

Bushfire Assessment: Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571,
10 Lomas Lane and 210 Wine Country Drive, Nulkaba

**BUSHFIRE ASSESSMENT REPORT
PERFORMANCE-BASED SOLUTION**

**ALTERATIONS AND ADDITIONS TO
EXISTING SCHOOL**

**LOT 1 DP 126765, LOT 1 DP 744377
and LOT 518 DP 837571**

10 Lomas Lane and 210 Wine Country Drive, Nulkaba

Date: **24/02/2025**

Prepared for: **St Philips Christian College**

NEWCASTLE BUSHFIRE CONSULTING
5 Chartley Street, Warners Bay NSW 2282
(ph) 02 40230149 (mob) 0423 923284
email: mail@newcastlebushfire.com.au

Couch Family Trust T/A
Newcastle Bushfire Consulting Pty Ltd A.B.N. 96 831 374 298
Bushfire and Building Sustainability Consultants

Document Status

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4	14/12/2024	Rev C – rewrite report to consider specification 43 and reassessment of eastern vegetation following BDAR ecology review	C.Couch	P.Couch
5	24/02/2024	Rev D – rewrite report to reference updated heritage assessment, updated landscape plan and minor amendments	C.Couch	P.Couch

Prepared By:



Phillip Couch GFireE
MA FireInvestigation
B Info Science
Grad Dip Design for Bushfire Prone Areas
FPAA BPAD – Level 3 Accreditation Number BPD-PA-16132
Director Newcastle Bushfire Consulting



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1.0 EXECUTIVE SUMMARY AND COMPLIANCE TABLES

This report has assessed the proposed school alterations and additions against the requirements of Planning for Bush Fire Protection (2019) and specific measures identified by New South Wales Rural Fire Service in SEARS SSD-10360337.

This report establishes that the development does not comply with the acceptable solutions of Planning for Bush Fire Protection (2019) and its Addendum (2022), with a Performance Based Solution provided to achieve the performance criteria.

TABLE 1 – PROPERTY DETAILS AND TYPE OF PROPOSAL

Applicant Name	St Philips Christian College		
Site Address	10 Lomas Lane and 210 Wine Country Drive, Nulkaba	Lot/Sec/DP	Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571
Local Government Area	Cessnock	FDI	100
Bushfire Prone Land	Yes, mapped bushfire prone land		
Type of development	Alterations and Additions to Existing School	Type of Area	Farmland/Vineyard
Special Fire Protection Purpose	Yes. Special Fire Protection Purpose as Infill	Flame Temperature	1200K
Application Complies with Acceptable Solutions	No. Performance solution proposed reviewing construction, a perimeter road and better bushfire outcomes.	Referral to RFS required	Yes. Bushfire Safety Authority Required

TABLE 2 – BUSHFIRE THREAT ASSESSMENT

	North	East	South	West
Vegetation Structure	Remnant Vegetation < 1 hectare in size	Forested Wetland	Grassland	Grassland
Asset Protection Zone	70 metres or greater	49 metres or greater	> 50 metres	> 50 metres
Slope Range	Level	Level	1 to 5 degrees downslope	Level/Upslope
PBP (2019) Table A1.12.1 Minimum Setbacks	38 metres	34 metres	N/A	N/A
AS3959 (2018) Bushfire Attack Level (BAL)	BAL-12.5	BAL-12.5	BAL-LOW	BAL-LOW

BAL-19. All buildings are to be built to BAL-19 as per National Construction Code (2022) Specification 43.

TABLE 3 – PLANNING FOR BUSH FIRE PROTECTION (2019) SECTION 6 COMPLIANCE

Performance Criteria	Proposed Development Determinations	Method of Assessment
Asset Protection Zone	Minimum setbacks have been determined in accordance with Planning for Bush Fire Protection (2019) Table A1.12.1 and are able to be achieved within the subject site.	Acceptable Solution
Landscaping	Landscaping shall be in accordance with Planning for Bush Fire Protection (2019) Appendix 4; and fencing is constructed in accordance with section Planning for Bush Fire Protection (2019) 7.6.	Acceptable Solution
Construction	Construction level of section 3 and 6 (BAL-19) of AS 3959 or NASH Standard and section 7.5 of Planning for Bush Fire Protection (2019) is applied for classrooms buildings. Where non-classroom building are located within 100 metres of bushland or 50 metres of grassland they shall be BAL-12.5.	Acceptable Solution
Access – Internal Roads	The internal access roads shall comply with Planning for Bush Fire Protection (2019) Section 6 property access provisions.	Acceptable Solution
Water Supply	The fire hydrant network shall be extended in accordance with AS 2419.1.	Acceptable Solution
Electrical Supply	The existing electrical supply to the local area is via overhead electrical transmission lines. Landscaping onsite should be managed so that no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002). Electrical supply onsite is recommended to be located underground.	Acceptable Solution
Gas Supply	Any proposed gas supply will be located underground.	Acceptable Solution
Emergency and Evacuation Planning	The proposed buildings, open structures and sporting fields shall be included in an emergency management plan for the school which complies with AS 3745-2010 Planning for emergencies in facilities and have specific consideration for bushfire.	Acceptable Solution

TABLE 4 – PLANNING FOR BUSH FIRE PROTECTION ADDENDUM APPENDIX B (2022)

Performance Criteria	Proposed Development Determinations	Method of Assessment
Construction	Construction level of section 3 and 6 (BAL-19) of AS 3959 or NASH Standard and section 7.5 of Planning for Bush Fire Protection (2019) is applied for classrooms buildings.	Acceptable Solution
Access	Property access shall be provided in accordance with Planning for Bush Fire Protection (2022) Addendum B Table 3 excepting a perimeter road around each building. The performance criteria for firefighting vehicles having safe access to fight fire has been examined.	<u>Performance Solution</u>
Water	Reticulated water is to be provided to the development and water for firefighting purposes must be made available and consist of a fire hydrant system installed in accordance with AS2419.1.	Acceptable Solution

2.0 INTRODUCTION

2.1 PURPOSE OF REPORT

The purpose of this report is to establish suitable bushfire mitigation measures for the proposed Alterations and Additions to Existing School, to be constructed at Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571, 10 Lomas Lane and 210 Wine Country Drive, Nulkaba.

Development on Bush Fire Prone Land must satisfy the aim and objectives of Planning for Bush Fire Protection (2019). The aim of Planning for Bush Fire Protection is to use the NSW development assessment system to provide for the protection of human life (including firefighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, onsite amenity and protection of the environment.

More specifically, the objectives are to:

- (i) Afford occupants of any building adequate protection from exposure to a bush fire;
- (ii) Provide for a defensible space to be located around buildings;
- (iii) Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- (iv) Ensure that safe operational access and egress for emergency service personnel and residents is available;
- (v) Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ); and
- (vi) Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush fire fighting).

The recommendations within this report address the aims and objectives of Planning for Bush Fire Protection (2019) to reduce the risk of ignition of the school in a bushfire event and provide safe refuge.

2.2 PROPOSED DEVELOPMENT

The land is zoned SP2 Educational Establishment and is comprised of three allotments totalling 37.05 hectares in size. The proposed development comprises alterations and additions to the existing St Philips Christian College Cessnock Campus. Consent is sought for the following:

- New indoor aquatic centre
- New 'Narnia' pre-school and early learning centre;
- New building for 'DALE' special school
- New building for administration and welcome centre;
- New performing arts centre building;
- New middle school building (2 modules);
- Extension to existing junior school building;
- Extension to existing senior school to include three new building modules including a library;
- Extension to the hub building and retrofit for canteen/cafeteria and IT services
- Extension to staff and hospitality/trade training building;
- Extension to sports hall building
- Extension to switch board building to accommodate a café
- Road upgrades to Lomas Lane including provision of bus bays and bus layover area;
- Additional vehicular access to the site from Wine Country Drive;
- Increase in student numbers to 1,732.

2.3 SIGNIFICANT ENVIRONMENTAL FEATURES

The only known significant environmental feature is that mapped waterways extend through the site.

2.4 ENVIRONMENTAL ASSETS

Portions of the site are mapped within the Biodiversity Values Map and Threshold Tool. This report has been reassessed based on ecological review and the intent of reducing impact on Biodiversity Mapped land.

2.5 ABORIGINAL HERITAGE

An Aboriginal Cultural Heritage Construction Management Plan has been prepared by McCardle Cultural Heritage Pty Ltd dated 11/12/2024.

An Aboriginal Heritage Assessment was undertaken by AECOM at the site in December 2008. There is the potential for archaeological material to exist within the site with a preliminary predictive model for the area suggesting that open sites, in the form of stone tool artefact scatters or isolated finds, may occur within 100m of Black Creek or within 50m of a low stream-order tributary or on basal slopes in close proximity to reliable water courses.

It is likely that any subsurface deposits have been subjected to disturbance, which may mitigate their cultural heritage value. Areas of the study area greater than 100m from Black Creek or greater than 50m from one of its tributaries are considered to have low potential for archaeological deposits. It is considered that about 50% of the study area retains moderate archaeological potential, with the remaining 50% being of low potential. There is also a high percentage of ground cover, which reduces the chances of success for detecting surface archaeological features (AECOM, 2008).

3.0 BUSHFIRE ATTACK ASSESSMENT

3.1 VEGETATION CLASSIFICATION

Potential bushfire hazards were identified from Cessnock Council bushfire prone mapping as occurring within the investigation area. Aerial mapping and inspection of the site reveals that the bushfire prone land map is somewhat inaccurate in respect to the current bushfire hazard.

The major vegetative threats have been determined using Keith (2004) to derive vegetation structures listed in Planning for Bush Fire Protection (2019). General vegetation structures have been translated to AS3959 (2018) groupings. The vegetation has been reviewed following completion of the Biodiversity Development Assessment Report (BDAR) V4 dated 4th November, 2022. The eastern riparian vegetation is now assessed as Forested Wetland – Coastal Floodplain Wetland, superseding the previous assessment of Forest – Coastal Swamp forest.

Primary Vegetation Structures have been identified in Figure 1 and 2 – Site Constraints Map and separation distances shown in Table 2 – Bushfire Attack Assessment.

3.2 EFFECTIVE SLOPE

Effective slope was measured using 1-metre contour data obtained from Department of Lands and verified by a laser hypsometer on site. The laser hypsometer verified slope within the vegetation calculating effective fire run slope from 5 separate measurements in each dominant direction.

Effective Slopes have been identified in Figure 1 and 2 – Site Constraints Map and slope ranges are shown in Table 2 – Bushfire Threat Assessment.

3.3 MINIMUM SETBACKS AND ASSET PROTECTION ZONES

Minimum setbacks have been determined in accordance with Table A1.12.1 (Planning for Bush Fire Protection). The minimum Asset Protection Zone for special fire protection purpose development has been demonstrated in Section 1 Executive Summary and Compliance Tables.

The required asset protection zones are available within the subject site.

3.4 BUSHFIRE ATTACK LEVELS

Bushfire attack levels and relevant construction levels in accordance with AS3959 (2019) have been demonstrated in Section 1 Executive Summary and Compliance Tables, Table 2 Bushfire Threat Assessment.



PHOTOGRAPH 1 – PROPOSED AQUATIC CENTRE LOCATION

View of the location of the proposed aquatic centre looking east. The existing greenhouse will be demolished and the unmanaged grassland surrounding the building shall be maintained.



PHOTOGRAPH 2 – NARROW BAND OF TREES LOCATED EAST OF ACQUATIC CENTRE

View of low threat vegetation located east of the aquatic centre. The vegetation is a thin band of casuarinas that offer a reduced vegetative threat to the proposed buildings and open structures. The ecological constraints analysis identifies a 20 metre riparian buffer to be located around the mapped waterway.



PHOTOGRAPH 3 – MANAGEMENT EAST OF LOW-THREAT RIPARIAN CORRIDOR

View of managed fields located east of the low-threat riparian corridor. Forest can be seen in the distance, with the majority of the open fields presently being mechanically managed grass. The forest is dominated by eucalypts in the upper stratum with an understorey of native shrubs and grasses. Black Creek runs along the eastern boundary of the site.

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FIGURE 1 – SITE CONSTRAINTS MAP

3.5 COMPLIANCE WITH AIMS AND OBJECTIVES OF PLANNING FOR BUSH FIRE PROTECTION

The aims and objectives of Planning for Bushfire Protection (2019) are addressed below for the school.

Afford occupants of any building adequate protection from exposure to a bush fire

The existing school was approved using Planning for Bush Fire Protection (2006) legislation which was current at time of approval. Following the establishment of additional asset protection zones, the buildings within the existing site will have a reduced exposure to bushfire. Evacuation planning in the event of bushfire should clearly indicate site users to evacuate early in a direction away from the fire.

Provide for a defensible space to be located around buildings

Defensible space is provided around all buildings and will be expanded around proposed school additions and the aquatic centre in accordance with the acceptable solutions.

Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition

Following establishment of the asset protection zones all buildings will comply with the setbacks of special fire protection purpose development and new classroom and childcare centre buildings will be built to BAL-19.

Ensure that safe operational access and egress for emergency service personnel and building users is available

The property access to the site offers compliance with Planning for Bush Fire Protection.

Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ)

The school shall maintain landscaping and fuel management in accordance with Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service's document Standards for Asset Protection Zones.

Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush fire fighting)

Utility services shall comply with Planning for Bush Fire Protection (2019). Electrical supplies onsite will be located underground, and the hydrant network will be expanded in accordance with AS2419.1.

4.0 UTILITY SERVICES AND INFRASTRUCTURE

4.1 WATER SERVICES

A reticulated water supply and street hydrant access is available. The hydrant span shall provide coverage to the development in accordance with AS 2419.1. It is noted that hydrant pressures have not been tested as part of this report.

4.2 ELECTRICITY SERVICES

The existing electrical supply to the local area is via overhead electrical transmission lines. No part of a tree shall be closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.

Onsite electrical transmission lines are located underground with new services recommended to be located underground.

4.3 GAS SERVICES

- Reticulated or bottled gas installed and maintained in accordance with AS 1596 (2002) and the requirements of the relevant authorities. Metal piping is to be used.
- Fixed gas cylinders to be kept clear of flammable material by a distance of 10m and shielded on the hazard side of the installation.
- Gas cylinders close to the building are to have the release valves directed away from the building and at least 2m from flammable material with connections to and from the gas cylinder being of metal.
- Polymer-sheathed, flexible gas supply lines to gas meters adjacent to the buildings are not to be used.

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FIGURE 2 – LOCALITY MAP
Courtesy of OpenStreetMap



FIGURE 3 – COUNCIL'S BUSHFIRE PRONE LAND MAP

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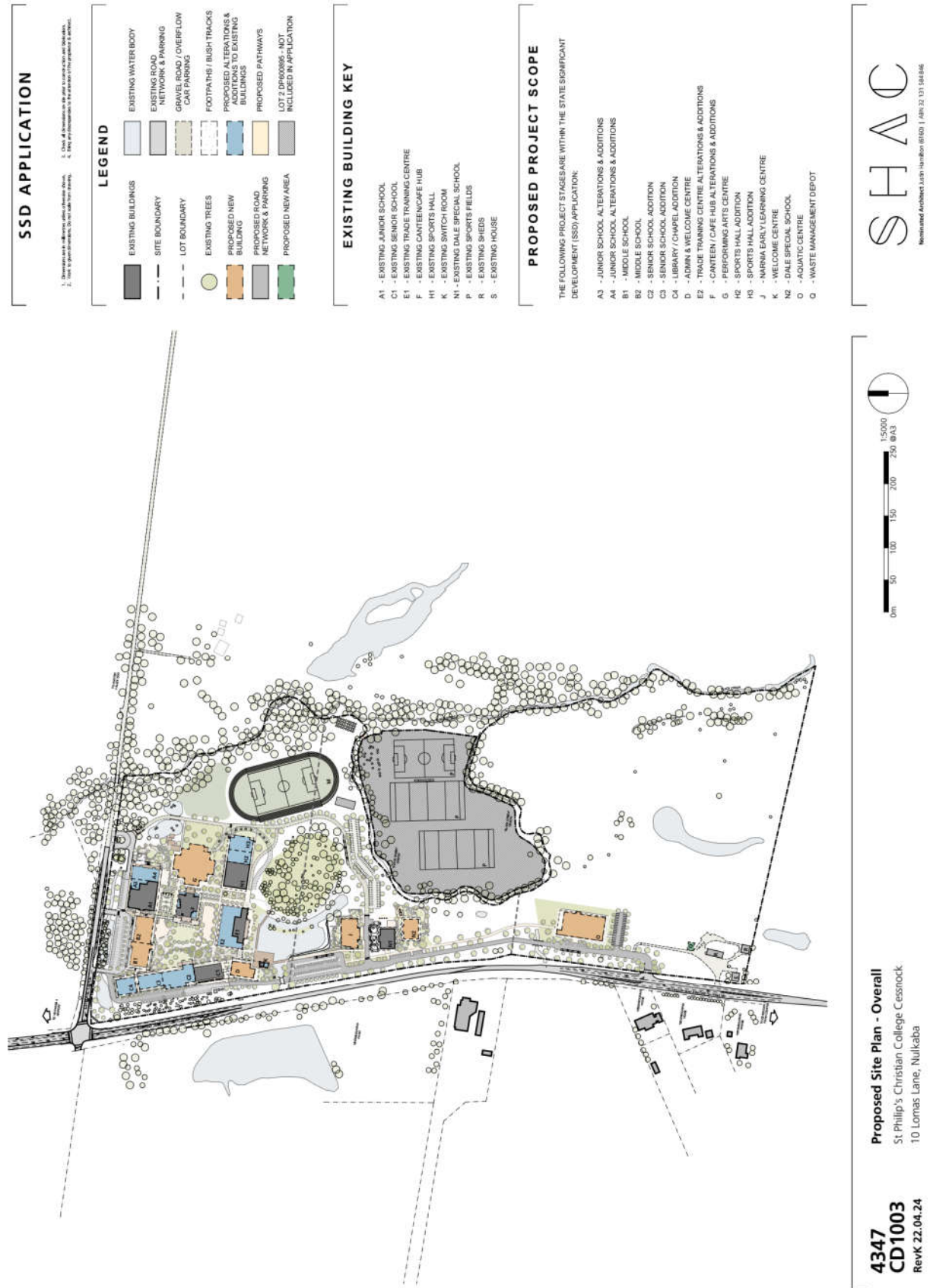


FIGURE 4 – DEVELOPMENT PLAN

5.0 PROPERTY ACCESS

Public Road Access

The subject site is located on the corner of Lomas Lane and Wine Country Drive being two way roads interconnecting into the local road network. Emergency Services are expected to have good access to the area at most times.

The existing public road network is deemed adequate to handle increased volumes of traffic in the event of a bushfire emergency. No new public roads are proposed for this development.

Fire Trails

Fire trails do not intersect the vegetation in the local area. No new fire trails are proposed for this development.

Property Access

Property access is provided by way of Lomas Lane providing access from the public road system directly to the private land, giving firefighters access to the building. The proposed development includes provision of a second site access directly off Wine Country Drive, further improving firefighting access and site egress for vehicles.

Property access roads shall comply with sections 6.8b of Planning for Bush Fire Protection 2019 as detailed below:

ACCESS (GENERAL REQUIREMENTS)	
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	• Internal roads are two-wheel drive, sealed, all-weather roads. • Access is provided to all structures; • Traffic management devices are constructed to not prohibit access by emergency services vehicles; • Access roads must provide suitable turning areas in accordance with Appendix 3; and • 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.
Compliance: The development can offer full compliance. The proposed design incorporates a loop road around the bulk of the school alterations/additions which will support effective evacuation of facility users and access for firefighters. Access to the hazard vegetation will be improved by sporting fields and the new road network.	
The capacity of access roads is adequate for firefighting vehicles.	The capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating.

Compliance: The development can offer full compliance.	
There is appropriate access to water supply.	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 AS2419.1 - Fire hydrant Installations - System design, installation and commissioning;
Compliance: The development can offer full compliance.	
PERIMETER ROADS	
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating, as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	• There are two-way sealed roads; • Minimum 8 metre carriageway width kerb to kerb; • Parking is provided outside of the carriageway width; • Hydrants are located clear of parking areas; • There are through-roads, and these are linked to the internal road system at an interval of no greater than 500 metres; • Curves of roads have a minimum inner radius of 6 metres; • 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 4 metres to any overhanging obstructions, including tree branches, is provided.
Compliance: A perimeter road is provided around the bulk of the school. The aquatic centre and D.A.L.E. will be located outside the perimeter road. The two way road at the north of the site will have lanes wrapping around the dam with 4 metre carriageway width on each lane.	
NON-PERIMETER ROADS	
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Minimum 5.5 metre carriageway width kerb to kerb; Parking is provided outside of the carriageway width; Hydrants are located clear of parking areas; Roads are through-roads and are linked to the internal road system at an interval of no greater than 500 metres; Curves of roads have a minimum inner radius of 6 metres; The road crossfall does not exceed 3 degrees; and A minimum vertical clearance of 4 metres to any overhanging obstructions, including tree branches, is provided.
Compliance: The development can offer full compliance.	

The property access requirements of Planning for Bush Fire Protection (2022) addendum and National Construction Code 2022 Specification 43 have been examined within the performance based solution.

6.0 LANDSCAPING MAINTENANCE

It is recommended that landscaping is undertaken in accordance with appendix 4 of Planning for Bush Fire Protection (2019) and maintained for the life of the development.

Trees should be located greater than 2 metres from any part of the roofline of a building. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.

The landscaped area should be maintained free of leaf litter and debris. The gutter and roof should be maintained free of leaf litter and debris. Landscaping should be managed so that flammable vegetation is not located directly under windows.

Ground fuels such as fallen leaves, twigs (less than 6mm in diameter) and branches should be removed on a regular basis, and grass needs to be kept closely mown and, where possible, green.

7.0 EMERGENCY AND MAINTENANCE PLANS

7.1 BUSHFIRE MAINTENANCE PLANS

A bushfire maintenance plan is to be prepared that addresses the following requirements:

- a) Contact person/department and details; and
- b) Schedule and description of works for the construction of asset protection zones and their continued maintenance.
- c) Landscaping shall be managed as outlined within Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service's document Standards for asset protection zones.

7.2 FIRE EMERGENCY PROCEDURES

Arrangements for emergency and evacuation are to comply with section 6 of Planning for Bush Fire Protection 2019.

An Emergency/Evacuation Plan is to be prepared consistent with AS 3745 'Emergency control organisation and procedures for buildings, structures and workplaces' which includes consideration of bushfire.

The Bush Fire Emergency Management and Evacuation Plan is to be prepared consistent with the:

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

8.0 PERFORMANCE BASED SOLUTION

At the request of the client, I have been asked to provide an unbiased safety model for the proposed development. The proposed Performance Based Solution offers compliance with National Construction Code 2022 performance measure of reducing the chance of ignition to the building from the fire front and the objectives of Planning for Bush Fire Protection (2019). The performance solution addresses Planning for Bush Fire Protection Addendum (2022) access performance criteria.

Proposed Performance-Based Solution

An existing state significant development application exists for the site however since during the assessment period, the National Construction Code (NCC) 2022 Specification was approved which introduced property access requirements that are not possible without total redesign.

The proposed development departs from the acceptable solutions of Planning for Bush Fire Protection (2022) Addendum relating to property access and providing a better bushfire outcome for the school.

Redundancy calculations have been provided for the forested wetland vegetation based on a 1 in 200 year fire weather event.

A bushfire design brief was submitted to NSW RFS for pre-DA consultation on 24/10/2024, with support in principle of the concept. The bushfire design brief is provided in Appendix 3.0 and NSW RFS response provided in Appendix 4.0.

Evaluation of Performance-Based Solutions

Defendable space is provided around the proposed buildings, with an examination made for the provision of a better bushfire outcome through an increased BALs, improved property access through a perimeter road around the school rather than around individual buildings and examination of Planning for Bush Fire Protection Addendum (2022) and improved emergency management and water supplies within the bushfire design brief.

AS3959 (2018) Construction of buildings in bushfire-prone areas and Planning for Bush Fire Protection (2019) detail the calculations required for detailed fire modelling and Newcastle Bushfire Consulting's proprietary modelling tool uses these. The detailed fire models have been provided in Appendix 3.0 Bushfire Design Brief. These are identified as a design redundancy using 1 in 200 year fire weather calculations and the acceptable solution has been applied.

Planning for Bush Fire Protection Addendum (2022) has been examined within the bushfire design brief and the performance criteria of "Firefighting vehicles are provided with safe, all-weather access to structures and hazardous vegetation." Has been achieved.

The proposed recommendations support the intent and objectives of Planning for Bush Fire Protection (2019) for this development and will result in a safer environment for students, employees and site users.

9.0 RECOMMENDATIONS

Based upon an assessment of the plans and information received for the proposal, it is recommended that development consent be granted subject to the following conditions:

1. Any proposed classrooms, and the childcare centre shall comply with sections 3 and 6 (BAL-19) in accordance with AS3959 (2018) Construction of buildings in bushfire-prone areas or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate and the additional construction requirements of Planning for Bush Fire Protection (2019) Section 7.5.2.
2. Building G – Performing Arts Centre shall comply with sections 3 and 5 (BAL-12.5) in accordance with AS3959 (2018) Construction of buildings in bushfire-prone areas or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate and the additional construction requirements of Planning for Bush Fire Protection (2019) Section 7.5.2.
3. At the commencement of building works and in perpetuity, the property to a distance of 49 metres surrounding the buildings to the south and east; and to the northern and western property boundary, shall be maintained as an inner protection area (IPA) as outlined within Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW Rural Fire Service's document Standards for Asset Protection Zones.
Note: no native vegetation removal is required within the BDAR mapped area located east of buildings A3, A4 or G.
4. A minimum 50 metre asset protection zone shall be managed within grassland surrounding the buildings where onsite.

Note 1: The existing asset protection zones that exceed the above distances are recommended to continue in perpetuity but shall not extend outside of the property boundaries and shall not include native vegetation clearing.

Note 2: The existing unformed vehicle access that connects to the sporting fields located on lot 2 DP 600895 are expected to be maintained to be accessible via a two wheel drive vehicle and have a minimum 3.5 metre width.

5. A bushfire maintenance plan is to be prepared for the site.
6. Water, electricity and gas are to comply with section 6 of Planning for Bush Fire Protection 2019.
7. The property access is to comply with section 6 of Planning for Bush Fire Protection 2019.

Note: a perimeter road shall be provided around the school and individual property access roads are not required around individual buildings.

8. Landscaping is to be undertaken in accordance with Appendix 4 of Planning for Bush Fire Protection 2019 and managed and maintained in perpetuity.
9. An Emergency/Evacuation Plan is to be prepared consistent with AS 3745 'Emergency control organisation and procedures for buildings, structures and workplaces' which includes consideration of bushfire. The Bush Fire Emergency Management and Evacuation Plan is to be prepared consistent with the:
 - The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan;
 - NSW RFS Schools Program Guide;

10.0 CONCLUSION

The final recommendation is that there is buildable area onsite for the development with appropriate services and asset protection zones available. The proposed development can comply with the requirements of Planning for Bush Fire Protection 2019 guidelines. The proposed development will result in a better bushfire outcome than if the development did not proceed, by increasing asset protection zones to the existing school, improving vehicular access and water supply throughout the site.

11.0 APPENDIX 1.0 – ASSET PROTECTION ZONES SUMMARY

Below is a summary of Asset Protection Zones outlined in appendix 4 of Planning for Bush Fire Protection (2019) and the NSW Rural Fire Services “Standards for Asset Protection Zones”. The property owner(s) should obtain these two documents and familiarise themselves with their content.

Generally

Asset Protection Zones (APZ) refer to the area between the bushfire threat and the asset (i.e. building). The APZ may contain two areas; the Inner Protection Area (IPA) and the Outer Protection Area (OPA). Some areas should be managed entirely as an Inner Protection Area (IPA). Refer to the plans for locations of APZ and distances from Assets.

Inner Protection Area (IPA)

The inner protection area is located adjacent to the asset and is identified as a fuel-free zone.

A. Shrubs (consisting of plants that are not considered to be trees)

1. Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
2. Shrubs should not be located under trees;
3. Shrubs should not form more than 10% ground cover; and
4. Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

B. Trees: Maintain a minimum 2-5 metre canopy separation.

1. Tree canopy cover should be less than 15% at maturity;
2. Trees at maturity should not touch or overhang the building;
3. Lower limbs should be removed up to a height of 2m above the ground;
4. Tree canopies should be separated by 2 to 5m; and
5. Preference should be given to smooth barked and evergreen trees.

Outer Protection Area (OPA)

The Outer Protection Area (OPA) is located adjoining the vegetation. The OPA should be maintained as a fuel-reduced area. This assumes trees may remain but with a significantly reduced shrub, grass, and leaf litter layer. In many situations leaf litter and the shrub layer may not require maintenance at all.

A. Shrubs:

1. Shrubs should not form a continuous canopy;
2. Shrubs should form no more than 20% of ground cover.

B. Trees:

1. Existing trees can be retained.
2. Tree canopy cover should be less than 30%; and
3. Canopies should be separated by 2 to 5m.

Grass (throughout the entire asset protection zone)

Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and leaves and vegetation debris should be removed.

12.0 APPENDIX 2.0 – LANDSCAPE PLAN REVIEW

BUSHFIRE PROTECTION MEASURES LANDSCAPE PLAN REVIEW

Subject Property: **LOT 1 DP 126765, Lot 1 DP 744377
and Lot 518 DP 837571
10 Lomas Lane and 210 Wine Country Drive, Nulkaba
St Philips Christian College**

Dated: **24/2/2025**

This landscape plan review is provided solely for the purpose of assessing the level of compliance with the development proposal, relevant to bushfire protection outlined in this assessment. This review may be considered as an addendum to the bushfire assessment report prepared by Newcastle Bushfire Consulting for Saint Philip's Christian College dated 12/12/2023.

Applicant Details		
Applicant	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION LTD	
Applicants Address	ST PHILIP'S CHRISTIAN COLLEGE 57 HIGH STREET WARATAH New South Wales 2298	
State Significant Development Details		
State Significant Development No.	SSD-10360337	
Proposed Development	Alterations and additions to St Philip's Christian College Cessnock campus	
Bushfire Consultant		
Company	Newcastle Bushfire Consulting	
BPAD-A Certified Practitioner	Phillip Couch	
BPAD-A Accreditation No.	BPD-PA-16132	
Contact Number	02 40230149	
Drawing Description	Project No.	Drawn
Detailed Landscape Plans	2324 Rev 5 Dated 24/2/2025	Studio 151

Additional Information Supplied to support the development proposal is detailed below:

Department of Planning and Environment Request for Information dated 13th October, 2023. The relevant clause is reproduced below:

“The Department’s request on 24 July 2023 requested that an addendum Bushfire Assessment report be provided to support the detailed landscape plans. The submitted RtS provides a statement from a Landscape designer but not an addendum Bushfire Assessment from a qualified Bushfire Consultant.

A full Landscape Plans are required to be prepared in the above request. Following that, the qualified Bushfire Consultant should provide an assessment of all the landscape plans and confirm compliance with Planning for Bushfire Protection 2019.”

The landscape plans have been reviewed with amendments made by studio 151 as requested. The landscape plans are deemed compliant with the intent of Planning for Bush Fire Protection 2019.

This landscape plan review was prepared for the purposes and exclusive use of the stated applicant to satisfy the specific item reviewed and is not to be used for any other purpose or by any other person or Corporation. Newcastle Bushfire Consulting accepts no responsibility for any loss or damage suffered howsoever arising to any person or Corporation who may use or rely on this certificate in contravention of the terms of this clause.

Reporting has been based on the relevant approval authorities and Rural Fire Service Guidelines at the time of review. The review is not to be interpreted as certifying that buildings or occupants will not be adversely impacted upon given that bushfire is a natural phenomenon and cannot fully be predicted nor can occupant behaviour.



Phillip Couch GFireE
MA FireInvestigation
B Info Science
Grad Dip Design for Bushfire Prone Areas
FPAA BPAD – Level 3 Accreditation Number BPD-PA-16132
Director Newcastle Bushfire Consulting



13.0 APPENDIX 3.0 – BUSHFIRE DESIGN BRIEF

BUSHFIRE DESIGN BRIEF PROPOSED SCHOOL ADDITIONS

**10 Lomas Lane and 210 Wine Country Drive, Nulkaba
LOT 1 DP 126765, LOT 1 DP 744377**

Date: **23/10/2024**

Prepared for: **St Philips Christian College**

NEWCASTLE BUSHFIRE CONSULTING

5 Chartley Street, Warners Bay NSW 2282
(Ph) 02 40230149 (mob) 0423 923284
Email: mail@newcastlebushfire.com.au

Couch Family Trust T/A
Newcastle Bushfire Consulting Pty Ltd A.B.N. 96 831 374 298
Bushfire and Building Sustainability Consultants

Document Status

Revision No.	Issue	Description	Reviewed	Approved by Director
1	23/10/2024	Final	E. Davis	P. Couch

Prepared By:



Phillip Couch GFireE
Bach Info Science
Grad Dip Design for Bushfire Prone Areas
FPAA BPAD – Level 3 Accreditation Number BPD-PA-16132
Director Newcastle Bushfire Consulting



1.0 ITEMS RELATING TO THIS BRIEF

This brief outlines specific performance-based solutions in relation to the measurement of the below factors for the proposed dwelling additions:

- Proposal of better bushfire outcome looking at upgrade to the existing school and improvements of existing State Significant Development approval for existing school, using the objectives of existing SFPP developments as defined in Planning for Bush Fire Protection (2019) Section 6.4 and a performance solution examining Planning for Bush Fire Protection Addendum (2022).
 - Removal of the need for a perimeter road around all buildings with a single loop road provided.
 - Reassessment of vegetation located east of the school, following detailed ecological study to remove the need for clearing due to biodiversity offset mapped vegetation.

It is noted that the development complies with all acceptable solutions except the above nominated issues.

2.0 INTRODUCTION

2.1 PROPOSAL

This brief has assessed the proposed school alterations and additions against the requirements of Planning for Bush Fire Protection (2019) and specific measures identified by New South Wales Rural Fire Service in SEARS SSD-10360337. The additional requirements of Planning for Bush Fire Protection Addendum (2022) have been examined.

Upgrades will be completed for the existing school relating to landscaping, water supply and construction. Refer to Figure 1.0 Site Plan.

Stakeholders

Name	Position
St Philips Christian College	Owner/Applicant
Phillip Couch – Newcastle Bushfire Consulting	Bushfire Consultant
SHAC	Architect
Unknown	Project Builder
Cessnock City Council	Approval Authority
New South Wales Rural Fire Service	Referral Authority

This Bushfire Design Brief (BDB) is to be used as a consultative tool for the relevant stakeholders.



2.2 GENERAL

An additional updated report shall be prepared examining the development pursuant to the requirements of current legislation and planning.

This Bushfire Design Brief is provided as a consultative tool to ensure consistency within the methodology used to support the performance-based solution of the development.

2.3 REPORT DETAILS

Property Address:	10 Lomas Lane and 210 Wine Country Drive, Nulkaba
Local Government Area:	Cessnock City Council
Report Prepared By:	Phillip Couch GFireE FPAA BPAD – Level 3 Accreditation Number BPD-PA-16132

3.0 PERFORMANCE BASED SOLUTION

The proposed development departs from the acceptable solutions of Planning for Bush Fire Protection (2019) due to the more detailed analysis of bushfire behaviour, assessment of the performance criteria of Planning for Bush Fire Protection Addendum (2022) and providing a better bushfire outcome for the school.

The existing vegetation assessment in the approved state significant development application is accepted, except for the riparian vegetation located east of the school grounds. This was previously assessed as forest, however it has been reassessed as forested wetland due to a detailed ecological study via a Biodiversity Development Assessment Report (BDAR), review of detailed Plant Community Type (PCT) mapping and an additional site visit. Supporting photographs have been provided.

Slope Analysis

Planning for Bush Fire Protection (2019) requires the slope analysis to be measured over the effective slope, determining bushfire behaviour within the hazard, from the vegetation/APZ interface line. Planning for Bush Fire Protection requires that the slope that will most influence the fire behaviour be used.

1-metre contours have been derived from Land and Property Information data and measured onsite.

Eastern Forested Wetland

The primary slope within the adjacent vegetation is determined to be level. A mapped waterway is located to the east of the site.

Assessment of Eastern Adjacent Vegetation

The land located east of the proposed classrooms is a riparian corridor identified as forested wetland - Coastal Floodplain Wetlands. Grazing pasture and rural lands extend east of the forested wetland.

BUSHFIRE ATTACK LEVEL ASSESSMENT

	North	East	South	West
Vegetation Structure	Remnant Vegetation < 1 hectare in size	Forested Wetland	Grassland	Grassland
Distance to Vegetation	70 metres or greater	49 metres	> 50 metres	> 50 metres
Slope Range	Level/Upslope	Level/Upslope	1 to 5 degrees downslope	Level/Upslope
PBP (2019) Table A1.12.1 Minimum Setbacks	38 metres	34 metres	36 metres	40 metres
Planning for Bush Fire Protection Bushfire Attack Level (BAL)	BAL-12.5 * BAL-19 construction required	BAL-12.5 * BAL-19 construction required	BAL-LOW * BAL-19 construction required	BAL-LOW * BAL-19 construction required

* Proposed construction is in accordance with Planning for Bush Fire Protection Addendum (2022) with all classroom and childcare centre buildings to be built to BAL-19.

3.1 METHODOLOGY

Pursuant to Section A2.4(c) of Appendix 2 in Planning for Bush Fire Protection (2019), the assessment method used by the performance solution to demonstrate compliance with the nominated performance criteria, is a comparative analysis with the acceptable solutions of Planning for Bush Fire Protection (2019) relating to construction.

The assessment will be consistent with Planning for Bush Fire Protection (2019) which provides bushfire protection measures to resist three forms of impact to the building emanating from a bushfire event being –

- Direct flame contact
- Radiant heat
- Ember attack.

Planning for Bush Fire Protection (2019) does not take maintenance mechanisms into consideration for the building and does not factor the potential impact on a building via windborne objects during a bushfire event.

This brief uses a qualitative and quantitative analysis to consider Appendix 1.8 and Section 6.4 of Planning for Bush Fire Protection (2019).

Quantitative review of Design Fires

The proposed development provides compliance with the acceptable solutions in Table A1.12.1 for Forested Wetland with a design redundancy of an additional 15 metres.

An additional design redundancy study is provided, based on a detailed fire model using Forested Wetland fuel loading with the consideration of a 1-in-200-year fire weather event.

The redundancy study determines the Bushfire Attack Level (BAL) using an AS3959 (2018) Method 2 Detailed Fire Model.

The ABCB Bushfire Verification Method Section 6.7 Simple Method has been applied to existing legislation to determine the BAL. Fire weather based on 1-in-200-year annual exceedance probability has been applied to the detailed fire model.

Douglas et al. (2014) define forest fire dangers using Extreme Value Analysis in Determining Annual Probability of Exceedance for Bushfire Protection Design. The FFDI for a 1-in-200-year event based upon Williamstown weather station is FFDI 123, with this having been used in the design fire model.

Forested Wetland Fire Inputs

Surface Fuel Load: 8.2 tonnes per hectare
Overall Fuel Load: 15.1 tonnes per hectare
Default elevation of receiver: as a design redundancy
Site and vegetation Slope: level
FDI: 123 (1-in-200-year fire event)

Forested Wetland Redundancy Study Design Fire Results

Radiant Heat Flux: 7.13 kw/m²
Modelled BAL: BAL-12.5
Proposed BAL: BAL-19

Qualitative review of Design Fires

The vegetation has been modelled with a 100-metre wide firefront which is deemed conservative for the adjacent vegetation.

The calculation utilises a 1200 kelvin flame temperature, with all points of all buildings exposed to less than 10 kw/m² of radiant heat exposure without any vegetation removal.

Review of Section 6.4 Better Bushfire Outcomes for Existing Special Fire Protection Purpose Facilities

The objectives of Planning for Bush Fire Protection (2019) Section 6.4 have been identified and examined below:

Objective: provide an appropriate defensible space;
Compliance: defensible space has been identified with less than 10 kw/m ² of radiant heat received at all points of the building.
Objective: site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition.
Compliance: the proposed buildings have a setback compliance with Planning for Bush Fire Protection (2019) Table A1.12.1.
Objective: provide a better bush fire protection outcome for existing buildings.
Compliance: the proposed additions will be built to BAL-19 and will improve the fire resistance of the current buildings by shielding the existing buildings with more fire resistant structures. The property access and water supply will be significantly enhanced.
Objective: 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.
Compliance: the proposed buildings have a setback compliance with Planning for Bush Fire Protection (2019) Table A1.12.1.
Objective: ensure there is no increase in bush fire management and maintenance responsibility on adjoining landowners without their written confirmation.
Compliance: no additional vegetation management is imposed on neighbouring property owners or public land.
Objective: ensure building design and construction enhances the chances of occupant and building survival; and
Compliance: the proposed building design and construction improves survivability of the building with BAL-19 applied. The design allows evacuation of building-users to safe areas located a distance from the bushland.
Objective: provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads).
Compliance: a Bush Fire Emergency Management and Evacuation Plan shall be prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010.

The proposed property access provides a loop road around the primary school facility which connects to sporting fields and the aquatic centre.
A more thorough examination of property access has been made below to address Planning for Bush Fire Protection Addendum (2022) with specific assessment of perimeter roads around classrooms.

Planning for Bush Fire Protection Addendum (2022) Appendix B Compliance

Table 2 Construction Standard – Acceptable Solution

A construction level of BAL-19 or greater, under AS 3959 and section 7.5 of PBP, is applied.

Compliance: BAL-19 has been applied for the construction of all new buildings.

Table 3: Development Access – Performance Criteria

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

Compliance: An examination has been made of the acceptable solutions with applicability of all classrooms and new buildings having a perimeter road surrounding the building. The acceptable solutions of table 3 relate to a large, isolated building and would require a total redesign of the school to accommodate unnecessary vehicle access.

There is significant defensible space onsite for firefighters. Vehicular access is available via a loop road surrounding the overall perimeter of the school which provides a significant interface to fight fire in the forested wetland or surrounding grassfire.

There is opportunity to evacuate all new buildings away from the bushland whilst firefighters can respond with direct or parallel fire attack.

The proposed loop road shall comply with Planning for Bush Fire Protection (2019) section 6.8b requirements for a non-perimeter road and will significantly enhance access for firefighters and evacuation routes.

Table 4: Development Water Supply – Acceptable Solution

Reticulated water is to be provided to the development, where available;
Water for firefighting purposes must be made available and consist of –
A fire hydrant system installed in accordance with AS2419.1; or
Where no reticulated water is available, a static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, determined in consultation with NSW RFS that –

- | |
|---|
| <ul style="list-style-type: none">• is capable of providing the required flow rate for a period of not less than 4 hours or• has a volume of 10,000 litres for each occupied building. |
|---|

Compliance: the hydrant network onsite shall be designed in accordance with AS2419.1. Provision of a static water supply will result in a better bushfire outcome. Full compliance will be achieved.
--

4.0 WATER SUPPLY

Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1;

hydrants are not located within any road carriageway; and reticulated water supply to SFPPs uses a ring main system for areas adjacent to the loop road.

5.0 SUMMARY OF RECOMMENDATIONS

Below is a summary of the recommendations for a better bushfire outcome:

1. The eastern vegetation has been reassessed as forested wetland with a minimum 49 metre asset protection zone to be provided to the east of classrooms.
2. The proposed building works shall comply with sections 3 and 6 (BAL-19) in accordance with AS3959 (2018) Construction of buildings in bushfire-prone areas or National Association of Steel-Framed Housing (NASH) Standard (1.7.14 updated) for Steel Framed Construction in Bushfire Areas as appropriate and the additional construction requirements of Planning for Bush Fire Protection (2019) Section 7.5.2.
3. Water, electricity and gas is to comply with Section 6 of Planning for Bush Fire Protection (2019).
4. A performance solution has been made on property access and Planning for Bush Fire Protection Addendum (2022) and Table 3 SFPP Development Access has been examined. The new school road network is to comply with Planning for Bush Fire Protection (2019) table 6.8b, with a loop road surrounding the overall perimeter of the school development and no perimeter roads around individual buildings recommended.
5. Landscaping is to be undertaken in accordance with Planning for Bush Fire Protection (2019) Appendix 4 and managed and maintained in perpetuity.
6. A Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010.

6.0 SUMMARY OF RESULTS

Defendable space is provided surrounding the school, with an examination made for the provision of a better bushfire outcome through upgrading vulnerabilities of the building, examination of Planning for Bush Fire Protection Addendum (2022) and improved emergency management and water supplies.

This bushfire design brief has been prepared to initiate discussion with NSW RFS prior to the submission of a final bushfire report, with a request that the methodology be considered, and feedback provided.

Bushfire Assessment: Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571,
10 Lomas Lane and 210 Wine Country Drive, Nulkaba



FIGURE 2.0 – SITE CONSTRAINTS PLAN



View of forested wetland located east of the school. The vegetation is assessed as coastal floodplain wetland with supporting classification within ecological studies for the school.



View of forested wetland looking into the vegetation. Eucalypts dominate the tree canopy with a grassy understorey. No vegetation removal will be required and the vegetation has been reassessed due to biodiversity mapping.

14.0 APPENDIX 4.0 – NSW RFS PRE-DA SUMMARY



PRE-DA ADVICE SUMMARY

Applicant: Phillip Couch, Newcastle Bushfire Consulting

Subject: Better bush fire outcome for proposed upgrade to the existing school and improvements of existing State Significant Development approval for existing school at 10 Lomas Lane and 210 Wine Country Drive, Nulkaba- LOT 1 DP 126765, LOT 1 DP 744377
(St Philips Christian College)
RFS Ref. PRE- DA20241025000264

Details of the Proposal

☒ SFPP

The proposed development includes upgrade to the existing school and improvements of existing State Significant Development approval for existing school. A bush fire design brief (BFDB) outlining specific performance-based solutions in relation to removal of the need for a perimeter road around all buildings with a single loop road provided, and reassessment of vegetation located east of the school, following detailed ecological study to remove the need for clearing due to biodiversity offset mapped vegetation is provided.

☐ Residential subdivision

☐ Other

Bush Fire Protection Issues Discussed

☒ Application and/or Interpretation of sections of *Planning for Bush Fire Protection (PBP) 2019*

Section 6.4 Development of existing SFPP facilities of *Planning for Bush Fire Protection (PBP) 2019* and Appendix B of *Planning for Bush Fire Protection (PBP) Addendum 2022*.

☒ Performance Based Solutions

☒ Qualitative Analysis

The bush fire prone vegetation to the east which was previously assessed as forest is now reassessed as forested wetland due to a detailed ecological study via a Biodiversity Development Assessment Report (BDAR).

☒ Quantitative Analysis

Method 2 calculation results for <10 kW/m² radiant heat exposure on the eastern aspect is provided, and BAL-19 is proposed for construction in accordance with *PBP Addendum 2022*.

☒ Proposed Redundancies

Performance solution examining *PBP Addendum 2022*, specifically access provisions.

☐ Strategic Bush Fire Study

☐ Non compliances in relation to Bush Fire Protection Measures

Bushfire Assessment: Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571,
10 Lomas Lane and 210 Wine Country Drive, Nulkaba

☒ Hazard Assessment	Forested Wetland on eastern aspect with Level/Upslope at 49m; remnant (<1ha in size) at Level/Upslope to the north at 70m; grassland at >0-5 DS on the south at more than 50m; and grassland at Level/Upslope on the west at 40m.
☒ Asset Protection Zones	49m APZ proposed to the east of the classrooms.
☒ Access	New school road network is to comply with <i>Planning for Bush Fire Protection (2019)</i> Table 6.8b, with a loop road surrounding the overall perimeter of the school development and no perimeter roads around individual buildings recommended.
☒ Construction Standards	Proposed building works shall comply with BAL-19.
☒ Services	To comply with <i>PBP 2019</i> .
☒ Emergency and Evacuation Planning	To be prepared.

Documentation

☒ Preliminary Bush Fire Risk Assessment	Newcastle Bushfire Consulting, dated 23 October 2024.
☒ Concept/Detailed Drawings	Proposal drawings- Project no. 4347, CD1003, revision K, dated 23 April 2024, prepared by SHAC Architecture.
☐ Other Documents	

Pre DA-Advice

- The NSW Rural Fire Service supports, in principle, the revised bush fire assessment of the alterations and additions to the existing school building under the provisions of section 6.4 of *Planning for Bush Fire Protection 2019* and Appendix B of *Planning for Bush Fire Protection (PBP) Addendum 2022* based on ecological study.
- In this regard, the detailed bush fire report to be submitted at DA stage can provide further analysis of the changed vegetation classification based on the plant communities identified within the Biodiversity Development Assessment Report (BDAR).
- The justification provided for the internal access roads, which include a loop road surrounding the overall perimeter of the school development, can satisfy the performance criteria as per Table 3 of *PBP Addendum 2022*. The recommendations provided in the bush fire design brief are acceptable.
- Please note that the pre-DA advice issued is preliminary in nature and that no detailed assessment of the site or development is undertaken nor is it intended for the purpose of submitting revised information/bushfire engineering brief for further review of the original advice. The aim of the service is to identify any potential issues before the formal DA is lodged.

Disclaimer

RFS advice is based on information provided and policy and legislative requirements applicable at the time. The advice should be copied into, or referenced in, any subsequent development application.

All efforts are made to identify issues of relevance and likely concern with the preliminary proposal. However, the comments and views in this document are based only on the plans and information submitted for preliminary assessment and discussion at the pre-DA meeting. You are advised that: -

- The views expressed may vary once detailed plans and information are submitted and formally assessed in the development application process, or as a result of issues contained in submissions by interested parties;
- Given the complexity of issues often involved and the limited time for full assessment, no guarantee is given that every issue of relevance will be identified;

Bushfire Assessment: Lot 1 DP 126765, Lot 1 DP 744377 and Lot 518 DP 837571,
10 Lomas Lane and 210 Wine Country Drive, Nulkaba

- Amending any aspect of the proposal could result in changes which would create a different set of impacts from the original plans and therefore make this advice invalid; and,
- The Pre-DA advice given does not bind Council officers, the elected Council members, or other parties to the DA process.

Submitted by:

Rohini Belapurkar
Development Assessment and Planning Coordinator
Planning and Environment Services (East)
Built and Natural Environment

Approved by:

Bryce Pascoe
A/Supervisor, Development Assessment and Planning
Planning and Environment Services (East)
Built and Natural Environment

Date: 29 November 2024

15.0 REFERENCES AND DISCLAIMER

References

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

Douglas G. He Y. Yang X. and Morris E.C. (2014) Use of Extreme Value Analysis in Determining Annual Probability of Exceedance for Bushfire Protection Design. Proceedings of the 11th International Association of Fire Science, Christchurch, New Zealand.

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

Environmental Planning and Assessment Act 1979.

New South Wales Rural Fire Service Planning for Bush Fire Protection (2019).

New South Wales Rural Fire Service Planning for Bush Fire Protection (2022) Addendum.

Watson, P. (2012) Fuel Load Dynamics in NSW Vegetation

Disclaimer

Despite the recommendations in this report, it is impossible to remove the risk of fire damage to the building entirely. This report assesses and provides recommendations to reduce that risk to a manageable level. It is of paramount importance that the recommendations are adhered to for the life of the structure and that all maintenance is performed, to ensure a level of protection is provided to the building, occupants and firefighters.

Planning for Bush Fire Protection (2019) states that notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small, always remains.

AS3959 (2018) Building in Bushfire-Prone Areas states that the standard is designed to lessen the risk of damage to buildings occurring in the event of the onslaught of bushfire. There can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.