 2021

