

Date: 02/02/2024

Our Ref: BR-652523-B

# BUSH FIRE ASSESSMENT

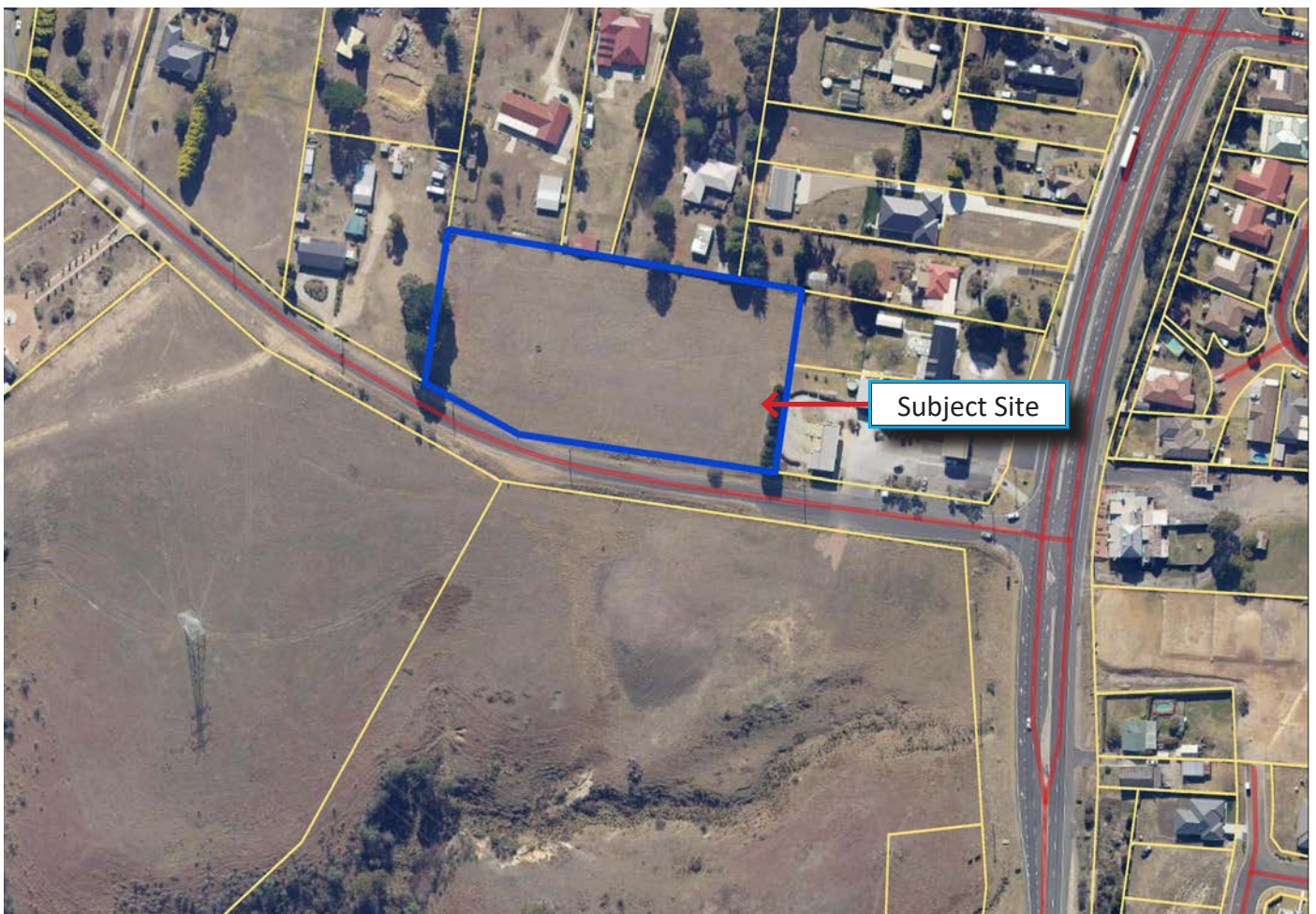
## Lot 1 Great Western Highway South Bowenfels 2790

Assessed as: Special Fire Protection Purpose (SFPP)

Prepared by: Matthew Noone | BPAD Accreditation Number: BPAD-PD 25584

Site Address: Lot 1 Great Western Highway South Bowenfels 2790 | Lot / DP: (Lot 1/-/DP527491)

### Project Description: Proposed School



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REPORT NUMBER  
BR-652523-B

Date: 02/02/2024

Our Ref: BR-652523-B

## BAL ASSESSMENT CERTIFICATION

Provided to support the Development Application

### Lot 1 Great Western Highway South Bowenfels 2790

Prepared by: Matthew Noone | BPAD Accreditation Number: BPAD-PD 25584




Site Address: Lot 1 Great Western Highway South Bowenfels 2790 | Lot / DP: (Lot 1/-/DP527491)

#### Project Description: Proposed School

PBP Development Type: Special Fire Protection Purpose (SFPP)

I hereby certify that:

1	I (Matthew Noone) am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment holding accreditation with the Fire Protection Association (BPAD-PD 25584).
2	Subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements *.
*	The relevant specifications and requirements being; specifications and requirements of the document entitled Planning for Bush Fire Protection prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by s.4.14 of the Environmental Planning and Assessment Act 1979.
*	The development complies with the relevant specifications and requirements. RFS referral is required.
3	I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with Planning for Bushfire Protection (2019).

CERTIFICATE NUMBER BR-652523-B-A			FPAA Accreditation Number BPAD-PD 2558 
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# DOCUMENT TRACKING

Issue Date	Issued to	Description	Version
02/02/2024	Tim Pridham	Issued for Comment	A

## **DISCLAIMER and TERMS OF USE**

*"It should be borne 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 of behaviour of fire, and extreme weather conditions." (AS3959 2018).*

Bushfire Planning & Design cannot be held liable for the loss of life or property caused by a bushfire event. This report has considered the relevant planning instruments, bushfire constructions codes and practices applicable at the time of writing. Should additional information be provided after this report has been issued, we reserve the right to review and if necessary modify our report. Bushfire Planning and Design has no control over workmanship, buildings degrade over time and vegetation if not managed will regrow. In addition legislation and construction standards are subject to change. Due to significant variance of bushfire behaviour, we do not guarantee that the dwelling will withstand the passage of bushfire even if this development is constructed to the prescribed standards.

This report has been based on our interpretation of Planning for Bushfire Protection (2019), AS3959 (2018) and the methodology for site specific bushfire assessment. As a consultant, our view can be subjective. Our opinions may differ from the opinions provided by you the Client (or Client Representative), the Council, the RFS or another bushfire consultant. The Rural Fire Service (RFS) has a higher authority and can upon their review, increase a nominated BAL-rating or entirely reject a development proposal. Any such recommendations made by the RFS take precedence. Our role is intermediary between our Client (or Client Representative) and the consenting authority. We apply our knowledge of the relevant bushfire protection standards to provide the best possible outcome for our Client (or Client Representative), both from a bushfire safety and financial perspective. Should the RFS modify our recommendations or reject the proposal to which this report relates to we will not be held liable for any financial losses as a result. By using this document, you the Client (or Client Representative) agree to and acknowledge the above statements

Bushfire Planning and Design accepts no liability or responsibility for any use or reliance upon this report and its supporting material by any unauthorized third party. The validity of this report is nullified if used for any other purpose than for which it was commissioned. Unauthorized use of this report in any form is deemed an infringement of our intellectual property. By using this document to support your development you the Client (or Client representative) agree to these terms.

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## GLOSSARY

The abbreviations that are commonly used are explained below. Not all are present in this report.

APZ	Asset Protection Zone
AS3959	Australian Standard for the Construction of a Building in a Bushfire Prone Area
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BFPL	Bush Fire Prone Land
BFPLM	Map Bush Fire Prone Land Map
BFDB	Bush Fire Design Brief
BPM	Bush Fire Protection Measure
DA	Development Application
DCP	Development Control Plan
DPIE	Department Of Planning, Industry And Environment
DTS	Deemed to Satisfy
EPA ACT	Environmental Planning And Assessment Act 1979
FDI	Fire Danger Index
FFDI	Forest Fire Danger Index
GFDI	Grassland Fire Danger Index
IPA	Inner Protection Area
LEP	Local Environmental Plan
NASH	National Association of Steel Framed Housing
NCC	National Construction Code
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection
RF ACT	Rural Fires Act
RF REG	Rural Fires Regulation
NSW RFS	New South Wales Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SFR	Short Fire Run
SSD	State Significant Development

## PART A - BACKGROUND AND BRIEFING NOTES

Prior to establishing the Bushfire Attack Level and compliance with Planning for Bushfire Protection and AS3959, it is necessary to discuss the following items.

A.01 BUSHFIRE PRONE LAND

A.02 DEVELOPMENT PROPOSAL

A.03 REGULATORY FRAME WORK

A.04 SITE LOCATION, DESCRIPTION AND POTENTIAL BUSHFIRE THREATS

A.05 LAND USE, ZONING AND PERMISSIBILITY

A.06 SIGNIFICANT ENVIRONMENTAL FEATURES

A.07 DETAILS OF ABORIGINAL HERITAGE

A.08 THREATENED SPECIES, COMMUNITIES AND CRITICAL HABITATS

A.09 BIODIVERSITY VALUES

A.10 REPORT LIMITATIONS

## A.01 BUSHFIRE PRONE LAND

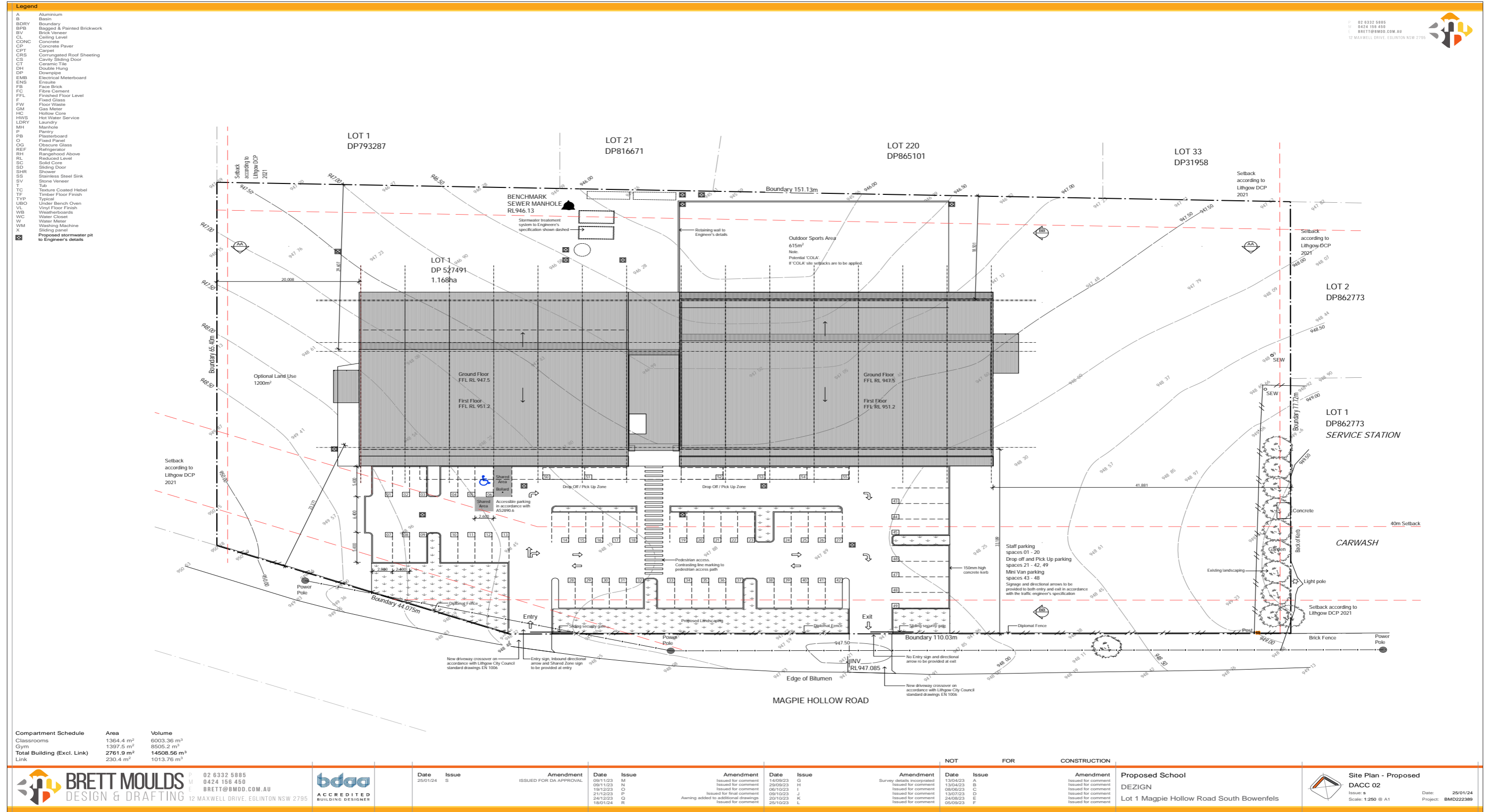
The subject site whether in whole or part is recorded as bushfire affected on a relevant map certified under Section 10.3 (2) of the Environmental Planning and Assessment Act 1979 (Refer figure A.01). All developments on certified bushfire prone are required to address bushfire as per 4.14 Environmental Planning and Assessment Act 1979.



<b>FIGURE A.01 BUSHFIRE PRONE LAND MAP</b>		Plot date:13/09/2023	Project CRS: EPSG:28356
<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ffff00; border: 1px solid black; margin-right: 5px;"></span> Buffer</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ff0000; border: 1px solid black; margin-right: 5px;"></span> Category 1</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ffff00; border: 1px solid black; margin-right: 5px;"></span> Category 2</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ff8c00; border: 1px solid black; margin-right: 5px;"></span> Category 3</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 2px solid blue; margin-right: 5px;"></span> Subject Site</li> </ul>	<p>0      40      80      120      160 m</p> <p style="text-align: center;">Meters</p>		<b>A.01</b>
<p><b>BUSHFIRE PLANNING &amp; DESIGN</b>          bpad.matthew.noone@gmail.com / 0406077222</p>			

# A.02 DEVELOPMENT PROPOSAL

The development relates to the construction of a new school on a vacant allotment.



Concept Drawing



## A.03 REGULATORY FRAME WORK

### Bushfire Prone Land:

The subject site whether in whole or part is recorded as bushfire affected on a relevant map certified under Section 10.3 (2) of the Environmental Planning and Assessment Act 1979. The development relates to the development of bushfire prone land and therefore must address the legislative requirements stipulated in Section 100B Rural Fires Act 1997.

### 100B Rural Fires Act 1997:

<b>100B</b>	<b>Bush fire safety authorities.</b>
(1)	The Commissioner may issue a bush fire safety authority for—
	(a) a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes, or
	(b) development of bush fire prone land for a special fire protection purpose.
(2)	A bush fire safety authority authorises development for a purpose referred to in subsection (1) to the extent that it complies with standards regarding setbacks, provision of water supply and other matters considered by the Commissioner to be necessary to protect persons, property or the environment from danger that may arise from a bush fire.
(3)	A person must obtain such a bush fire safety authority before developing bush fire prone land for a purpose referred to in subsection (1).
(4)	Application for a bush fire safety authority is to be made to the Commissioner in accordance with the regulations.

### Rural Fires Regulation 2022:

<b>45</b>	<b>Application for bush fire safety authority —the Act, s 100B</b>
(1)	For the purposes of the Act, section 100B(4), an application for a bush fire safety authority must be made in writing.
(2)	An application for a bush fire safety authority must include the following—.....”

## NATIONAL CONSTRUCTION CODE (NCC)

FUNCTIONAL STATEMENTS	
<b>F2.7.4</b>	<b>Bushfire prone areas</b>
	A Class 1 building or a Class 10a building or deck associated with a Class 1 building constructed in a designated bushfire prone area is to provide resistance to bushfires in order to reduce the danger to life and reduce the risk of the loss of the building.

PERFORMANCE REQUIREMENT	
<b>P2.7.5</b>	Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.
	Where an alternate bushfire protection design is proposed as a Performance Solution to that described in Part 3.10.5, that proposal must comply with—
(a)	Performance Requirement P2.7.5; and
(b)	The relevant Performance Requirements determined in accordance with A2.2(3) and A2.4(3) as applicable.

CONSTRUCTION IN BUSHFIRE PRONE AREAS	
<b>3.10.5.0</b>	<b>Performance Requirement P2.7.5 is satisfied, for—</b>
(a)	a Class 1 building; or
(b)	a Class 10a building or deck associated with a Class 1 building, located in a designated bushfire prone area if it is constructed in accordance with—
(c)	AS 3959; or
(d)	NASH Standard – Steel Framed Construction in Bushfire Areas.

## NATIONAL CONSTRUCTION CODE (NCC) CONTD...

### STATE AND TERRITORY VARIATIONS

#### 3.10.5.0 IS REPLACED WITH THE FOLLOWING CLAUSE IN NEW SOUTH WALES:

<b>Performance Requirement P2.7.5 is satisfied, for—</b>	
(a)	a Class 1 building; or
(b)	a Class 10a building or deck associated with a Class 1 building,

located in a designated bushfire prone area , if it is constructed in accordance with the following: AS 3959 except—

(1)	as amended by Planning for Bush Fire Protection; and
(2)	for Section 9 for Bushfire Attack Level FZ (BAL-FZ).

NASH Standard – Steel Framed Construction in Bushfire Areas except—



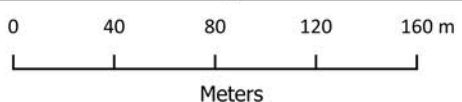
(1)	as amended by Planning for Bush Fire Protection; and
(2)	for Section 9 for Bushfire Attack Level FZ (BAL-FZ).

the requirements of (c), or (d) above as modified by the development consent following consultation with the NSW Rural Fire Service under section 4.14 of the Environmental Planning and Assessment Act 1979 if required; or the requirements of (c), or (d) above as modified by development consent with a bushfire safety authority issued under section 100B of the Rural Fires Act 1997 for the purposes of integrated development.

## A.04 SITE LOCATION, DESCRIPTION AND POTENTIAL BUSHFIRE THREATS

The subject site is located in South Bowenfels which is within the Lithgow Local Government Area (LGA). The site is currently vacant. Access to the site is via Magpie Hollow Road to the south. The allotment is surrounded by managed residential curtilage to the east, west and north. Grassland is located to the south of Magpie Hollow Road. Our report does not rely on any management of the land to the south of Magpie Hollow Road.



<b>FIGURE A.04 LOCATION DRAWING</b>   Subject Site	Plot date: 13/09/2023	Project CRS: EPSG:28356	<b>A.04</b>  
	 Meters		
	<b>BUSHFIRE PLANNING &amp; DESIGN</b> bpad.matthew.noone@gmail.com / 0406077222		

## A.05 LAND USE, ZONING AND PERMISSIBILITY

The subject site is zoned R2 Low Density Residential.



### LAND ZONING LEGEND

 B1 Neighbourhood Centre	 IN1 General Industrial	 RU1 Primary Production
 B2 Local Centre	 IN2 Light Industrial	 RU2 Rural Landscape
 B3 Commercial Core	 IN3 Heavy Industrial	 RU3 Forestry
 B4 Mixed Use	 IN4 Working Waterfront	 RU4 Primary Production Small Lots
 B5 Business Development	 R1 General Residential	 RU5 Village
 B6 Enterprise Corridor	 R2 Low Density Residential	 RU6 Transition
 B7 Business Park	 R3 Medium Density Residential	 SP1 Special Activities
 B8 Metropolitan Centre	 R4 High Density Residential	 SP2 Infrastructure
 C1 National Parks & Nature Reserves	 R5 Large Lot Residential	 SP3 Tourist
 C2 Environmental Conservation	 RE1 Public Recreation	 UR Urban
 C3 Environmental Management	 RE2 Private Recreation	 DM Deferred Matter
 C4 Environmental Living	 RO Regional Open Space	
 CA Complex Area	 RP Regional Park	

## **A.06 SIGNIFICANT ENVIRONMENTAL FEATURES**

There are no significant environmental features within the subject site.





## **A.07 DETAILS OF ABORIGINAL HERITAGE**

To our knowledge the site is not associated with any items of Aboriginal heritage.

## **A.08 THREATENED SPECIES, COMMUNITIES AND CRITICAL HABITATS**

The subject site is not mapped by the Department of Planning, Industry and Environment (DPIE) under Part 7 of the Biodiversity Conservation Act 2016 (BC Act) as having Biodiversity Values (BV). There is no BV mapped land within the proposed development area. Refer to Figure A.09.



<p><b>FIGURE A.09 BIODIVERSITY</b></p>	<p>Plot date: 13/09/2023</p>	<p>CRS: EPSG:28356</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 2em; font-weight: bold;">A.09</p> 
<p><b>BIODIVERSITY VALUES</b></p> <p> Subject Site</p> <p> Biodiversity Values</p> <p> Biodiversity Values added in the last 90 days</p> <p>The BV Map has been prepared by the Department of Planning, Industry and Environment (DPIE) under Part 7 of the Biodiversity Conservation Act 2016 (BC Act).</p>	<p>0 <span style="float: right;">150 m</span></p> <p style="text-align: center;">Meters</p>		

## A.09 REPORT LIMITATIONS

This bushfire assessment is developed based on the current accepted standards. The severity of bushfire attack is reliant on many variables. Due to these variables the bushfire attack on any given day could be higher due to the limitations outline below. The bushfire protection measures contained in this document does not guarantee that loss of life, injury or property damage will not occur during a bush fire event.

### Fire Danger Index

It may be possible that days of higher Fire Danger Index (FDI) may be experienced than the FDI levels used for assessment. This may result in fire situations where conditions challenge survivability of buildings and their occupants.

### Fuel Load

The fuel loads and vegetation classes used in our assessment are based on the State Vegetation Mapping and Comprehensive Fuel Loads based on The University of Wollongong's (UoW) Fuels Modelling Project. Fuel loads in some areas may be higher than those used in this document. This can influence bush fire behaviour and the potential impact on property. The DTS APZs in PBP (2019) are based on the UoW fuel loads and are therefore suitable for design purposes.

### Climate change

Climate change has led to longer, more intense fire seasons and an increase in the average number of elevated fire weather days, as measured by the Forest Fire Danger Index (FFDI). Last year saw the highest annual accumulated FFDI on record. Australia was the first country in the world to report the impact of climate change on bushfires through CSIRO's work to model the increase in high fire danger days.

### Legislative Standards

Recommendations relating to development of bushfire prone land are a directive through the legislative standards applicable at the time of writing. Legislative standards change over time. All recommendations made are based on the current standards. We cannot guarantee that the current standards will be suitable in comparison to future standards.

### Maintenance

After the issuance of an Occupancy Certificate (OC) it is imperative that the bushfire protection recommendations are carried out for the life of the development. Failure to maintain a property in accordance with the RFS standards for Asset Protection Zones could lead to the failure of the building, property and life. We have no control over the extent of how well a property will be maintained post OC.



### B.01 INTRODUCTION

For the purpose of this bushfire assessment, the vegetation is required to be described to a distance of 140m from the boundary and the slope to 100m from boundary. Vegetation type and slope under vegetation are the factors that will significantly affect bushfire behaviour.

‘Research has shown that 85% of houses are lost in the first 100m from bushland and that ember attack is a significant form of attack on properties’ (RFS 2006).

### B.02 SLOPE DETERMINATION

The effective slope has been assessed for a distance of at least 100m from the proposed development. The slope data has been calculated from a 1m LiDAR Digital Elevation Model (DEM). The source data sets have been captured to standards that are generally consistent with the Australian ICSM LiDAR Acquisition Specifications which require a fundamental vertical accuracy of at least 0.30m (95% confidence) and horizontal accuracy of at least 0.80m (95% confidence). The slope arrows indicated in figure A represent the slope calculated across the length of the arrow direct from the digital elevation model. The calculated slope as shown in Figure A has not been manipulated or modified in any way.


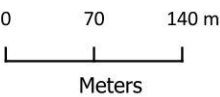

### B.03 HOW THE VEGETATION COVER IS MEASURED

The distance to the vegetation is measured from the extent of vegetation cover interpolated from high resolution aerial imagery. This is the most conservative way to map the vegetation. A site visit was not undertaken.

### B.04 PREDOMINANT VEGETATION FORMATIONS

This assessment considers the vegetation within the site and if relevant, vegetation external to the site boundaries. Where mixes of vegetation formations are located together, the vegetation formation providing the greater hazard (highest radiant heat load) shall be used to determine the BAL and APZ. The combination of vegetation and slope that yields the worst case scenario shall be used (A1.2 PBP 2019). The vegetation mapping provides an overview of the types of vegetation proximal to the site. The vegetation mapping shown in Figure B.04 is not intended to be conclusive.



<b>FIGURE B.04 VEGETATION FORMATIONS AND CLASS (PCT)</b>	Plot date: 13/09/2023	CRS: EPSG:28356
 Subject Site		
<b>BUSHFIRE PLANNING &amp; DESIGN</b> bpad.matthew.noone@gmail.com / 0406077222		

## B.05 VEGETATION PHOTOS



01: Grassland to the south of Magpie Hollow Road.





02: Grassland to the south of Magpie Hollow Road.



## B.06 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT.

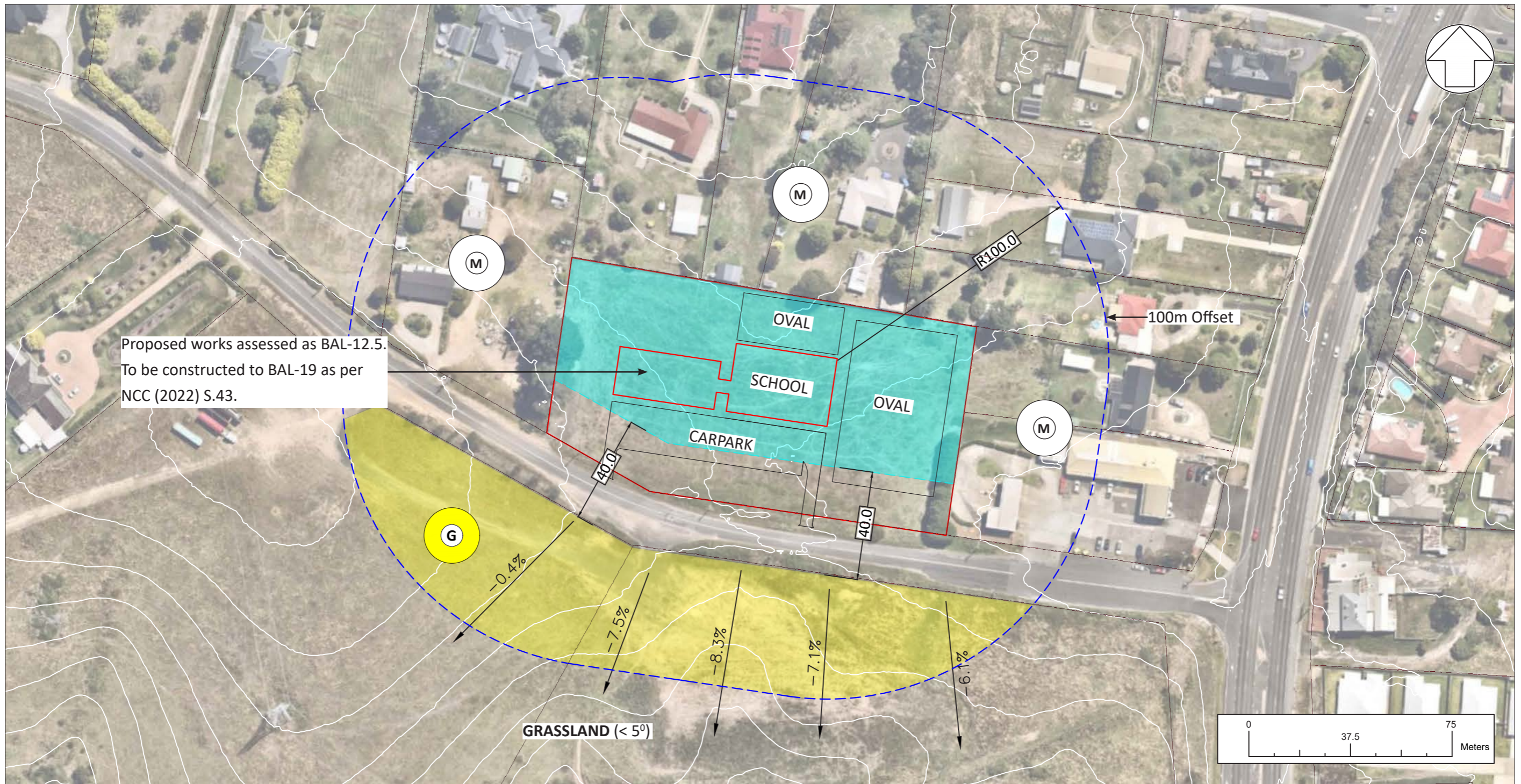
To clarify the findings below, Grassland is located to the south of Magpie Hollow Road. The land in all other directions is managed land for 100m.

Based on the parameters identified in Table 1 below, the proposed building works are assessed as BAL-12.5 however must be constructed to BAL-19 as specified in AS3959 (2018). This is an NCC Specification 43 requirement.

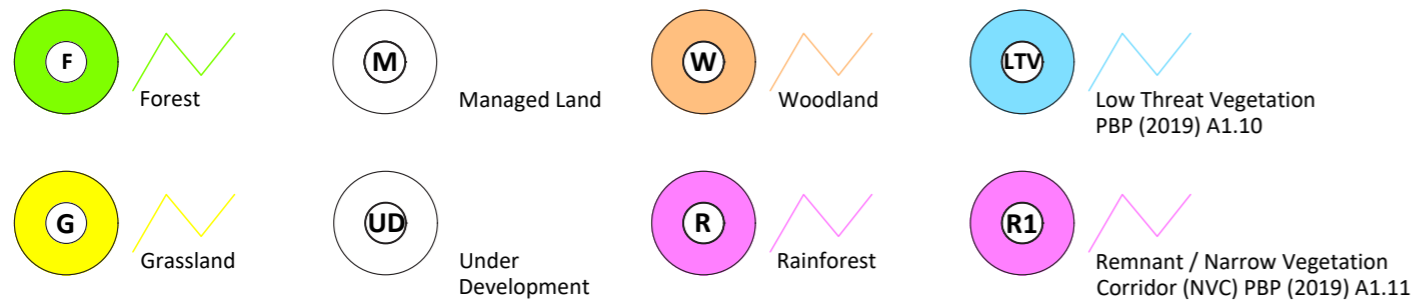
<b>TABLE 1</b> (To be read in conjunction with Figure A).				Forest Fire Danger Index = FDI 80		
LGA = Lithgow Council				Forest Fire Danger Index = FDI 80		
ASPECT <sup>1</sup>	Vegetation Class <sup>2</sup>	Max Effective Slope <sup>3</sup>	Site slope <sup>3</sup>	Required APZ <sup>4</sup>	Proposed APZ / EML <sup>5</sup>	BAL-Rating
S	Grassland	0-5° D-S	N/A	40m	> 40m	BAL-12.5
AOD	Managed residential land					

Abbreviations		
AOD All other directions	EML Extent of managed land	NVC Narrow vegetation corridor

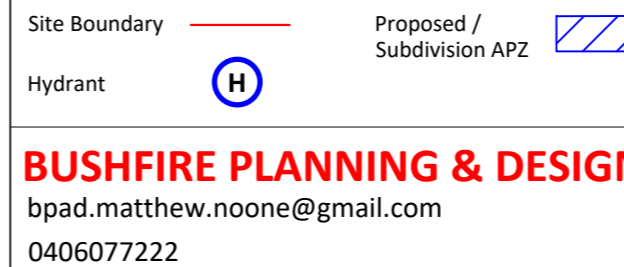
<sup>1</sup>	<i>Cardinal direction from each proposed building facade based on grid north.</i>
<sup>2</sup>	<i>Vegetation Classifications are as described in PBP (2019) A1.2.</i>
<sup>3</sup>	<i>Site slope is calculated from 1m LiDAR contours.</i>
<sup>4</sup>	<i>Minimum APZ required stated as Acceptable Solutions within Table 1.12.2 and A1.12.5. PBP (2019).</i>
<sup>5</sup>	<i>Actual dimensional setback from the face of the building to the assessed vegetation. Achieved Asset Protection Zone (APZ) or extent of managed land (EML).</i>
<sup>6</sup>	<i>Where the direct line of sight between the proposed building and assessed vegetation is obstructed (by a wall or building) the assessed rating can be lowered by one BAL-rating (PBP 2019, s. A1.8).</i>
<sup>7</sup>	<i>Remnant bushland and narrow vegetation corridors (NVC) as stated in PBP (2019) s.A1.11 can be assessed as rainforest as a simplified approach or be assessed as Short Fire Run using method 2 (AS3959).</i>
<sup>8</sup>	<i>Deeming provisions for grassland s.7.9 PBP (2019).</i>



### VEGETATION KEY (solid)



### DRAWING LEGEND



### BAL KEY (drawing may contain all or none)

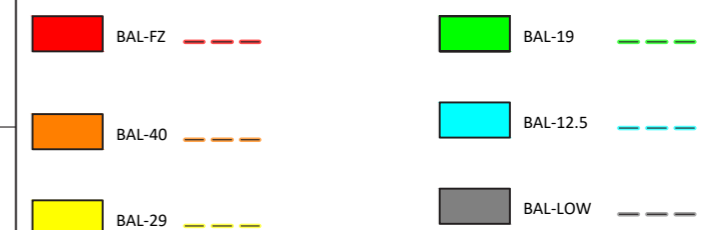
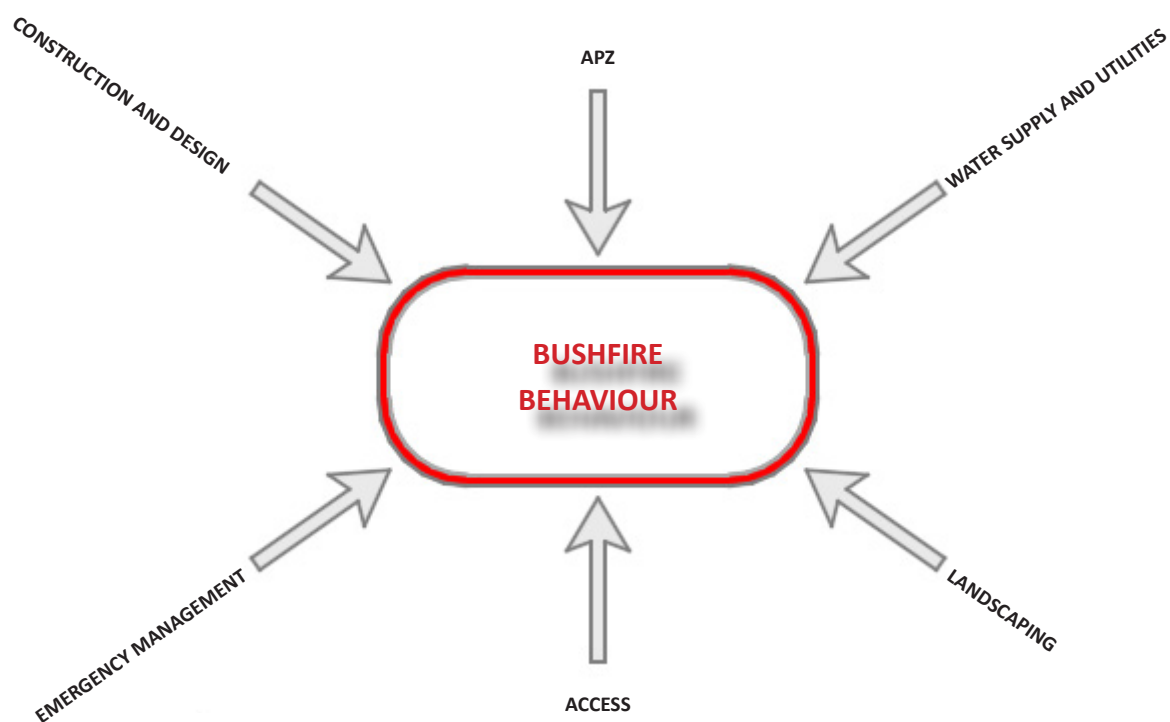


Figure:

**A**

## PART C BUSHFIRE PROTECTION MEASURES

BPMs can mitigate the impact of bush fire attack on people and assets. The types of protection measures include APZs, access, landscaping, water supply, building design and construction and emergency management arrangements. These measures assist building survival during a bush fire. They also contribute to the safety of firefighters and members of the community occupying buildings during the passage of a bush fire front. There are a range of different BPMs which should be applied in combination based upon the development type and the level of bush fire risk. All requirements for BPMs that relate to the development must be provided, as required by this document.



### C.01 ASSET PROTECTION ZONES (APZs)

### C.03 CONSTRUCTION

### C.04 ACCESS

### C.05 WATER

### C.06 ELECTRICITY & GAS

## C.01 ASSET PROTECTION ZONES (APZs)

APZ Intent of measures: to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting fire fighting activities.

The asset protection zones (APZ) recommendations in this report have been derived from the methodology of A1.12.2 or A1.12.3 in Appendix 1 of PBP (2019). Asset protection zones and in particular the Inner Asset Protection Zones are critical for providing defensible space and reducing flame length and rate of spread (PBP 2019). APZs are designed to provide sufficient open space for emergency workers to operate and for occupants to egress the site safely. They are divided into Inner and Outer Asset Protection Zones (IPAs and OPAs) and are required to be maintained for the life of the development. The IPA provides for defensible space and a reduction of radiant heat levels at the building line and the OPA provides for the reduction of the rate of spread and filtering of embers.

### PERFORMANCE CRITERIA (PBP 2019)

- APZs are to be provided commensurate with the construction of the building.
- A defensible space is to be provided.
- APZs are to be managed and maintained to prevent the spread of a fire to the building.
- The APZ is to be provided in perpetuity.
- APZ maintenance is to be practical, soil stability is not compromised and the potential for crown fires is minimised.

Refer to our APZ discussion and recommendations on page 25.



## C.02 ASSET PROTECTION ZONES (APZs) RECOMMENDATIONS

The subject site is surrounded by managed residential land. The inherent management of the subject site and surrounding allotments is sufficient to achieve the nominated BAL-ratings and defensible space. Magpie Hollow Road to the south provides a permanent APZ that can be relied upon in perpetuity and ensures the Grassland vegetation to the south will not encroach closer to the subject site over time. The site is to be managed as an inner APZ in perpetuity. No vegetation is required to be removed to create the APZ.

### 3.1 - INNER APZ (IPA) GUIDELINES

The Inner APZ (IPA) is the managed area closest to the asset (eg. dwelling). The IPA is managed to minimal fuel conditions and aims to mitigate the impact of direct flame contact and radiant heat on the development. The IPA also aims to provide defensible space.

#### TREES

- Canopy cover should be less than 15% (at maturity) within the Inner APZ.
- Trees (at maturity) should not touch or overhang the building.
- Lower limbs should be removed up to a height of 2m above ground.
- Canopies should be separated by 2 to 5m (horizontal and or vertical displacement).
- Preference should be given to smooth barked and evergreen trees.

#### SHRUBS

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

#### GRASS

- Should be kept mown (as a guide grass should be kept to no more than 100mm in height).
- Leaves and vegetation debris should be removed.

### 3.2 - OUTER APZ (OPA) GUIDELINES

The Outer APZ (OPA) is the part of the APZ that is located between the IPA and the bushfire vegetation threat. The reduction in the available fuels and canopy connections in the OPA aims to mitigate the intensity of an approaching fire and restricts the pathways to crown fuels thus reducing the level of direct flame, radiant heat and ember attack on the IPA and asset (dwelling).

#### TREES

- Canopy cover should be less than 30% (at maturity) within the Outer APZ.
- Trees should have canopy separation canopies should be separated by 2 to 5m.

#### SHRUBS

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

## C.03 CONSTRUCTION

### PERFORMANCE CRITERIA (PBP 2019)

The proposed building is assessed as having a Bushfire Attack Level of BAL-12.5. The proposed building works are to be constructed to BAL-19 (NCC, Specification 43 requirement) as indicated in Figure A and as specified in AS3959 (2018). This includes the general requirements of Section 3 of AS3959 (2018) and the additional construction requirements stipulated in s.7.5 of the New South Wales Rural Fire Service (RFS) document Planning for Bushfire Protection (PBP 2019).

## C.04 ACCESS

Intent of measures: To provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area.

### PERFORMANCE CRITERIA (PBP 2019)

•	Fire-fighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.
•	The capacity of access roads is adequate for fire-fighting vehicles.
•	There is appropriate access to water supply.
•	Fire-fighting vehicles can access the dwelling and exit the property safely.

### PUBLIC ROADS

Magpie Hollow Road is located to the south of the subject site. Great Western Highway is located to the east. Fire fighting vehicles are provided with safe, all-weather access to structures. The public road system is deemed to be adequate for emergency services appliances.

## C.05 WATER

Intent of measures: To provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

### PERFORMANCE CRITERIA (PBP 2019)

- An adequate water supply is to be provided for fire-fighting purposes.
- Water supplies are to be located at regular intervals.
- The water supply is to be accessible and reliable for fire-fighting operations.
- Flows and pressure are to be appropriate
- The integrity of the water supply is to be maintained.
- A static water supply is to be provided for fire-fighting purposes in areas where reticulated water is not available.

### WATER PROVISIONS

Reticulated water is provided however the hydrant sizing, spacing or pressures have not been tested. PBP (2019) does not nominate a distance from the hydrant to the most distal part of the dwelling. RFS require a maximum distance of 70m (60m hose length + 10m spray) from the hydrant to the most distal part of the dwelling. NSW Fire and Rescue require a maximum distance of 90m (20m hose length connected from the hydrant to the tanker + 60m hose length + 10m spray). If it is found that a hydrant is located more than the specified distances, tank water is to be provided as per s.5.3d and 7.4a PBP (2019).

### WATER SUPPLY RECOMMENDATIONS

- All above-ground water service pipes (including taps and connections) external to the building are to be metal.

## C.06 ELECTRICITY & GAS

Intent of measures: To locate gas and electricity so as not to contribute to the risk of fire to a building.

### PERFORMANCE CRITERIA (PBP 2019)

- Location of electricity services is to limit the possibility of ignition of surrounding bush land or the fabric of buildings.
- Location and design of gas services is not to not lead to the ignition of surrounding bushland or the fabric of buildings.

### ELECTRICITY (RFS RECOMMENDATIONS FOR CONSIDERATION)

Generally the electrical frame work will be an existing condition. Should there be a need to install new electrical connections the following should be considered;

- Where practicable place electrical transmission lines are underground or,
- If overhead electrical transmission lines are proposed:- lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).
- No part of a tree is to 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.

### GAS SUPPLY RECOMMENDATIONS (IF APPLICABLE)

Should the Applicant wish to install a gas supply to the dwelling or structure, the following criteria are to be complied with.

- Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.
- Connections to and from gas cylinders are to be metal.
- Polymer-sheathed flexible gas supply lines are not to be used.
- Above-ground gas service pipes are to be metal, including and up to any outlets.

## PART D NCC (2022) SPECIFICATION 43 REVIEW

The following tables provide a review of Specification 43 Bushfire protection for certain Class 9 buildings

S43C1 Scope			
	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>This Specification sets out bushfire protection measures for buildings described in G5D4.</i>	Noted.	-
(2)	<i>Compliance with this Specification does not guarantee the safety of building occupants or the maintenance of tenable conditions within a building during a bushfire event.</i>	Noted.	-

S43C2 Separation from classified vegetation			
	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
	<p><i>This clause has deliberately been left blank.</i></p> <p><i>S43C2 does not apply in NSW as Asset Protection Zones must be determined in accordance with Planning for Bush Fire Protection.</i></p>	Asset Protection Zones have been reviewed against the acceptable solutions in Planning for Bush Fire Protection (2019).	Y

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

## S43C3 Separation between buildings

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>The building must be located not less than 12m from any other building.</i>	The proposed building is not within 12m of other buildings.	Y
(2)	<i>The separation distance by (1) need not be complied with if the building is constructed—</i>		
(a)	<i>with walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or</i>	Noted.	N/A
(b)	<i>for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m<sup>2</sup> or greater.</i>	Noted.	N/A

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).



## S43C4 Separation from allotment boundaries and carparking areas

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>The building must be located not less than 10 m from any allotment boundary or open carparking area/spots.</i>	<p>The building is not located within 10m of the allotment boundary.</p> <p>A carpark is located within 10m to the south.</p>	<p>Y (boundary)</p> <p>N (Carpark)</p>
(2)	<i>The separation distance required by (1) need not be complied with if the building is constructed —</i>		
(a)	<i>with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or</i>	Noted.	TBS
(b)	<i>for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m<sup>2</sup> or greater.</i>	Noted.	TBS

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

### S43C5 Separation from hazards

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>The external walls and roof of the building must be protected from potential hazards on the site such as liquefied petroleum gas bottles, fuel storage, storage of combustible materials, waste bins, vehicles, machinery, and the like, by—</i>	Noted.	TBS
(a)	<i>a separation distance of not less than 10m; or</i>	Noted.	TBS
(b)	<i>where within the 10 m separation distance described in (a), constructed with external walls that have an FRL of not less than 60/60/60 when tested from the outside, including any openings protected in accordance with AS 3959 for BAL—19 or greater; or</i>	Noted.	TBS
(c)	<i>for external walls and roof, using a material or system that satisfies the test criteria of AS 1530.8.1 for a radiant heat flux of 10 kW/m<sup>2</sup> or greater.</i>	Noted.	TBS

### S43C6 Non-combustible path around building

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>A non-combustible pathway directly adjacent to the building and not less than 1.5 m wide must be provided around the perimeter of the building.</i>	Noted.	TBS

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

### S43C7 Access pathways

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>Access pathways that lead to a road or open space must—</i>	Noted.	TBS
	(a) <i>be readily identifiable; and</i>	Noted.	TBS
	(b) <i>have an even surface; and</i>	Noted.	TBS
	(c) <i>have a minimum clear width of not less than 1 m.</i>	Noted.	TBS
(2)	<i>If the access pathway is an accessway that is required to comply with Part D4, the requirements of Part D4 override (1) to the extent of any inconsistency.</i>	Noted.	TBS

### S43C8 Exposed external areas

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>An external area designed to hold people unable to be safely accommodated within the building, that may be exposed to radiant heat flux from a fire front during a bushfire event, must not be exposed to an incident radiant heat flux from the fire front exceeding 1 kW/m<sup>2</sup> above background solar radiant heat flux.</i>	The proposed building works are not directly exposed to potential bushfire prone vegetation.	Y

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

## S43C9 Internal tenability

SPECIFICATION 43 CLAUSES		BPAD COMMENTS	COMPLIANCE *
<i>To maintain internal tenability throughout the duration of occupancy during a bushfire event, the building must comply with the following:</i>			-
(a)	<i>An air handling system must be provided that is capable of—</i>	Ventilation systems are not within the bushfire consultancy scope or area of expertise. To be determined by others.	TBS
(i)	being adjusted for full recycling of internal air for a period of not less than 4 hours to avoid the introduction of smoke into the building; and		
(ii)	maintaining an internal air temperature of not more than 25°C.	Ventilation systems are not within the bushfire consultancy scope or area of expertise. To be determined by others.	TBS
(b)	The building envelope must be designed such that if an air handling system required by (a) fails, then—	Ventilation systems are not within the bushfire consultancy scope or area of expertise. To be determined by others.	TBS
(i)	internal air temperatures can be maintained below 39°C; and		
(ii)	internal surface temperatures can be maintained below 60°C		
(c)	If the building is divided into separate compartments then, for the purposes of (a), each compartment must have a separate air handling system.	Ventilation systems are not within the bushfire consultancy scope or area of expertise. To be determined by others.	TBS
(d)	Each air handling system required by (a) must be designed to account for the activation of smoke detectors from low concentrations of smoke from external sources, so as to ensure that air-conditioning and other essential systems remain operational.		

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

### S43C10 Building envelope

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
	<i>The building envelope must be constructed in accordance with AS 3959 – BAL 19 or greater, except that where the use of combustible materials is permitted by AS 3959, they are not to be used unless permitted by C2D10(4), (5) or (6).</i>	Noted.	TBS

### S43C11 Supply of water for fire-fighting purposes

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
	<i>Water for fire-fighting purposes must be available and consist of—</i>		
(a)	<i>A fire hydrant system complying with E1D2; or</i>	Hydraulic services have not yet been designed.	TBS
(b)	<i>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 the relevant fire brigade that—</i>	Hydraulic services have not yet been designed.	TBS
	(i) <i>is capable of providing the required flow rate for a period of not less than 4 hours; or</i>	Hydraulic services have not yet been designed.	TBS
	(ii) <i>has a volume of 10 000 litres for each occupied building.</i>	Hydraulic services have not yet been designed.	TBS

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

## S43C12 Emergency power supply

	SPECIFICATION 43 CLAUSES	BPAD COMMENTS	COMPLIANCE *
(1)	<i>Emergency power must be provided to support, for not less than 4 hours before and 2 hours after the passing of the fire front during a bushfire event, the ongoing operation of—</i>	Electrical services not yet designed.	TBS
(a)	<i>air handling systems to maintain internal tenability; and</i>	Electrical services not yet designed.	TBS
(b)	<i>any pumps for fire-fighting; and</i>	Electrical services not yet designed.	TBS
(c)	<i>any emergency lighting and exit signs; and</i>	Electrical services not yet designed.	TBS
(d)	<i>any other emergency equipment listed in C3D14(6) and required to be provided.</i>	Electrical services not yet designed.	TBS
(2)	<i>Manual control for emergency back-up power supply must be provided to facilitate manual intervention where the power supply fails or runs out.</i>	Electrical services not yet designed.	TBS

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

### S43C13 Signage

	<b>SPECIFICATION 43 CLAUSES</b>	<b>BPAD COMMENTS</b>	<b>COMPLIANCE *</b>
(1)	<i>Signage must be provided to warn building occupants against storing combustible materials under or adjacent to the building</i>	Noted.	TBS

### S43C14 Vehicular access

	<b>SPECIFICATION 43 CLAUSES</b>	<b>BPAD COMMENTS</b>	<b>COMPLIANCE *</b>
(1)	<i>Vehicular access to the building must be provided in accordance C3D5(2), as if the building were a large isolated building for the purposes of C3D4.</i>	The building is not a large isolated building.	N/A

\* (Y = Yes), (N=No), (TBS=To be Specified), (N/A= Not Applicable).

## **PART E RECOMMENDATIONS**

The development is required to be referred to NSW Rural Fire Service. RFS will provide their requirements in their General Terms of Approval letter to Council. Provided Council agrees with the RFS recommendations, Council will reference the RFS requirements in the DA consent.

Once Council receives the RFS General Terms of Approval letter this report and any recommendation within becomes obsolete and is no longer to be used or referenced unless directed otherwise by in the RFS General Terms of Approval.



## PART F SUMMARY

The development relates to the construction of a new school on a vacant allotment.

For the purpose of bushfire assessment and pursuant of clause 4.46 of the EP&A Act 1979 and 100B of the Rural Fire Act 1997, this project is considered to be an integrated development and is required to be referred to the RFS for their approval and issuance of a Bushfire Safety Authority (BFSA).

The subject site is located in South Bowenfels which is within the Lithgow Local Government Area (LGA). The site is currently vacant. Access to the site is via Magpie Hollow Road to the south. The allotment is surrounded by managed residential curtilage to the east, west and north. Grassland is located to the south of Magpie Hollow Road. Our report does not rely on any management of the land to the south of Magpie Hollow Road.

The subject site is surrounded by managed residential land. The inherent management of the subject site and surrounding allotments is sufficient to achieve the nominated BAL-ratings and defensible space. Magpie Hollow Road to the south provides a permanent APZ that can be relied upon in perpetuity and ensures the Grassland vegetation to the south will not encroach closer to the subject site over time. The site is to be managed as an inner APZ in perpetuity. No vegetation is required to be removed to create the APZ.

The proposed building works are assessed as BAL-12.5 as indicated in Figure A. As per NCC (2022) Specification 43, the proposed building works are to be constructed to BAL-19 as specified in AS3959 (2018) the Australian Standard for the Construction of Buildings in a Bushfire Prone Area.

Access to the site via the public road system is suitable for emergency response vehicles. RFS do not require site access.

Reticulated water is available on Great Western Highway. No Additional water is required for fire fighting.

The project can comply with the construction requirements of AS3959 (2018) and the performance requirements of the BCA. The objectives and performance requirements of PBP (2019) are also achieved.

In the event that Council or the NSW Rural Fire Service has any questions in relation this report please get in contact to discuss.

Report prepared by:



Matthew Noone

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## D.01 REFERENCES

AS3959 (2018)	Australian Standard, Construction of buildings in bushfire-prone areas, AS 3959, Third edition 2018 Standards Australia International Ltd, Sydney.
BCA (2019)	Building Code of Australia 2019, Building Code of Australia, Australian Building Codes Board, Canberra 2019.
EPA Act (1979)	Environmental Planning and Assessment Act 1979, NSW Government, NSW, legislation found at <a href="http://www.legislation.nsw.gov.au">www.legislation.nsw.gov.au</a>
Keith (2004)	Keith, D.A. (2004), Ocean shores to desert dunes: The Native Vegetation of New South Wales and the ACT. NSW Department of Environment and Conservation (2004).
PBP (2019)	Planning for Bushfire Protection, a Guide for Councils,Planners, Fire Authorities, Developers and Home Owners. Rural Fire Service 2019, Australian Government Publishing Service, Canberra.
RFS (2015)	Rural Fire Service, Guide For Bush Fire Prone Land Mapping, Version 5b.

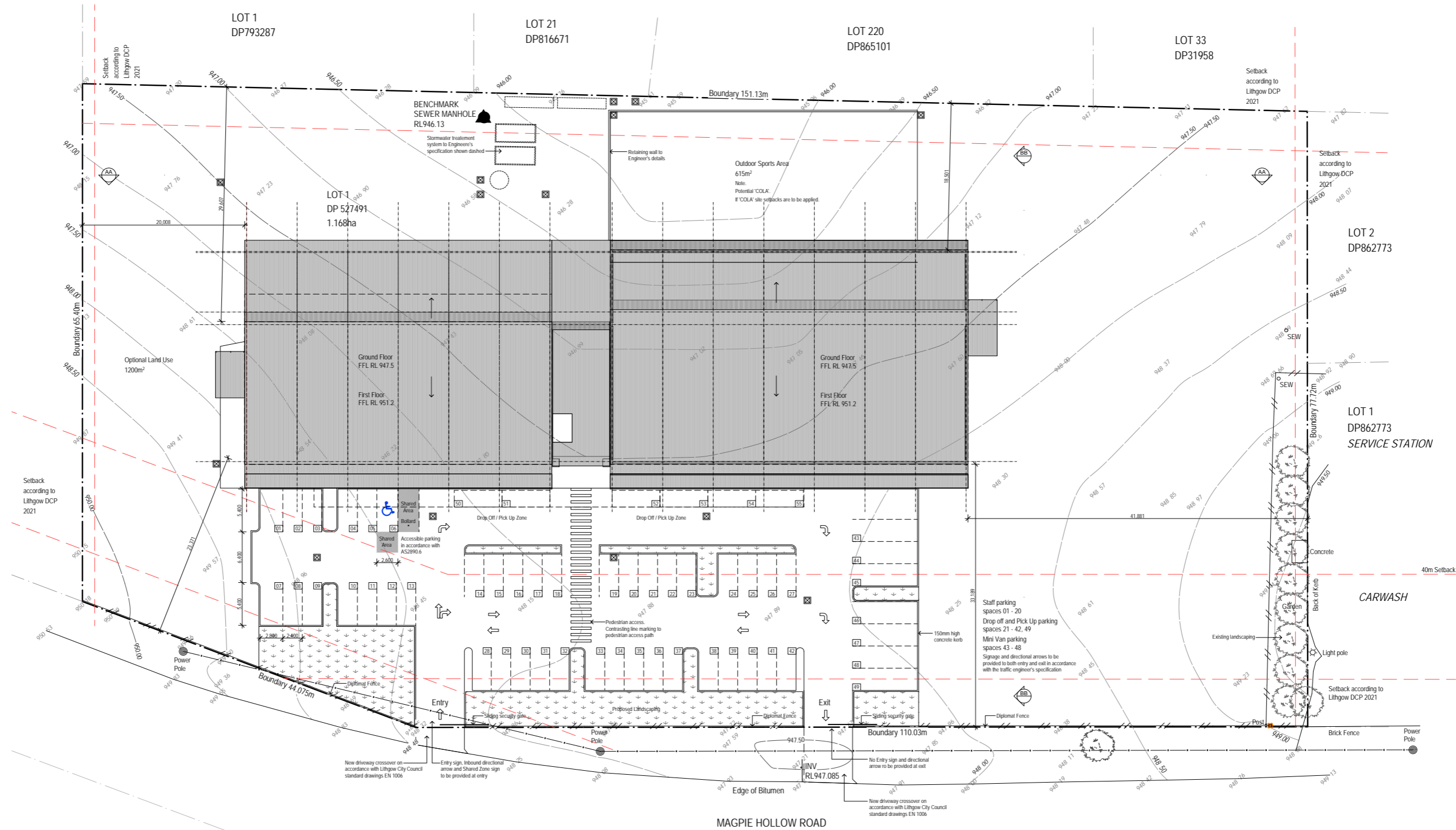
## D.02 APPENDICES

Appendix A - Architectural Drawings.

# APPENDIX A - ARCHITECTURAL DRAWINGS

**Legend**

- A Aluminium
- B Basin
- BDRY Boundary
- BPB Bagged & Painted Brickwork
- BV Brick Veneer
- CL Ceiling Level
- CONC Concrete
- CP Concrete Paver
- CPT Carpet
- CRS Corrugated Roof Sheeting
- CS Cavity Sliding Door
- CT Ceramic Tile
- DH Double Hung
- DP Downpipe
- EMB Electrical Meterboard
- ENS Ensuite
- FB Face Brick
- FC Fibre Cement
- FFL Finished Floor Level
- FG Fixed Glass
- FW Floor Waste
- GM Gas Meter
- HC Hollow Core
- HWS Hot Water Service
- LDRY Laundry
- MH Manhole
- P Pantry
- PB Plasterboard
- FP Fixed Panel
- OG Obscure Glass
- REF Refrigerator
- RH Rangehood Above
- RL Reduced Level
- SC Solid Core
- SD Sliding Door
- SHR Shower
- SS Stainless Steel Sink
- SV Stone Veneer
- T Tub
- TC Texture Coated Hebel
- TFP Typical
- UBO Under Bench Oven
- VL Vinyl Floor Finish
- WB Weatherboards
- WC Water Closet
- W Water Meter
- WM Washing Machine
- X Sliding panel
- Proposed stormwater pit to Engineer's details



Compartment Schedule	Area	Volume
Classrooms	1364.4 m <sup>2</sup>	6003.36 m <sup>3</sup>
Gym	1397.5 m <sup>2</sup>	8505.2 m <sup>3</sup>
<b>Total Building (Excl. Link)</b>	<b>2781.9 m<sup>2</sup></b>	<b>14508.56 m<sup>3</sup></b>
Link	230.4 m <sup>2</sup>	1013.76 m <sup>3</sup>

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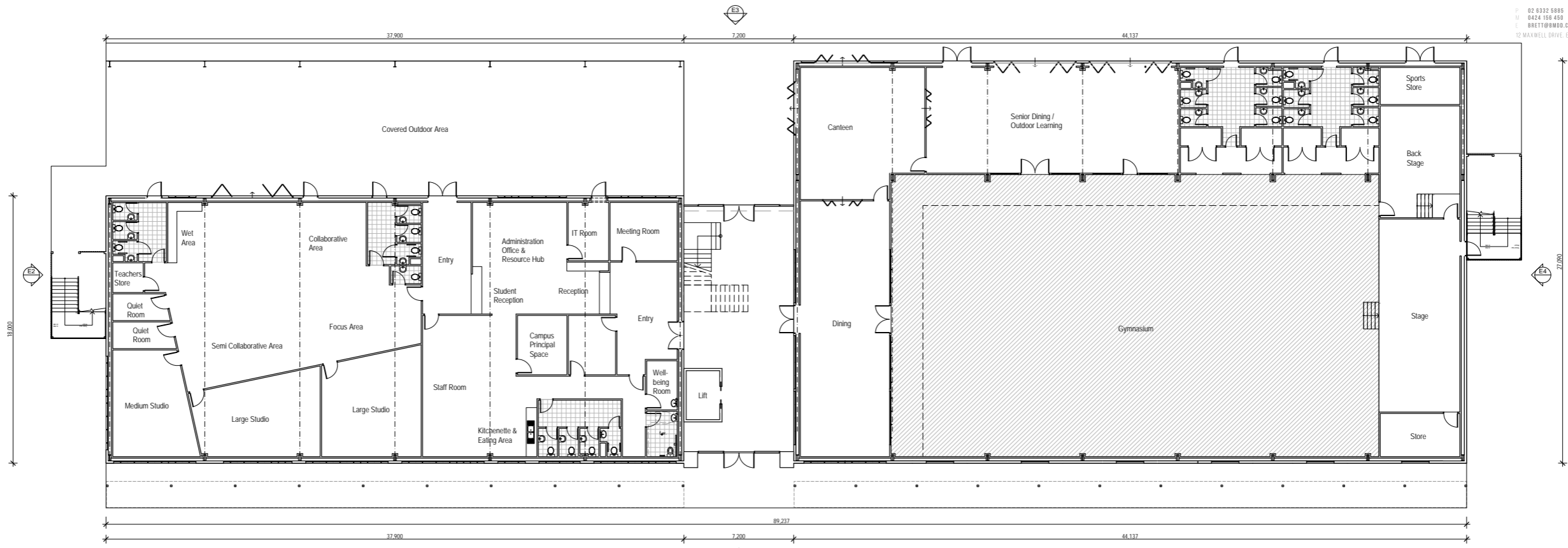
**bdac**  
 ACCREDITED BUILDING DESIGNER

Date	Issue	Amendment	Date	Issue	Amendment	Date	Issue	Amendment	Date	Issue	Amendment
25/01/24	S	ISSUED FOR DA APPROVAL	09/11/23	M	Issued for comment	14/09/23	G	Survey details incorporated	13/04/23	A	
			09/11/23	N	Issued for comment	20/09/23	H	Issued for comment	13/04/23	B	
			19/12/23	O	Issued for comment	06/10/23	I	Issued for comment	08/06/23	C	
			21/12/23	P	Issued for final comment	09/10/23	J	Issued for comment	13/07/23	D	
			24/12/23	Q	Awaiting added to additional drawings	23/11/23	K	Issued for comment	24/08/23	E	
			18/01/24	R	Issued for comment	25/11/23	L	Issued for comment	05/09/23	F	

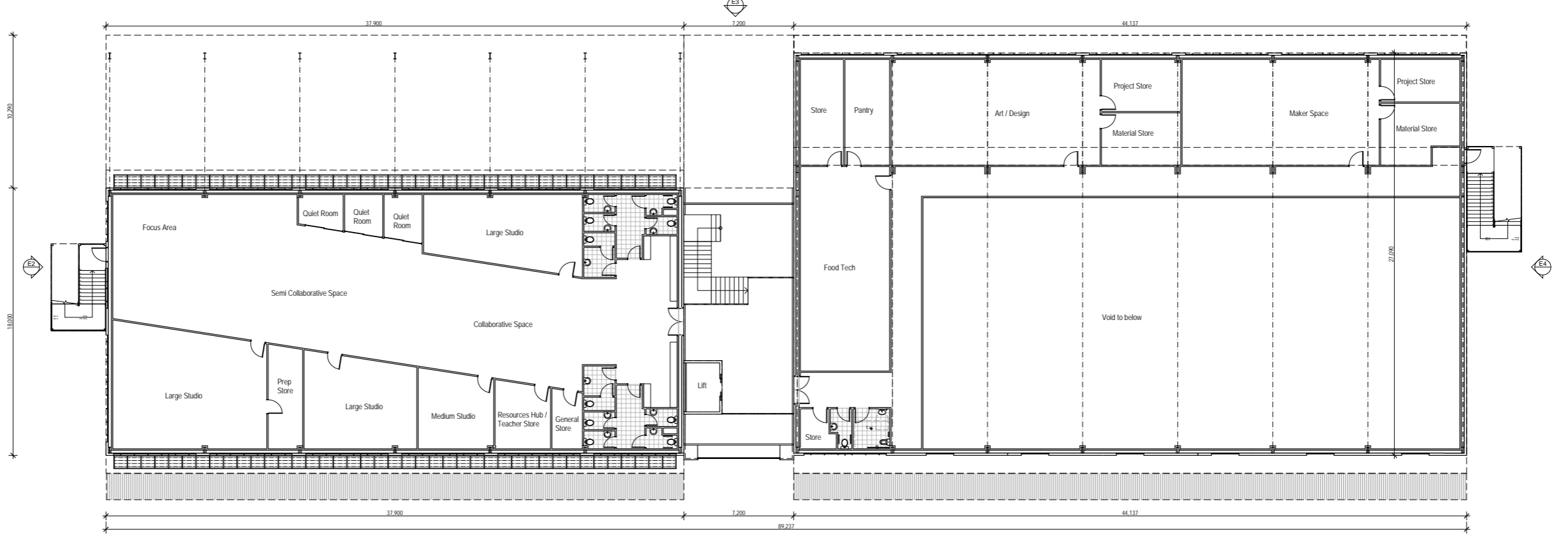
Date	Issue	Amendment
		NOT FOR CONSTRUCTION
		Proposed School
		DEZIGN
		Lot 1 Magpie Hollow Road South Bowenfels

**Site Plan - Proposed**  
**DACC 02**  
 Issue: 5  
 Scale: 1:250 @ A1  
 Date: 25/01/24  
 Project: BMD22389





Ground Floor - Proposed  
Scale 1:150



First Floor - Proposed

Compartment Schedule	Area	Volume
Classrooms	1364.4 m <sup>2</sup>	6003.36 m <sup>3</sup>
Gym	1397.5 m <sup>2</sup>	8505.2 m <sup>3</sup>
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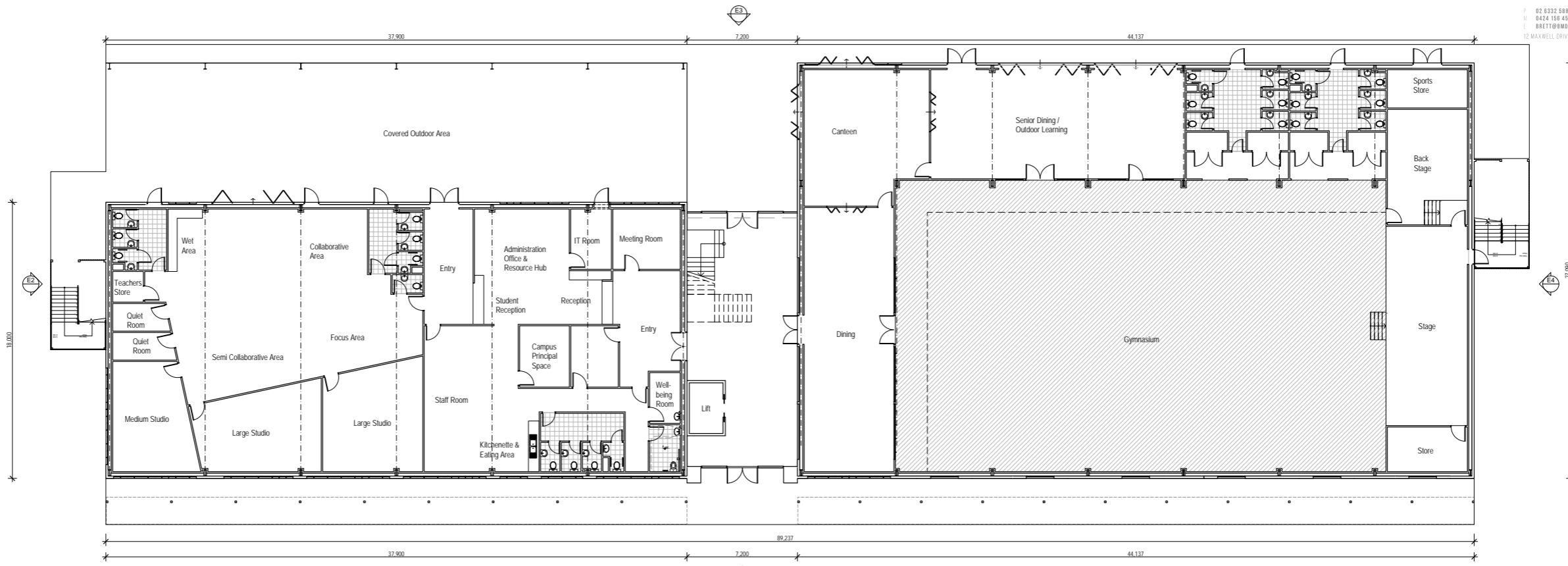


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			21/12/23	P	Issued for final comment	09/10/23	J	Issued for comment
			24/12/23	Q	Awaiting added to additional drawings	23/10/23	K	Issued for comment
			18/01/24	R	Issued for comment	25/10/23	L	Issued for comment

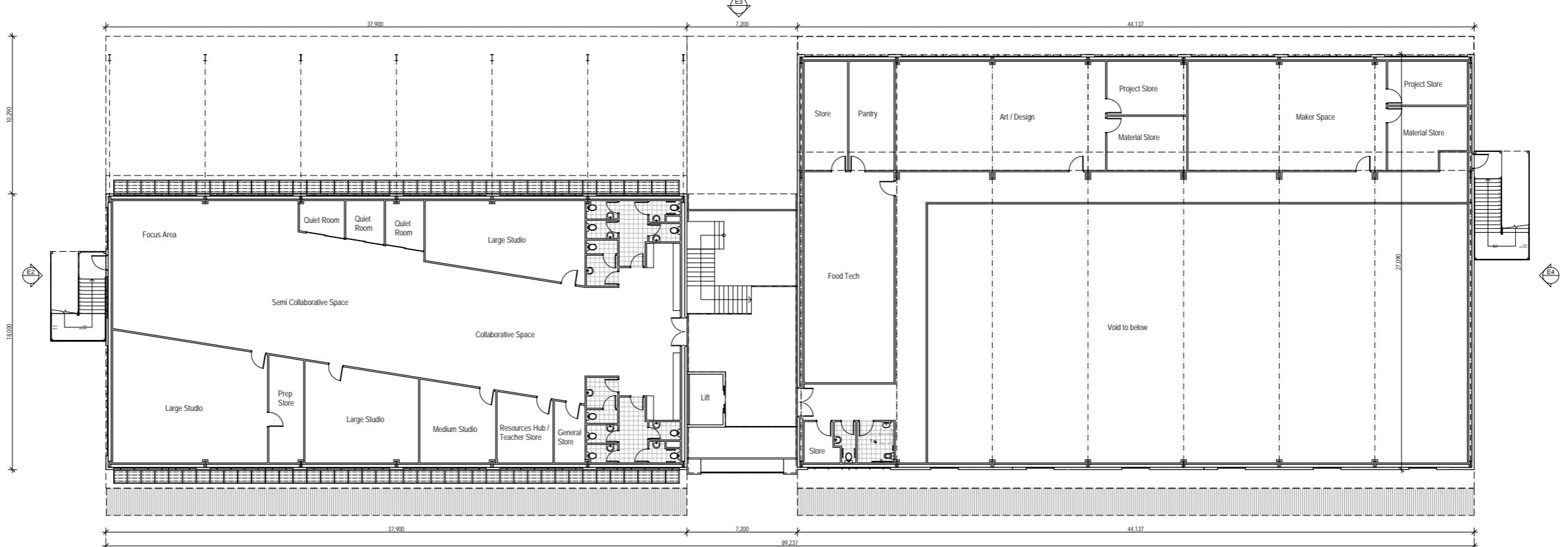
NOT FOR CONSTRUCTION	Date	Issue	Amendment
	13/04/23	A	Issued for comment
	13/04/23	B	Issued for comment
	08/06/23	C	Issued for comment
	13/07/23	D	Issued for comment
	24/08/23	E	Issued for comment
	05/09/23	F	Issued for comment

Proposed School  
DEZIGN  
Lot 1 Magpie Hollow Road South Bowenfels

Floor Plans - Proposed  
DACC 03  
Issue: 5  
Scale: 1:150 @ A1  
Date: 25/01/24  
Project: BMD22389



Ground Floor - Proposed  
Scale 1:150



First Floor - Proposed

Compartment Schedule	Area	Volume
Classrooms	1364.4 m <sup>2</sup>	6003.36 m <sup>3</sup>
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Date	Issue	Amendment
25/01/24	S	ISSUED FOR DA APPROVAL

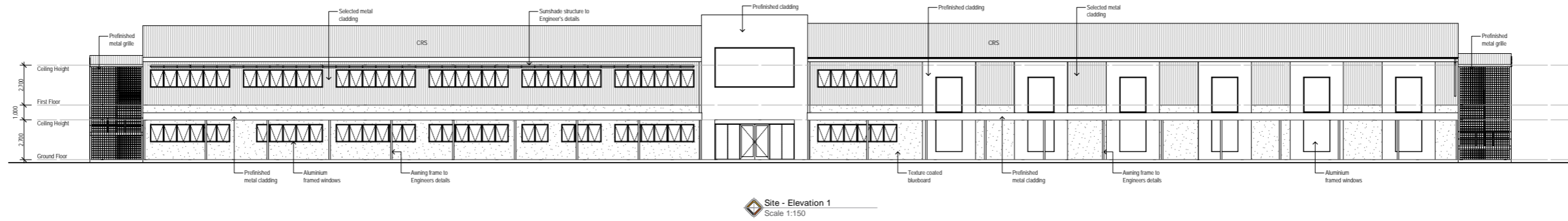
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09/11/23	M	Issued for comment
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Date	Issue	Amendment
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06/10/23	I	Issued for comment
09/10/23	J	Issued for comment
23/10/23	K	Issued for comment
25/10/23	L	Issued for comment

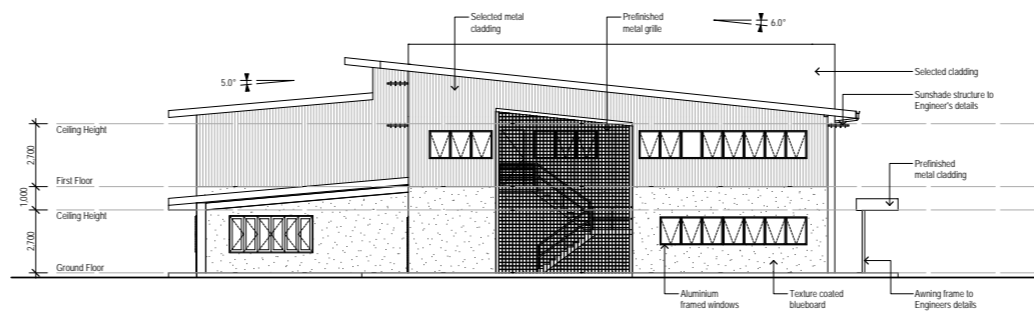
NOT FOR CONSTRUCTION

Proposed School  
DEZIGN  
Lot 1 Magpie Hollow Road South Bowenfels

Floor Plans - Proposed  
DACC 03  
Issue: S  
Scale: 1:150 @ A1  
Date: 25/01/24  
Project: BMD22389

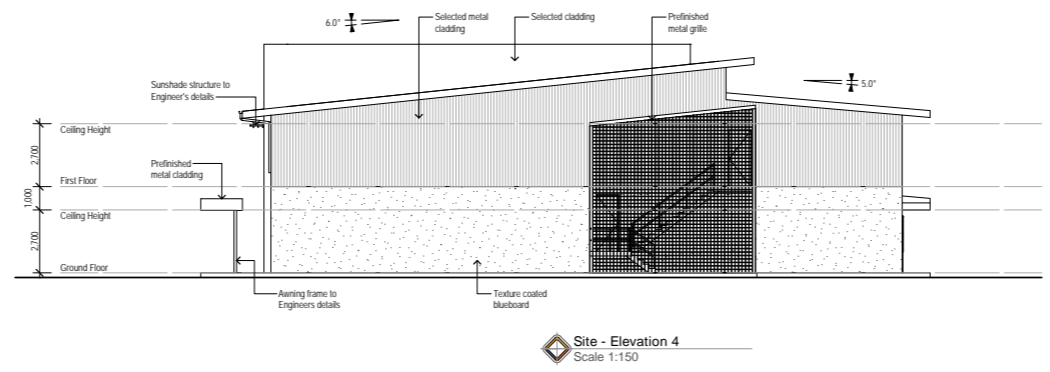


Site - Elevation 1  
Scale 1:150



Site - Elevation 2  
Scale 1:150





Date	Issue	Amendment	Date	Issue	Amendment	Date	Issue	Amendment	Date	Issue	Amendment
25/01/24	S	ISSUED FOR DA APPROVAL	09/11/23	M	Survey details incorporated	14/09/23	G	Issued for comment	13/04/23	A	Issued for comment
			09/11/23	N	Issued for comment	23/09/23	H	Issued for comment	13/04/23	B	Issued for comment
			19/12/23	O	Issued for comment	06/10/23	I	Issued for comment	08/06/23	C	Issued for comment
			21/12/23	P	Issued for final comment	09/10/23	J	Issued for comment	13/07/23	D	Issued for comment
			24/12/23	Q	Awning added to additional drawings	20/10/23	K	Issued for comment	24/09/23	E	Issued for comment
			18/01/24	R	Issued for comment	25/10/23	L	Issued for comment	05/09/23	F	Issued for comment

Legend

- A Aluminium
- B Basin
- BDRY Boundary
- BPB Bagged & Painted Brickwork
- BV Brick Veneer
- CL Ceiling Level
- CONC Concrete
- CP Concrete Paver
- CPT Carpet
- CRS Corrugated Roof Sheet
- CS Cavity Sliding Door
- CT Ceramic Tile
- DH Double Hung
- DP Downpipe
- EMB Electrical Meterboard
- ENS Ensuite
- FB Face Brick
- FC Fibre Cement
- FFL Finished Floor Level
- F Fixed Glass
- FW Floor Waste
- GM Gas Meter
- HC Hollow Core
- HWS Hot Water Service
- LDTRY Laundry
- MH Manhole
- P Pantry
- PB Plasterboard
- O Fixed Panel
- OG Obscure Glass
- REF Refrigerator
- RH Rangedhood Above
- RL Reduced Level
- SC Solid Core
- SD Sliding Door
- SHR Shower
- SS Stainless Steel Sink
- SV Stone Veneer
- T Tub
- TC Texture Coated Hebel
- TFP Typical Floor Finish
- UBO Under Bench Oven
- VL Vinyl Floor Finish
- WB Weatherboards
- WC Water Closet
- W Water Meter
- WM Washing Machine
- X Sliding panel

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 12 MAXWELL DRIVE, EGLINTON NSW 2795



**Notes:**  
 1. Builder to confirm coordination of architectural and structural documentation prior to construction.  
 2. All dimensions are to be verified on site by contractor prior to commencement of any works.  
 3. All discrepancies are to be referred to designer for action.



Compartment Schedule	Area	Volume
Classrooms	1364.4 m <sup>2</sup>	6003.36 m <sup>3</sup>
Gym	1397.5 m <sup>2</sup>	8505.2 m <sup>3</sup>
<b>Total Building (Excl. Link)</b>	<b>2761.9 m<sup>2</sup></b>	<b>14508.56 m<sup>3</sup></b>
Link	230.4 m <sup>2</sup>	1013.76 m <sup>3</sup>

NOT FOR CONSTRUCTION



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 DESIGN & DRAFTING  
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**bdac**  
 ACCREDITED  
 BUILDING DESIGNER

Date	Issue	Amendment
25/01/24	S	ISSUED FOR DA APPROVAL

Date	Issue	Amendment
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Date	Issue	Amendment
14/09/23	G	Survey details incorporated
29/09/23	H	Issued for comment
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**Proposed School**  
 DEZIGN  
 Lot 1 Magpie Hollow Road South Bowenfels



**Learning Centre - Ground Floor Plan**  
 DACC 06  
 Issue: 5  
 Scale: 1:100 @ A1  
 Date: 25/01/24  
 Project: BMD222389

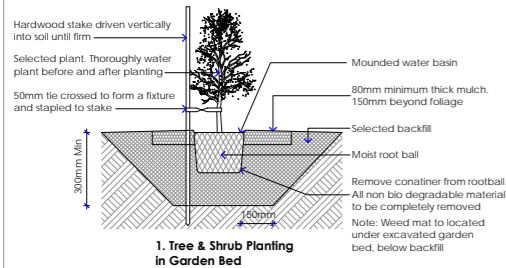
-  Turf
-  Concrete/ Blumex
- 150K 150mmH concrete kerb

Plant Species

-  Botanical Name: *Pistacia chinensis*  
Common Name: Chinese Pistachio  
Pot Size: 100 Ltr  
Average Height: 4 - 6m  
Quantity: 14
-  Botanical Name: *Acer sect. Macrantha*  
Common Name: Spokelbark Maple  
Pot Size: 100 Ltr  
Average Height: 8m  
Quantity: 6
-  Botanical Name: *A. palmatum*  
Common Name: Japanese Maple  
Pot Size: 100 Ltr  
Average Height: 4m  
Quantity: 13
-  Botanical Name: *Cordyline Australis*  
Common Name: Cordyline Sundance  
Pot Size: 6"  
Average Height: 2.5m  
Quantity: 7
-  Botanical Name: *Choisya Tomata*  
Common Name: Mexican Orange Blossom  
Pot Size: 6" 1.5m spacing  
Average Height: 1m Clipped  
Quantity: 18
-  Botanical Name: *Cerastium tomentosum*  
Common Name: Snow in Summer  
Pot Size: 6"  
Average Height: 0.2m  
Quantity: 64
-  Botanical Name: *Liriodi Muscari - Royal Purple*  
Common Name: Lily Turf  
Pot Size: 6"  
Average Height: 60cm  
Quantity: 64

Notes:

1. Plant selection to be reviewed by landscaping contractor for suitability and appropriate substitutions made where necessary.
2. All garden beds are to have an irrigator system installed that will provide adequate water to all plants.



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NOT FOR CONSTRUCTION  
 Proposed School  
 DEZIGN  
 Lot 1 Magpie Hollow Road South Bowenfels



Landscape Plan  
 DACC 17  
 Issue 5  
 Scale: 1:250 @ A1  
 Date: 25/01/24  
 Project: BMD222389