CLARKE DOWDLE & ASSOCIATES

DEVELOPMENT CONSULTANTS

SURVEYORS • PLANNERS • ECOLOGISTS • BUSHFIRE CONSULTANTS

ABN 15 114 156 740

BUSHFIRE THREAT & PROTECTION ASSESSMENT

For the Proposed Junior School Buildings

At

ST PHILLIPS CHRISTIAN COLLEGE-GOSFORD CAMPUS
20 NARARA CREEK ROAD, NARARA, NSW
(LOT 102 DP 832279)

AUGUST 2015

Clarke Dowdle & Associates

PO Box 3122, Umina Beach NSW 2257
Ph: (02) 4344 3553 Fax: (02) 4344 6636
EMAIL: admin@cdasurveys.com.au
WEBSITE: www.cdasurveys.com.au

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APPENDICES

DOCUMENT TRACKING

Project Location	St Phillips Christian College-Gosford Campus
Date	25/08/15
Prepared by	Kristan Dowdle
Reviewed by	Anthony Clarke
Approved by	Kristan Dowdle
Status	FINAL
Version	4

1.0 INTRODUCTION

Clarke Dowdle & Associates has been engaged to conduct a Bushfire Threat & Protection Assessment on the school known as St Phillips Christian College-Gosford Campus located at 20 Narara Creek Road, Narara. The proposal is for the extension and construction of a new junior school building/s within an existing school facility. The assessment was performed in August 2015 and was conducted in accordance with the procedures and methods recommended in the NSW Rural Fire Service published document NSW Rural Fire Service published document '*Planning for Bushfire Protection'* (PBP).

This Bushfire Threat & Protection Assessment serves to identify issues relating to the condition of the site as part of the level of assurance required for consent by Gosford City Council to the Development Application (DA) pertaining to the proposed development on the site. A Bushfire Threat & Protection Assessment is required as the site falls within a Bushfire Prone Area as identified by Gosford City Council.

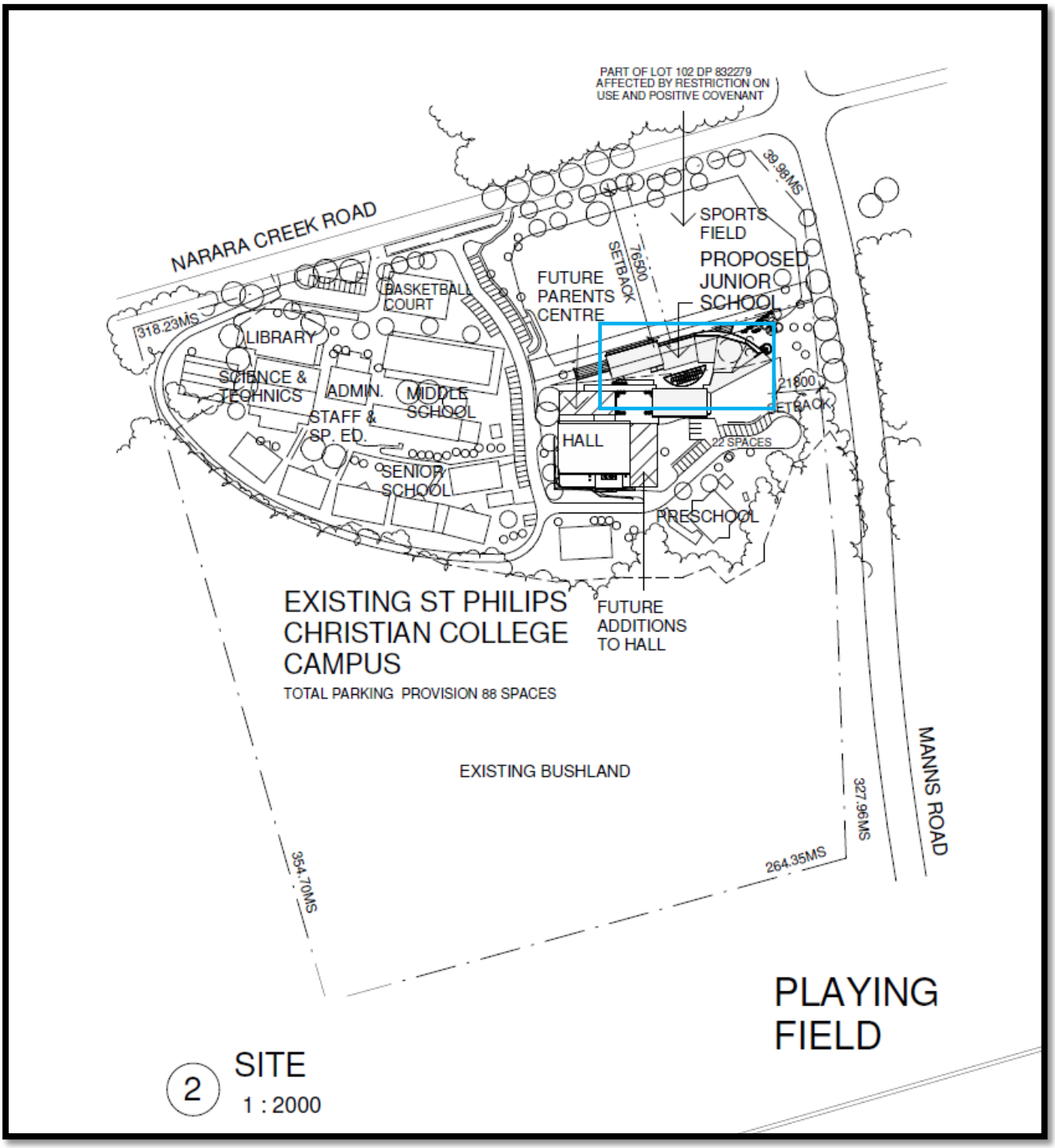
The proposed development involves the extension to an existing school facility within a designated bushfire prone area. These types of developments are identified under Clause 46(d) - *Rural Fires Regulation 2008* are classed as a *Special Fire Protection Purpose* (SFPP) which are integrated under Section 91(1) of the *Environmental Planning and Assessment Act.*

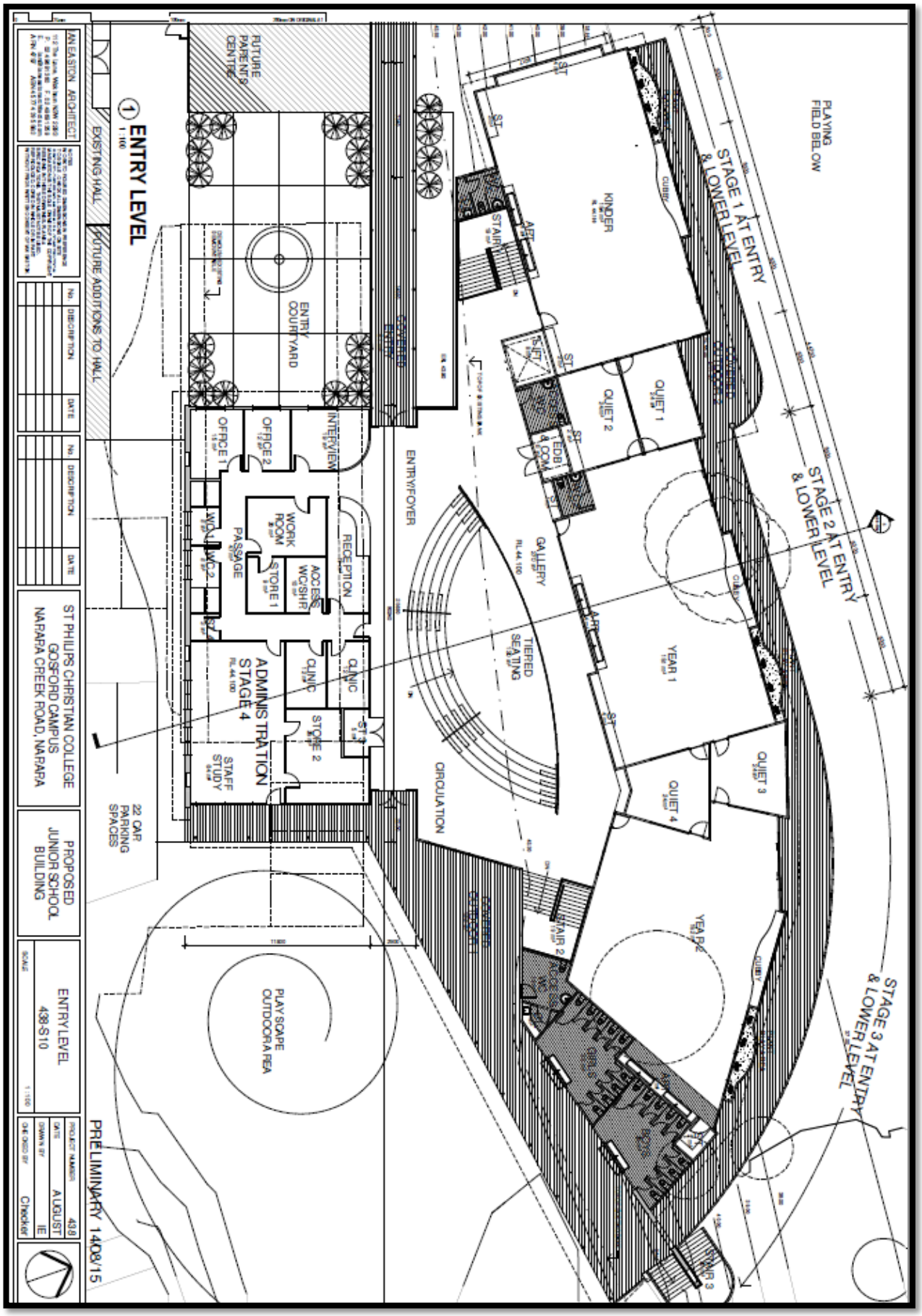
This report will form the basis for providing an assessment of the bushfire protection requirements for the development and will provide recommendations on the provision of Asset Protection Zones, accessibility, water supplies and construction standards within the site.

1.1 Proposed Development

The proposed development will involve the construction of a new Junior School within the existing school campus grounds. The proposal will extend from an existing building and be located on the north-eastern portions of the property. The plans also indicates, future developments proposed. Figure 1 provides a site plan of the proposed development.

The final building plans outlining the elevations, size and dimension of the proposed development will accompany the Development Application.


PART OF LOT 102 DP 832279
AFFECTED BY RESTRICTION ON
USE AND POSITIVE COVENANT
NARARA CREEK ROAD
318.23MS
BASKETBALL COURT
LIBRARY
SCIENCE & TECHNICS
ADMIN. STAFF & SP. ED.
MIDDLE SCHOOL
SENIOR SCHOOL
FUTURE PARENTS CENTRE
76500 SETBACK
SPORTS FIELD
PROPOSED JUNIOR SCHOOL
39.98MS
21800 SETBACK
HALL
22 SPACES
PRESCHOOL
FUTURE ADDITIONS TO HALL
EXISTING ST PHILIPS CHRISTIAN COLLEGE CAMPUS
TOTAL PARKING PROVISION 88 SPACES
EXISTING BUSHLAND
MANNS ROAD
327.96MS
264.35MS
354.70MS
PLAYING FIELD
2 SITE
1 : 2000



Figures 1 & 2: Proposed Development Site Plans

2.0 OBJECTIVES AND SCOPE OF THE ASSESSMENT

The primary objectives of this report are to:

- Outline the degree of bushfire hazard currently affecting the site;
- Outline the degree to which any identified bushfire hazard can be managed;
- Indicate the potential of the site to provide a safe development;
- Provide recommendations for the provision of Asset Protection Areas and Construction standards;
- Review the accessibility of the site; and
- Identify any pre-existing bushfire protective measures such as roads and creeks.

In order to achieve the above objectives the following work was conducted:

- Compilation and review of site information including a site detail plan, topographic map, aerial photograph and site photographs;
- Review of appropriate guidelines including Australian Standard AS3959-2009 '*Construction of buildings in Bushfire Prone Areas'* and PBP;
- Inspection of the proposed development site and surrounding areas to assess the topography, slopes, aspect, drainage vegetation and adjoining land usage;
- Identification of any existing bushfire protection advantages such as roads, creeks and sporting ovals; and
- Visual appraisal of bushfire hazard and risk to the site.

3.0 LEGISLATION

This report has been prepared in accordance with the following legislation and planning requirements:

- *Environmental Planning and Assessment Act, 1979, Sections 79BA, 79C (1) (c) and 91(1)*
- *Rural Fires Act, 1997 (Amended), Sections 63 (1) ,63 (2) and 100B*
- *Rural Fires Regulation 2013-Clause 44*
- *Planning for Bushfire Protection, 2006.*

4.0 SITE IDENTIFICATION AND DESCRIPTION

4.1 Site Identification and Location

The subject site is known as St Phillips Christian College-Gosford Campus and has a street address of 20 Narara Creek Road, Narara (Lot 102 in DP 832279). The site is in the Local Government Area (LGA) of Gosford City Council (Fire Danger Index-100).

Figure 3: Aerial Photograph of site
Source: Department of Planning, 2014 & Nearmap 2015

As can be seen in Figure 2, the site is a large parcel of land that contains numerous buildings and hardstand areas associated with the school facility. The proposed building is located on north-eastern portions of the school grounds.

Lands within the site consist of hardstand areas associated with buildings, driveways and carparks along with playing fields. The higher southern portions of the property contain unmanaged forest vegetation.

The site is connected to the town water supply and contains numerous water hydrants throughout the property.

The main access to the site is via a driveway running from Narara Creek Road. The site contains an internal road network occur throughout the school grounds.

4.2 Bushfire Prone Mapping

The site has been identified by Gosford City Council bushfire mapping as being within the 100m buffer (red) of Category 1 vegetation (orange). Figure 4 outlines this.

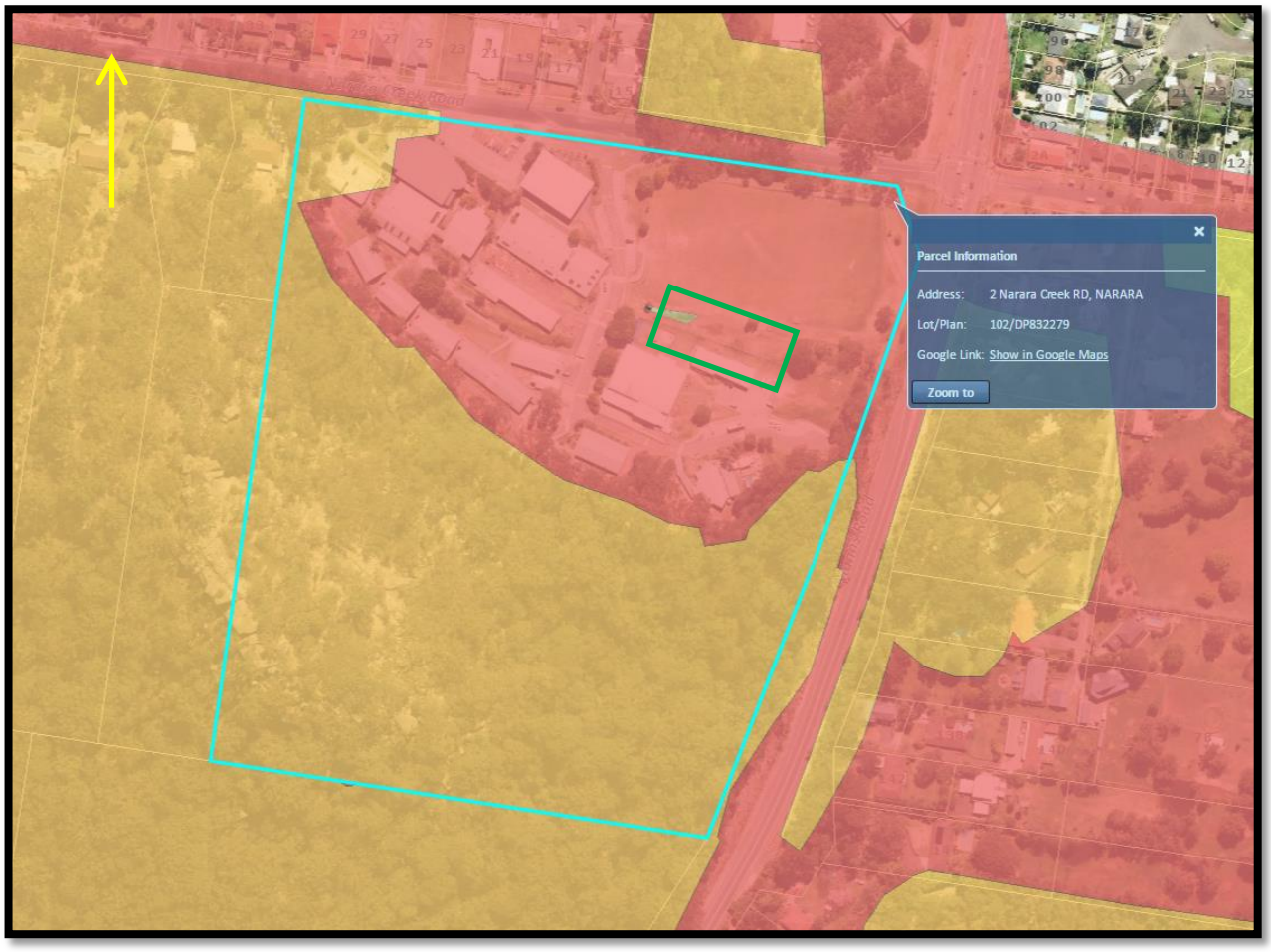


Figure 4: Bushfire Prone Mapping and location of proposal (bordered in green)
Source: Gosford City Council, 2015

4.3 Surrounding Vegetation

4.3.1 Non-Hazard Aspects

North, East and West

These aspects contain managed lands associated with the school grounds and adjoining residential land usage and therefore do not pose a significant bushfire threat to the proposal.

4.3.2 Hazard Aspects

South
To the south beyond managed grounds within the site and school buildings is a large area of sclerophyll forest. In accordance with Appendix 3 in PBP and AUSLIG 1999 Pictorial Analysis (AS 3959-2009) the vegetation contained on the northern and eastern aspects will be assessed as Forest and provides a bushfire risk to the proposal.

4.4 Effective Slope

PBP states in A2.3(b) that effective slope is;

'the gradient within the hazard (vegetation) which will most significantly influence the fire behaviour of the site having regard to vegetation class found.'

In regards to the site, the effective slopes for each hazard facing aspects are;

- **South-west-** >20° Up Slope
- **South -** Flat/Cross Slope

Figure 5 provides Gosford City Councils topographic mapping

Figure 4: Topographic mapping and location of proposal (bordered in blue)
Source: Gosford City Council, 2013

4.5 Surrounding Land Use, Slope, Vegetation Classification and Fuel Loads

The vegetation, slope and surrounding land use were investigated to at least 140 metres surrounding the site. All vegetation has been classified by structure or formation using the system adopted by Keith (2004), then converted to the AUSLIG Pictorial Analysis in AS3959-2009 and by the general description using Table 2.1 in PBP. The vegetation and land use surrounding the site is as follows:

Table 1: Surrounding Vegetation (fuel loads), Slope and Land Usage

TO THE NORTH	TO THE SOUTH	TO THE WEST	TO THE EAST
Managed and maintained lands	This aspect sclerophyll forest. In accordance with AS3959-2009 this vegetation will be as FOREST as per AS 3959-2009 and provides a bushfire risk to the site	Managed and maintained lands	Managed and maintained lands
EFFECTIVE SLOPE			
Flat/Cross Slope	**South-West:** >20° Up Slope **South:** Flat/Cross Slope	Flat/Cross Slope	>20° Up Slope

5.0 BUSHFIRE RISK ASSESSMENT

5.1 Background Information

This bushfire assessment follows the methods and procedures recommended in PBP. This document provides concepts for (via a NSW State variation to the BCA) Class 1, 2, 3 buildings, Class 4 parts of buildings, some Class 10 structures and Class 9 buildings that are Special Fire Protection Purposes (SFPP) (AS3959-2009) in bushfire prone areas and gives guidance on planning and development control processes in relation to bushfire protection measures. The document also provides a methodology for determining setback distance (Asset Protection Zones – refer to Appendix B) and Bushfire Attack Levels (BAL) (refer to Appendix C) required in development for residential purposes that are found to fall in areas designated as bushfire-prone.

5.2 Asset Protection Zones

Appendix 2 of PBP provides a methodology for determining the Asset Protection Zone (APZ) required for any given proposed development. APZ's describes the distance between the proposed development (the asset) and the hazard (the bushland) and vary according to topography and vegetation type. PBP states that the primary purpose of an APZ is to ensure that a progressive reduction of bushfire fuels occurs between the bushfire hazard and any habitable structures within the development.

A summary of the APZ's required for each aspect of the proposed extension is provided in Table 3. Further details as to the theory behind APZ's are contained in Appendix A.

Table 2: Asset Protection Zone Summary

Aspect	Vegetation[1] within 140m of development	Estimated Fuel Loads (t/ha)[2]	Effective Slope of Land	Required Width of APZ (SFPP)[3]
North	Managed Lands	<4	Not Required	-
East	Managed Lands	<4	Not Required	-
West	Managed Lands	<4	Not Required	-
South	Forest	~35	Flat/Cross Slope	60m

Notes for Table 2:

- (1)Refer to Keith (2004) and Table A2.1 *PBP*
- (2) Refer to Table B2 in Appendix B AS3959-2009
- (3) Refer to Table A2.6 *PBP* for SFPP Development

As summarised in Table 3, in accordance with Table 2.6 in PBP, for SFPP developments an APZ of 60m is required on the southern aspects. This 60m APZ will be accommodated by the proposal.

5.3 Bushfire Attack Level (BAL)

The bushfire risk to a property depends on the vegetation type, slope and proximity of vegetation to the proposed development, and can be classified as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL FZ as outlined in AS3959-2009 and PBP. The categories of bushfire attack were determined for the vegetation conditions currently existing on the site and adjacent areas. Following the identification of the bushfire attack category for each aspect, the site will be assessed according to vegetation that presents the highest level of bushfire attack risk. AS3959-2009 provides two methods to determine complying Bushfire Attack Levels, these are the **Simplified Procedure-Method 1** (deemed-to-satisfy) and **Detailed Method for Determining the Bushfire Attack Level-Method 2.**

The level of bushfire attack then determines the construction standards necessary for the proposed development. These protective construction measures are outlined in Australian Standard AS3959-2009. The BAL required for each of the aspects/facades for the proposed development are summarised in Table 2.

Table 3: Bushfire Attack Assessment (Method 1-AS3959-2009)

	ASPECT			
	Northern	**Eastern**	**Western**	**Southern**
Vegetation[1] within 100m of development	Managed Land	Managed Land	Managed Land	Forest
Effective Slope of Land	N/A	N/A	N/A	Flat
Distance (APZ) to Vegetation[2]	>100m	>100m	>100m	60m
Bushfire Attack Level (BAL)[3]	BAL 12.5	BAL 12.5	BAL 12.5	BAL 12.5

Notes for Table 3:

- (1) Refer to Keith (2004), AS 3959-2009 and Table A2.1 in *PBP*
- (2) Distance to vegetation
- (3) Bushfire Attack Levels are in accordance with AS3959-2009

It is noted that the performance requirements for SFPP buildings as specified by PBP state;

'Radiant heat levels of greater than 10kW/m^2 will not be experienced by occupants or emergency workers entering or existing a building'

As seen in Table 3 the proposal will be provided with an APZ of 60m from the southern aspects of the proposed building and meet with the performance requirements of PBP for SFPP development.

The Building Code of Australia (BCA) provides AS3959-2009 as a deemed-to-satisfy building solution for developments within bushfire prone areas. Therefore bushfire protection measures required for the proposed development are provided within the recommendations of this report with reference to the deemed-to-satisfy provisions and section 3.5 of AS3959-2009.

6.0 RECOMMENDATIONS

The subject site falls within a bushfire prone area as deemed by Gosford City Council; therefore the requirements of PBP apply. This bushfire assessment has followed the methodology and procedures recommended in the PBP document.

This Bushfire Threat and Protection Assessment concluded that the proposed development may comply with the performance criteria for PBP if the proposed acceptable solutions and recommendations are implemented. These items are outlined below.

6.1 Asset Protection Zones

- **An APZ of 60m should be created to the south** of the proposed building and is to be managed as an **Inner Protection Area (IPA) for the lifetime of the development.**
- Fuel management within the APZ and cleared areas within the site should be maintained with regular maintenance of the landscaped areas, managed lawns in accordance with an IPA (See Appendix B) and RFS guidelines: *Standards for Asset Protection Zones* (NSW RFS, 2005).
- Notwithstanding the above stated guidelines, the following advice for maintaining APZ's within the site are to be followed:
    - *Mowing of grass*: Grass needs to be kept short (approx. 5cm in height) and green where adequate water supply is available
    - *Raking or manual removal of fine fuels:* Ground fuels such as fallen leaves, twigs (<6mm in diameter) and back should be removed on a regular basis. Fine fuels should also be removed.
    - *Removal or pruning of trees, shrubs and understorey:* The control of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation. Prune or remove trees so that you do not have a continuous tree canopy leading from the hazard to the asset. Separate tree crown by 2 to 5 metres.

Landscaping

With regard to landscaping and APZ maintenance the following recommendations are made:

- Ensure that vegetation does not provide a continuous canopy and fuel path to the school building;
- Planting of vegetation in clumps rather than continuous rows;
- Prune low branches approx 2 metres from the ground to prevent a ground fire spreading into the canopy;
- Plant vegetation far enough away from the proposed building so that plants will not ignite the building by direct flame contact or radiant heat;
- Ensure that shrubs and other plants do not directly abut the building. Where this does occur, gardens should contain low-flammability plants and non flammable ground cover such as gravel and/or pebbles etc.

6.2 Construction Standards

Proposed Junior School Building/s

- The proposed building/s shall be built to comply with AS3959-2009 *Construction of Buildings in Bush Fire Prone Areas'* **Sections 3 and 5 (BAL 12.5)** and **Appendix 3 in PBP.**

Roof

- Roof gutters and valleys should be leaf-proofed by the installation of an external gutter protection system that stops leaves from entering the gutter and building up in the gutter. The material used in such a system should have a flammability index of no greater than 5 (AS AS1530.2);

Service Pipes

- All exposed piping should be of metal. Pipes of other materials should be buried to a depth of at least 300mm below finished ground level.

Fencing

- All new fencing and gates shall be constructed in accordance with the NSW Rural Fire Service guideline: Fast Fact-*Fences or Gates in Bushfire Prone Areas*

6.3 Property Access and Evacuation Safety

- Safe access is provided to the subject property via Narara Creek Road. This road will serve both as an access point for fire fighters and an egress point for residents during a bushfire event.

- The site contains numerous roads within the education facility extending from the sites main car park. Fire Services will have free pedestrian and road access to the entire property and around the proposed building footprint.

6.4 Emergency and Evacuation Management Plan

The proposed alterations should be incorporated into the existing Evacuation Plan and/or new evacuation plan for the school. This emergency/evacuation plan is to be prepared consistent with the *RFS Guidelines for the Preparation of Emergency/Evacuation Plan and* outline compliance with AS 3745-2010. This plan should address all buildings within the site and include information on, but not limited to, the following ;

- Under what conditions and circumstances should the complex be evacuated (e.g. Large bushfire event);
- Where occupants will be evacuated to;
- Roles and responsibilities of persons coordinating the evacuation;
- Roles and responsibilities of persons remaining on site after the evacuation; and
- The procedure to contact emergency services (e.g. NSW Rural Fire Service) and inform them of the evacuation and where they will be evacuated to.

6.5 Water and Utility Services Supply

6.5.1 Water

The College is connected to the existing reticulated town's water main for domestic and commercial needs. Hydrants and hose reels are located throughout the school grounds and the nearest hydrant is within 50m of the proposed development room. In recognition of this the following recommendations are made;

- Taps and fittings should be constructed of metal; and
- The number of taps and/or length of hose should be adequate in number and/or length to supply water to the building;

6.5.2 Gas (if applicable)

- Any gas cylinders or gas connections should be installed and maintained in accordance with Australian Standard AS1596 - *The Storage and Handling of LP Gas* and the requirements of relevant authorities.
- If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion.

6.5.3 Electricity(if applicable)

- Where possible electrical connection should occur via underground lines
- Where overhead electrical connection lines are proposed-lines area installed with short pole spacing and no part of a tree closer to a power line that the distance set out on accordance with the specifications in 'Vegetation Safety Clearance' issued by Energy Australia

6.6 Landscape and Property Management

- The APZ's and existing cleared areas within the site are recommended to be maintained to comply with Appendix 5 in PBP (see Appendix B of this report).

7.0 CONCLUSION

Clarke Dowdle & Associates were engaged to conduct a Bushfire Threat & Protection Assessment on the property known as St Phillips Christian College-Gosford Campus located at 20 Narara Creek Road, Narara. The assessment was performed in August 2015 and was conducted in accordance with the procedures and methods recommended in the NSW Rural Fire Service published document '*Planning for Bushfire Protection'* (PBP).

This report has outlined and provided recommendations as to how the proposal may comply with the aims and objectives of PBP as summarised below;

'Afford occupants of any building adequate protection from exposure to a bushfire'

APZs have been provided which comply with and/or exceed the minimum requirements of Appendix 2 of *PBP*. The future building/s will be constructed in accordance with *AS3959-2009*.

'Provide for a defendable space to be located around buildings'

APZs have been provided which comply with or exceed the minimum requirements outlined within Appendix 2 of PBP.

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

APZs have been provided in accordance with PBP and future building construction will in accordance with AS3959-2009. Fuel management will occur in the APZ and will be managed by the school.

'Ensure that safe operational access and egress for emergency service personnel and residents is available'

Access complies with the performance requirements outlined within Section 4.1.3(1), (3) and 4.2.7 of PBP.

'Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ'

Fuel management within the development can be undertaken by the land owners under the guide of Appendix B and as outlined within NSW RFS publications such as *Standards for Asset Protection Zones* available from the RFS website at www.rfs.nsw.gov.au.

'Ensure that utility services are adequate to meet the needs of fire fighters (and others who may assist in bushfire fighting)'

Water supply, gas services and electricity are to comply with Section 4.1.3 of PBP.

The determining authorities and Rural Fire Service may suggest additional measures to be implemented with any planning and construction upon the subject site.

We would be pleased to provide further information on any aspects of this report.

For and on behalf of

Clarke Dowdle and Associates

Kristan Dowdle

B. Env. Sc.
Grad Dip. Design in Bushfire Prone Areas
Environmental & Bushfire Consultant

Disclaimer

PBP States;
Not withstanding the precautions adopted, it should always be remembered that bushfire burn under a wide range of conditions and an element of risk, no matter how small always remains.

AS 3959-2009 states;
It should be borne in mind that the measures contained in this standard cannot guarantee that the building will survive a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions.

This Report is a Bush Threat & Protection Assessment that provides the required information to assist Local Council and the Rural Fire Service in determining compliance in accordance with PBP and AS 3959-2009 and as stated above, this report does not guarantee that the proposal will withstand bushfire attack on every occasion.

REFERENCES

- Australian Building Codes Board (2015), Building Codes Australia, *Class 1 and Class 10 Building Housing Provisions Volume 2*

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

- NSW Rural Fire Service (2005). *Standards for Asset Protection Zones.* NSW Rural fire Service http://www.rfs.nsw.gov.au/file_system/attachments/State/Attachment_20060130_7DE0A145.pdf

- NSW Rural Fire Service (2006). *Asset Protection Zone Calculator* http://bfaa.rfs.nsw.gov.au/apzcalc.html

- NSW Rural Fie Service and Department of Planning (2006), *Planning for Bushfire Protection, A guide for Councils, Planners, Fire Authorities and Developers*. NSW Rural Fire Service.

- Schauble, J. (2004). *The Australian Bushfire Safety Guide*. Harper Collins Publishers, Sydney, Australia.

- Standards Australia, (2009), *AS3959 Construction of Buildings in Bushfire-prone Areas*. Standards Australia International

APPENDIX A

SITE PLAN

LEGEND

Proposed Development (not to scale)

Note: 60m circle radius shows an indicative area to be maintained as an APZ to the south.

Site Pan is indicative only

APPENDIX B ASSET PROTECTION ZONES

The following information has been taken from '*Planning for Bushfire Protection'* (NSW Rural Fire Service and Planning Australia, 2001).

Introduction

Asset Protection Zones (APZ's) are required for any development adjoining a bushfire hazard area, whether it is a single building, a group of isolated buildings or an urban subdivision. The Asset Protection Zone acts as a buffer zone between the development and the hazard. The primary purpose of an Asset Protection Zone is to ensure that a progressive reduction of bushfire fuels occurs between the bushfire hazard and any habitable structures within the development. Where a bushfire hazard exists on or adjacent to the development site, an Asset Protection Zone is to be established on the hazard side of the development, as indicated in Figure 4.1.

It is the responsibility of Local Governments to ensure that the developments they approve, particularly subdivisions, do not offset bushfire protection measures to neighbouring areas. Bushfire protection measures that are essential to a development must occur on the site of the proposed development unless the most exceptional circumstances apply. This has been supported by various court rulings including *Scott Revay and Unn v. Wyong Shire Municipal Council 1994. Williams's v Blue Mountains City Council 1995* and *Spargo v Wollongong City Council 1997.*

Components of an Asset Protection Zone

The Asset Protection Zone (APZ) should incorporate:

a) An Outer Protection Area (OPA); and
b) An Inner Protection Area (IPA), which should include a perimeter road or reserve (which incorporates an access track).

a) **Outer Protection Area**:

(i) **Location**:

The Outer Protection Area is located adjacent to the hazard. Originally the Outer Protection Area would have been part of the bushfire hazard but has become an area where the fuel loadings are reduced.

(ii) **Purpose:**

The reduction of fuel in this area substantially decreases the intensity of an approaching fire and restricting the pathways to crown fuels; reducing the level of direct flame, radiant heat and ember attack on the Inner Protection Area.

(iii) **Depth**:

The depth of the OPA is largely dependent on the type of land use and vulnerability of the dwelling or persons affected. For residential development the OPA is usually 10m deep. For special protection development the OPA is usually 15m deep. Some variation may be possible in consultation with local fire authorities (RFS or NSWFB).

(iv) **Fuel Loadings:**

Within the Outer Protection Area any trees and shrubs should be maintained in such a manner that the vegetation is not continuous.

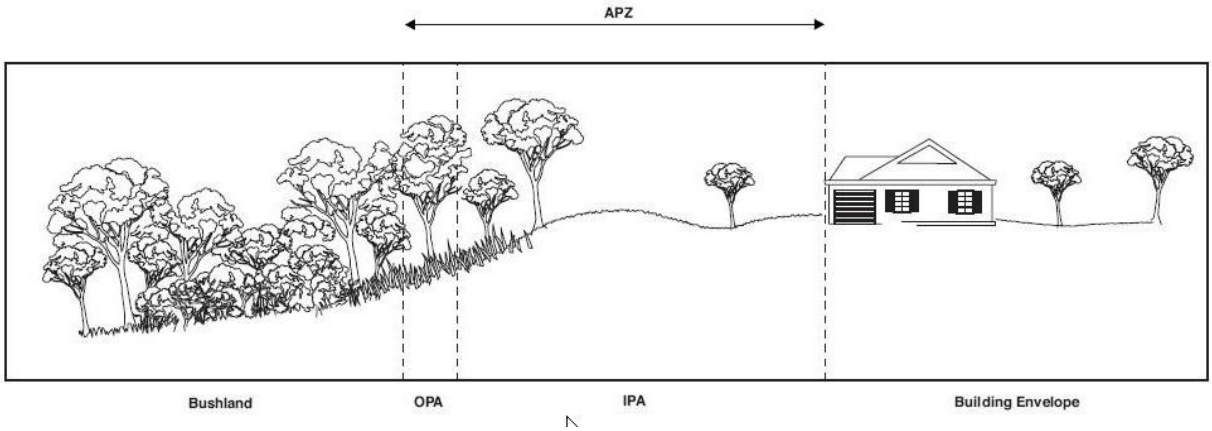
Fine fuel loadings within the OPA should be kept to a level where the fire intensity expected will not impact on adjacent developments. In the absence of any policy to the contrary, 8 tonnes per hectare of fuel is commonly used.

In grasslands, fuel height should be maintained below 10 centimetres.

b) **Inner Protection Area:**

(i) **Location:**

The Inner Protection Area extends from the edge of the Outer Protection Area to the development (see below)



(ii) **Purpose**:

The Inner Protection Area ensures that the presence of fuels, which could become involved in a fire, are minimised close to a development. Therefore the impact of direct flame contact and radiant heat on the development is minimised.

(iii) **Depth:**

The depth of the IPA is dependent upon the slope of the land. The greater the slope, the greater the intensity of any approaching fire and hence the greater the depth required for the IPA.

(iv) **Fuel Loadings:**

It is more practical to determine the specifications of the IPA in terms of performance than in terms of a minimum fuel loading.
The performance of the Inner Protection Area must be such that:

- There is minimal fine fuel at ground level which could be set alight by a bushfire; and
- Any vegetation in the Inner Protection Area does not provide a path for the transfer of fire to the development – that is, the fuels are discontinuous.

The presence of a few shrubs or trees in the Inner Protection Area is acceptable provided that they:

- Do not touch or overhang the building;
- Are well spread out and do not form a continuous canopy;
- Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
- Are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission.

Woodpiles, wooden sheds, combustible material storage areas, large areas/quantities of garden mulch, stacked flammable building materials etc should not be permitted in the Inner Protection Area.