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BUSHFIRE
CONSULTING
SERVICES PTY LTD

Designing Bushfire Protection Measures

Reference: J24/0070

Date of Issue: 15 March 2024

Revision 6 dated 18 December 2024

2024

Bush Fire Assessment Report

in relation to the proposed
part demolition and rebuild of school facilities

At: 91 Sparks Road Woongarrah
Lot 71 DP 1258149

(subject site)



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Document Tracking

Item	Detail
Project Name	Bush Fire Assessment Report, proposed part demolition and rebuild of school facilities
Project Address	Lot 71 DP 1258149, 91 Sparks Road Woongarah
Client Name	Stanton Dahl Architects on behalf of Catholic Schools Broken Bay
Project Number	J24/0070
Plan Reference	Plans by Stanton Dahl Architects numbered 2826.22 revision P11 dated 19/06/2024
Prepared by	Laura Richards
Approved by	Catherine Gorrie
BAL under AS3959-2018	<10kW/m ² of anticipated radiant heat has been demonstrated and BAL 19 applies due to PBP 2022 requirements and exemption request from Access requirements of PBP 2022 is requested

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Document Control

Version	Primary Author	Description	Date Completed
1	Laura Richards	Draft	1/03/2024
2	Catherine Gorrie	Final	15/03/2024
3	Catherine Gorrie	Final- plan revision	25/06/2024
4	Catherine Gorrie	Final- Minor update	17/07/2024
5	Catherine Gorrie	Final- Respond to RFS RFI	15/11/2024
6	Catherine Gorrie	Final- minor revisions	18/12/2024

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Disclaimer

Any recommendation or advice expressed in this report is made in good faith and in accordance with the relevant legislation for bushfire prone development in New South Wales. Bushfire Consulting Services Pty Ltd has endeavoured to ensure that the information in this document is correct. However, many factors outside our current knowledge or control affect the recipient's needs and project plans. Bushfire Consulting Services Pty Ltd does not warrant or represent that the document is free from error or omissions and does not accept liability for any errors or omissions. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. To the fullest extent possible Bushfire Consulting Services Pty Ltd excludes any express or implied warranty as to condition, fitness, merchantability or suitability of this document and limits its liability for direct or consequential loss at Bushfire Consulting Services Pty Ltd option to re-supplying the document or the cost of correcting the document. In no event shall Bushfire Consulting Services Pty Ltd responses to questions or any other information in this document be deemed to be incorporated into any legally binding agreement without the express written consent of an officer of Bushfire Consulting Services Pty Ltd.

It should be borne in mind that the measures recommended in this report cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the degree of vegetation management, the unpredictable behaviour of bushfires and extreme weather conditions. As such, the author is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to the person taking action or not taking action based on the recommendations of this report.

NOTE: *This bush fire assessment shall remain valid for 12 months from the date of issue.*

Executive Summary

Bushfire Consulting Services was commissioned by Stanton Dahl Architects on behalf of Catholic Schools Broken Bay to provide a bush fire assessment for the part demolition and rebuild of school facilities at Lot 71 DP 1258149, 91 Sparks Road Woongarah. The subject site is mapped as designated bush fire prone land by Central Coast Council, and is located within 100m of bush fire prone (hazardous) vegetation.

The proposal is a form of Special Fire Protection Purpose, which is a development that is occupied by people who are considered to be at-risk members of the community. In a bush fire event, these occupants may be more susceptible to the impacts of bush fire. Under the *Rural Fires (RF) Act* section 100B (s.100B), a Bush Fire Safety Authority (BFSA) from the NSW RFS is required for SFPP development.

The maximum radiant heat level of 10kW/m² has been demonstrated, and a bush fire attack level (BAL) associated with the development of the subject building is recommended to be BAL 19.

It is requested that provision be made within the Bush Fire Safety Authority to be issued by the NSW RFS to grant an exemption from the Vehicular Access requirements of PBP 2022 as this report demonstrates compliance with the Vehicular Access provisions of PBP 2019.

The initial version of this report was founded on the expectation that the subdivision located to the northwest across Mataram Road would remove the hazard from within the Study Area. However, a *Request for Further Information* was received from the NSW Rural Fire Service dated 9/10/2024 stating that the proposal was considered to be within bushfire prone land. Therefore this version of the report responds to the RFS letter by providing an assessment relative to the hazard that will be removed in the future.

This report makes recommendations in accordance with the tailored objectives for this development type, and at a minimum, addresses

- water provision
- emergency management
- access provisions

commensurate with occupancy levels, assessed level of risk and the characteristics of occupants. Where all recommendations are implemented, the report concludes that the proposal can comply with the objectives of Chapter 6 of the NSW RFS document '*Planning for Bush Fire Protection*'.

Compliance Summary

This Assessment has been Certified by: Catherine Gorrie BPAD-Level 3 Accredited Practitioner FPAA Cert No: BPAD20751	
Has the proposal demonstrated a maximum radiant heat level of 10kW/m ² ?	Yes
What is the recommended level of compliance with AS3959-2018?	<10kW/m ² of anticipated radiant heat has been demonstrated and BAL 19 applies due to PBP 2022 requirements
Can this proposal comply with AS 3959-2018?	Yes
Does this development comply with the specific aim and objectives of PBP?	Yes
Is referral to the NSW Rural Fire Service (RFS) required?	Yes, a BFSa is required, and it is requested that an exemption from Access PBP 2022 is granted

List of Abbreviations

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2018, <i>Construction of Buildings in Bushfire Prone Areas</i>
BAL	Bushfire Attack Level
BFSA	Bush Fire Safety Authority
BPAD	Bushfire Planning and Design (Accreditation Scheme)
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Central Coast Council
DA	Development Application
DEM	Digital Elevation Model
EP&A Act	<i>Environmental Planning and Assessment Act – 1979</i>
FDI	Fire Danger Index
FPAA	Fire Protection Association of Australia
IPA	Inner Protection Area
kW/m ²	Kilowatts per metre squared
LiDAR	Light Detection and Ranging
LPMA	Land & Property Management Authority
NCC	National Construction Code
PBP	<i>Planning for Bush Fire Protection 2019</i>
RF Act	<i>Rural Fires Act – 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SIX	Spatial Information Exchange
SWS	Static Water Supply

1. Introduction

This report has been commissioned by Stanton Dahl Architects on behalf of Catholic Schools Broken Bay to provide a bush fire assessment for the part demolition and rebuild of school facilities at Lot 71 DP1258149, 91 Sparks Road Woongarah.

The subject property is “bushfire prone land” as per the local Council bushfire prone land map (Figure 3) as defined by section 10.3 (s10.3) of the Environmental Planning & Assessment Act (EP&A) 1979 and therefore the requirements stipulated by legislation apply to any new development on the site.

Planning for Bush Fire Protection 2019 (Chapter 6) describes this type of development as “SFPP development” and therefore the requirements of s100B of the *RF Act* are applicable, and a BFSA is required to be issued by the NSW RFS. As such, an Integrated Development approval may be required under the *EP&A Act* s.4.46.

As an existing school facility, this report assesses the criteria of PBP 2019 and 2022 and National Construction Code (NCC) Part G5 Construction in bushfire prone areas Including Specification 43 so far as is possible, and requests exemptions where necessary. These exemptions, if granted, must be noted in the BFSA.

The bush fire assessment and recommendations are derived from the *RF Act*, the Rural Fire Service document *Planning for Bush Fire Protection 2019* and Australian Standard 3959-2018 ‘*Construction of Buildings in Bushfire Prone Areas*’.

2. Purpose of this Report

The purpose of this report is to provide the owners, the Consent Authority, the Certifier and the Rural Fire Service with a description of the proposed development as well as the vegetation type, slope and any other factors

influencing the likely bushfire behaviour, sufficient to show that the development will be protected from the likely bushfire threat as outlined in current legislation.

This assessment includes an analysis of the hazard, threat and subsequent risk to the development and provides recommendations that satisfy the aim and specific objectives of Chapter 6 of the NSW RFS document 'Planning for Bush Fire Protection' (PBP).

3. Location

The site is located and known as Lot 71 DP 1258149, 91 Sparks Road Woongarrah. The property is part of the Central Coast local government area.

Figure 1. Location Map. Source: LPMA SIX Viewer (NSW Government 2024a)



Site location outlined in red

Figure 2. Aerial Map. Source: Nearmap, Image Date 28/10/2024 and overlays by BFCs Pty Ltd

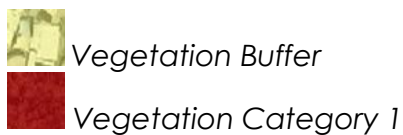


Site location outlined in red

Figure 3. Bushfire Prone Land Map. Source: NSW Government Planning Portal (NSW Government 2024b) Subject Site highlighted by BFCS P/L



Site location outlined in yellow – note that significant vegetation clearing has occurred since this map was made and therefore the map cannot be considered correct



4. Property Description

The property is comprised of Lot 71 DP 1258149, 91 Sparks Road Woongarah, covering approximately 9.392ha in area (Figure 2). It is bounded by Mataram Road to the approximate north, Mary Mackillop Drive to the approximate east, Sparks Road to the approximate south, and private allotments recently cleared of all vegetation due to a new subdivision to the approximate west. The subject site currently contains Mackillop Catholic College, to be partially demolished for the new development, and partially retained.

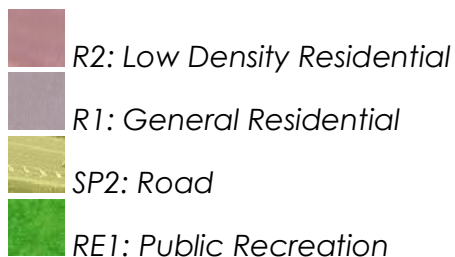
4.1 Zoning

The land is zoned R1: General Residential under Central Coast Local Environmental Plan 2022. Adjacent lands to the north, east and west are similarly zoned and adjacent lands to the south zoned SP2: Roads (Figure 4).

**Figure 4. Zoning Map. Source: NSW Government Planning Viewer
(NSW Government 2024b)**



Site location outlined in yellow



4.2 Biodiversity Values

A search of the NSW Office of Heritage and Environment and Heritage's Biodiversity Values Map (NSW Government 2024c) has been carried out and has not revealed any high biodiversity values on the land.

4.3 The Proposal

The proposal is for the part demolition of existing single storey General Learning Area (GLA) buildings and construction of 2 new two storey and 1 new 3 storey GLA buildings containing 28 new GLA's, amenities, storerooms, site works, infrastructure and play areas. Projected approximate increase in numbers of Staff from 138 to 170 and Students from 1599 to 1830.

5. Site Assessment

Bushfire Consulting Services Pty Ltd attended the site on 13 February 2024. The assessment relates to the new development shown in the site plans (reference Appendix 1 below). The NSW Spatial Services mapping website has also been used as a reference (NSW Government 2024a), and '*Ocean Shores to Desert Dunes*' by David Keith (Keith 2004), in determining the vegetation type.

6. Identify APZs

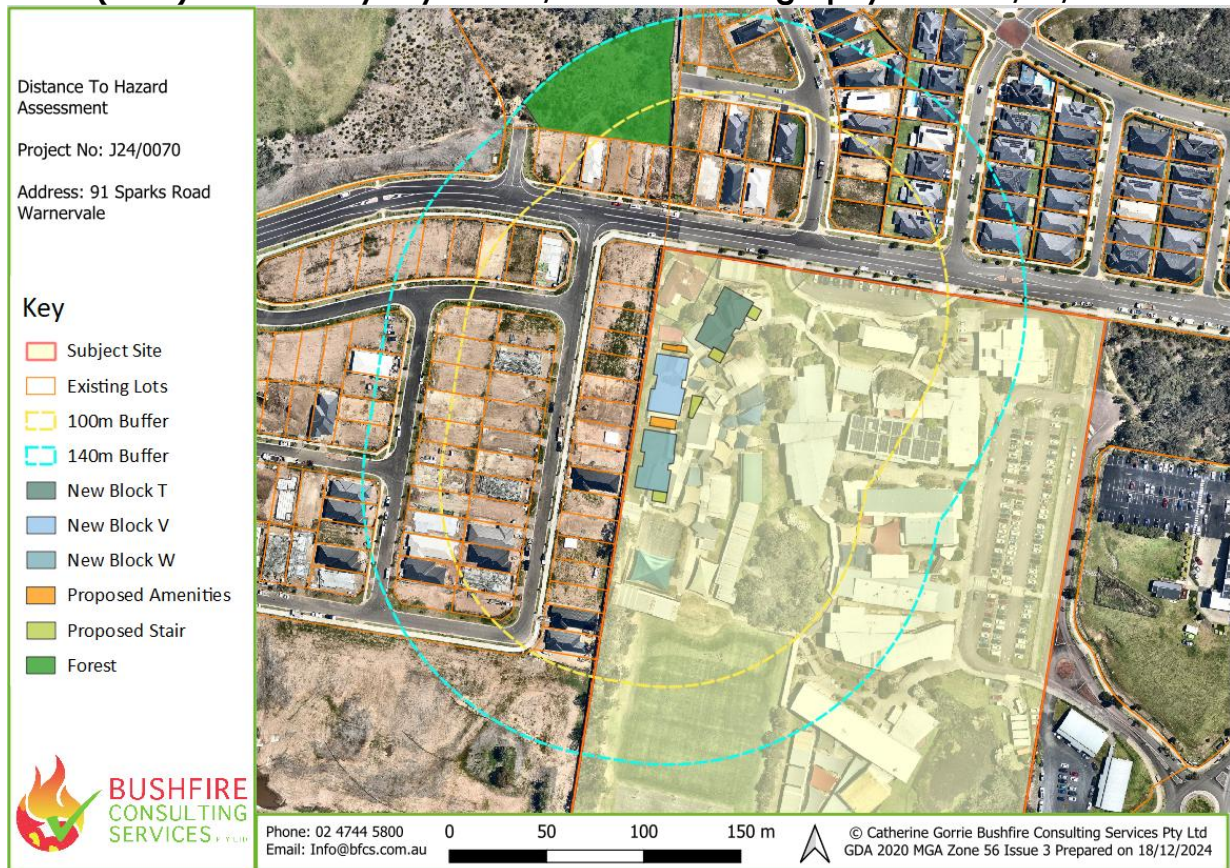
6.1 Determine Vegetation Formations

The hazardous vegetation formations for each aspect of the development within 140m of the asset have been identified according to Keith (2004). The bushfire threat emanates from bushland located to the northwest of the subject development. This vegetation is external to the subject site boundaries.

Apart from the hazard, within 140m of the site, lots contain existing residential and school developments with curtilages comprising lawns, shrubs and occasional trees, which do not constitute a hazard.

Based on a site visit and determination of vegetation formation using the Keith (2004) Identification Key, there is no classified vegetation having the potential to affect the subject buildings.

Figure 5. Hazardous vegetation affecting the subject building. Source: NearMap (2024) with overlays by BFCs P/L. Aerial Photography date: 28/10/2024



Subject site outlined in red. Vegetation was assessed to a distance of 140m from the subject building

6.2 The effective slope

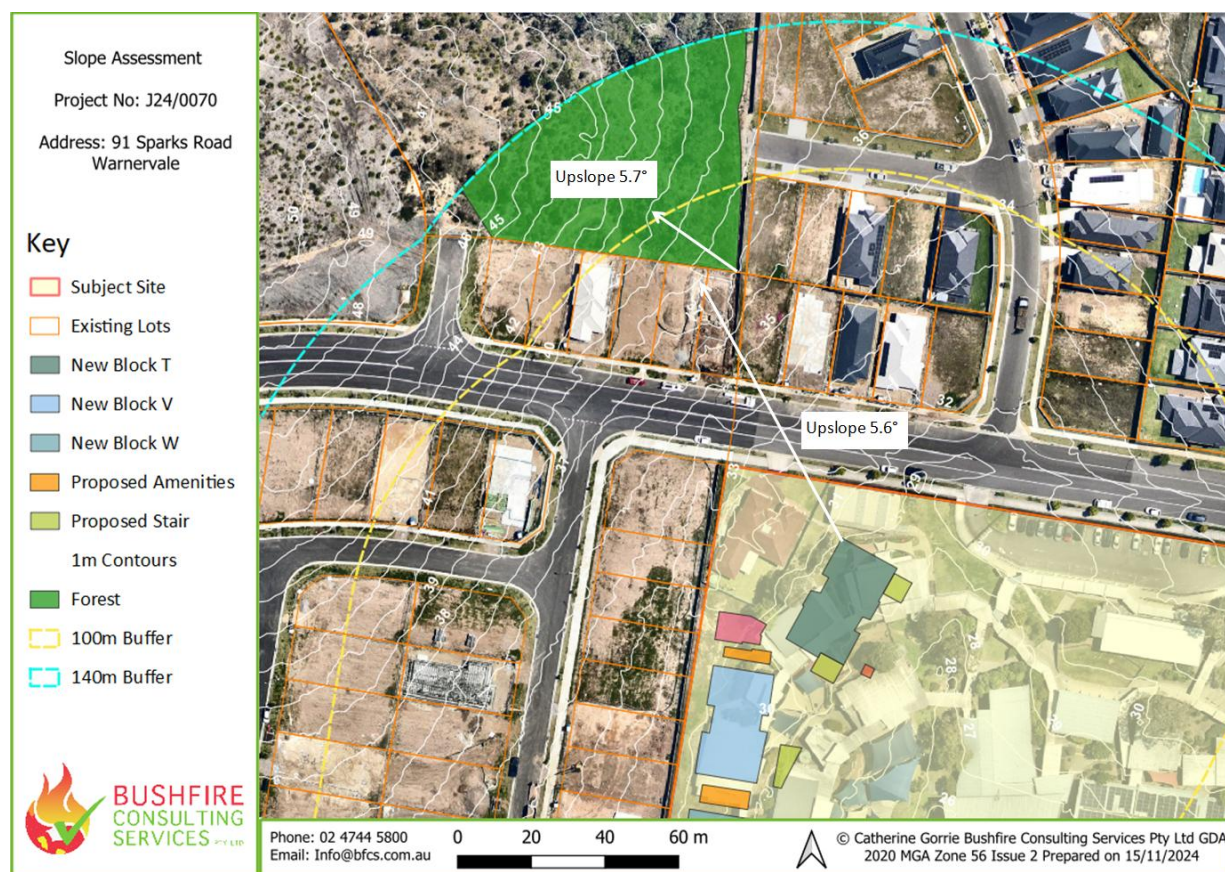
The slope of the land under the classified vegetation has a direct influence on the rate of fire spread, the intensity of the fire and the level of radiant heat flux. The effective slope of the land from the new building for a distance of 100m is derived from a site assessment combined with the most detailed contour data available. The slope is then categorised into one of following classes, relative to the location of the hazard:

- all upslope vegetation (considered 0 degrees)
- >0 to 5 degrees downslope vegetation
- >5 degrees to 10 degrees downslope vegetation
- >10 degrees to 15 degrees downslope vegetation, and
- >15 degrees to 20 degrees downslope vegetation.

1m DEM data is sourced from NSW Spatial Services which is captured using LiDAR and has a horizontal accuracy of 0.3m and vertical accuracy of 0.8m at 95%.

The effective slope has been measured manually on site over a distance of 100m from the proposed development where accessible, under the classified vegetation community constituting the hazard. The slope was found to be consistent with the topographical information from NSW Spatial Services LiDAR data.

Figure 6. Slope Diagram. Source: NearMap (2024) and LiDAR (NSW Government 202a) with overlays by BFCSS P/L: Aerial Photography Date: 28/10/2024



6.3 Fire Weather

The development is located in the Central Coast Council area, a part of the Greater Sydney Region, which has a Fire Danger Index of 100.

6.4 Determination of APZs

An Asset Protection Zone (APZ) is a fuel-reduced area surrounding a built asset or structure. An APZ provides a buffer zone between a bush fire hazard and an asset and an area of reduced bush fire fuel that allows suppression of fire. It also provides an area from which backburning or hazard reduction can be conducted, and allows emergency services access as well as providing a relatively safe area for firefighters to defend property.

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy. PBP has minimum specifications for APZs to be established around a SFPP development to be managed as an Inner Protection Area (IPA).

An IPA should provide a tree canopy cover of less than 15% and have minimal fine fuel at ground level, the grass mowed on a frequent basis, trees and shrubs retained as clumps or islands and do not take up more than 20% of the area, trees and shrubs located far enough from buildings so that they will not ignite the building, garden beds with flammable shrubs not located under trees, and are to be separated from exposed windows and doors by a distance of at least twice the height of the vegetation. Minimise plant species that keep dead material or drop large quantities of ground fuel, tree canopies are not located within 2 metres of the building, trees separated by 2-5 metres and do not provide a continuous canopy from the hazard to the building, and lower limbs of trees removed up to a height of 2 metres above the ground.

To identify the appropriate APZ, the relevant FFDI, vegetation formation, separation distances, effective slopes and site slopes have been used as inputs.

Minimum distances for APZs – SFPP development, FFDI 100 Areas ($\leq 10\text{kW/m}^2$, 1200K)

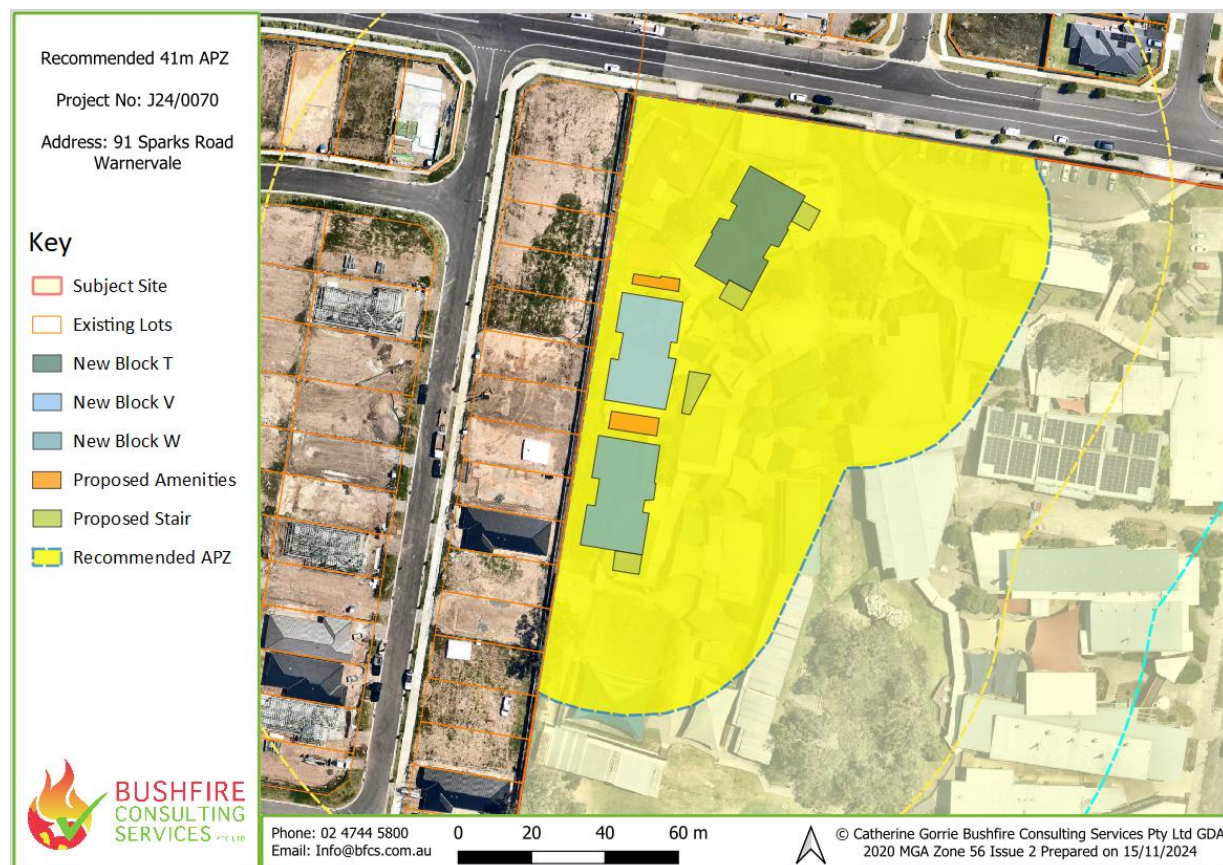
Aspect	Vegetation Classification	Slope Under Classified Vegetation	APZ required	APZ Available
Northwest	Forest (Hunter-Macleay Dry Sclerophyll Forests)	Upslope 5.7°	41m	78m

Site slope Upslope 5.6°

Calculated by AS3959-2018 Method 2 using the NBC Bushfire Attack Assessor v4.1

The minimum APZ is established to be 41m. The management of vegetation within the subject site is already consistent with an Asset Protection Zone and there is no modification of vegetation required or proposed for the purposes of an APZ. It is recommended that the site continue to be managed as an IPA APZ from the proposal to the boundary to the north and west and for a distance of 41m to the east around to the south.

Figure 7. APZ Diagram. Source: NearMap (2024) and LiDAR (NSW Government 202a) with overlays by BFCSS P/L: Aerial Photography Date: 28/10/2024



7. Bushfire Protection Measures

7.1 APZs and building construction

Intent of measures: to provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.

Performance Criteria	Acceptable Solutions
Radiant heat levels of greater than 10kW/m ² (calculated at 1200K) will not be experienced on any part of the building	The building is provided with an APZ in accordance with The Detailed Method of Determining the Bushfire Attack Level of AS3959 (Method 2, using 1200K, see above)
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are located on lands with a slope less than 18 degrees. The slope within the APZ is <5°
APZs are managed to prevent the spread of fire to the building	APZs are managed in accordance with PBP Appendix 4
APZs are provided in perpetuity	The APZ is wholly within the boundaries of the development site and within adjacent roadways and managed lands as permitted by PBP 3.2
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	landscaping is in accordance with Appendix 4

7.2 Identify Construction Requirements

Table 2 (PBP Addendum 2022): SFPP Development Construction Standards – Specific requirements for schools

Performance Criteria	Acceptable Solutions	Comment
The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact	A construction level of BAL-19 or greater under AS 3959 and section 7.5 of PBP is applied	Can Comply

7.3 Access

Table 3 (PBP Addendum 2022): SFPP Development Access – Specific requirements for schools

Performance Criteria	Acceptable Solutions	Comment
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	Vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building, have an unobstructed width of 6m, provide reasonable pedestrian access to the building	Exemption requested as Vehicular Access is existing to the north, east and off site to the south, and is otherwise limited by the existing building footprints on site The proposal cannot comply with the Access requirements of PBP Addendum 2022 However, it is demonstrated that access complies with Table 6.8b of PBP 2019 (see below)

Table 6.8b of *Planning for Bush Fire Protection 2019*

Performance Criteria	Acceptable Solutions	Comment
An adequate water supply for firefighting purposes is installed and maintained	Property access roads are two-wheel drive, all-weather roads	Can Comply
	The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating	Can Comply
	There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available	N/A as reticulated supply existing
	A minimum 4m carriageway width	Complies as road widths are a minimum of 4m wide
	In forest, woodland and heath situations, rural property access roads have passing bays every 200 metres that are 20 metres long by two metres wide, making a minimum trafficable width of six metres at the passing bay	N/A
	A minimum vertical clearance of four metres to any overhanging obstructions, including tree branches	Complies

Performance Criteria	Acceptable Solutions	Comment
	Property access provides a suitable turning area in accordance with Appendix 3 of PBP	Yes, existing Property Access allows for vehicles to enter and egress in a loop in a forwards direction
	Curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress	Complies
	The minimum distance between inner and outer curves is six metres	Complies
	The crossfall is not more than 10 degrees	Complies as near level
	Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads	Complies as near level
	There is appropriate access to water supply	Can comply as hydrants are existing and / or to comply with AS419.1:2021 Fire hydrant installations, Part 1: System design, installation and commissioning

7.4 Water Supply

Table 4 (PBP Addendum 2022): SFPP Development Water Supply – Specific requirements for schools

Performance Criteria	Acceptable Solutions	Comment
An adequate water supply for firefighting purposes is installed and maintained	Reticulated water is to be provided to the development, where available	Can Comply
	Water for firefighting purposes must be made available and consist of A fire hydrant system installed in accordance with AS2419.1	Can Comply

7.5 Electricity Services (PBP 2019)

Performance Criteria	Acceptable Solutions	Comment
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, and where overhead, electrical transmission lines are proposed as follows: Lines are installed with short pole spacing (30m), 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	Electricity is existing

Performance Criteria	Acceptable Solutions	Comment
	accordance with the specifications in ISSC3 <i>Guideline for Managing Vegetation Near Power Lines</i>	

7.6 Gas Services

Performance Criteria	Acceptable Solutions	Comment
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	Where applicable, 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 side, connections to and from gas cylinders are metal. if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any	The proposal does not include a new gas supply

Performance Criteria	Acceptable Solutions	Comment
	combustible material, so they do not act as a catalyst to combustion Polymer-sheathed flexible gas supply lines are not used, and above-ground gas service pipes are metal, including and up to any outlets.	

7.7 Emergency management planning

Intent of measures: to provide suitable emergency and evacuation arrangements for occupants of SFPP developments

Performance Criteria	Acceptable Solutions/Comment	Comment
A Bush Fire Emergency Management and Evacuation Plan is prepared	A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: The NSW RFS document: <i>A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i> and <i>NSW RFS Schools Program Guide</i> The Bush Fire Emergency Management and Evacuation Plan should	Can Comply

Performance Criteria	Acceptable Solutions/Comment	Comment
	include planning for the early relocation of occupants. Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development	
Appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan	An Emergency Planning Committee is established to consult with residents (and their families in the case of schools) and staff in developing and implementing an Emergency Procedures Manual; and detailed plans of all emergency assembly areas including on site and off-site arrangements as stated in AS 3745:2010 are	Can Comply

Performance Criteria	Acceptable Solutions/Comment	Comment
	clearly displayed, and an annual emergency evacuation is conducted	

8. Recommendations

The following recommendations are made for the bushfire measures for the proposed part demolition and rebuild of school facilities at Lot 71 DP 1258149, 91 Sparks Road Woongarra, and are based upon the relevant provisions of the NSW Rural Fire Service Guideline entitled Planning for Bush Fire Protection 2019 and Addendum 2022.

1. Issue of a Bushfire Safety Authority

Provide suitable wording within the Bush Fire Safety Authority to provide an Exemption to the requirements of PBP 2022- Access.

2. Asset Protection Zones

At the commencement of the development, and in perpetuity, the site shall continue to be managed as an Inner Protection Area (IPA) Asset Protection Zone (APZ) from the works to the boundary to the north and west and for a distance of 41m to the east and south, as outlined in PBP 2019 Appendix 4.

3. Landscaping

Landscaping within the APZ is to comply with the NSW RFS 'Asset protection zone standards' (PBP Appendix 4).

4. Hydrants

Hydrants are to be provided in accordance with *AS 2419.1:2021 Fire hydrant installations, Part 1: System design, installation and commissioning* and not be located in any road carriageway.

5. Emergency and Evacuation Planning

A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the:

- The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan;
- NSW RFS Schools Program Guide;

The Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants.

Note: A copy of the Bush Fire Emergency Management and Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development

6. Emergency Planning Committee

An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual, and detailed plans of all emergency assembly areas including on site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annual emergency evacuation is conducted.

9. Summary

This report consists of a bush fire assessment for the proposed SFPP development of the part demolition and rebuild of school facilities at Lot 71 DP 1258149, 91 Sparks Road Woongarra. The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development in bushfire prone areas are applicable.

This report has considered all the elements of bushfire attack and the development satisfies the aim, specific objectives, the intent and performance criteria of Chapter 6 of the NSW RFS document 'Planning for Bush Fire

Protection', and Addendum 2022, subject to implementation of the recommendations made by this report.

Notwithstanding 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 bushfire attack on every occasion.

This report is a bush fire assessment that provides the required information to assist local Council and the Rural Fire Service in determining compliance in accordance with Planning for Bush Fire Protection 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.



Catherine Gorrie



(a person who is recognised by the NSW Rural Fire Service as a suitably qualified consultant in bush fire risk assessment)

Accredited Bushfire Planning and Design Practitioner

Fire Protection Association Australia BPAD-Level 3 (BPAD 20751)

Grad Dip Bushfire Protection (UWS 2010)

Diploma Environmental Health & Building Surveying (TAFE 2005)

Corporate Silver Member Fire Protection Association Australia

Bushfire Consulting Services Pty Ltd

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10. References

Keith D 2004, *Ocean Shores to Desert Dunes, the Native Vegetation of NSW and the ACT*, Department of Environment and Conservation, Sydney

NearMap 2023, *NearMap Photomap Aerial Imagery*, NearMap Australia, Barrangaroo, NSW

NSW Government 2023a, *NSW Spatial Services*, NSW Department of Finance, Services and Innovation.

NSW Government 2023b, *NSW Planning Portal*, NSW Department of Planning and Environment.

NSW Government 2023c, *Biodiversity Values Map*, NSW Department of Environment and Heritage.

NSW RFS 2019, *Planning for Bush Fire Protection*, NSW Rural Fire Service, Sydney.

Standards Australia 2018, *Australian Standard AS 3959-2018 'Construction of Buildings in Bushfire Prone Areas'*, SAI Global, Australia.

11. Legislation

Environmental Planning & Assessment Act 1979

Rural Fires Act 1997

Rural Fires Regulation 2013

[illegible]

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Appendix 2 – Photos of Site and Surrounds

Source: BFCS P/L 13/02/2024



Subject site



Location of proposed works



Location of proposed works



Location of proposed works



Vegetation to the north, approximately 77m from the proposal, now removed

Appendix 3 - Modifications of section 7.5 of PBP

7.5 Additional construction requirements

To ensure the performance criteria for construction standards given in section 7.4 can be met, PBP adopts additional measures over and above AS 3959 and NASH Standard as follows:

- construction measures for ember protection at BAL-12.5 and BAL-19 provided by AS 3959
- construction measures for development in BAL-FZ; and
- requirements over and above the performance criteria contained within AS 1530.8.1 and AS 1530.8.2 apply in regards to flaming.

7.5.1 Ember protection

Based on the findings from the 2009 Victorian Bush Fires Royal Commission, PBP aims to maintain the safety levels previously provided by AS 3959:1999 in relation to ember protection at lower Bush Fire Attack Levels.

In particular, the areas addressed are in relation to:

- sarking;
- subfloor screening;
- floors;
- verandas, decks, steps, ramps and landings;
- timber support posts and beams; and
- fascias and bargeboards.

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.