

Bushfire Assessment Report

Proposed:
Alterations and Additions

At:
**Covenant Christian School,
Belrose**

Reference Number: 230862

30th May 2023



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Version Control				
Version	Date	Author	Reviewed by	Details
1	05/04/2023	Andrew Muirhead	Stuart McMonnies	Final Report
2	30/05/2023	Andrew Muirhead	Stuart McMonnies	NCC 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	Northern Beaches City 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 by Bow Goid Architects to prepare an independent Bushfire Assessment Report for the proposed alterations to a library staff room building within an existing educational establishment known as the Covenant Christian School, located at 212 Forest Way, Belrose NSW.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing the Vegetation Buffer therefore the subject site is considered 'bushfire prone'.

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.

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

The vegetation identified as being a possible bushfire impact to the proposed building is located to the north and west within neighbouring sites.

The proposed building will provide an Asset Protection Zones (APZs) of >77 metres to the north and >123 metres to the west, consisting of maintained grounds, existing buildings and hard surfaced areas within the subject property, maintained grounds within an adjoining property, Linden Avenue and Bundaleer Street.

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

The development proposal relates to alterations to a library staff room building within an existing educational establishment known as the Covenant Christian School, located at 212 Forest Way, Belrose NSW.

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing the Vegetation Buffer therefore the subject site is considered 'bushfire prone'.

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.

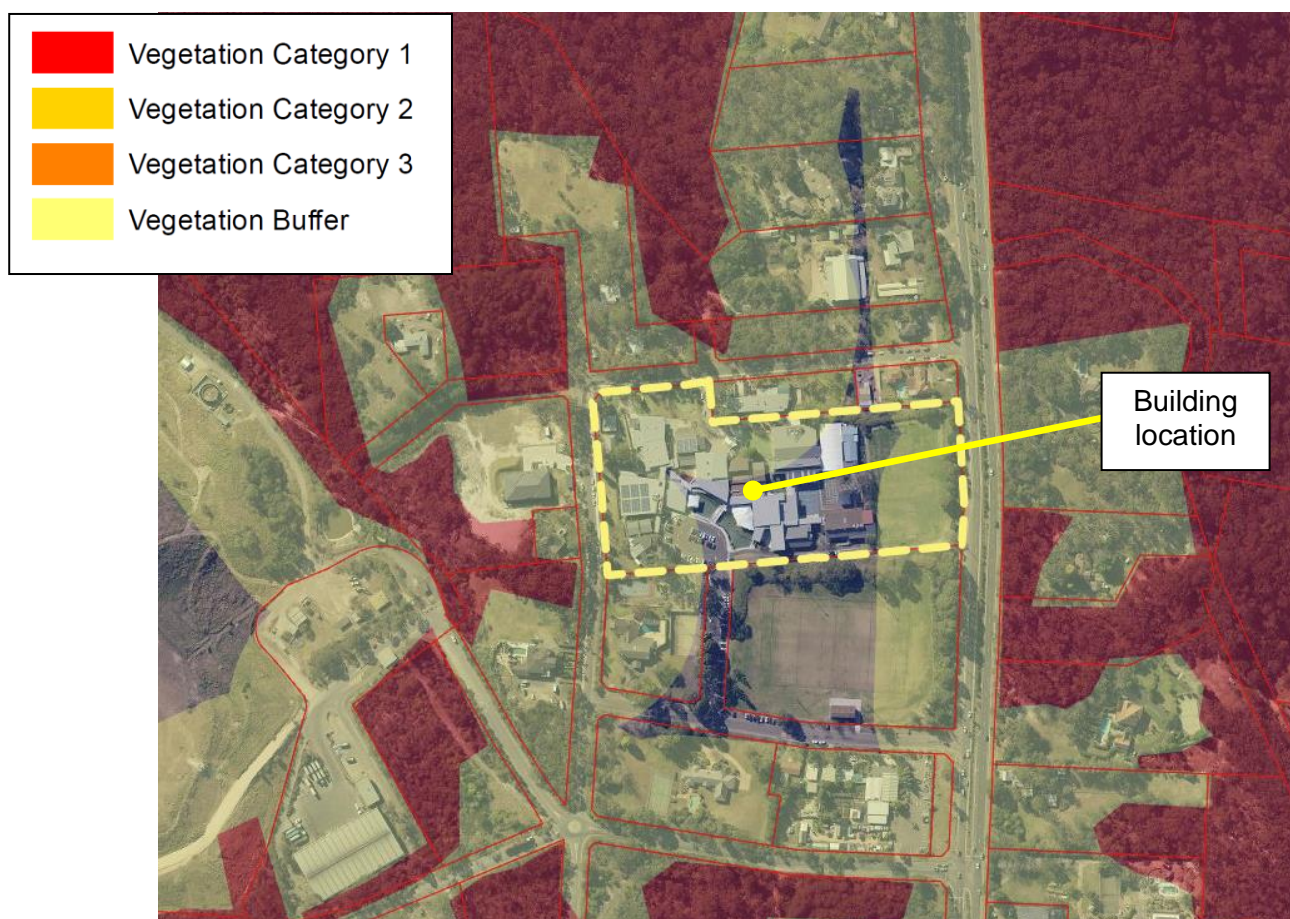


Figure 01: Extract from Northern Beaches Council's Bushfire Prone Land Map

2.0 Legislative Requirements

The site is subject to the following legislative provisions as it relates to bushfire planning and protection:

- *Environmental Planning & Assessment Act 1979*
- *Rural Fires Act 1997*
- *Rural Fires Regulation 2022*
- *Planning for Bush Fire Protection*

2.1 Rural Fires Act 1997

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

The development must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service (RFS).

2.2 Environmental Planning & Assessment Act 1979

Section 10.3 requires councils, where a Bush Fire Risk Management Plan applies, to record a bush fire prone land map after consulting with the Commissioner of the NSW Rural Fire Service (NSW RFS). The Commissioner will designate lands to be bush fire prone within an area and, when satisfied that the lands have been recorded on a map, certify the map as the Bush Fire Prone Land map.

In accordance with section 4.14 of the *Environmental Planning and Assessment Act 1979* development consent cannot be granted for the carrying out of development for any purpose (other than a subdivision of land that could lawfully be used for residential or rural residential purposes or development for a special fire protection purpose) on bush fire prone land unless the consent authority:

- (a) is satisfied that the development conforms to the specifications and requirements of the version (as prescribed by the regulations) of the document entitled *Planning for Bush Fire Protection*, or
- (b) has been provided with a certificate by a person who is recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment stating that the development conforms to the relevant specifications and requirements.

As the proposal relates to a special fire protection purpose it is subject to s.100B of the *Rural Fires Act 1997*, it is therefore considered to be integrated development in accordance with s.4.46. This means that the proposed development requires authorisation in respect of bush fire safety because of the Special Fire Protection Purpose use.

2.3 Rural Fires Regulation 2022

Section 45 sets out the relevant matters that must be considered when assessing a bushfire safety authority and includes an assessment of the proposal against *Planning for Bush Fire Protection*.

2.4 Planning for Bush Fire Protection

As the subject site is identified as being bushfire prone and the proposed development involves a residential subdivision the proposal is subject to the application of the relevant specifications and requirements of Planning for Bush Fire Protection.

The proposal is required to demonstrate that it achieves compliance with the following elements of PBP:

- Chapter 1 - Aim and Objectives
- Chapter 6 - Special Fire Protection Purpose Developments

3.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide Bow Goold Architects, the Rural Fire Service 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.

4.0 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.

5.0 Compliance Tables & Notes

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

	North	South	East	West
Vegetation Structure	Forest	Managed land	Managed land	Forest
Slope	5 - 10 degrees down	n/a	n/a	0 – 5 degrees down
Required Asset Protection Zone (New SFPP)	93 metres*	n/a	n/a	79 metres*
Available Asset Protection Zone	>77 metres	n/a	n/a	>123 metres
Significant Landscape Features	Maintained grounds/ Bundaleer Street	Maintained grounds / Recreation reserve/ Dell Street	Maintained grounds/ Forest Way	Maintained grounds / Linden Avenue
Threatened Species	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Aboriginal Relics	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Bushfire Attack Level	BAL 12.5	n/a	n/a	BAL Low
Required Construction Level**	BAL 19	BAL 19	BAL 19	BAL 19

* Determined from Table A1.12.1 of PBP

** In accordance with Table 2 of the addendum to PBP (and S43C10 NCC 2022)

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7.02
Construction Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Access	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7.04
Water Supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.05
Gas and Electrical Supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.05

Asset Protection Zones Compliance

One of the objectives underpinning Planning for Bush Fire Protection is to provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings.

The proposed building will provide Asset Protection Zones (APZs) of >77 metres to the north and >123 metres to the west. The APZs consist of maintained grounds and hard surfaced areas within the subject property, maintained grounds within an adjoining property, Linden Avenue and Bundaleer Street.

The APZs 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 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 entire 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.

6.0 Aerial view of the subject allotment



Figure 02: Aerial view of the subject area. Courtesy Nearmap

7.0 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 24th March 2023. 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)

7.01 Location

The subject site contains an existing educational establishment known as the Covenant Christian School and is located at 212 Forest Way, Belrose.

The subject site is zoned 'DM: Deferred Matter' and located within Northern Beaches Council's Local Government Area.

The subject property has street frontages to Forest Way to the east, Bundaleer Street to the north, Linden Avenue to the west and Dell Street to the south. The site also abuts private neighbouring allotments to the north and south, and a recreation reserve to the south.

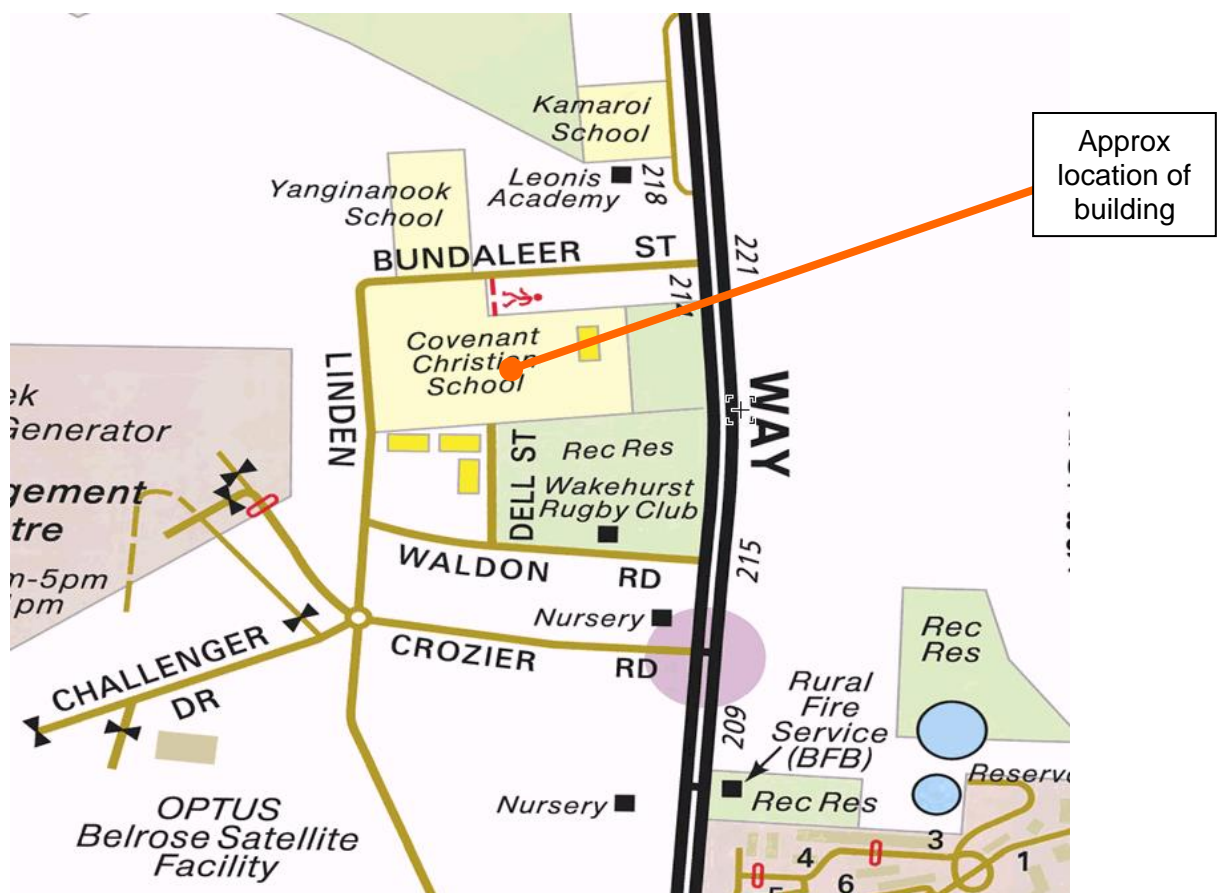


Figure 03: Extract from street-directory.com.au

7.03 Vegetation

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 identified as posing a bushfire hazard to the proposed building is located to the north and west within neighbouring properties.

The vegetation posing a hazard was found to consist of trees 10 - 30 metres in height with a 30 - 70% foliage cover and an understorey of shrubs, grasses, and weed species. The vegetation to the west was found to have a width of approximately 40 metres.

For the purpose of assessment under Planning for Bush Fire Protection the vegetation posing a hazard to the north and west was determined to be Forest.

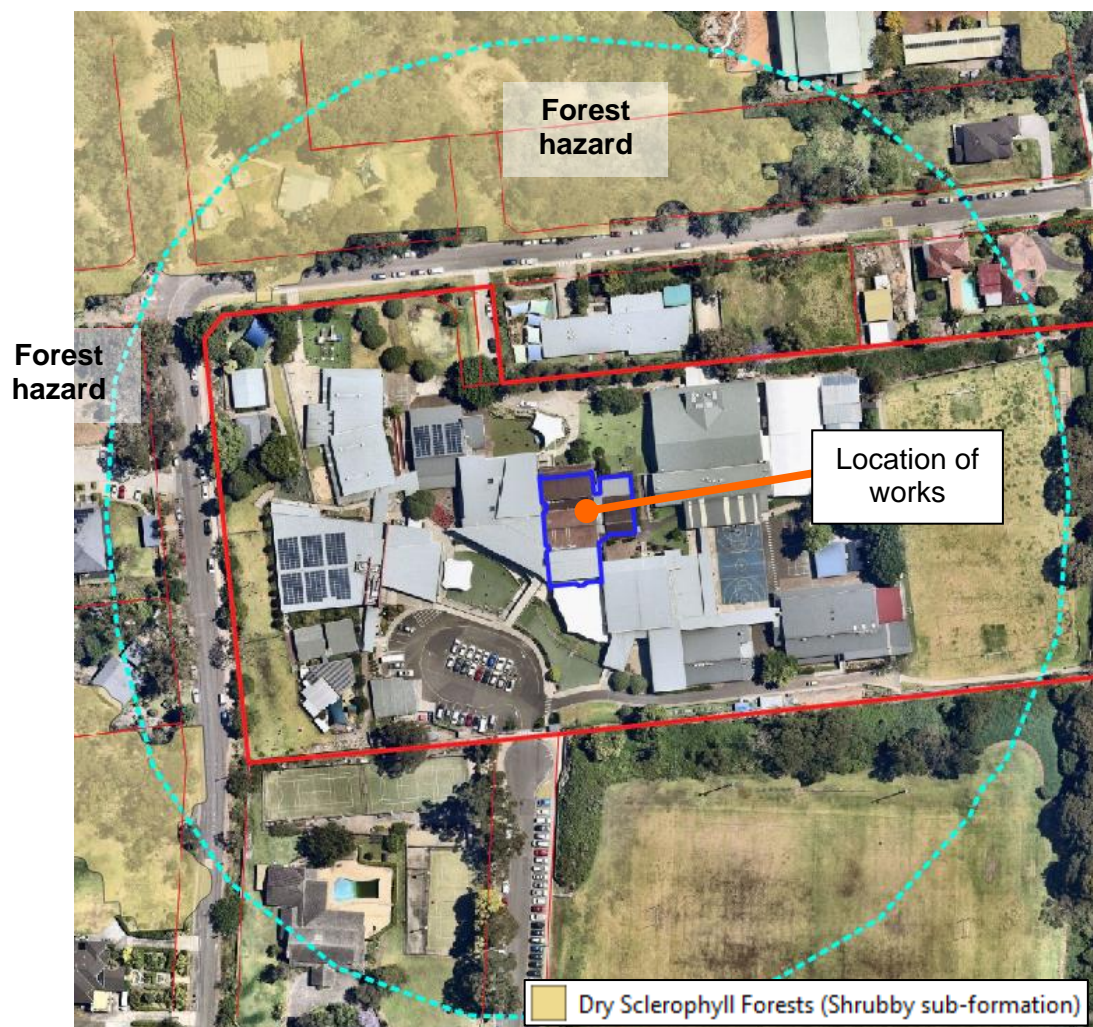


Figure 04: Aerial view of the subject area overlaid with vegetation mapping (Vegetation NSW)



Photograph 01: View of the maintained grounds to the north of the subject building



Photograph 02: View into the vegetation to the west of the subject building



Photograph 03: View into the vegetation to the north of the subject building

7.04 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.

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

- 5 - 10 degrees down slope within the hazard to the north
- 0 - 5 degrees down slope within the hazard to the west



Figure 05: Extract from ELVIS – Geoscience Australia (1m contours)

7.04 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 Northern Beaches Council in this instance.

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

7.05 Fire History

There are areas within NSW which have significant fire history and are recognised as known fire paths. While the fire history is more commonly considered as part of strategic planning (to ensure future development is not exposed to an unacceptable risk), it is useful to consider at a Development Application phase to ensure the land is suitable for development in the context of bushfire risk.

In this instance the closest recorded wildfire was found to be located >120 metres to the west and 160 metres to the north of the subject site (source NPWS Fire History dataset). This fire occurred in the 2001-02 fire season.

Prevailing weather conditions associated with the bush fire season in the Warringah Pittwater BFMC area are North-westerly winds accompanied by high daytime temperatures and low relative humidity (Warringah Pittwater BFRMP 2008).

The subject site is not considered to be within a known fire path.

8.0 Bushfire Protection Measures

8.01 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 the Vegetation Buffer, therefore the application of PBP must apply in this instance.

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.

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

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. The additional provisions outlined in the addendum to PBP (2022) have also been addressed.

8.02 Specific Objectives

The following table outlines the objectives that apply to existing SFPP development under section 6.4 'Development of existing SFPP facilities' of PBP and our comments on the proposals compliance or otherwise.

Objective	Comment
<i>provide an appropriate defensible space;</i>	<p>The proposed works will be located no closer to the bushfire hazard than the existing building, are in a BAL 12.5 location and will be constructed to BAL 19.</p> <p>The Asset Protection Zones consist of an existing sealed public road which is serviced by hydrants at regular intervals, providing a logical fire-fighting platform.</p> <p>An appropriate defensible space is provided.</p>

Objective	Comment
<i>site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition;</i>	<p>The proposed works are located as far as possible from the identified hazards and will be constructed to BAL 19 being one level higher than the determined construction level.</p> <p>The available APZs in conjunction with the application of BAL 19 construction to the new works will minimise potential for material ignition.</p>
<i>provide a better bush fire protection outcome for existing buildings;</i>	The Bushfire Emergency Management and Evacuation Plan will be updated as part of this application.
<i>new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings (unless they can comply with section 6.8);</i>	<p>The ability to provide compliant APZs is restricted due to the location of the subject building and physical boundaries.</p> <p>The proposed building location is located centrally within the subject site and replaces existing buildings.</p> <p>The proposed works will be located no closer to the bushfire hazards than existing buildings.</p>
<i>ensure there is no increase in bush fire management and maintenance responsibility on adjoining land owners without their written confirmation;</i>	There is no increase in bush fire management and maintenance responsibilities on adjoining land owners as a result of the proposal.
<i>ensure building design and construction enhances the chances of occupant and building survival; and</i>	The new works will comply with sections 3 and 6 (BAL 19) of Australian Standard 3959 'Construction in bushfire-prone areas' 2018 and the additional construction requirements detailed in section 7.5 of <i>Planning for Bush Fire Protection</i> 2019.
<i>provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).</i>	<p>It has been recommended that the Bushfire Emergency and Evacuation Management Plan be updated as part of this application.</p> <p>The subject site has street frontage to Bundaleer Street, Linden Avenue and Dell Street which have capacity to accommodate a timely evacuation of the site.</p>

8.03 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 93 metres to the north and 79 metres to the west.

The location of the subject building and physical boundaries does not allow for the minimum required APZ to the north to be achieved.

As the proposed works are relate to the redevelopment of an existing SFPP facility section 6.4 'Development of existing SFPP facilities' of PBP can be applied. The provisions outlined in the section can allow for a reduction in the minimum required APZ, noting the following:

The intention for any building work occurring within an existing SFPP development is to achieve a better bush fire outcome than if the development did not proceed. Achieving this may require a combination of measures including improved construction standards, APZs and evacuation management. This may result in a level of retrofitting of existing buildings and managing other portions of the site (i.e. APZs) to ensure an improved level of bush fire protection.

The proposed building will provide Asset Protection Zones (APZs) of >77 metres to the north and >123 metres to the west. The APZs consist of maintained grounds, other buildings and hard surfaced areas within the subject property, maintained land within an adjoining property and Bundaleer Street.

The proposed works are within the existing school building envelopes and does not extend towards any of the identified hazards.

In consideration that this proposed building will be constructed one level higher than the determined Bushfire Attack Level under Australian Standard 3959 'Construction of building in bushfire-prone areas' 2018 and will replace existing structures which were constructed prior to any bushfire construction regulations, this marginal departure is considered acceptable.

All grounds within the subject site not built upon will continue to 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'.

While it is acknowledged that the separation from classified vegetation does not satisfy NSW S43C2 NCC 2022 it does satisfy section 6.4 'Development of existing SFPP facilities' of Planning for Bush Fire Protection.

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

I am satisfied that the proposed landscaping within the balance of the site has been designed to minimise flame contact and radiant heat to the building and potential for wind-driven embers, satisfying the Performance Criteria for Landscaping detailed in Table 6.8a of PBP.

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	12.6 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

The highest Bushfire Attack Level to the proposed works 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 entire 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.

Property Access

Clear access to the property is available from Bundaleer Street, Linden Avenue and Dell Street and the surrounding road network. Persons seeking to egress from the subject building will be able to do so freely along the existing internal road infrastructure and Bundaleer Street, Linden Avenue and Dell Street.

Access/egress is available in at least two directions. Similarly, fire services have free access to the proposed building from Bundaleer Street, Linden Avenue and Dell Street and along the existing internal road system.

More importantly fire services also have direct access to the hazard interface via Bundaleer Street and Linden Avenue.

Avenues of access for fire service and occupant evacuation are considered satisfactory.

The existing road network provides a perimeter road setup around the subject property and direct access to the hazard. As the site is existing it does not have the ability to provide vehicle access around the building although pedestrian access is available.



Figure 06: Aerial view of the subject site showing vehicle access

As the existing road network provides direct access to the hazard and acts as a perimeter road for the site the existing access in our opinion satisfies the performance criteria of Table 3 of the addendum to PBP, being:

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

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

Water Supply & Utilities

The subject property is connected to the existing towns water main for its commercial needs. Existing hydrants are available in Dell Street, Linden Avenue, Bundaleer Street and Forest Way and surrounding streets for the replenishment of attending fire services.

The subject site contains a comprehensive boosted hydrant system with pillar hydrants located at regular intervals throughout the subject site. This hydrant system is connected to water mains.

The existing water supply is considered adequate for the replenishment of attending fire services and will satisfy Table 4 of the addendum to PBP.

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

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

8.04 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;	<p>The proposed works will be constructed to BAL 19 in accordance with the addendum to PBP.</p> <p>In conjunction with the corresponding APZ recommended herein the building and its occupants will be afforded protection from the exposure to bushfires.</p>
(ii) provide for a defendable space to be located around buildings;	The existing APZs provide a defendable space around the building.
(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, coupled with the construction requirements and the location of the proposed works, provides for appropriate setbacks and minimises potential material ignition.

Objective	Comment
(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;	The existing 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 grounds 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>The subject site contains a comprehensive boosted hydrant system with pillar hydrants located at regular intervals throughout the subject site.</p> <p>Existing water supply is adequate to meet the needs of attending fire services.</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*.

8.05 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>	None Known
<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>	None Known
<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>	Multiple egress routes are available from the subject building via existing public roads and internal roads away from the identified hazards. 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.

9.0 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. At the commencement of building works and in perpetuity all grounds within the subject property shall be managed as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 4 of 'Planning for Bush Fire Protection 2019' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

Note: At the time of our inspection the entire site was found to be managed as an APZ and only continued ongoing management is required to satisfy the above recommendation.

We have reviewed the Landscape Plan by Landscape Architecture Pty Ltd, Project No 23947, Issue B, Date 30.05.23 and the plan has the ability to satisfy the above recommendation.

Construction

2. That the proposed new building 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 plan be updated to capture the new building 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.

10.0 Conclusion

Northern Beaches Council's Bushfire Prone Land Map identifies the subject property as containing the Vegetation Buffer therefore the subject site is considered 'bushfire prone'.

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

As the subject site is considered 'bushfire prone' and involves a listed SFPP (school) the proposal is considered integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979* and requires a Bushfire Safety Authority from the NSW Rural Fire Service.

In accordance with the submission requirements for a Bush Fire Safety Authority detailed in section 45 of the *Rural Fires Regulation 2022* an assessment of the extent to which the proposed development conforms with or deviates from *Planning for Bush Fire Protection* (PBP) is required.

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 application.

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

Prepared by
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FPA Australia BPAD Level 3 Accredited Practitioner
BPAD Accreditation No. BPAD9400



11.0 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

Landscape Architecture (2023). *Landscape Plan*, Project No 23947, Issue B, Date 30.05.23

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*.

Plans prepared by Bow Goold Architects, Project No. 2222, Revision A, Dated Feb 2023

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*

Acknowledgements to:

Geoscience Australia
Nearmap
Street-directory.com.au

Attachments

Nil