

BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

Lot 2 DP 1176624 Gipps Street, WERRINGTON NSW 2747

Report prepared for: - Pared Foundation

Report Documentation Control

Title	Lot 2 DP 1176624 Gipps Street, WERRINGTON NSW 2747
Date	Date of Issue 19 October 2015
Author(s)	Bushfire Management Consultants
The Client	Pared Foundation
Expiry	19 October 2016 (The information in this report is valid for 12 months from the
	date of issue.)
Job No.	2015980
Disclaimer	Disclaimer – This information is believed to be true and correct at the date of this report, as vegetation access and other influencing factors can change over time. It is based on information and data provided by the client and other relevant organisations during preparation. The information provided in this assessment is for the use of the client and shall not be used by other parties. People using the information should apply and rely on their own skills and judgement to a particular issue they are considering. No survey information was provided within or outside the subject site. This assessment does not guarantee that a Development Application or Complying Development Certificate if submitted to Council or Certifying Authority would be approved or the recommendations in this report adopted by the consent authority or Rural Fire Service. The author does not accept any contractual, tortuous or other forms of liability for any consequences arising from its use. The measures recommended in this report cannot guarantee that a building will survive a bushfire event. This is due to the degree of vegetation management, the unpredictable behaviour of bushfires and extreme weather conditions. The author is not liable to any person for any damage or loss what so ever which has occurred or may occur in relation to the person taking action or not taking action based on the recommendations of this report.
Copyright	The information and intellectual property contained in this document is confidential and is the proprietary to Bushfire Management Consultants. It is intended for use only by the person, company or organisation to whom it is provided and only for the stated purpose for which it is provided. It must not be used for any other purpose or by any other individual or organisation without the written consent of the author.

Date: - 13 October 2015

Development Application Number: - Unknown

Telephone: 0411067691 E-mail: bushfiremanagement@yahoo.com

Web: www.bushfiremanagement.weebly.com

Limited Liability by a scheme approved under Professional Standards Legislation

In association with Red Road Engineers Pty Ltd



BUSHFIRE ATTACK LEVEL (BAL)

OUR REFERENCE	2015980
DATE OF THIS CERTIFICATE	19 October 2015
APPLICATION TYPE	✓ Development Application 100B Rural Fires Act, Special Fire Protection Purpose
SUBJECT SITE	Lot 2 DP 1176624 Gipps Street, WERRINGTON NSW 2747
PROPOSED DEVELOPMENT	New Detached Music Room
PLAN REFERENCE	SITE PLAN PREPARED BY CAROL AND CAROL ARCHITECTS, DA SET PLAN NO: 2 DATED 14 SEP 2014

1.0 PROJECT BRIEF

Bushfire Management Consultants have been engaged by the Pared Foundation to assess the potential threat to the proposed development in the event of a bushfire and prepare a Bushfire Attack Level Assessment to determine the level of Bushfire Attack to the proposed development and compliance with Planning for Bushfire Protection (PBP).

Maps prepared by Penrith City Council in accordance with Section 146 of the Environmental Planning and Assessment Act 1979 (EP&A Act) indicate that the subject property is bushfire prone land. The aim of this report is to determine the relevant Bushfire Attack Level (BAL) for the proposed building and the construction requirements in accordance with AS3959 – 2009 *Construction of Buildings in Bushfire Prone Areas* and to determine if any further requirements are needed for the proposal with regard to bushfire protection. This assessment included a site assessment to determine the actual site characteristics.

An assessment has been conducted in accordance with the methodology set out in AS3959-2009 (Amendment 3).

The proposal is to seek approval for the construction of a new detached Music Room within an Existing school being Wollemi College. The school currently contains existing classrooms, office buildings, sports facilities and other associated buildings. As such the proposed development is considered a Special Fire protection Purpose under PBP.



The following information has been used to assess the potential bushfire threat to the proposed development:-

- (a) SITE PLAN PREPARED BY CAROL AND CAROL ARCHITECTS, DA SET PLAN NO: 2 DATED 14 SEP 2014 (Refer Attachment A)
- (b) Inspections of the site and surrounding development
- (c) Advice from the Pared Foundation
- (d) Initial Advice from the NSW Rural Fire Service

2.0 EXECUTIVE SUMMARY

This report provides an assessment of the subject property and proposed development as required by Section 100B of the Rural Fires Act and The NSW Rural Fire Service Guide; *Planning for Bushfire Protection* (2006) – A Guide for Councils, *Planners, Fire Authorities and Developers*, to determine the BAL for the site. Subsequently the subject site has been identified as Bushfire Prone Land and has been identified on the bushfire prone land maps adopted by Penrith City Council. (Refer Attachment B)

The subject site is known as Lot 2 DP 1176624 Gipps Street, Werrington and is currently operational as an independent boys' school known as Wollemi College. The school currently contains existing classrooms, office buildings, sports facilities and other associated buildings.

The vegetation of greatest threat to the proposed music room is to the west on adjoining lands. This vegetation is best described as 'grasslands'. There is no other vegetation within 100m of the building that creates a risk with regard to a bushfire threat as indicated on Councils Bushfire Prone Land Maps.

The assessment determined that the proposed development is at risk of bushfire attack and has been assessed as a combination of BAL 19 and BAL 12.5 for shielded elevations. As a Special Fire Protection Purpose specific objectives are listed in Planning for Bushfire Protection, which have been detailed further in this report. Initial Pre-DA advice has been sought from the RFS (Refer RFS email dated 9 October 2015 from Joshua Calandra) who have concurred that the proposal can be assessed as 'Infill Special Fire Protection Purpose' under Planning for Bushfire Protection. The entry and exits to the building have been designed on the non-hazard side of the building and are shielded by an extended wall. Additional recommendations regarding water supply, services and maintenance are contained further in this report.

Page 3 of 28



3.0 PROPOSED DEVELOPMENT

The applicant proposes a new detached Music Room on Lot 2 DP 1176624 Gipps Street, WERRINGTON within Wollemi College. The proposed building is a mixture of building materials including brick and colourbond with a proposed colourbond roof. In addition the proposal consists of an extended colourbond wall along the hazard side of the building to 'shield the entry and exit points to the building.

The proposed building consists of two music rooms being Music Room 1 and Music Room 2. In addition the building contains 3 store rooms, a teaching space and stage and two music practice rooms being Music Practice 1 and Music Practice 2.

The proposed building will be attached to an existing Covered Outdoor Learning Area (COLA) that currently covers a basketball court. The architects preparing the drawings have advised that the existing COLA will be attached externally to the proposed music room. The existing COLA comes to within 6m of the property boundary and as such 6m from the hazard, however for the purposes of this assessment it is recommended that RFS considerer that the existing COLA will form an attached structure as Class 10 building. Section 4.3.6 of Planning for Bushfire Protection requires that where a Class 10 building is constructed in proximity of another class of building the class 10 building should meet the requirements of that class and not the other way around.

In this situation the COLA is an existing structure and is generally non-combustible (steel) construction. As such for the purposes of this assessment the distance to vegetation has been assessed as that to the new classroom rather than the distance to the existing COLA.



Figure 1 – Location of Proposed Building



4.0 SITE ASSESSMENT AND CHARACTERISTICS

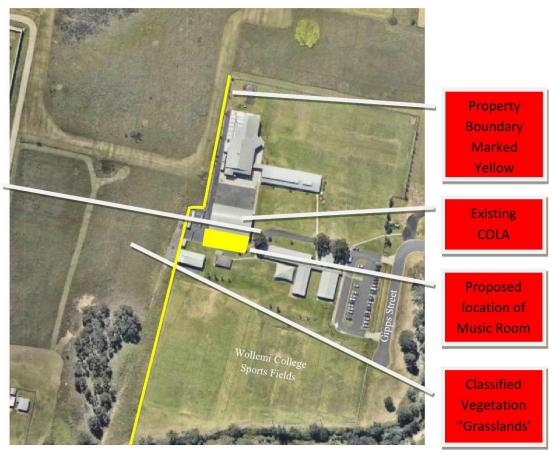
4.1 Site Description

The site is located in the Local Government Area of PENRITH, in the suburb of Werrington and a street frontage to Gipps Street. Gipps Street is a local road providing a sealed access road to the property and surrounding developments. The subject site is known as Lot 2 DP 1176624 Gipps Street, Werrington and is currently operational as an independent boys' school. The school currently contains existing classrooms, office buildings, sports facilities and other associated buildings. The school grounds are regularly maintained including garden and playground, sports oval maintenance.

The area of the site is approximately 8.6 hectares. The site has a frontage to Gipps Street which is a public road that provides free access for fire fighting vehicles.

The schools capacity is currently 20 staff and a 286 students.

An Aerial photo of the site is shown below in Figure 2.



*Aerial photo not representative of current developed land or clearing.

Figure 2 – Aerial Photo

Existing Sealed Access



4.2 Surrounding Development

The subject site is adjoined by vacant lands to the west and existing school grounds in all other directions. A description of the development adjoining the proposed building is indicated below.

4.2.1 North

To the north of the proposed building are the existing grounds of Wollemi College, containing basketball courts, classrooms, hard stand areas and maintained grounds. The risk with regard to a bushfire in this direction is low.



Figure 3 – North



4.2.2 South

To the south is an open shade structure and further south is the Wollemi College Sports Fields. The risk with regard to a bushfire from this direction is low.



Figure 4 – South

4.2.3 East

To the east is existing classrooms and the school grounds of Wollemi College including hard stand areas and maintained grounds. The risk with regard to a bushfire in this direction is low.



Figure 5 – East

Page **7** of **28**

BUSHFIRE MANAGEMENT CONSULTANTS

4.2.4 West

To the west adjacent to Wollemi College is vacant land that contains classified vegetation as indicated on Penrith City Councils Bushfire Prone Land Maps. Council's maps and inspections by Bushfire Management Consultants confirms that it is the vegetation to the west that creates the greatest risk to the proposed development in the event of a bushfire.



Figure 6 - West

5.0 DETERMINING THE BUSHFIRE ATTACK LEVEL – BAL

5.1 Methodology

AS3959-2009 sets the methodology for assessment and determination of the applicable Bushfire Attack Level (BAL) for development. The method required the determination of the following:-

- 1. The relevant Fire Danger Index (FDI)
- 2. The classified vegetation types
- 3. The distance of the site from the classified vegetation
- 4. The effective slope under the classified vegetation
- 5. The BAL level from the appropriate table

The following addresses the method for determining the BAL for the subject site.



5.2 FDI

FDI is determined by Table 2.1 AS3959-2009. In this case the subject site is within NSW and the Greater Sydney Region.

NSW Greater Sydney FDI 100

5.3 Vegetation Type

Penrith City Council's Bushfire Prone Land Maps and inspections by Bushfire Management Consultants confirms that it is the vegetation to the west that creates the greatest risk to the proposed development in the event of a bushfire. Figure 7 indicates that the vegetation in this direction is considered Grasslands. Figure 2.4 (G) AS3959.

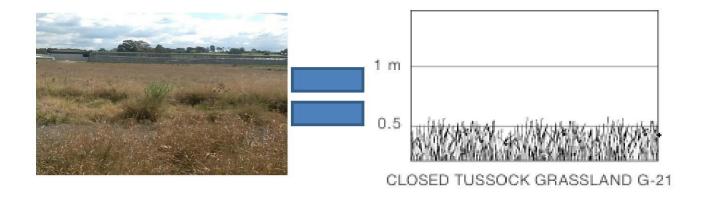


Figure 7 Vegetation Type

As such the Classification of vegetation in Table 2.3 AS3959 is:-

TABLE 2, CLASSIFICATION OF VEGETATION

Direction	Vegetation Type
West	Grasslands



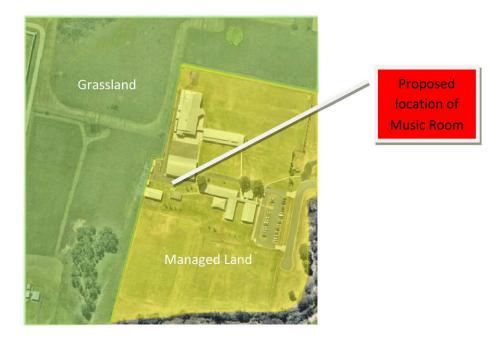


Figure 8 – Vegetation Mapping

5.4 Slope

The slope of the land within 100m of a proposed dwelling together with other factors reflects the intensity and rate of spread of an approaching bushfire. Fires spread quicker when burning upslope than they generally do when burning downslope.

Table 1 below identifies the general slope of the land surrounding the proposed dwelling.

TABLE 1, SLOPE IDENTIFICATION

Direction	Slope	Degrees (°)
North	Downslope	All Upslopes use 0 ⁰
South	Downslope	$0-5^{0}$
East	Downslope	$0-5^{0}$
West	Upslope/Flat	All Upslopes use 0 ⁰



6.0 CATEGORY OF BUSHFIRE ATTACK

To determine the appropriate BAL for the subject site Table 2.4.2 AS3959-2009 is used. The results of this assessment are summarised below in Table 2.

TABLE 2, TABLEOF COMPLIANCE

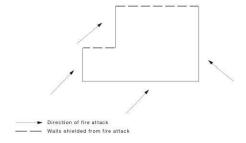
	North	South	East	West
Vegetation	Managed Land	Managed Land	Managed Land	Grasslands
Structure				
Vegetation Width	<100m	<100m	<100m	>100m
Slope	Downslope 0-5 ⁰	Downslope 0-5 ⁰	Downslope 0-5 ⁰	Flat/Upslope
Asset Protection Zone	School Grounds	School Grounds	School Grounds	School Grounds Minimum 14m
Distance to vegetation	>100m	>100m	>100m	14.57m
Bushfire Attack Level	BAL LOW	BAL LOW	BAL LOW	BAL 19
Proposed Level of Construction	BAL 12.5	BAL 19	BAL 12.5	BAL 19

7.0 REDUCTION IN CONSTRUCTION REQUIREMENTS DUE TO SHIELDING

AS 3959 – 2009 Section 3.5 allows the lowering of one BAL level only where an elevation is deemed to be not exposed to the source of the bushfire attack. However the construction requirements for a shielded elevation shall not be less than that required for BAL-12.5. This is demonstrated in Figure 3.1 of AS3959.

The proposed building has been designed and is attached to an existing shade structure known as a Covered Outdoor Learning Area (COLA). The rear wall of the COLA is a colourbond wall that extends parallel to the western boundary and essentially provides shielding to the northern elevation of the new building. The northern elevation contains the entry and exit points for the building and as such is shielded from the bushfire threat from the west.

(Examples of walls subject to shielding) in AS3959-2009



Page 11 of 28



Figure 9 below indicates a site pictorial and indicated the existing western wall of the COLA and the proposed shielding to the new building.

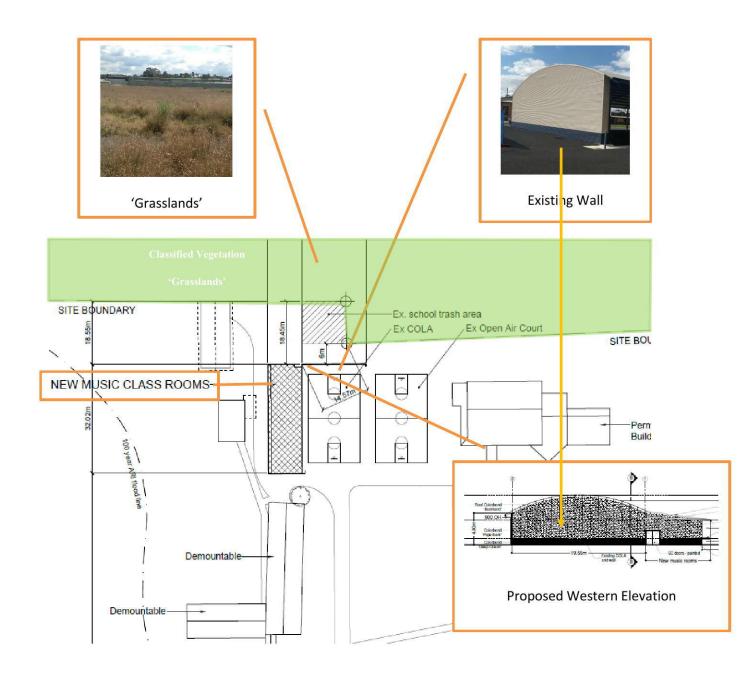


Figure 9 – Site Pictorial



TABLE 3, PBP SFPP INFILL OBJECTIVES SITING AND DESIGN

OBJECTIVE – Siting and Design	PBP COMPLIANCE
Buildings are sited and designed to minimise the risk of bushfire attack	✓ Complies Shielding from COLA

8.0 WATER SUPPLY AND FACILITIES

8.1 Water Supply

Reticulated water supply is available to the subject site from Gipps Street. The school has advised that they have a fire hydrant system installed within the school, together with a 100,000 litre in-ground tank.

In accordance with the RFS fact sheet 3/08 (version 3) dated February 2012 the BASIX tank may be used for the purposes of circulating water to the development and is not a "dedicated" water supply.

The following requirements should be provided to assist in supplementing the reticulated water supply in the event of a bushfire:-

- A 65mm storz fitting and ball or gate valve installed in the tank. Gate and ball valve shall be made of metal.
- Above ground tanks are to be manufactured of concrete or metal.
- All above ground water supply pipes including taps are to be metal.
- Obtain and fix a static water supply marker at the front of the property in a highly visible location.
- Water supply is to comply with Section 4.1.3 of Planning for Bushfire Protection 2006.

TABLE 4, PBP SFPP INFILL OBJECTIVES FOR WATER SUPPLY AND UTILITIES

OBJECTIVE	PBP COMPLIANCE
Adequate water and electrical services are provided for firefighting operations	Complies Existing Hydrants and Existing 100,000 litre tank.
Gas and electricity services are located so as not to contribute to the risk of fire to a building	✓ Complies



8.2 Gas Services

Gas is not proposed to the building, however if gas is provided to the proposed building the following shall be adhered to for gas connections:-

- All external gas lines shall be made of metal.
- Reticulated and bottled gas shall be installed and maintained in accordance with AS1596 2008.
- Gas Services are to comply with Section 4.1.3 of Planning for Bushfire Protection 2006.

8.3 Electrical Services

Origin Energy provides electrical services to the subject lot and proposed dwellings and as such the service provider has systems in place in the event of a bushfire. In addition electricity supply is to comply with Section 4.1.3 of Planning for Bushfire Protection 2006. New lines to the building will be provided underground.

9.0 ACCESS

9.1 Public Roads

Access to the site is via Gipps Street. Gipps Street is a sealed public road which allows free access for fire fighting vehicles.

9.2 Property Access

A hard stand driveway is currently provided that connects from Gipps Street through the site for vehicular access. As such access for fire fighters and fire fighting vehicles is available.

TABLE 5, PBP OBJECTIVES FOR ACCESS

OBJECTIVE	PBP COMPLIANCE
Safe operational access is provided (and maintained) for emergency service personnel in supressing a bushfire while residents are seeking to relocate, in advance of a bushfire.	✓ Complies Existing sealed access Refer Figure 2

9.3 Fire Trails

The provision of fire trails are not required for this type of development.



9.4 Asset Protection Zones

There are no formal asset protection zones currently listed for the property. These areas are in the form of the existing school grounds in all directions from the proposed building. This report recommends that the subject property be maintained as an Inner Protection Area. Planning for Bushfire Protection Page 52 provides APZ requirements for 'Grasslands' and a basic APZ of 10m. As such the proposed building has a setback of minimum 14m from the 'Grassland' hazard.

TABLE 6, PBP SFPP INFILL OBJECTIVES FOR ASSET PROTECTION ZONES

OBJECTIVE	PBP COMPLIANCE
A defendable space is provided on site	☑ Complies 14m minimum
An Asset Protection Zone is provided and maintained for the life of the development	✓ Complies

10.0 Special Fire Protection Purpose

10.1 Special Fire protection Purpose Section 4.2.3

The proposed development is considered a Special Fire protection Purpose under S4.2.2 Types of Special Fire Protection Purpose Developments '(a) a school' as described in Planning for Bushfire Protection (2006) – A Guide for Councils, Planners, Fire Authorities and Developers. Initial Pre –DA discussions undertaken with the NSW Rural Fire Service determined that "the development appears to be consistent with the considerations allowing for Infill Development in an SFPP as outlined in Section 4.2.5 of PBP." As such the proposal has been assessed under Section 4.2.5 of PBP as it is an addition to an existing school in the form of a new music room. Sections 1-9 in this report address matters from PBP and in particular Section 4.2.5 which generally requires compliance with Section 4.3.5.

Section 4.2.3 of PBP provides specific objectives for SFPP developments, and as such these are addressed below.

1. Provide for the special characteristics and needs of occupants. Unlike residential subdivision, which can be built to a construction standard to with stand the fire event, enabling occupants and fire fighters to provide property protection after the passage of fire, occupants of SFPP developments may not be able to assist in property protection. They are more likely to be adversely affected by smoke or heat while being evacuated.

Wollemi College is an existing school operating with students and teachers. The school currently has an Evacuation Plan that will need to be amended to include a Bushfire Emergency Evacuation Plan for the development. Currently clear evacuation paths are available to the east, towards Gipps Street.

Page **15** of **28**



The school may have mobility impaired children or staff and as such the school has advised that "All facilities are approved for 'Access for All'."

During a bushfire the school may be prone to congestion of roads. In this case Wollemi College has access off Gipps Street which is essentially within the Bushfire Buffer on Council's Bushfire Prone Land Maps. Further there is land within the surrounding suburb that is not bushfire Prone Land. The sporting fields and maintained grounds of the school form an APZ surrounding the school buildings.

2. Provide for safe emergency evacuation procedures. SFPP Developments are highly dependent on suitable evacuation arrangements which require greater separation from bushfire threats. During emergencies, the risk to fire fighters and other emergency service personnel can be high through prolonged exposure, where door-to door warnings are to be given and exposure to the bushfire is imminent.

The school will need to develop a Bushfire Emergency evacuation Plan for inclusion in the Existing Evacuation Plan to minimise risks to emergency services. With regard to the proposed building (Music Room) exits have been located on the northern side of the building which is shielded from a bushfire hazard by the existing western elevation wall of the COLA. As part of the Bushfire Emergency Management Plan the school will need to develop a communication strategy within the school to minimise exposure of students and staff to smoke and heat.

10.2 Radiant Heat Levels for SFPP Buildings

PBP Section 4.2.7 sets performance criteria for access to the building.

1. Radiant heat levels of greater than 10kw/m² will not be experienced by occupants or emergency services workers entering or exiting the building.

The proposed building has been assessed as having a Bushfire Attack Level of BAL 19. The exit from the building is located approximately 25m from the grasslands. When assessed under method 1 of AS3959 and the vegetation types and sloped identified earlier in this report this equated to a Bushfire Attack Level of BAL 12.5 at the entry and exit points. In addition the entry and exit points are shielded by the western solid wall from the COLA. Refer to Figure 9

An APZ is provided in accordance with the relevant tables and figures in Appendix 2 of this document

There are no formal asset protection zones currently listed for the property. These areas are in the form of the existing school grounds in all directions from the proposed building. This report recommends that the subject property be maintained as an Inner Protection Area. Planning for Bushfire Protection Page 52 provides APZ requirements for 'Grasslands' and a basic APZ of 10m. As such the proposed building has a setback of minimum 14m from the 'Grassland' hazard.

3. Exits are located away from the hazard side of the building

Exits have been provided away from the hazard side of the building and shielded from the existing western wall of the COLA.

4. The APZ is wholly contained within the boundaries of the development site

Page 16 of 28

BUSHFIRE MANAGEMENT CONSULTANTS

The minimum 10m required as an APZ is wholly contained on the subject property.

11.0 RECOMMENDATION

The proposed building has been assessed as being required to comply with the construction methods outlined in AS3959-2009 for BAL 19 and BAL 12.5 for shielded elevations.

The construction requirements for BAL 12.5 and BAL 19 are listed in Sections 5 and 6 of AS3959 - 2009. Specific variations exist in NSW in the application of Section 5 and 6 (BAL 12.5 and BAL 19) of AS3959-2009 Construction of Buildings in Bushfire Prone Areas. Refer to Section A3.7 – Addendum Appendix 3 Planning for Bushfire Protection. NSW Rural Fire Service 2010.

In addition roofing shall have leafless gutters and valleys and screened to prevent the build-up of flammable material. Gutter and Valley Guards should be in accordance with *Planning for Bushfire Protection* (2006) – A Guide for Councils, Planners, Fire Authorities and Developers. Additional recommendations are contained further in this report.

- The construction requirements for BAL 12.5 are listed in Section 5 of AS3959. Specific variations exist in NSW in the application of Section 5 (BAL 12.5) of AS3959-2009 Construction of Buildings in Bushfire Prone Areas. Refer to Section A3.7 Addendum Appendix 3 Planning for Bushfire Protection. NSW Rural Fire Service 2010. In addition roofing shall have leafless gutters and valleys and screened to prevent the build-up of flammable material. Gutter and Valley Guards should be in accordance with Planning for Bushfire Protection (2006) A Guide for Councils, Planners, Fire Authorities and Developers.
- The construction requirements for BAL 19 are listed in Section 6 of AS3959. Specific variations exist in NSW in the application of Section 6 (BAL 19) of AS3959-2009 Construction of Buildings in Bushfire Prone Areas. Refer to Section A3.7 Addendum Appendix 3 Planning for Bushfire Protection. NSW Rural Fire Service 2010. In addition roofing shall have leafless gutters and valleys and screened to prevent the build-up of flammable material. Gutter and Valley Guards should be in accordance with Planning for Bushfire Protection (2006) A Guide for Councils, Planners, Fire Authorities and Developers.
- Roofing shall have leafless gutters and valleys and screened to prevent the build-up of flammable material. Gutter and Valley Guards should be in accordance with *Planning for Bushfire Protection (2006) A Guide for Councils, Planners, Fire Authorities and Developers.*
- The new roofing system including gutters, fascias, eave linings and roof lights shall comply with the requirements of AS3959 2009 BAL 19 and Addendum Appendix 3 of *Planning for Bushfire Protection* (2006) A Guide for Councils, Planners, Fire Authorities and Developers.
- Landscaping to the site is to comply with the principals of Appendix 5 of Planning for Bushfire Protection.
- Above ground tanks are to be manufactured of concrete of metal.
- All above ground water supply pipes including taps are to be metal.
- New electrical lines to the building will be provided underground.

Page 17 of 28



- Obtain and fix a static water supply marker at the front of the property in a highly visible location.
- All external gas lines shall be made of metal.
- To aid in fire fighting activities, unobstructed pedestrian access to the rear of the property shall be provided and is to be maintained at all times.
- Any new fencing shall be non-combustible.
- Bushfire Emergency Evacuation Plan shall be developed for the site in accordance with Planning for Bushfire Protection and the RFS Guidelines for the Preparation of Emergency/Evacuation Plan.
- A ball gate and valve and storz sitting shall be connected to the existing 100,000 tank for RFS purposes or RFS access for suction provided through other purposes.
- Water, electricity and gas are to comply with Section 4.1.3 of Planning for Bushfire Protection 2006. New lines to the building will be provided underground.
- At the commencement of building works and in perpetuity the entire property shall be managed as an Inner Protection Area (IPA) as outlined within section 4.1.3 and appendix 5 of 'Planning for Bushfire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

The Inner Protection Area (IPA) shall comprise the following:

- Minimal fine fuel at ground level;
- Vegetation that does not provide a continuous path to the building for the transfer of fire;
- Shrubs and trees that do not form a continuous canopy;
- Vegetation that is cleared into clumps rather than continuous rows;
- Species that retain dead material or deposit excessive quantities of ground fuel are to be avoided;
- Shrubs and trees are pruned and removed so they do not touch or overhang the building (minimum 2.0m);
- Vegetation is located far enough away from the building so that the plants will not ignite the building by direct flame contact or radiant heat emission.

13.0 CONCLUSION

This assessment determined that the proposal for construction of a new music room at the existing school (Wollemi College) at Lot 2 Gipps Street, Werrington, can comply with the requirements of *Planning for Bushfire Protection* (2006) – A Guide for Councils, Planners, Fire Authorities and Developers. It is recommended that the proposal be approved with conditions.



Planning for Bushfire Protection

"no development in a bush fire prone area can be guaranteed to be entirely safe from bush fires

Australian Standard A.S 3959

"it should be bourne in mind that the measures contained in this Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions"

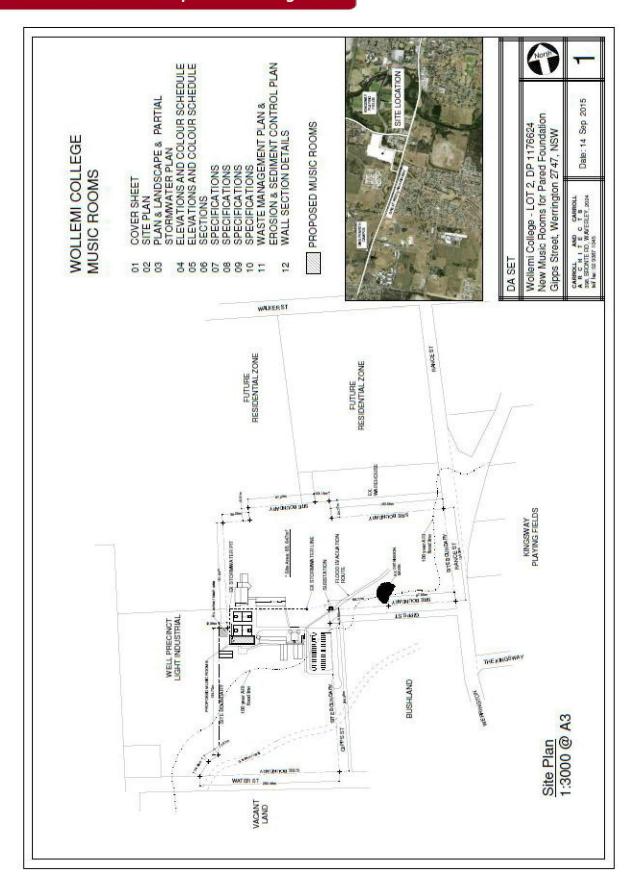
REFERENCES

- 1. Australian Standard AS 3959-2009 (Incorporating Amendment Nos 1,2 and 3)
- 2. Planning for Bushfire Protection (2006)
- 3. Penrith City Council Website
- 4. Ocean Shores to Desert Dunes David Keith
- 5. Google Maps
- 6. RFS Website
- 7. NSW Environment and Heritage website

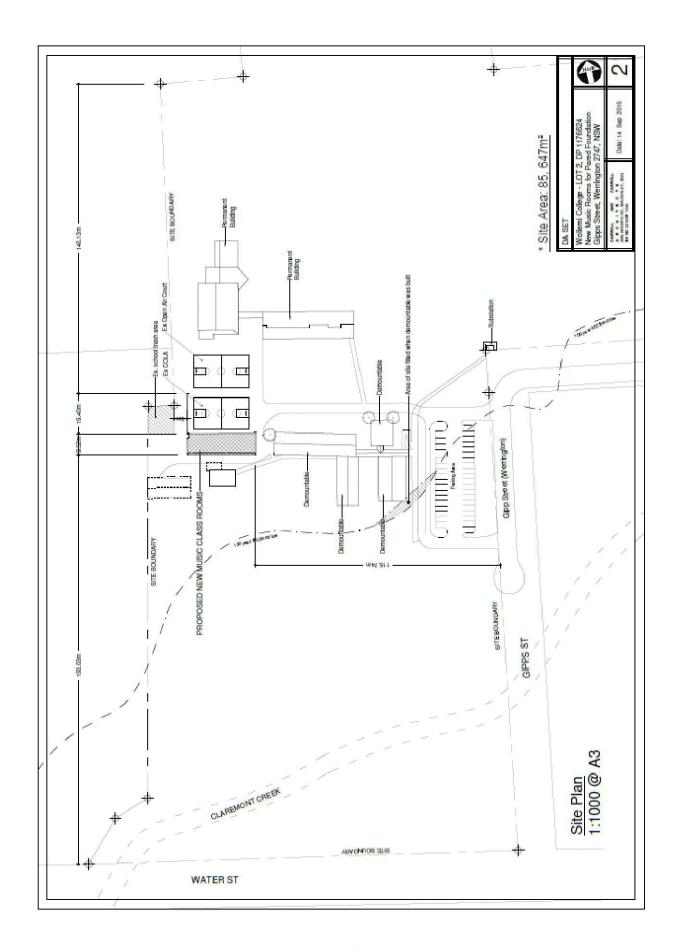
Page 19 of 28



Attachment 'A' Proposed Building Plans

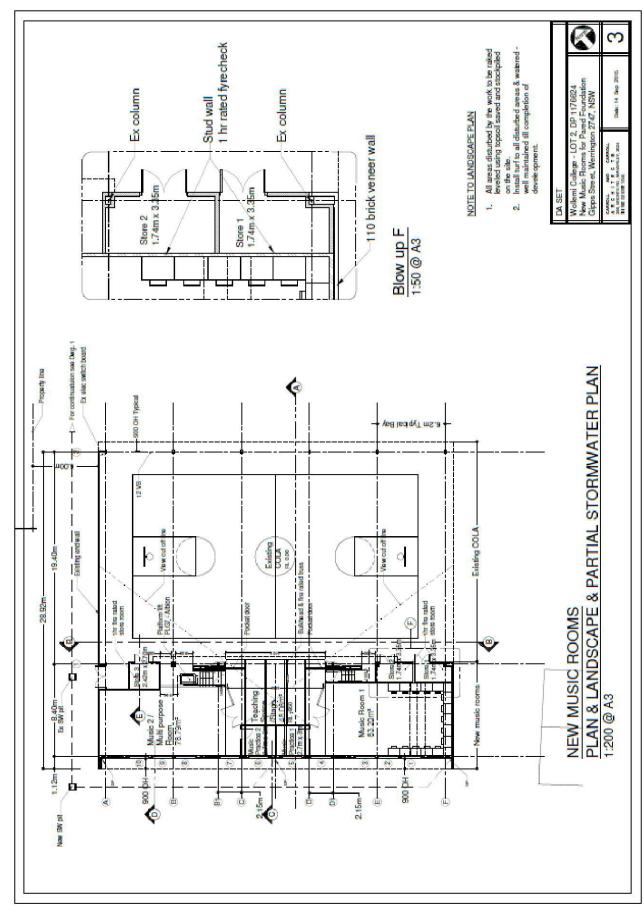






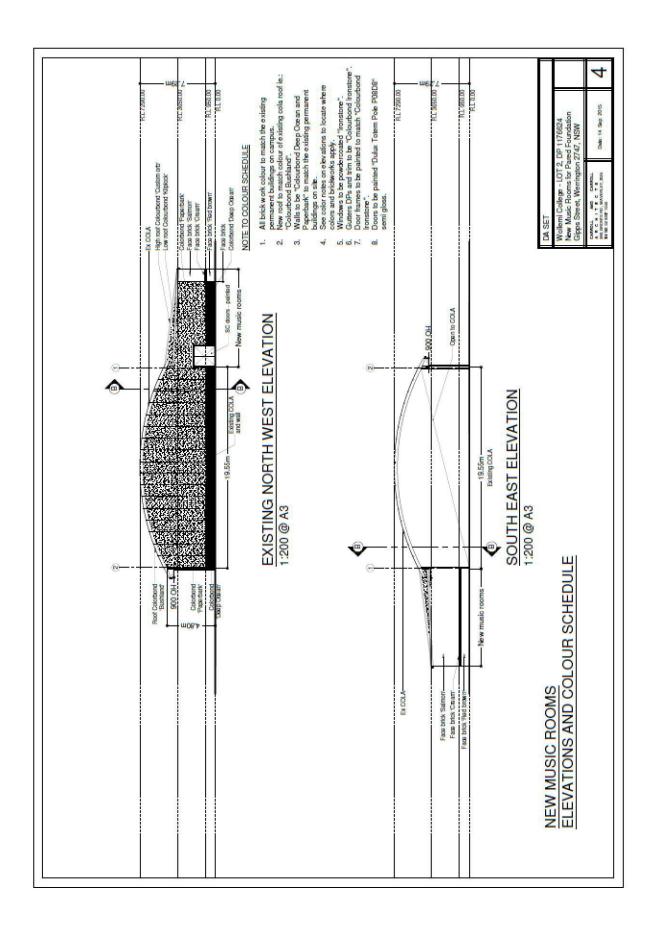
Page 21 of 28



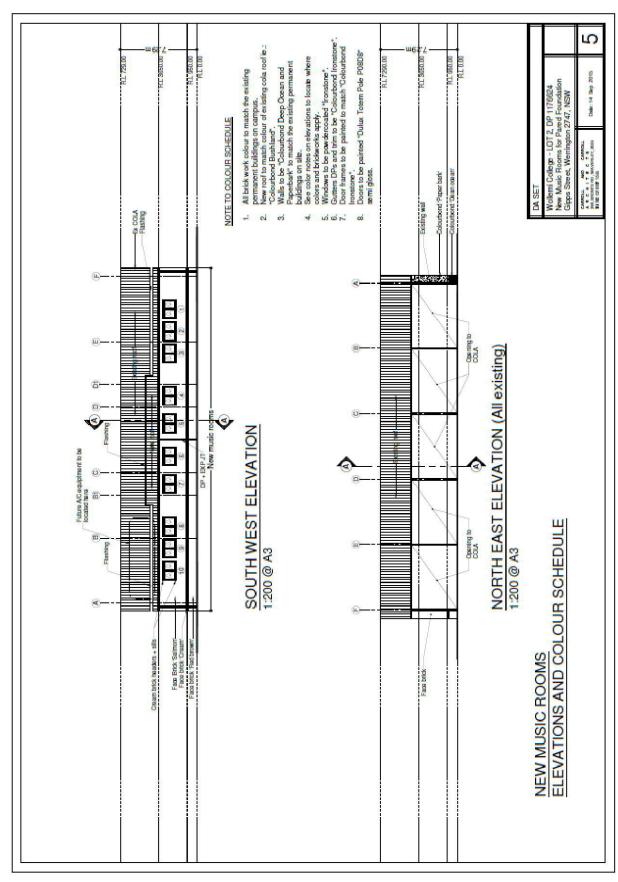


Page 22 of 28

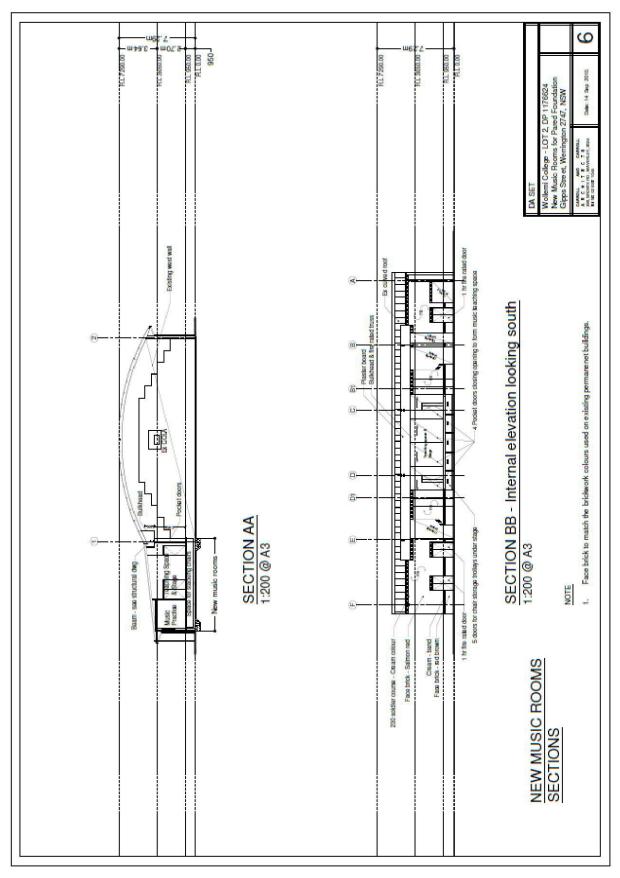






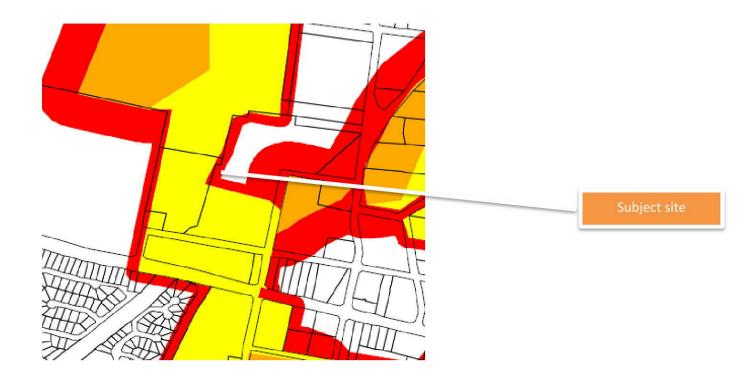








Attachment 'B' Bushfire Prone Land Map Penrith City Council





Attachment C Photographic Record





P1 Grasslands to West,

P2 From Proposed Music Room Looking West





P3 From Proposed Music Room Looking South

P4 Basket Ball Court Metal Shade Structure





P5 From Proposed Music Room Looking South, P6 From Proposed Music Room Looking East



P7 Grasslands to West,

P8 From Proposed Music Room Looking North