Bushfire Assessment Report

Proposed:
Childcare

At:
5 Skyline Place, Frenchs Forest

Reference Number: 210979D

12 February 2025

Prepared By:
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Contents

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Section 4.14 applications (under the Environmental Planning and Assessment Act 1979) and all infill development applications *may be* referred by Council to the NSW Rural Fire Service for review and concurrence during the DA process. S100B applications under the Rural Fires Act 1997 (subdivisions and Special Fire Protection Purpose Developments), Flame Zone determinations and Alternate Solutions *must be* referred by Council to the NSW Rural Fire Service for review and receipt of a Bushfire Safety Authority (BSA) or other such recommended conditions from the NSW Rural Fire Service before the consent can be granted.

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Version Control				
Version	Date	Author	Reviewed by	Details
1	12/02/2025	Andrew Muirhead	Stuart McMonnies	Final Report

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 Council
DA	Development Application
ELVIS	Elevation and Depth Foundation Spatial Data
EP&A Act	*Environmental Planning and Assessment Act* - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NASH	National Association of Steel-framed Housing
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	*Planning for Bush Fire Protection* – 2019 as amended
ROW	Right of Way
RF Act	*Rural Fires Act* - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

Executive Summary:

Building Code and Bushfire Hazard Solution P/L has been commissioned to prepare an independent Bushfire Assessment Report for a proposed development for a new childcare centre within an existing approved building, located at 5 Skyline Pace, Frenchs Forest NSW.

The subject building was approved under Development Application DA2021-0212 and was assessed and approved as a Special Fire Protection Purpose development under Planning for Bush Fire Protection 2019.

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

Childcares are a 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 posing a hazard to the subject site is located to the west within vacant allotments.

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

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/m^2 at the closest point of the available building footprint.

It is acknowledged the original development application for the building, which the proposed childcare will occupy, utilised bushfire modelling to determine the minimum APZs. The same parameters have been used for this assessment and demonstrates the proposed childcare will not be exposed to radiant heat impact of more than 10kW/m^2.

The modelling has incorporated various redundancies to ensure a margin of safety. These redundancies include increased vegetation width than actually present and the use of fully developed bushfire modelling regardless of the limited fire development period.

In addition, an existing commercial building immediately adjacent the hazard provides substantial shielding to the proposed buildings, with this reduced view factor not incorporated into the bushfire design modelling (i.e. modelling considers unencumbered impact).

As a verification method to the use of a physically constrained vegetation widths (due to allotment configuration) Short Fire Run Modelling was used which concluded a smaller width (54.91m) than that minimum adopted herein (60m).

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

The proposed childcare is internal with the extent of the external works limited to rendering and aluminium timber look battens, which comply with the relevant BAL.

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 the change of use and the establishment of a childcare within an existing allotment, located at 5 Skyline Pace, Frenchs Forest NSW.

The subject building was approved under Development Application DA2021-0212 and was assessed and approved as a Special Fire Protection Purpose development under Planning for Bush Fire Protection 2019.

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'.

Childcares are a 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

Childcares are a listed Special Fire Protection Purpose (SFPP) under section 100B (6b) 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.

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 childcare 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 the owners, 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 project's compliance with *Planning for Bush Fire Protection – 2019*.

Approved Building	**Transect 1**	**Transect 2**	**Transect 3**	**Transect 4**	**Transect 5**	**Transect 6**
Vegetation	Sydney Coastal DSF	Sydney Coastal DSF	Sydney Coastal DSF	Sydney Coastal DSF	Sydney Coastal DSF	Sydney Coastal DSF
Veg./Flame Width	60 metres	60 metres	60 metres	60 metres	100 metres	80 metres
Flame Temp.	1200K	1200K	1200K	1200K	1200K	1200K
Vegetation Slope	2° down	1° down	1° down	2° down	1° down	1° down
Site Slope	0° across	0° across	0° across	1° down	0° across	0° across
Separation Distance	≥59 metres	≥59 metres	≥57 metres	≥69 metres	≥68 metres	≥65 metres
Radiant Heat*	9.37 kW/m^2	8.8 kW/m^2	9.38 kW/m^2	4.93 kW/m^2	9.45 kW/m^2	8.96 kW/m^2
Bushfire Attack Level**	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5

* Determined from bushfire design modelling (attached)
** 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	☐	☒	8.03
Construction Standard	☒	☐	8.03
Access	☐	☒	8.03
Water Supply	☒	☐	8.03
Gas and Electrical Supplies	☒	☐	8.03

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 Childcare is located within an approved building that was assessed as a Special Fire Protection Purpose development under PBP. The available APZs remain consistent with this consent.

The APZ consists of maintained grounds and maintained grounds within an adjoining property.

Construction Level Compliance

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

The proposed childcare involves internal works, with the only external works being limited to rendering and aluminium timber look battens, which comply with the relevant BAL.

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 29th January 2025. 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 (NSW State Vegetation Type Map)

7.01 Location

The subject site is a new allotment and is located at 5 Skyline Pace, Frenchs Forest and legally identified as Lot 11 DP 1258355.

The subject site is zoned 'SP4: Enterprise' and located within Northern Beaches Council's Local Government Area.

The subject property has street frontages to Skyline Pace to the east and Frenchs Forest Road East to the north and abuts similar neighbouring allotments to the north, south and west.

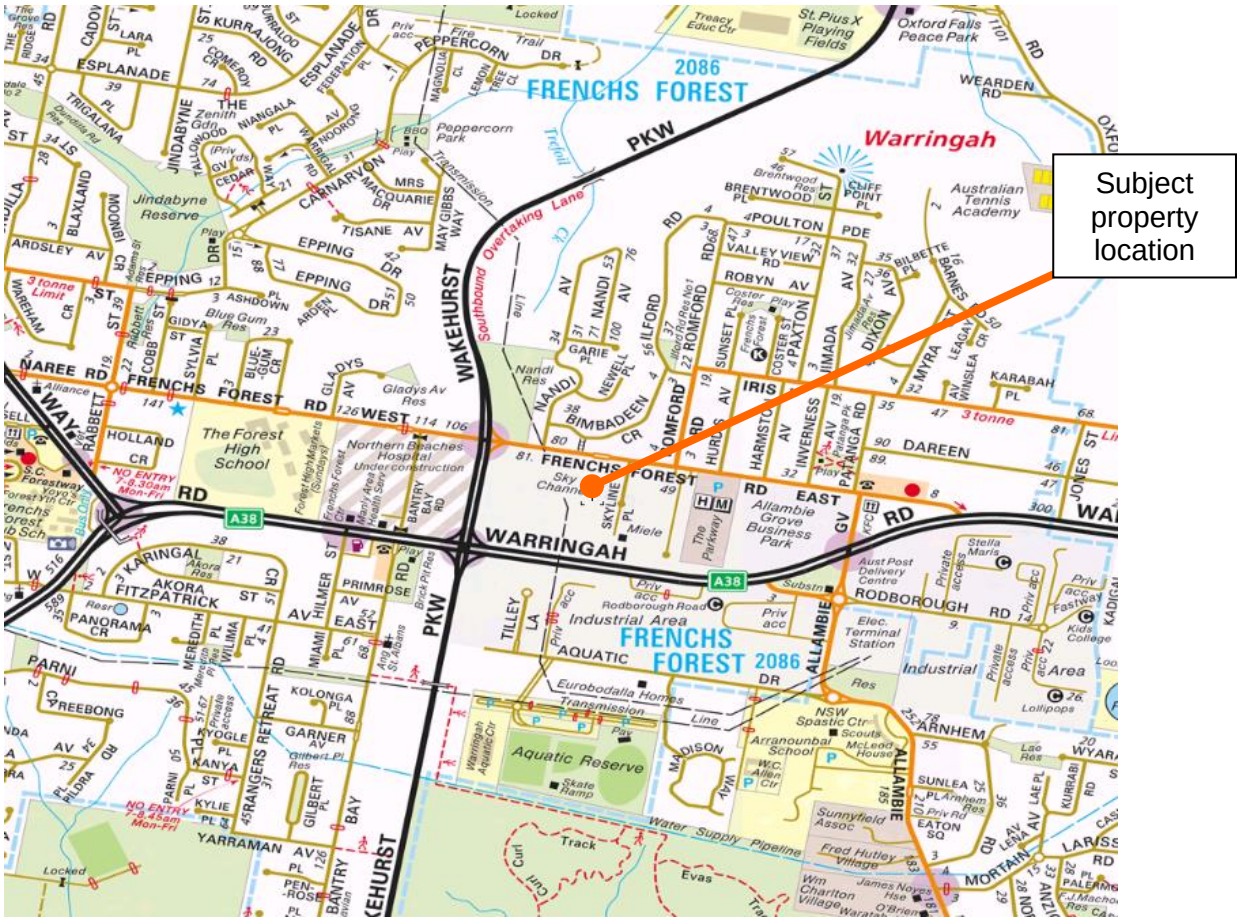

Figure 03: Extract from street-directory.com.au

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 hazard to the subject site is located to the west within vacant allotments.

The vegetation posing a potential bushfire hazard was found to consist of trees 10-20 metres in height with a canopy cover of 30-70% and an understorey of small trees, shrubs, grasses and areas of weeds (Lantana). There was a clear absence of elevated fuels in this area.

This vegetation is mapped (SydneyMetroArea v3 2016) as being Sydney Ironstone Bloodwood-Silvertop Ash Forest (Duffys Forest Ecological Community) a listed Endangered Ecological Community under the *Biodiversity Conservation Act 2016*.

Localised impact occurred to this community as part of the recent Northern Beaches Hospital Road Upgrade project, including the establishment of a site compound with the allotment to the west of the site. As part of the approval for this roadworks project to offset this impact a biodiversity offset site was established along Forest Way.

It is acknowledged that a condition of consent for the roadworks project requires impacted vegetation to be rehabilitated to the greatest extent practicable. In this regard it is noted that the NSW Government advertised the project's completion in August 2020. Regardless the modelling used herein has considered a fully developed fire and therefore any future rehabilitation is inconsequential to this assessment.

The hazard is a small (<2ha) fragmented stand of Forest surrounded by the recently upgraded Frenchs Forest Road East, Warringah Road and Wakehurst Parkway and existing commercial development.

The vegetation presents physical limitations (property boundaries) which limit the interface exposure to the proposed buildings. These property boundaries preclude a 100 metre vegetation width / fire front, in which the prescriptive tables in PBP consider, at the closest point of impact.

For the purpose of this assessment the vegetation posing a hazard has been classified Sydney Coastal Dry Sclerophyll Forest and in accordance with the NSW Rural Fire Service publication 'Comprehensive Vegetation Fuel Loads' (2019) a surface fuel load of 21.3 t/ha and overall fuel load of 27.3 t/ha adopted.

In this regard comprehensive bushfire design modelling, considering the worst fire run towards the building and is consistent to the modelling in used to for the original development application for the subject building (DA2021-0212) which was supported by the NSW RFS (ref DA20210330001208-S4.55-1).

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

Photograph 02: View within the hazard to the west

Photograph 03: View within the hazard to the west

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 gradient with the vegetation to the west was found to rise or be level for approximately 70 metres before falling gently to Wakehurst Parkway.

It is acknowledged there is a steeper area adjacent Frenchs Forest Road East to the northwest of the site. This area was found to be located greater than 100 metres from the proposed buildings and was not considered to be an influential slope toward the site.

The slope that would **most significantly** influence bushfire behaviour toward the site was determined from topographic imagery (1 metre contours sourced from ELVIS - Geoscience Australia) in conjunction with site observations.

Refer to section 8.03 of this report for the detail of the adopted slope for each assessed transect.

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 >380 metres to the south of the subject site (source NPWS Fire History dataset). This fire occurred in the 1990-91 fire season.

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

Figure 06: Aerial view of the subject area overlayed with recorded wildfires (source NPWS Fire History dataset)

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.

Childcare centres are a 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.

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

8.02 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
minimise levels of radiant heat, localised smoke and ember attack through increased APZ, building design and siting;	The subject building has an APZ exceeding the minimum required under PBP. The subject buildings will be located within a BAL 12.5 area.
provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;	The subject site has street frontage to Skyline Pace to the east and Frenchs Forest Road East to the north. Attending fire service have direct vehicle access to the bushfire hazard via Frenchs Forest Road East, Wakehurst Parkway and Warringah Road for hazard reduction or fire suppression activities. The proposal also provides managed land and good operational space around the subject building.

Specific Objective	Comment
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	The surrounding public roads provide existing carriageways exceeding the requirements for Perimeter Roads as described in Table 6.8b of PBP. The external utility providers have systems in place to cater for increased demand as necessary.
ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.	This assessment includes a recommendation that the Bushfire Emergency Management Plan be prepared.

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/m^2 at the closest point of the available building footprint.

In the original DA for the subject building considered multiple transects with the details and fire runs set out below.

For the purpose of this assessment six (6) potential fire runs (transects) were assessed to ensure the worst possible impact considered.

The modelling has incorporated various redundancies to ensure a margin of safety. These redundancies include increased vegetation width than actually present and the use of fully developed bushfire modelling regardless of the limited fire development period.

In addition, an existing commercial building immediately adjacent the hazard provides substantial shielding to the proposed buildings, with this reduced view factor not incorporated into the bushfire design modelling (i.e. modelling considers unencumbered impact).

As a verification method to the use of a physically constrained vegetation widths (due to allotment configuration) Short Fire Run Modelling was used which concluded a smaller width (54.91m) than that minimum adopted herein (60m).

Transect 1:

Transect 1 considers a fire impacting the subject site from a north-westerly direction, being that commonly associated with severe fire behaviour. This scenario would result in a bushfire impacting the interface on a tangent and therefore it would be reasonable to reduce the fire front width from the actual exposed interface (55m). As a margin of a safety a 60 metre fire front was adopted for this transect.

It should be noted that while this scenario would result in impact the fire run is not directly toward to the site and consequently the adopted modelling is an overrepresentation of the potential impact.

Figure 07: Aerial view of the subject area, 1 metre contours and Transect 1
Subject site (thick red outline) and proposed building envelope (yellow outline)

Transect 2:

Transect 2 considers a fire impacting the subject site from a westerly direction, also being that commonly associated with severe fire behaviour. This scenario would result in a bushfire impacting the interface direct. As a margin of a safety a 60 metre fire front was adopted for this transect rather than the measured 55 metre interface.

Figure 08: Aerial view of the subject area, 1 metre contours and Transect 2
Subject site (thick red outline) and proposed building envelope (yellow outline)

Transect 3:

Transect 3 considers a fire impacting the subject site from a south-westerly direction, and allows for additional revegetation works within the vacant allotments. This scenario would result in a bushfire impacting the interface direct. As a margin of a safety a 60 metre fire front was adopted for this transect rather than the measured 55 metre interface.

In addition it should be noted that an upslope was recorded for approximately 70 metres, regardless as an additional margin of safety a downslope was adopted.

Figure 09: Aerial view of the subject area, 1 metre contours and Transect 3
Subject site (thick red outline) and proposed building envelope (yellow outline)

Transect 4:

Transect 4 considers a fire impacting the subject site from a southerly direction. This scenario has a limited fire development period (42m) and is not expected to reach a fully developed state by the point of impact. Regardless this transect has also been modelled as a fully developed fire.

Figure 10: Aerial view of the subject area, 1 metre contours and Transect 4
Subject site (thick red outline) and proposed building envelope (yellow outline)

Transect 5:

Transect 5 considers the point a fire could theoretically produce a 100 metre interface exposure to the site. This scenario is considered extremely unlikely given the limited fire development period. This view is supported by the use of Short Fire Run Modelling which accounts for limited fire development periods and found a maximum calculated fire front of 54.91m.

Figure 11: Aerial view of the subject area, 1 metre contours and Transect 5
Subject site (thick red outline) and proposed building envelope (yellow outline)

Transect 6:

Transect 6 similar to Transect 5 considers the point a fire could theoretically produce an 80 metre interface exposure to the site. This scenario again is considered extremely unlikely given the limited fire development period. This view is supported by the use of Short Fire Run Modelling which accounts for limited fire development periods and found a maximum calculated fire front of 54.91m.

Figure 12: Aerial view of the subject area, 1 metre contours and Transect 6
Subject site (thick red outline) and proposed building envelope (yellow outline)

In this instance it has been demonstrated that the closest point of the subject building is exposed to a maximum potential radiant heat impact of 9.45 kW/m^2, satisfying section 6.8.1 'APZs and building construction' of PBP.

All grounds within the subject site are required to be maintained in accordance with an Asset Protection Zone / 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'.

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'.

The proposed childcare involves internal works, with the only external works being limited to rendering and aluminium timber look battens, which comply with the relevant BAL.

Property Access

Clear access to the property is available from Skyline Pace through the existing access of the service centre.

Fire services have free access to the existing building will be from Skyline Pace.

More importantly fire services also have direct and comprehensive access to the hazard interface via Frenchs Forest Road East, Wakehurst Parkway and Warringah Road.

Due to site specific characteristics an exemption from the full loop road around the childcare building is being sought.

Frenchs Forest Road East, Wakehurst Parkway and Warringah Road act as perimeter roads around the vegetation and the access road to the neighbouring commercial development is an 8 metre wide road. Therefore, the vegetation has perimeter access around the vegetation.

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

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

As described firefighting vehicles have safe, all weather access to all structures through carpark and existing roads/ access, therefore we seek an NSW RFS support in the exemption to the vehicle access provisions (S43C14) of Specification 43 under NSW G5D4(c) of Volume One of NCC 2022.

Water Supply & Utilities

The subject property is connected to the existing towns water main for its commercial needs. Existing hydrants are available in Skyline Pace and surrounding streets for the replenishment of attending fire services.

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

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 a Bushfire Emergency Management Plan be prepared for the centre.

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;	The proposed childcare will be constructed to BAL 19 in accordance with the addendum to PBP. In conjunction with the corresponding APZ recommended herein the building and its occupants will be afforded protection from the exposure to bushfires.
(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.

Aim / 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	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'. Any future Landscaping is to comply with the provisions of Appendix 4 of PBP.
(vi) ensure that utility services are adequate to meet the needs of firefighters.	The surrounding streets contain a hydrant system with inground hydrants located at regular intervals throughout. Water supply is adequate to meet the needs of attending fire services.

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
(a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out,	See section 7.01
(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*,*	See section 7.02
(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),	See section 7.03
(d) identification of any significant environmental features on the property,	None Known
(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,*	None Known
(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,*	No known sites
(g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters—	See section 8.0
(i) the extent to which the development is to provide for setbacks, including asset protection zones,	See section 8.03
(ii) the siting and adequacy of water supplies for fire fighting,	See section 8.03
(iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,	Multiple egress routes are available from the subject building via existing public roads away from the identified hazards. These roads are considered adequate to accommodate a timely evacuation from the site.
(iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,	There are no registered fire trails within the local area.

Submission Detail	Response
(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,	See section 8.03
(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,	See section 8.03
(vii) the construction standards to be used for building elements in the development,	See section 8.03
(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,	There is no existing bushfire sprinkler system, nor is one proposed. See section 8.03 for all bushfire protection measures
(ix) any registered fire trails on the property,	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.

Construction

2. That the proposed new childcare 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 a bushfire emergency management plan be prepared 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 extended 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

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

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'.

Childcares 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 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
Building Code & Bushfire Hazard Solutions

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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

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*.

PA Studio (2024). *Site Plan* (Issue B, Date 02.12.2024).

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

Attachment 01: Bushfire Design Modelling

NBC Bushfire Attack Assessment Report V4.1

AS3959 (2018) Appendix B - Detailed Method 2

Print Date: 19/02/2021 **Assessment Date:** 15/02/2021

Site Street Address: 5 Skyline Place, Frenchs Forest

Assessor: Stuart McMonnies; Bushfire Hazard Solutions

Local Government Area: Northern Beaches **Alpine Area:** No

Equations Used

Transmissivity: Fuss and Hammins, 2002
Flame Length: RFS PBP, 2001/Vesta/Catchpole
Rate of Fire Spread: Noble et al., 1980
Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005
Peak Elevation of Receiver: Tan et al., 2005
Peak Flame Angle: Tan et al., 2005

Run Description: SFR

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 2 Degrees **Vegetation Slope Type:** Downslope

Surface Fuel Load(t/ha): 21.3 **Overall Fuel Load(t/ha):** 27.3

Vegetation Height(m): 1.4 Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees **Site Slope Type:** Level

Elevation of Receiver(m): Default **APZ/Separation(m):** 57

Fire Inputs

Veg./Flame Width(m): 54.91 **Flame Temp(K):** 1200

Calculation Parameters

Flame Emissivity: 95 **Relative Humidity(%):** 25

Heat of Combustion(kJ/kg 18600 **Ambient Temp(K):** 308

Moisture Factor: 5 **FDI:** 100

Program Outputs

Level of Construction: BAL 12.5 **Peak Elevation of Receiver(m):** 10.57

Radiant Heat(kW/m2): 9.38 **Flame Angle (degrees):** 71

Flame Length(m): 22.35 **Maximum View Factor:** 0.109

Rate Of Spread (km/h): 2.93 **Inner Protection Area(m):** 39

Transmissivity: 0.774 **Outer Protection Area(m):** 18

Fire Intensity(kW/m): 41387

Run Description: Transect 1

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 2 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees

Site Slope Type: Level

Elevation of Receiver(m): Default

APZ/Separation(m): 59

Fire Inputs

Veg./Flame Width(m): 60

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 10.63

Radiant Heat(kW/m2): 9.37

Flame Angle (degrees): 72

Flame Length(m): 22.35

Maximum View Factor: 0.109

Rate Of Spread (km/h): 2.93

Inner Protection Area(m): 40

Transmissivity: 0.771

Outer Protection Area(m): 19

Fire Intensity(kW/m): 41387

Run Description: Transect 2

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 1 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees

Site Slope Type: Level

Elevation of Receiver(m): Default

APZ/Separation(m): 59

Fire Inputs

Veg./Flame Width(m): 60

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 10.08

Radiant Heat(kW/m2): 8.8

Flame Angle (degrees): 73

Flame Length(m): 21.08

Maximum View Factor: 0.102

Rate Of Spread (km/h): 2.74

Inner Protection Area(m): 41

Transmissivity: 0.771

Outer Protection Area(m): 18

Fire Intensity(kW/m): 38628

Run Description: Transect 3

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 1 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees

Site Slope Type: Level

Elevation of Receiver(m): Default

APZ/Separation(m): 57

Fire Inputs

Veg./Flame Width(m): 60

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 10.02

Radiant Heat(kW/m2): 9.38

Flame Angle (degrees): 72

Flame Length(m): 21.08

Maximum View Factor: 0.109

Rate Of Spread (km/h): 2.74

Inner Protection Area(m): 39

Transmissivity: 0.773

Outer Protection Area(m): 18

Fire Intensity(kW/m): 38628

Run Description: Transect 4

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 2 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 1 Degrees

Site Slope Type: Downslope

Elevation of Receiver(m): Default

APZ/Separation(m): 69

Fire Inputs

Veg./Flame Width(m): 40

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 9.54

Radiant Heat(kW/m2): 4.93

Flame Angle (degrees): 74

Flame Length(m): 22.35

Maximum View Factor: 0.058

Rate Of Spread (km/h): 2.93

Inner Protection Area(m): 49

Transmissivity: 0.76

Outer Protection Area(m): 20

Fire Intensity(kW/m): 41387

Run Description: Transect 5

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 1 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees

Site Slope Type: Level

Elevation of Receiver(m): Default

APZ/Separation(m): 68

Fire Inputs

Veg./Flame Width(m): 100

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 10.23

Radiant Heat(kW/m2): 9.45

Flame Angle (degrees): 76

Flame Length(m): 21.08

Maximum View Factor: 0.111

Rate Of Spread (km/h): 2.74

Inner Protection Area(m): 45

Transmissivity: 0.76

Outer Protection Area(m): 23

Fire Intensity(kW/m): 38628

Run Description: Transect 6

Vegetation Information

Vegetation Type: Sydney Coastal DSF

Vegetation Group: Dry Sclerophyll Forests (Shrubby)

Vegetation Slope: 1 Degrees

Vegetation Slope Type: Downslope

Surface Fuel Load(t/ha): 21.3

Overall Fuel Load(t/ha): 27.3

Vegetation Height(m): 1.4

Only Applicable to Shrub/Scrub and Vesta

Site Information

Site Slope: 0 Degrees

Site Slope Type: Level

Elevation of Receiver(m): Default

APZ/Separation(m): 65

Fire Inputs

Veg./Flame Width(m): 80

Flame Temp(K): 1200

Calculation Parameters

Flame Emissivity: 95

Relative Humidity(%): 25

Heat of Combustion(kJ/kg 18600

Ambient Temp(K): 308

Moisture Factor: 5

FDI: 100

Program Outputs

Level of Construction: BAL 12.5

Peak Elevation of Receiver(m): 10.18

Radiant Heat(kW/m2): 8.96

Flame Angle (degrees): 75

Flame Length(m): 21.08

Maximum View Factor: 0.105

Rate Of Spread (km/h): 2.74

Inner Protection Area(m): 44

Transmissivity: 0.763

Outer Protection Area(m): 21

Fire Intensity(kW/m): 38628