

Bushfire Assessment Report

***Proposed:
School***

***At:
268 & 278 Catherine Fields
Road, Catherine Field***

Reference Number: 211505D

***Prepared For:
Minarah College***

21 March 2025



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Version Control				
Version	Date	Author	Reviewed by	Details
1	24/03/2022	Andrew Muirhead	Stuart McMonnies	Draft Report
2	05/04/2022	Andrew Muirhead		Final Report
3	01/05/2024	Andrew Muirhead	Stuart McMonnies	Plan Update
4	02/05/2024	Stuart McMonnies		Client Comments
5	21/03/2025	Andrew Muirhead		Plan Update

List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2018 as amended
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Camden Council
DA	Development Application
ELVIS	Elevation and Depth Foundation Spatial Data
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
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	<i>Planning for Bush Fire Protection – 2019 as amended</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

Executive Summary:

Building Code and Bushfire Hazard Solution P/L has been commissioned to prepare an independent Bushfire Assessment Report for the proposed educational establishment known as Minarah College at 268 and 278 Catherine Fields Road, Catherine Field.

The application seeks consent for the construction of a co-educational establishment (Minarah College) accommodating 980 students. The school will comprise of an Early Learning Centre (ELC) for 60 students, a School for Specific Purpose (SSP) for 30 students, a primary school accommodating 505 students and a high school for 385 students. The new school will be constructed in four stages, growing in line with growth in the local population.

In this instance the subject site is depicted on Camden Council's Bushfire Prone Land Map (BPLM) as containing designated Category 1 and 2 Vegetation and their associated buffer zones. The subject site is therefore considered 'bushfire prone'.

Schools are listed Special Fire Protection Purpose (SFPP) development under section 100B of the *Rural Fires Act 1997*.

SFPP development is assessed under Chapter 6 'Special Fire Protection Purpose Developments' of *Planning for Bush Fire Protection 2019* (PBP).

The minimum required APZs were determined from the Table A1.12.1 of PBP to be 42 metres to the north, northeast and east.

The proposed works were found to be located >42 metres from the bushfire hazard to the north and northeast and >100 metres to the east, achieving and in most instances exceeding the minimum required APZs.

The existing APZ consists of maintained grounds within the subject site and managed land within the northern neighbouring allotment (including dwelling, immediate curtilage and power lines).

The proposal has been designed as far from the identified hazards as possible and exceeds the minimum required APZs for new SFPP development.

The highest Bushfire Attack Level to the proposed building was determined from Table A1.12.5 of PBP to be 'BAL 12.5'.

In accordance with Table 2 of the addendum to PBP (and S43C10 NCC 2022) the building must comply with BAL 19 and subsequently comply with sections 3 and 6 of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018 and the additional construction requirements detailed in section 7.5 of PBP.

The proposal satisfies all relevant specifications and requirements of *Planning for Bush Fire Protection 2019* and the addendum to *Planning for Bush Fire Protection*.

1.0 Introduction

This Bush Fire Assessment Report has been prepared by Building Code and Bushfire Hazard Solution P/L on behalf of the Minarah College (**the Applicant**). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (**SSD-30759158**) for Minarah College at 268 and 278 Catherine Fields Road, Catherine Field (**the site**).

The modified application seeks consent for the construction of a co-educational establishment (Minarah College) accommodating 980 students. The school will comprise of an Early Learning Centre (ELC) for 60 students, a School for Specific Purpose (SSP) for 30 students, a primary school accommodating 505 students and a high school for 385 students. The new school will be constructed in four stages, growing in line with growth in the local population. Specifically, consent is sought for:

- Demolition of the existing dwellings and ancillary structures on-site;
- Bulk earthworks across the site;
- The construction of the following:
 - One-storey early learning centre.
 - Two-storey administration building, with attached outside school hours care (OSHC), and wellbeing room.
 - Two-storey primary school building comprising of primary school classrooms,
 - School for Specific Purpose classrooms,
 - Primary school hall;
 - Two-storey high school building comprising high school classrooms;
 - Two-storey high school hall;
 - Shared one-storey canteen adjoining the high school building; and
 - Shared library located on the second storey above the ELC and Food and Textiles building below.
- Site access from Catherine Fields Road at two points;
- Works within Catherine Fields Road to allow for a right-turn bay from Catherine Fields Road and bus bays on the eastern side of Catherine Fields Road;
- Removal of trees and replacement planting and landscaping;
- Associated site landscaping and public domain improvements; and
- On-site car park.

The development is to be constructed in four stages. The school will be operating at full capacity from stage 3. A breakdown of the student and staff numbers across each stage is as follows:

- Stage 1: 2026, 318 students (18 ELC, 290 School, 10, SSP), 15 FTE staff
- Stage 2: 2031, 652 students (42 ELC, 600 School, 10 SSP), 33 FTE Staff
- Stage 3, 2035, 980 students (60 ELC, 890 School, 30 SSP), 51 FTE Staff
- Stage 4, 2037, 980 students (60 ELC, 890 School, 30 SPP), 51 FTE Staff

The total student population at stage 3 will be 980 students, the staff population will total 45 FTE and 6 SSP staff.

The NSW Rural Fire Service (NSW RFS) have reviewed and issued eight (8) recommended conditions (RFS ref: DA20220629008877-Response to Submission-1, dated 6 April 2023) for the original application.

In this instance the subject site is depicted on Camden Council's Bushfire Prone Land Map (BPLM) as containing designated Category 1 and 2 Vegetation and their associated buffer zones. The subject site is therefore considered 'bushfire prone'.

In relation to this application item 22 of the issued Secretary's Environmental Assessment Requirements (SEARs) requires that if the development is on bush fire prone land, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection (PBP)*.

As the development is on bushfire prone land this report has been prepared to address the relevant specifications and requirements of PBP.

Schools are listed Special Fire Protection Purpose (SFPP) development under section 100B of the *Rural Fires Act 1997*.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979*. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

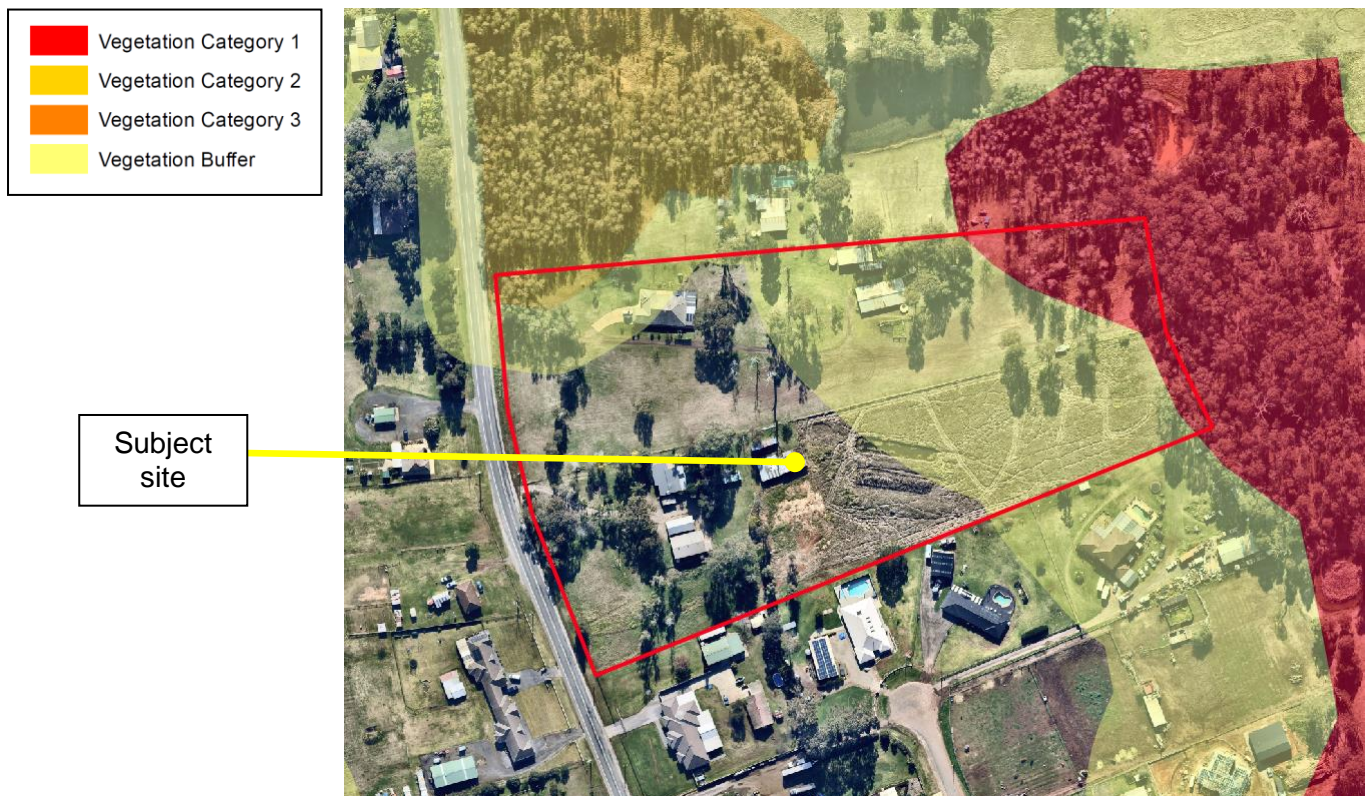


Figure 01: Extract from Camden Council's Bushfire Prone Land Map

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide the Rural Fire Service 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 the NSW Rural Fire Service may elect to place within any consent conditions.

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 project's compliance with *Planning for Bush Fire Protection – 2019*.

	North	Northeast	East	South & West
Vegetation Class	Forested Wetlands	Forested Wetlands	Woodland	Maintained Curtilages
Slope	0 - 5 degrees down	0 - 5 degrees down	0 degrees & up	N/A
Required Asset Protection Zone *	42 metres	42 metres	42 metres	N/A
Available Asset Protection Zone	>42 metres	>42 metres	>100 metres	N/A
Significant Landscape Features	Neighbouring allotments	Neighbouring allotments	Neighbouring allotments	Neighbouring allotments / Catherine Fields 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	BAL 12.5	BAL 12.5	BAL 12.5

* Determined from Table A1.12.1 of PBP

** Determined from Table A1.12.5 of PBP

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"/>	8.03
Construction Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03
Access	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8.03
Water Supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03
Gas and Electrical Supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.03

Asset Protection Zones Compliance

Asset Protection Zones for new Special Fire Protection Purpose (SFPP) development are determined from Table A1.12.1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10kW/m² at the closest point of the available building footprint.

The minimum required APZs were determined from the Table A1.12.1 of PBP to be 42 metres to the north, northeast and east.

The proposed works were found to be located >42 metres from the bushfire hazard to the north and northeast and >100 metres to the east, achieving and in most instances exceeding the minimum required APZs.

The existing APZ consists of maintained grounds within the subject site and managed land within the northern neighbouring allotment (including dwelling, immediate curtilage and power lines).

All grounds APZs within the subject site will be maintained in accordance with an Inner Protection Area as detailed in Appendix 4 of *Planning for Bush Fire Protection* 2019 and the NSW Rural Fire Service publication 'Standards for Asset Protection Zones'.

Construction Level Compliance

The highest Bushfire Attack Level to the proposed buildings was determined from Table A1.12.5 of PBP to be 'BAL 12.5'.

In accordance with Table 2 of the addendum to PBP (and S43C10 NCC 2022) the building must comply with BAL 19 and subsequently comply with sections 3 and 6 of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018 and the additional construction requirements detailed in section 7.5 of PBP.

5.0 Aerial view of the subject allotment

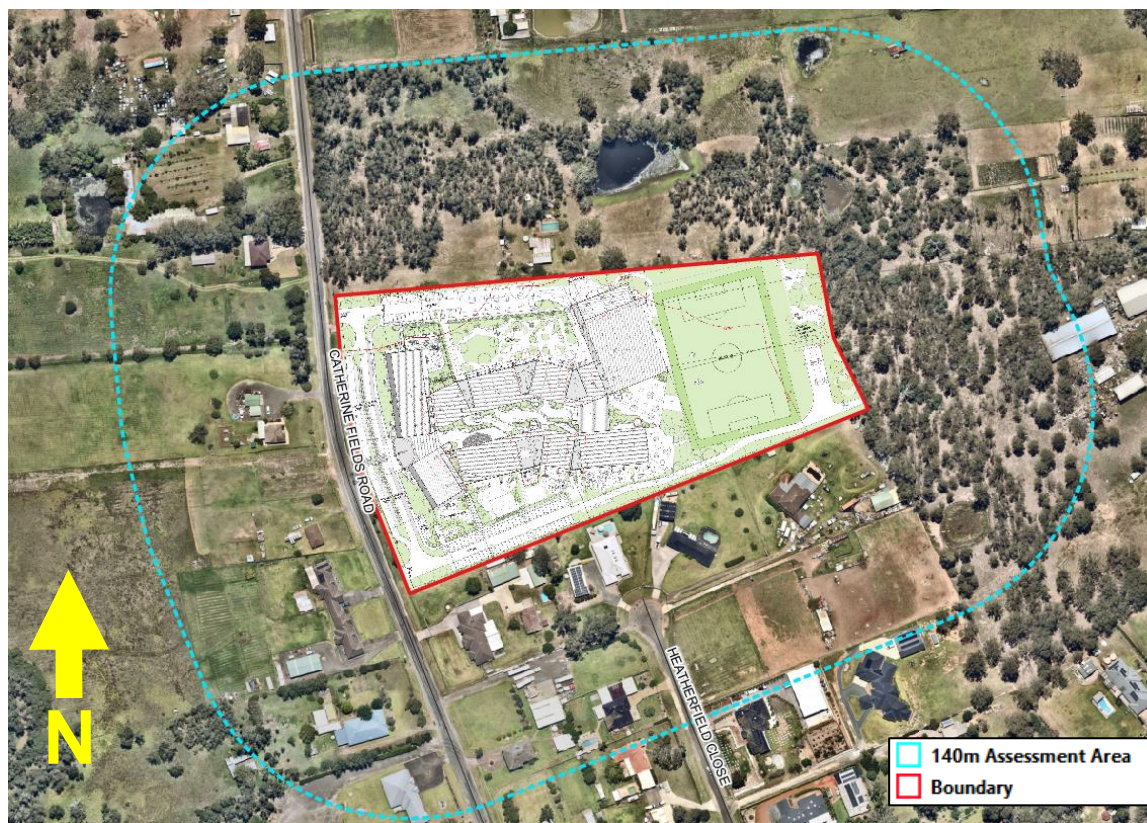


Figure 02: Aerial view of the subject site (thick red outline), site plan and surrounding area
Courtesy Nearmap

6.0 Bushfire Assessment

A detailed site inspection has been undertaken of the subject site by a representative of Building Code & Bushfire Hazard Solutions P/L on Monday 5th July 2021. In addition to the collected site data this assessment has relied on:

- Aerial imagery of the subject area (NSW Spatial Services & Nearmap);
- 1 metre contour mapping of the subject area (Elevation and Depth Foundation Spatial Data – Geoscience Australia)
- NSW Planning Portal Spatial Viewer
- Vegetation Mapping (Vegetation NSW)

6.01 Location

The subject site comprises of two (2) existing allotments known as 268 & 278 Catherine Fields Road, Catherine Field and legally identified as Lot 11 DP 833983 & 12 DP 833784 (the subject site).

The subject site is zoned RU4: Primary Production Small Lots and located within Camden Council's local government area.

The subject site has street frontage to Catherine Fields Road to the west and abuts similar allotments to the north and east and residential allotments to the south.



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

6.03 Vegetation

The vegetation structure, connectivity and attributes are fundamental contributors to bushfire behaviour and its movement through the landscape.

As part of this assessment, we have considered the potential bushfire runs that currently exist into the site.

In accordance with Appendix 1 'Site Assessment Methodology' of PBP we have undertaken an assessment of all vegetation formations within 140 metres of the development site for each aspect as per Keith (2004).

The vegetation posing a hazard to the north and northeast within the 140 metre assessment area was found to comprise of River-flat Eucalypt Forest and to the east Cumberland Plain Woodland.

For the purpose of assessment we have assessed the vegetation to the north and northeast to be Forested Wetland and Woodland to the east.

The identified bushfire hazards are fragmented from other hazards in the broader landscape and provide limited opportunity to develop into a fully developed fire. Regardless the proposal does not seek the application of any concessions (SFR modelling) and applies the deemed-to-satisfy APZs for fully developed fire.

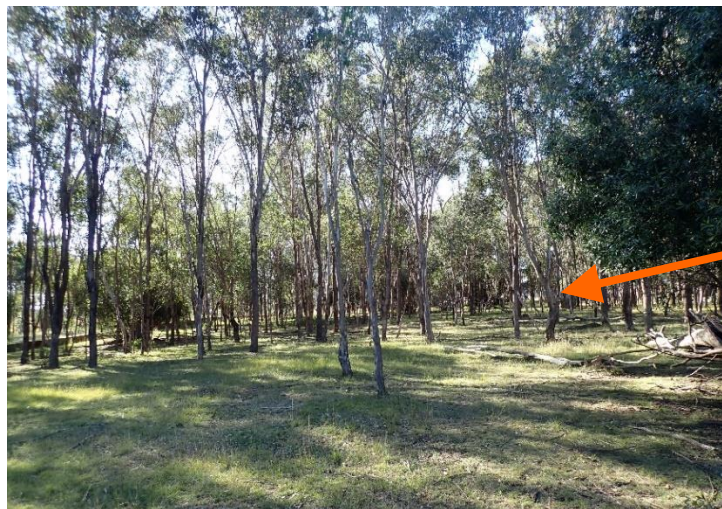


Figure 04: Extract from NARLA environmental showing the vegetation mapping within the site



Forested
Wetlands

Photograph 01: View into the vegetation to the north of the subject property



Woodland

Photograph 02: View into the vegetation to the east of the subject property

6.04 Slope and Topography

The slope of the land under the classified vegetation has a direct influence on the forward rate of spread, fire intensity and radiant heat exposure. The effective slope is considered to be the slope under the classified vegetation which will most significantly influence bushfire behaviour toward the development site.

In accordance with A1.4 'Determine slope' of PBP the slope assessment is to be derived from the most detailed contour data available.

The slope that would most significantly influence bushfire behaviour was determined from topographic imagery (1 metre contours) in conjunction with site observations to be:

- 0 - 5 degrees down slope within the hazard to the north and northeast
- 0 degrees and up slope within the hazard to the east



Figure 05: 1 metre LiDar contours of the subject area

6.04 Fire Weather

All development which attracts an Asset Protection Zone under PBP requires the identification of the relevant Fire Danger Index (FDI). The FDI required to be used for development assessment purposes is based on the local government boundaries, being Camden Council in this instance.

In accordance with the NSW Rural Fire Service publication 'NSW Local Government Areas FDI' (2017) Camden Council form part of the Greater Sydney Region Fire Weather District and attracts an FFDI of 100.

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.*

In this instance the subject site is depicted on Camden Council's Bushfire Prone Land Map (BPLM) as containing designated Category 1 and 2 Vegetation and their associated buffer zones. The subject site is therefore considered 'bushfire prone'.

In relation to this application item 22 of the issued Secretary's Environmental Assessment Requirements (SEARs) requires that if the development is on bush fire prone land, a bush fire assessment is to be provided that details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection* (PBP).

As the development is on bushfire prone land this report has been prepared to address the relevant specifications and requirements of PBP.

Schools are a listed Special Fire Protection Purpose (SFPP) development under section 100b (6 (a)) of the *Rural Fires Act 1997*.

The application of PBP requires satisfactory demonstration of the aim and objectives and the specific objectives and bushfire protection measures relevant to the type of development.

In this instance the proposal must satisfy the aim and objectives detailed in Chapter 1 'Introduction' and specific objectives and bushfire protection measures detailed in Chapter 6 'Special Fire Protection Purpose Developments' of PBP.

7.02 Specific Objectives

The following table lists the specific objectives for Special Fire Protection Purpose development in accordance with section 6.2 of PBP applicable to the proposal and our comments on compliance or otherwise.

Specific Objective	Comment
<i>minimise levels of radiant heat, localised smoke and ember attack through increased APZ, building design and siting;</i>	The highest radiant heat to the proposed school buildings is 10kW/m ² . Fire services will have comprehensive access available around the proposed buildings utilising the proposed internal roads, which will have hydrant points available at regular intervals.
<i>provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;</i>	The subject site has street frontage to Catherine Fields Road to the west. The proposal also provides managed land and good operational space around the proposed buildings. The existing APZs and road network provides an appropriate operational environment for emergency services.

Specific Objective	Comment
<i>ensure the capacity of existing infrastructure (such as roads and utilities) can accommodate the increase in demand during emergencies as a result of the development; and</i>	<p>The surrounding public roads provide existing carriageways in excess of the requirements for Perimeter Roads as described in Table 6.8b of PBP.</p> <p>The new proposed access and carpark will provide greater access to the site with sufficient turning from Catherine Fields Road.</p> <p>The external utility providers have systems in place to cater for increased demand as necessary.</p>
<i>ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.</i>	<p>This assessment includes a recommendation that a Bushfire Emergency Management Plan be prepared.</p>

7.03 Bushfire Protection Measures

Section 6.8 'Bush fire protection measures' of PBP outlines the specific Bushfire Protection Measures (BPMs) applicable to Special Fire Protection Purpose development, including APZs, Landscaping, Construction, Access, Services & Emergency Management Plan.

The following section addresses each BMP and the proposals compliance or otherwise.

Asset Protection Zones

Asset Protection Zones for new Special Fire Protection Purpose (SFPP) development are determined from Table A1.12.1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10kW/m² at the closest point of the available building footprint.

The minimum required APZs were determined from the Table A1.12.1 of PBP to be 42 metres to the metres to the north, northeast and east.

The proposed works were found to be located >42 metres from the bushfire hazard to the north and northeast and >100 metres to the east, achieving and in most instances exceeding the minimum required APZs.

The existing APZ consists of maintained grounds within the subject site and managed land within the northern neighbouring allotment (including dwelling, immediate curtilage and power lines).

All grounds APZs within the subject site will be maintained in accordance with an Inner Protection Area as detailed in Appendix 4 of *Planning for Bush Fire Protection 2019* and the NSW Rural Fire Service publication 'Standards for Asset Protection Zones'.

The Asset Protection Zones have been determined in accordance with Planning for Bush Fire Protection as set out in NSW S43C2 NCC 2022.

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.

Correlation between bushfire impact and AS3959		
Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2018
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	>12.5 to 19.0	BAL - 19
29	>19.0 to 29.0	BAL - 29
40	>29.0 to 40.0	BAL - 40
Flame Zone	>40.0	BAL FZ No deemed to satisfy provisions

The highest Bushfire Attack Level to the proposed buildings was determined from Table A1.12.5 of PBP to be ‘BAL 12.5’.

In accordance with Table 2 of the addendum to PBP (and S43C10 NCC 2022) the building must comply with BAL 19 and subsequently comply with sections 3 and 6 of Australian Standard 3959 ‘Construction of buildings in bushfire-prone areas’ 2018 and the additional construction requirements detailed in section 7.5 of PBP.

The NSW RFS has included a closing statement in their submission, dated 6 April 2023 , being an item for further consideration of the consent authority. This item states:

BAL 12.5 construction will need to be applied to the Staff & Admin building in its current location, where noncertified land within 100m west of the building is reasonably expected to involve revegetation as part of future precinct planning and development. Please note the Applicant's response to submissions opposes this approach; however, the consent authority will need to determine its suitability.

There is a fundamental objection to applying additional bushfire protection measures based on potential future land zoning and presuming future revegetation / reinstatement within 100 metres of a building.

It is understood that precinct planning for this area is some time away and subsequently there is no reasonable way to established future land zoning.

It is consequently the applicant’s position that the assessment should be based off the assessment framework outlined in *Planning for Bush Fire Protection 2019*, including consideration of current and any published draft land zoning, and not from assumptions of potential future land zoning.

It is subsequently requested that the closing statement be deleted.

Property Access

Access to the subject property is available Catherine Fields Road to the west.

Persons seeking to egress the proposed building are able to do so via internal paths and existing public road and proposed access infrastructure.

The Acceptable Solution listed in Table 3 of the addendum to PBP requires the provision of a 6 metre wide unobstructed path around the subject building.

Compliance with Table 3 of the addendum to PBP is being addressed by satisfying the Performance Criteria, being;

Firefighting vehicles are provided safe, all-weather access to structures and hazardous vegetation.

It is proposed to provide a service road to the rear of the site with suitable turning provisions for fire appliances and buses. A fire hydrant is also proposed at the location of the turning area for the replenishment of attending fire services.

While it is acknowledged that through roads are the preferred design option this cannot be achieved in this instance and in consideration of the nature and isolation of the hazards is not warranted in my opinion.

The proposed access arrangements include a 4 metre wide access road (all weather surface, with capacity to carry a fully loaded fire-fighting vehicle) and passing bay, which will facilitate fire services access to the rear of the site for hazard reduction or fire suppression activities. This access road will exclusively be used for maintenance, buses (for sporting events) and emergency services – with no regular day-to-day use.

The turning point at the end of this access road provides a logical fire-fighting platform for multiple appliances, with a water supply available (hydrant point), attending fire services have the ability to deploy lines to the north eastern portion of the site (<70m distance).

In addition, fire services will have comprehensive access available around the proposed buildings utilising the proposed internal roads, which will have hydrant points available at regular intervals.

It is recommended that the Bush Fire Emergency Management and Evacuation Plan be prepared in accordance with the NSW Rural Fire Service guidelines for emergency management plans.

We request that the NSW RFS specifically acknowledge this modification in the issued Bush Fire Safety Authority in accordance with NSW G5D3 NCC 2022.

The access is considered adequate for occupant evacuation and fire service access.

Water Supply & Utilities

The site will be connected to the reticulated town's water main for its commercial needs. Existing in ground hydrants are available along Catherine Fields Road and surrounding streets for the replenishment of attending fire services.

The existing hydrant network will be extended into the site to service the new buildings.

The hydrant spacing, design, sizing, flows and pressures must comply with AS2419.1-2005. Hydrants are not permitted within the carriageway of any road.

The acceptable solution in Table 4 of the addendum to PBP states:

Reticulated water is to be provided to the development, where available; and Water for firefighting purposes must be made available and consist of –

- *A fire hydrant system installed in accordance with AS2419.1;*

The proposed water supply are considered adequate for the replenishment of attending fire services and where it is confirmed it complies with AS2419.1 will meet the requirements of NSW S43C11 NCC 2022.

The proposed building will have a new connection to the existing underground electrical network.

Emergency management arrangements

The intent of the Emergency Management Plan measure is to provide suitable emergency and evacuation arrangements for occupants of SFPP developments.

This assessment includes a recommendation that the existing Bushfire Emergency Management Plan for the School be updated to capture the new building.

7.04 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 building works are within a 10kW/m ² area and the proposed classroom buildings will be built to BAL 19 in accordance with the addendum to PBP. The existing APZs will afford the building and its occupants protection from the exposure to bushfires.
(ii) provide for a defensible space to be located around buildings;	The existing APZs provide a defensible space around the building.

Objective	Comment
(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;	The Asset Protection Zones to the proposed building works provides for appropriate setbacks and minimises potential material ignition.
(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;	The proposed access arrangements have been reviewed and are considered adequate for fire-fighter access and occupant evacuation.
(v) provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and	<p>All APZs within the subject site will be maintained in accordance with an Inner Protection Area as detailed in Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service publication 'Standards for Asset Protection Zones'.</p> <p>Any future Landscaping is to comply with the provisions of Appendix 4 of PBP.</p>
(vi) ensure that utility services are adequate to meet the needs of firefighters.	<p>Existing in ground hydrants are available along Catherine Fields Road and surrounding streets for the replenishment of attending fire services.</p> <p>The existing hydrant network will be extended into the site to service the proposed buildings.</p>

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

7.05 Submission Detail

Section 45 of the *Rural Fires Regulation 2022* identifies various items which must be addressed and included within an application for a Bush Fire Safety Authority. The following table outlines these items and includes a corresponding response.

Submission Detail	Response
<i>(a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out,</i>	See section 7.01
<i>(b) a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection,</i>	See section 7.02
<i>(c) an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property),</i>	See section 7.03
<i>(d) identification of any significant environmental features on the property,</i>	River-flat Eucalypt Forest and Cumberland Plain Woodland
<i>(e) the details of any threatened species or threatened ecological community under the Biodiversity Conservation Act 2016 that is known to the applicant to exist on the property,</i>	River-flat Eucalypt Forest and Cumberland Plain Woodland.
<i>(f) the details and location of any Aboriginal object (within the meaning of the National Parks and Wildlife Act 1974) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property,</i>	No known sites
<i>(g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters—</i>	See section 8.0
<i>(i) the extent to which the development is to provide for setbacks, including asset protection zones,</i>	See section 8.03
<i>(ii) the siting and adequacy of water supplies for fire fighting,</i>	See section 8.03
<i>(iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,</i>	Egress is available from the subject building via existing public roads and internal roads away from the identified hazard. These roads are considered adequate to accommodate a timely evacuation from the site.

Submission Detail	Response
<i>(iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,</i>	There are no registered fire trails within the local area.
<i>(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,</i>	See section 8.03
<i>(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,</i>	See section 8.03
<i>(vii) the construction standards to be used for building elements in the development,</i>	See section 8.03
<i>(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,</i>	There is no existing bushfire sprinkler system, nor is one proposed. See section 8.03 for all bushfire protection measures
<i>(ix) any registered fire trails on the property,</i>	There are no classified fire trails within the subject site.

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.

Asset Protection Zones

1. At the commencement of building works and in perpetuity all grounds not built upon within the subject site be maintained as an 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 and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

Construction

2. That the proposed new building works shall comply with sections 3 and 6 (BAL 19) of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' – 2018.
3. That all new construction shall comply section 7.5 of *Planning for Bushfire Protection 2019*.

Emergency Management

4. That the bushfire emergency management and evacuation plan be prepared and to be consistent with the NSW Rural Fire Service guidelines.

Services (where applicable)

Electricity:

5. Any new electrical services must comply with the following:
 - 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 *ISSC3 Guideline for Management Vegetation Near Power Lines*.

Gas:

6. Any new gas services must comply with the following:
 - reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, 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 combustible material, so they do not act as a catalyst to combustion;
 - polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and
 - above-ground gas service pipes external to the building are metal, including and up to any outlets.

Water:

5. That the new internal hydrant system is to comply with the requirements detailed in Table 6.8c of *Planning fir Bush Fire Protection 2019*, specifically:
 - fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021;
 - fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.
 - all above-ground water service pipes external to the building are metal, including and up to any taps.
 - fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with the relevant clauses of AS 2441:2005 Installation of fire hose reels.

Access

6. That the proposed access arrangements are to comply with the Site Plan prepared by Tonkin Zulaikha Greeer Architects, project no 21019, dwg no A 003, Revision D, Date 24.06.2024.
7. That the proposed service trail to the rear of the subject site is to comply with the relevant requirements for a Category 1 Fire Trail as described in the NSW RFS publication 'NSW RFS Fire Trail Standards' and 'NSW Rural Fire Service Fire Trail Design Construction and Maintenance Manual'.

8. That the proposed internal roads shall comply with the Access requirements as detailed in Table 6.8b of PBP, specifically:
- SFPP access roads are two-wheel drive, all-weather roads;
 - access is provided to all structures;
 - traffic management devices are constructed to not prohibit access by emergency services vehicles;
 - one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.
 - 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.
 - hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
 - hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021; and
 - minimum 5.5m carriageway width kerb to kerb for two-way roads;
 - parking is provided outside of the carriageway width;
 - hydrants are located clear of parking areas;
 - curves of roads have a minimum inner radius of 6m;
 - the maximum grade road is 15 degrees and average grade of not more than 10 degrees;
 - the road crossfall does not exceed 3 degrees; and
 - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

NCC – Specification 43

- **We request that the NSW RFS specifically acknowledge that the access provisions at S43C14 are not applicable in the issued Bush Fire Safety Authority in accordance with NSW G5D3 NCC 2022.**

9.0 Conclusion

The development proposal relates to the construction and operation of new school at 268 & 278 Catherine Fields Road, Catherine Field.

This application is being assessed as a State Significant Development (SSD-30759158).

In this instance the site is depicted on Camden Council's Bushfire Prone Land Map (BPLM) as containing designated Category 1 and 2 Vegetation and their associated buffer zones. The site is therefore considered 'bushfire prone'.

In relation to this application item 22 of the issued Secretary's Environmental Assessment Requirements (SEARs) requires that if the development is on bush fire prone land, a bush fire assessment is to be provided that details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection* (PBP).

As the development is on bushfire prone land this report has assessed the proposal against the relevant specifications and requirements of PBP.

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.

It is of our opinion that the proposal can satisfy all relevant specifications and requirements of PBP.

We are therefore in support of the development.

Should you have any enquiries regarding this project please contact our office.

Prepared by
Building Code & Bushfire Hazard Solutions



Andrew Muirhead

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Graduate Diploma in Bushfire Protection WSU
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BPAD Accreditation No. BPAD9400



10.0 Annexure 01

List of Referenced Documents

Australian Building Codes Board (2022). *National Construction Code Volume One - 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 Bushfire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*.

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

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

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

Tonkin Zulaikha Greer Architects (2024), *Site Plan* (Drawing No A 003, Rev D, Date 24.06.2024)

Acknowledgements to:

Geoscience Australia
Nearmap
Street-directory.com.au

Attachments

NIL