

STATEMENT OF ENVIRONMENTAL EFFECTS

New multi-purpose hall at Nepean Creative and Performing Arts High School



PR147922-3
2
12 March 2021

[rpsgroup.com](https://www.rpsgroup.com)

STATEMENT OF ENVIRONMENTAL EFFECTS

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
A	Review by client	Shaun Smith	Rob Dwyer	Rob Dwyer	05-02-21
1	For lodgement with Council	Shaun Smith	Rob Dwyer	Rob Dwyer	18-02-21
2	Further review and lodgement with Council	Shaun Smith	Rob Dwyer	Rob Dwyer	12-03-21

Approval for Issue

Rob Dwyer

12 March 2021

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by:

Prepared for:

RPS

NSW Department of Education (SI NSW)

Rob Dwyer
Planning Manager - Newcastle

Thu Thanapalasuntheram
Project Officer – Infrastructure Delivery

Unit 2A, 45 Fitzroy Street
Carrington NSW 2294

GPO Box 33
Sydney NSW 2001

T +61 2 4940 4200
E rob.dwyer@rpsgroup.com.au

T
E

Contents

1	INTRODUCTION	4
1.1	Purpose	4
1.2	Crown development applications	4
1.3	Consent authority	4
1.4	Site history	5
1.5	Cost of works	5
1.6	Pre-DA advice	5
1.7	Supporting documentation	7
2	SITE AND SURROUNDING AREA	9
2.1	Site description and area	9
2.2	Surrounding area	9
3	SCHOOL DEVELOPMENT OPTIONS	14
3.1	Overview of the project	14
3.2	Project options	14
4	PROPOSED DEVELOPMENT	15
4.1	Project description	15
5	DEVELOPMENT ISSUES	18
5.1	Biodiversity	18
5.2	Flooding	18
5.3	Noise	19
5.4	Soils and water management	20
5.5	Waste	20
5.6	Potential contamination	20
5.7	Aboriginal archaeology	20
5.8	Non-Aboriginal heritage	20
5.9	Air quality	21
5.10	Bushfire	21
5.11	Transport and traffic	21
5.12	Social impacts	21
6	PLANNING CONTROLS	22
6.1	State Environmental Planning Policy 55 (Remediation of Land)	22
6.2	State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017	22
6.3	Penrith Local Environmental Plan 2010	23
6.3.1	Part 2 - Zoning	23
6.3.2	Part 4 - Principal development standards	23
6.3.3	Part 5 - Miscellaneous Provisions	24
6.3.4	Part 7 - Additional local provisions	24
6.4	Penrith Development Control Plan 2014	25
7	ASSESSMENT OF ENVIRONMENTAL EFFECTS	27
7.1	Section 4.15(1) (a) – Statutory Planning Considerations	27
7.2	Section 4.15 (1) (b) – Environmental, Social and Economic Impacts	27
7.2.1	Impacts on the Natural Environment	27
7.2.2	Impacts on the Built Environment	27
7.2.3	Social and Economic Impacts	28
7.3	Section 4.15(1) (c) – The Suitability of the Site	28
7.4	Section 4.15(1)(d) – Submissions	28
7.5	Section 4.15(1)(e) – Public Interest	28

8	CONCLUSION	29
----------	-------------------------	-----------

Tables

Table 1	Additional information in relation to vegetation removal.	6
Table 2	Penrith DCP 2014 Compliance Table	25

Plates

Plate 1	View looking west from entry gate along Great Western Highway	11
Plate 2	View looking south from existing service road towards development area	11
Plate 3	View looking north-west – gas tanks to be removed.....	12
Plate 4	View looking west with development area in the foreground	12
Plate 5	View looking east with development area in the foreground	13
Plate 6	View looking to the south – boundary trees that will remain.....	13

Figures

Figure 1	Location plan	10
Figure 2	Building site plan of proposed multi-purpose hall	16
Figure 3	3D perspective of the proposed multi-purpose hall.....	17

Appendices

Appendix A	Survey Plan
Appendix B	Architectural Plans
Appendix C	Landscape Concept Plan
Appendix D	Request for Clause 4.6 variation
Appendix E	Flora and Fauna Assessment
Appendix F	Civil Engineering Flood Statement
Appendix G	Flood Risk Management Plan
Appendix H	Acoustic Report
Appendix I	Civil Engineering Works Plans
Appendix J	Waste management plan
Appendix K	Detailed site investigation for contamination
Appendix L	AHIMS search results
Appendix M	Design Verification Statement

1 INTRODUCTION

1.1 Purpose

RPS Newcastle acts on behalf of its client, NSW Department of Education (School Infrastructure NSW) in preparing this Statement of Environmental Effects (SEE) for the construction and operation of a new multi-purpose hall at Nepean Creative and Performing Arts High School (Nepean CAPA HS), Emu Plains (“the site”).

A locality plan showing the site and surrounding lands is provided in **Figure 1**.

The proposal for the construction of the multi-purpose hall has been formulated having full and proper regard to the existing development controls and environmental qualities of the site and surrounds. This SEE demonstrates that the proposed development complies with development controls currently applying to the site and includes consideration of matters referred to in Section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The purpose of the SEE is to:

- Describe the land to which the development application (DA) relates and the character of the surrounding area.
- Describe the proposed development.
- Define the statutory planning framework within which the DA is to be assessed and determined.
- Assess the proposed development in the light of all relevant matters of consideration.

The proposed development will enable Nepean CAPA HS to provide upgraded sport and multi-purpose facilities for the existing student and community base and the proposed development will not involve a planned increase in approved student numbers.

The proposed development is a permissible form of development in accordance with *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* (Education SEPP).

1.2 Crown development applications

Division 4.6 of the EP&A Act allows for DAs to be made by, or on behalf of the Crown. Clause 226 of the Regulation prescribes that a public authority (not being a council) is the Crown for the purposes of Section 4.32 (2)(a) of the EP&A Act. NSW Department of Education is a public authority and is therefore a Crown authority for the purposes of the DA and Section 4.32 of the EP&A Act.

Section 4.33 of the EP&A Act provides that:

(1) *A consent authority (other than the Minister) must not:*

- (a) *refuse its consent to a Crown development application, except with the approval of the Minister, or*
- (b) *impose a condition on its consent to a Crown development application, except with the approval of the applicant or the Minister.*

Pursuant to Section 4.44(2) of the EP&A Act, Integrated Development does not apply to a Crown DA other than development that requires a heritage approval. The proposed works do not include any of the works that require approval under Section 57(1) of the *Heritage Act 1977*. Accordingly, the proposal is not integrated development.

1.3 Consent authority

Penrith City Council is the consent authority for the proposed works.

1.4 Site history

Nepean CAPA HS is a large, co-educational community school experiencing significant growth that will see the demand for its educational services increase in the coming years. The school currently services a student population of 1,175 students. The high school operates a dual curriculum, and the construction of a multi-purpose hall is required to facilitate students' ability to undertake these courses in an adequate environment.

1.5 Cost of works

Budget costs to construct the multi-purpose hall are estimated at \$5,904,473 excl GST.

1.6 Pre-DA advice

On 14th December 2020 School Infrastructure NSW provided to Penrith City Council a summary document of the inputs into the subject DA. The following provides an extract from Council's email response advice dated 12th January 2021.

The DA submission list captures most of the necessary reporting and design plans necessary to inform the DA however an acoustic report or acoustic statement would be needed from an appropriately qualified acoustic consultant as well. This is because the building is intended as a gym / hall, providing a mix of activities that is in close proximity to residential receivers. I believe the elevations showed some windows so the acoustic report would need to consider what activities are intended, the likely sound level outputs, detail any mitigation measures to the building or boundary fencing, all to demonstrate that the noise limits set in the Industrial Noise Policy (which applies to this type of development) are not exceeded. It could be that the building itself provides some acoustic shielding from broader school activities but this will need to be detailed in the report.

The property is located within a Low Flood Island which typically means increasing the number people on the land is unlikely to be supported. This is because evacuation routes are blocked during a 1%AEP flood event. The statement and flooding report will need to outline the current patronage of the school and confirm if the facility is catering to existing school population numbers and not seeking to address additional growth. From my reading of the attached document, this seems to be the case, with existing facilities being inadequate to cater for current demand but it will need to be addressed in the statement of environmental effects and supporting engineering reports. The location of the proposed multipurpose hall is shown to be outside of Council's mapped flood extent however a Flood Planning level (FPL) is applicable and Council has issued a flood advice letter on 24 Nov 2020 advising of the 1%AEP flood level for the site being 26.5m AHD. The formal flood advice letter should form an attachment to the application and will need to inform the flooding assessment and the finished floor levels of the development.

The Penrith Local Environmental Plan 2010 sets a maximum building height of 8.5m across this site and noting the potential need for elevated finished floor levels to address the FPL, the height limit is likely to be exceeded as the measurement is taken from existing ground levels and the attached document indicates a building height of around 9m maximum. If the maximum building height limit is exceeded, a clause 4.6 request to vary the building height development standard will need to accompany the application. This is a formal request that needs to address key principles established by the NSW Land and Environment Court. The key considerations will be the need for the exceeding height, how the building has been designed to minimize bulk, scale and amenity impact, why the building cannot be relocated further away from residential properties to the south and how the noncompliance results in a better development outcome than what would be provided by a compliant building.

I also understand that there may be a separate vegetation permit application in with Council for tree or vegetation removal. I am advised that the Report submitted with this request was not considered satisfactory and Council's Tree Management Team have asked for additional information, and to ensure that any future reports are prepared by a suitably qualified person. In this respect, Council's Tree Management and Vegetation Team have separately sent an email outlining what is required. Given the extent of tree removal proposed, which is not insignificant, I would suggest an arborist report is necessary to ascertain the condition of the vegetation / trees sought to be removed with reasons why the removal is necessary (including why the location cannot be reconsidered to an area without required tree removal).

STATEMENT OF ENVIRONMENTAL EFFECTS

The location of works is quite close to a listed heritage item being the Arms of Australia Inn (Item No. 327) at 127 Great Western Highway. While the works are not immediately adjoining, they are in relatively close proximity and the Penrith LEP 2010 provides provisions that must be addressed for any development that is in the vicinity of a heritage item. Please refer to Clause 5.10 of the LEP for the provisions to be addressed, which typically relate to the location of works, the design of the development and the landscaping so that the heritage value and visual presentation and views of the item are not adversely affected. The clause sets up a potential for a heritage impact statement to be prepared. In this instance I would suggest this is not required if the objectives of the clause can be addressed in the statement of environmental effects.

In addition to the Council's planning documents, there are a number of State Environmental Planning Policies that will need to be addressed in the application and the statement of environmental effects including commentary on SEPP 55 regarding potential for land contamination and SEPP (Educational Establishments & Child Care Facilities) 2017.

In addition, the internal plans will need to confirm if there will be a canteen and fit out details of such would need to be included.

Councils' email response refers to a previous tree removal application (VEG 20/0439) over the subject site. On 15 January 2021 Council advised that removal of the trees was not permitted and instead a DA will be required, and at a minimum the DA must sufficiently demonstrate an appropriate response to the additional information stated by Council within its' refusal of VEG 20/0439. Column 1 of **Table 1** below lists the additional items to be addressed with respect to vegetation removal and Column 2 provides the response to each of these items.

Table 1 Additional information in relation to vegetation removal.

Additional information in relation to vegetation removal is required to demonstrate	Response
The hall cannot be sited in a location where there is less impact on the removal of trees.	There are two locations on the site that would have less impact on the removal of trees. These are: 1. Adjacent to the sports court in the middle of the school, near the existing demountable classrooms; or 2. North-east of the sports oval, near the Great Western Highway boundary. Whilst these locations would have less impact on the removal of trees, they are ultimately unsuitable due to their impact on functionality. • Positioning the hall on any of the sports ovals would result in a reduction of open play space for students. • Positioning the hall near any of the sports courts or sports ovals is very far from the on-site carparking, which will impact upon community use. • Positioning of the hall in a location other than the proposed location would pose a security risk as visitors would be required to traverse through the school grounds. The proposed location of the hall is the most/only suitable location due to its co-location with the existing halls to form an educational precinct, as well as convenience due to its close proximity to adjacent carparking. Wayfinding to its location is straightforward, with a straight and clear path from the school's lone vehicular entry from the Great Western Highway. The proposed location allows for better integration with the existing school and promotes the utilisation of the surrounding landscaping for students to learn and play.
The removal of the trees does not impact on biodiversity/habitat.	A Flora and Fauna Assessment has been prepared by Eco-logical and is contained in Appendix E: The Flora and Fauna Assessment states the vegetation on site was predominately planted natives or exotics that did not make up any plant community types (PCT's). Tests of Significance in accordance with Section 7.3 of the <i>Biodiversity Conservation Act 2016</i> were undertaken for relevant threatened species, which concluded that the proposed works are unlikely to have a significant impact. The Flora and Fauna Assessment concludes (page 19) that the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not required. Similarly, because the vegetation is planted natives, it is not recognised under the EPBC Act. As such, the clearance of vegetation on site does not require consideration under the EPBC Act.

Additional information in relation to vegetation removal is required to demonstrate	Response
A thorough fauna survey has been undertaken, in particular a night-time survey and a survey over seasons.	In preparing the Flora and Fauna Assessment Eco-logical conducted a field survey and ultrasonic call detection for microchiropteran bat (microbat) species. Field work also included a desktop and field survey (including <u>nocturnal</u> microbat surveys) conducted in January 2021 to determine the vegetation community present on site and the presence of threatened fauna and flora. Although several threatened flora, fauna and ecological communities have been recorded in the surrounding area, none have previously been recorded on the subject site and none were observed during the diurnal field surveys. Several threatened microchiropteran species were recorded during the microbat surveys, all with low activity levels which indicated low densities on site. It can therefore be stated that a thorough fauna survey has been undertaken.
The proposed removal of trees can be sufficiently compensated for through the provision of replacement plantings.	A replacement list of trees has been provided by Eco-logical and the consulting arborist (Moore Trees, Arboriculture Services). Additional planting is planned to offset the removal of vegetation at an indicative ratio of two trees for every one tree removed, implemented via an appropriate condition of consent for the development and not limited to the school site. Removal of trees will therefore be sufficiently compensated through the suggested planting process.
As there is no master plan for the site it cannot be demonstrated that trees to be retained or any proposed replacement plantings won't be removed at some time in the future to facilitate development.	No future developments are being prepared for Nepean CAPA HS at this time. The location and species of replacement trees will be carefully chosen with Ecological, Moore Trees, Arboriculture Services and Department of Education stakeholders to maximise the growing conditions of the planted trees and nominate planting areas, such as walkways or along boundaries, which are extremely unlikely to hold a future development.
The location of the hall will not adversely impact neighbouring residents.	There is already a performance hall adjacent to the proposed site which was constructed in 2011. The new multi-purpose hall is set back 16m from the boundary line (existing hall approximately 8 metres) and will increase slightly the overshadowing of the backyards of the adjoining properties during the winter solstice. However the backyards will receive approximately 5 hours of uninterrupted sunlight during this period. The proposed development will not result in any loss of privacy to the same adjoining properties. From a streetscape perspective the proposed development will not be visually dominant from the Great Western Highway or surrounding residential streets.

In response to the above comments from Council this SEE and DA includes the following:

- Acoustic Report.
- Flood Planning Statement.
- Clause 4.6 Variation Request.
- Flora and Fauna Assessment.
- Comment on listed heritage items in the vicinity, refer to Section 5.8 of this SEE.
- Review of applicable State Environmental Planning Policies, review to Section 6 of this SEE.
- Other information as required.

1.7 Supporting documentation

The following documents are appended to this SEE and form part of the DA.

- Survey Plan.
- Architectural Plans and Design Verification Statement
- Landscape Concept Plan.
- Request for Clause 4.6 Variation to development standard.

STATEMENT OF ENVIRONMENTAL EFFECTS

- Flora and Fauna Assessment.
- Civil Engineering Flood Statement.
- Flood Risk Management Plan.
- Acoustic Report.
- Civil Engineering Works Plans including erosion and sediment control plan and drainage concept plan.
- Waste Management Plan.
- Detailed site investigation for contamination.
- AHIMS search results.

2 SITE AND SURROUNDING AREA

2.1 Site description and area

The site address is 115-119 Great Western Highway, Emu Plains, NSW. The real property description is Lot 12 DP 1056135.

The site has an area of approximately 12 hectares (ha). A detailed survey plan is contained in **Appendix A**.

2.2 Surrounding area

The site is located in Emu Plains within the Penrith local government area (LGA) in Western Sydney.

Figure 1 identifies the site and its setting within the surrounding urban area.

The site is located south of Emu Plains Train Station. The site is relatively flat and is bounded by the Great Western Highway to the south east, Old Bathurst Road along the north east and the Main Western Railway line along the northern side. The site is surrounded by residential dwellings along the south-western and south-eastern boundaries.

The school fronts the Great Western Highway with one primary vehicular entry. The entry point is adjacent to pedestrian traffic lights and leads to a carparking area primarily used by staff members. Within the site and adjacent to the entry is a slip road for bus drop off and pick up. A clear sense of arrival is provided with the main gate located close to vehicle entry point. A second pedestrian gate is positioned further north along the slip road.

The existing school buildings are orientated perpendicular to the street frontage (short side facing the street) with three general rows defining building use and the intermediate spaces between. A covered walkway dissecting two of the rows of buildings creates a defining link for students to use. The relationship between building forms creates courtyard areas of varying spatial qualities.

The carpark separates the southern row from the remaining school with the Hall and Nepean Arts Centre positioned adjacent to the south west boundary.

West of the Hall is the agricultural plot with remaining edges of the school grounds devoted for sports ovals and courts.

Existing buildings are generally one to two storeys in height and are brick with metal cladding and metal roofs.

Photographs showing the existing site conditions of the area where development is to occur are shown in **Plates 1 to 6**.



Figure 1 Location plan
(Source Sixmaps)



Plate 1 View looking west from entry gate along Great Western Highway



Plate 2 View looking south from existing service road towards development area



Plate 3 View looking north-west – gas tanks to be removed



Plate 4 View looking west with development area in the foreground



Plate 5 View looking east with development area in the foreground



Plate 6 View looking to the south – boundary trees that will remain

3 SCHOOL DEVELOPMENT OPTIONS

3.1 Overview of the project

Figure 1 identifies the Nepean CAPA HS site and its setting within the surrounding urban area.

The size and layout of the current hall at Nepean CAPA HS limits its usage by the school. In particular, the hall cannot adequately accommodate an indoor sporting area due to the hexagonal design and size which is not able to accommodate various sporting uses.

Sports and physical activities are key components of the school's dual curriculum, contributing to the educational outcomes for students. The absence of an indoor sporting space on site further affects the educational outcomes during extreme weather conditions, as students rely on the limited covered open spaces available as play space.

Design development and construction of a new multi-purpose hall is therefore proposed to provide an adequate environment for the school to facilitate its dual curriculum.

3.2 Project options

DoE and School Infrastructure NSW have carried out a comprehensive assessment of development options including the "do nothing option", repurposing the existing hall, expansion and demolition of the existing hall and building of a new additional multi-purpose hall. The assessment resulted in a short-listing of options (Options 4A, 4B and 4C) that found the building of a new multi-purpose hall would best meet the school's needs whilst still being practical and cost-effective.

Options for the location of the new multi-purpose hall including it being sited on land where the existing sports ovals and sports courts are located, being to the north and west of the existing buildings. Siting of the new multi-purpose hall in any of these locations was considered to be sub-optimal due to their need for additional way finding to maintain functionality between buildings. The site was selected due to its location close to the existing assembly and performance halls, creating a multi-purpose precinct with the three buildings. The site is in close proximity to the carpark, with covered access from adjacent buildings and the carpark, which provides easy access for both students and the community.

The preferred option, which is subject of this DA, is one that involves building a new multi-purpose hall with an east to west orientation. This was selected due to the following factors:

- The building orientation east to west (preferred option – Option 4) allows students to flow out from the building to the assembly hall, the oval, the carpark and into the school; while the alternative (north to south orientation) separates the hall from the oval; and
- The preferred option allows for new external landscape toward the north and the east of the building, creating a harmonious design between the new hall and the existing buildings. The alternative option only allows for external landscape towards the east and constrains the access from the oval.

The preferred option will involve the removal of 0.10 ha of planted native vegetation. A Flora and Fauna Assessment Report which assesses tree removal associated with the proposed development has been prepared and is discussed further in Section 5.1 of this SEE. Additional planting is planned to offset the removal of vegetation at an indicative ratio of two trees for every one tree removed implemented via an appropriate condition of consent for the development and not limited to the school site.

4 PROPOSED DEVELOPMENT

The following provides a description of the proposed development.

4.1 Project description

The proposed development is the construction and usage of a new multi-purpose hall within the confines of the existing Nepean CAPA HS. The new multi-purpose hall will be located midway and approximately 18 metres from the southern boundary of the site immediately north-west of the existing multi-purpose facility. The new facility will function as a multi-purpose hall to achieve curriculum requirements (Stream 9 Educational Facilities Standards and Guidelines (ESFG) Standards) and be used for indoor sports, performances and events. A building site plan and a 3D perspective, extracted from the Architectural Plans, are provided as **Figure 2** and **Figure 3** respectively.

Specifically, the proposed development includes the following works:

- Installation of temporary site-specific erosion and sediment control measures prior to construction works commencing and maintenance throughout construction.
- Removal of 0.10 ha of planted native vegetation.
- Demolition / removal of two existing sheds, removal of two existing gas tanks and concrete slab, removal of concrete slab west of the existing hall, and removal of internal fencing.
- Minor earthworks and levelling of the site.
- Construction of the new multi-purpose hall. The facility will be variable in height to approximately 10.2 metres above natural ground level high and occupy an area of approximately 1,105m². It will contain a gymnasium with capacity for functions seating around 570 persons, equipment and storage rooms, change / shower facilities, foyer and other areas required for its' operation. It should be noted that the proposed development does not include canteen facilities. The new multi-purpose hall will be located west of the existing performing arts hall.
- New entry landscaping around the building.
- Adjustment to utilities as required including new concrete slab and LPG tanks north of the new building.
- New metal sheds at the rear of the new building.
- Operation of the new multi-purpose hall during the hours of 7AM to 10PM, seven days a week.

Once constructed the new multi-purpose hall will strengthen current relationships with wider community groups and schools. It will facilitate some after school hours use by allowing community to access the facility and will enhance the sense of arrival. It must be noted that the proposed development caters for the current student population with the development meeting 'Stream 9' facility requirements (schools up to 1,500 students) and is not seeking to address additional growth. As the hall is not increasing classroom space or student numbers, coupled with controls on hall usage after hours, there will be no increase in people on the campus as a result the development.

Architectural Plans consistent with Penrith City DA submission requirements are contained in **Appendix B**. A Landscape Concept Plan is contained in **Appendix C**.

In accordance with Clause 35(6)(a) of the Education SEPP a Design Verification Statement has been prepared by BKA Architecture and assesses the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4 of the Education SEPP. The Design Verification Statement is contained in **Appendix M** and concludes that the proposal demonstrates compliance with the design principles of Clause 35(6)(a) of the Education SEPP as well as the EFSG. It is considered that the proposed development is an appropriate response to its context and will make a quality aesthetic contribution to the schools' built environment.

It is noted that the height of the proposed development exceeds the maximum building height specified within *Penrith Local Environmental Plan 2010* (LEP 2010). A clause 4.6 request to vary the building height development standard in case of this development is contained in **Appendix D**.

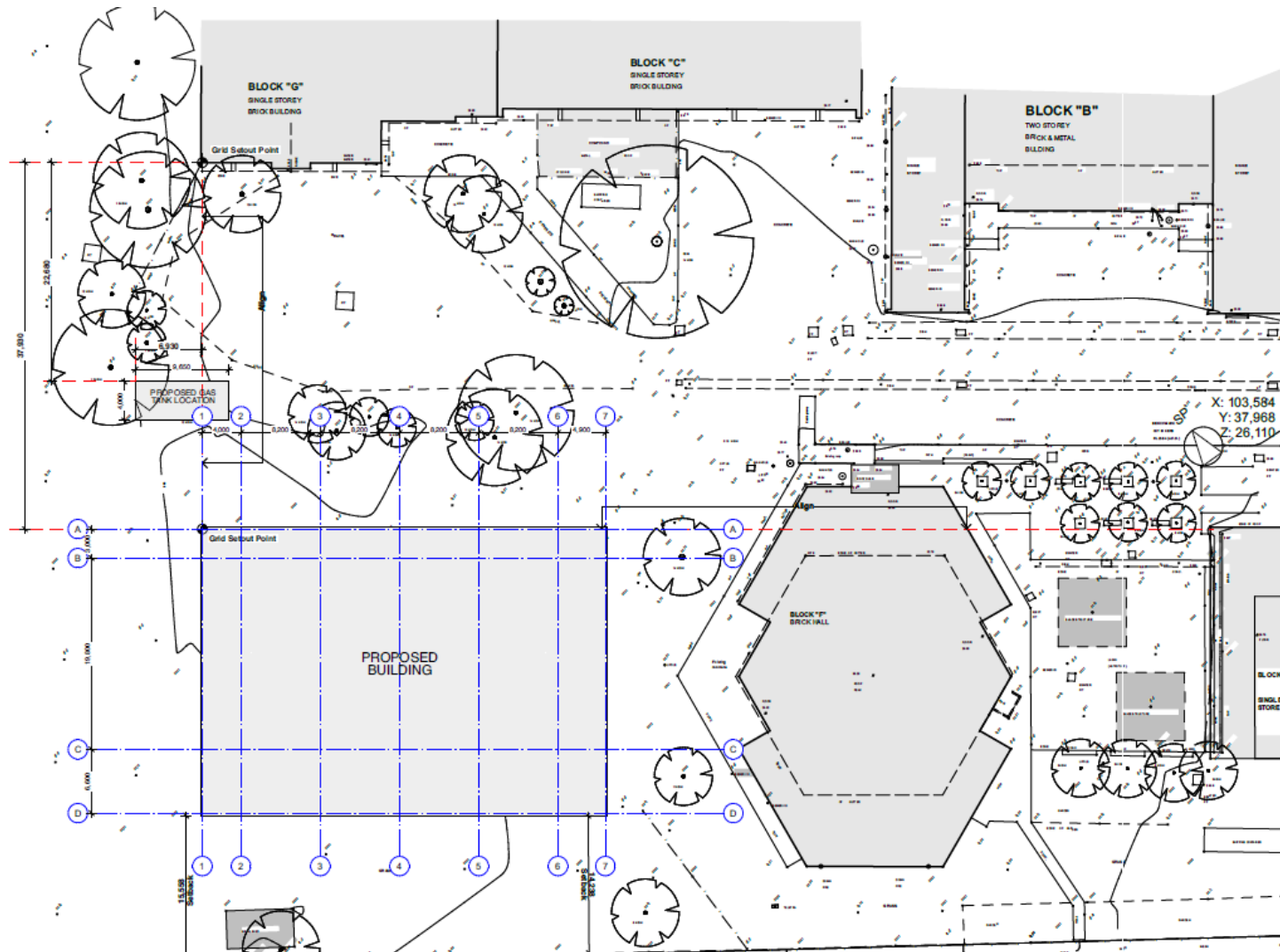


Figure 2 Building site plan of proposed multi-purpose hall
(Source BKA Architecture)



Figure 3 3D perspective of the proposed multi-purpose hall
(Source BKA Architecture)

5 DEVELOPMENT ISSUES

5.1 Biodiversity

The site is highly degraded, with mostly planted native vegetation, some exotic vegetation and some cleared areas. The ground is predominately covered by mulch and gravel. A Flora and Fauna Assessment has been prepared to support the proposed development and is contained in **Appendix E**.

The Flora and Fauna Assessment included a field survey and ultrasonic call detection for microchiropteran bat (microbat) species. It also included a desktop and field survey (including nocturnal microbat surveys) conducted in January 2021 to determine the vegetation community present on site and the presence of threatened fauna and flora. Although several threatened flora, fauna and ecological communities have been recorded in the surrounding area, none have previously been recorded on the subject site and none were observed during the diurnal field surveys. Several threatened microchiropteran species were recorded during the microbat surveys, all with low activity levels which indicated low densities on site.

The proposed works will result in the removal of 0.10 ha of planted native vegetation, which provides marginal foraging habitat to the following species, which were recorded as present on site through ultrasonic detection:

- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*)

Three (3) other species listed as Vulnerable could potentially be present within the subject site including:

- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Eastern Cave Bat (*Vespadelus troughtoni*)
- Grey-Headed Flying Fox (*Pteropus poliocephalus*)

Tests of Significance in accordance with Section 7.3 of the *Biodiversity Conservation Act 2016* (BC Act) were undertaken for the above threatened species, which concluded that the proposed works are unlikely to have a significant impact. The Flora and Fauna Assessment concludes that the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not required.

A Significance Assessment in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was also undertaken for the Grey-Headed Flying fox, which also concluded that the proposed development is unlikely to have a significant impact.

In terms of mitigation measures for the proposed development the Flora and Fauna Assessment recommends the following:

Prior to works beginning - Tree guard protection should be set up around all trees that are not to be impacted. Ideally, these measures would include physical barriers to prevent any accidental damage to these trees and utilise high visibility colouration to place emphasis on their location.

During construction works the Flora and Fauna Assessment recommends the following:

- Ensure tree guard protection remains installed around vegetation outside the impact area.
- Ensure adequate sediment and erosion controls are in place to contain soil within the subject site.

Appendix E within the Flora and Fauna Assessment provides a species planting list based off the previous occurrence of native vegetation in the broader study area and can be used as a guide for future vegetation replanting and landscaping works. Vegetation replanting, utilising the species planting list, could be considered at an indicative ratio of two trees for every one tree removed and implemented via an appropriate condition of consent for the development.

5.2 Flooding

The site is located approximately 500m from the Nepean River and thus is impacted by this waterway. The proposed development site is not impacted by the 1% Annual Exceedance Probability (AEP) flood event.

However, the site is within the flood plain affected by the Probable Maximum Flood (PMF) event. Council advice is that the site is located in a Low Flood Island which causes evacuation routes to be obstructed for storms at and above the 1% AEP.

A Civil Engineering Flood Statement has been prepared for the DA and is contained in **Appendix F**.

The Flood Statement notes that the proposed multi-purpose hall caters for the current student population with the development meeting 'Stream 9' facility requirements (up to 1,500 students) and is not seeking to address additional growth. As the hall is not increasing classroom space or student numbers, coupled with controls on hall usage after hours, there will be no increase in people on the campus. Therefore, there is no increase in flooding risk or risk to school users.

A flood planning level of RL26.5m AHD has been applied to the design of the proposed development in accordance with a recently issued Flood Planning Certificate from Council.

The Flood Statement concludes that, as the hall does not increase classroom space and after hours use will limit numbers, there is no increase in people on the campus. Therefore, there is no increase in flooding risk as a result of the proposed development.

In recognition of the site being located in a Low Flood Island a Flood Risk Management Plan for the Nepean CAPA HS site has been prepared and is contained in **Appendix G**. The Flood Risk Management Plan identifies the need for the establishment of an Emergency Planning Committee, consisting of staff from the school, that will prepare the site for a flooding event. Preparation for a flooding event would be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Flood Safe Emergency Kit. The Emergency Planning Committee will also organise evacuation drills and flood emergency kits to prepare all site personnel for flood risks.

Finalisation of the draft Flood Risk Management Plan can be carried out as a condition of consent.

5.3 Noise

An Acoustic Report (Noise Impact Assessment) has been prepared for the proposed development and is contained in **Appendix H**. The report assesses the potential operational noise impacts of the hall on the nearby residential receivers. It assesses the operational impacts of the use of the hall as well as mechanical equipment at the nearest receptors. Noise criteria for the assessment is taken from the *Noise Policy for Industry and Interim Construction Noise Guideline, Assessing Vibration: A Technical Guideline, BS 7385-2 and BS 6472*. Modelling of the potential operational impacts has been conducted utilising package software iNoise 2021.

The Acoustic Report makes the following recommendations.

- The hall is recommended to be utilised from 7am to 10pm.
- Sound pressure levels within the hall from a PA system, music or likewise are recommended not to exceed 75 dBA.
- Façade openings such as for the weather louvres, glass windows and doors are recommended to be constructed in the locations shown on the architectural plans.
- Following the final selection of equipment at the Construction Certificate stage, noise levels from mechanical equipment are recommended to be predicted at the nearest receivers. Noise emissions from mechanical equipment are to be acoustically treated to achieve compliance with the external noise level criteria discussed in Section 5.2 of the Acoustic Report contained in **Appendix H**.

A Construction Noise and Vibration Management Plan (CNVMP) is recommended to be carried out during the Construction Certificate stage of the development. As part of this CNVMP, construction noise impacts are recommended to meet the criteria outlined in section 5.3 of the Acoustic Report contained in **Appendix H**, while construction vibration impacts are recommended to meet the criteria presented in section 5.4 of the Acoustic Report contained in **Appendix H**.

Should the recommendations in the Acoustic Report be carried out, the proposed multi-purpose hall is predicted to comply with the recommended noise criteria at the surrounding receivers.

5.4 Soils and water management

Civil Engineering Works plans are contained in **Appendix I**. The plans include an erosion and sediment control plan prepared in accordance with the Landcom *Managing Urban Stormwater – Soils and Construction* (the Blue Book). The plans also include drainage concept designs for the conveying of stormwater from the site after construction has occurred.

Soil and water management measures specified in the Civil Engineering Works Plans and duly implemented will ensure that offsite sediment or erosion impacts during heavy rain/wind events are minimised.

5.5 Waste

The proposed development will generate moderate quantities of waste, primarily green waste (trees) during the pre-construction phase and building waste primarily concrete, metal and timber waste during construction.

A Site waste and minimisation management plan (SWMMP) has been prepared and is contained in **Appendix J**. The SWMMP identifies the appropriate measures to avoid, minimise or mitigate the impacts of the demolition. The mitigation measures within the SWMMP will be documented within the CEMP for the site and adhered to during demolition.

5.6 Potential contamination

A Detailed Site Investigation (DSI) of the proposed area for construction has been prepared and is contained **Appendix K**. From a contamination perspective, based upon the findings of the DSI, no further investigations or remediation works are warranted for the site. The DSI notes a potential still exists for isolated occurrences of ACM to be encountered during any future soil disturbance. The DSI recommends that an Unexpected Finds Protocol be prepared and implemented to provide a formal contingency to be followed in the event of an unexpected find with respect to potential site contamination issues encountered during any bulk earthworks. The preparation of an Unexpected Finds Protocol can be carried out as a condition of consent.

5.7 Aboriginal archaeology

An extensive AHIMS search has been carried out and results are contained in **Appendix L**. The search reveals three Aboriginal sites, now destroyed, on land associated with the Emu Plain Stabling Yards, refer to **Figure 1** on page 5 of this SEE. The land that contains the now destroyed items, is located on the northern side of the Main Western Railway which runs along the north-western boundary of the school site.

No further investigation into Aboriginal archaeology is required.

5.8 Non-Aboriginal heritage

The site is not identified within Schedule 5 of PLEP 2010 - environmental heritage items (Part 1 Heritage items, Part 2 Heritage conservation areas and Part 3 Archaeological sites).

To the south of the school site on the northern corner of the intersection of the Great Western Highway with Gardenia Avenue is the Arms of Australia Inn Museum, refer to **Figure 1** on page 5 of this SEE. The inn was once a staging post for travellers making the trip from Sydney over the Blue Mountains to Bathurst and the goldfields. Built in two sections, the first in 1826, it is one of the oldest buildings in Penrith, if not the oldest. It now operates as a museum. The site is listed as Item 327 in Schedule 5 of PLEP 2010. The proposed multi-purpose hall will be located at the rear of the existing Nepean CAPA HS buildings, approximately 120 metres from the heritage item and will not be visible from the heritage item. The multi-purpose hall will be adjacent to an already existing hexagonal hall. The proposed multi-purpose hall is regular in shape. Accordingly, the potential effect of the proposed development on the heritage significance of the item has been considered and it is concluded that the proposed development will not adversely affect the heritage significance of the heritage item and a heritage impact statement is not required.

To the north of the school site is the site of the former Australia Arms Inn (Item 61 in Schedule 5 of PLEP 2010). The site now operates as a dwelling. The proposed hall will be approximately 370 metres to the

south-west from the heritage item and will not be visible from the heritage item. Accordingly, the potential effect of the proposed development on the heritage significance of the item has been considered and it is concluded that the proposed development is will not adversely affect the heritage significance of the heritage item.

5.9 Air quality

The proposed development will involve felling and mulching of a number of trees as well as ground disturbance and both activities will have the potential to generate dust. Dust emissions associated with the proposed development would be consistent with dust emissions from typical construction sites and would be temporary and short-lived in duration. Dust from the activities can be minimised and managed using a suite of controls typically adopted to manage dust on construction sites. Any air quality impacts associated with the emissions from vehicles and plant associated with the proposed activity would be minor, highly localised, and temporary and short-lived in duration.

All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at an EPA licensed waste disposal facility.

5.10 Bushfire

The site is not identified as bush fire prone land according to Council records and a recently issued Section 10.7 Planning Certificate.

5.11 Transport and traffic

The proposed development will not increase the demand for car parking and access during school hours. As noted in Section 4.1 of this SEE the operation of the hall will not increase classroom space or student numbers. Coupled with controls on hall usage after hours, there will be no increase in people on the campus as a result the development. Car parking provided in close proximity to the proposed hall will be utilised. Appropriate pedestrian and bicycle pathways are located along the frontage of the site. No further investigation into traffic and car parking matters is required.

5.12 Social impacts

The proposed multi-purpose hall will cater for the current student population with the development meeting 'Stream 9' facility requirements (schools up to 1,500 students). The proposed multi-purpose hall is not seeking to address additional growth. The proposed hall will provide much-needed facilities for the school.

During construction the project is expected to generate employment and business opportunities for local contractors and flow-on effects for local businesses.

There will be social impacts resulting from construction of the building potentially including noise, dust, odour, visual, and pedestrian and vehicle access construction impacts. A construction management plan will be finalised prior to any works starting on site to ensure construction impacts are minimised. Impacts during construction will be short-term.

A shadow diagram for the proposed development is contained within the Architectural Plans contained in **Appendix B** and illustrates shadows cast by the completed building on 21st June (Winter Solstice). At 9AM the existing boundary fence between the school site and the adjoining residential properties casts a shadow into the rear of Number 5, 7 and 9 of Gardenia Avenue. The proposed development will extend the shadow a further 5 metres further into the backyards of these properties. However, by approximately 11AM the shadow from the proposed development will no longer impact these properties and accordingly the backyards will receive approximately 5 hours of uninterrupted sunlight during the winter solstice.

Overall it is considered that the proposed development will be a positive contribution to the school and the wider community and the minor impact on the adjoining residential properties affected will be minimal.

6 PLANNING CONTROLS

6.1 State Environmental Planning Policy 55 (Remediation of Land)

The objective of *State Environmental Planning Policy 55 (Remediation of Land)* (SEPP 55) is to promote the remediation of contaminated land for the purpose of reducing risk of harm to human health or any other aspect of the environment. Clause 7 of the SEPP relates to contamination and remediation that should be considered in determining a development application. A consent authority must firstly consider whether a site is contaminated. If the land is contaminated, the consent authority must be satisfied that the land is suitable in its contaminated state, or it will be suitable after remediation, for the proposed development.

A Detailed Site Investigation (DSI) of the proposed area for construction has been prepared and is contained **Appendix K**. From a contamination perspective, the DSI concludes that the site is safe for the intended use and no further investigations or remediation works are warranted for the site.

The land is suitable for the proposed development of the new multi-purpose hall.

6.2 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

The aim of the Education SEPP is to facilitate the effective delivery of educational establishments and early education and care facilities across the State by—

- (a) improving regulatory certainty and efficiency through a consistent planning regime for educational establishments and early education and care facilities, and*
- (b) simplifying and standardising planning approval pathways for educational establishments and early education and care facilities (including identifying certain development of minimal environmental impact as exempt development), and*
- (c) establishing consistent State-wide assessment requirements and design considerations for educational establishments and early education and care facilities to improve the quality of infrastructure delivered and to minimise impacts on surrounding areas, and*
- (d) allowing for the efficient development, redevelopment or use of surplus government-owned land (including providing for consultation with communities regarding educational establishments in their local area), and*
- (e) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing, and*
- (f) aligning the NSW planning framework with the National Quality Framework that regulates early education and care services, and*
- (g) ensuring that proponents of new developments or modified premises meet the applicable requirements of the National Quality Framework for early education and care services, and of the corresponding regime for State regulated education and care services, as part of the planning approval and development process, and*
- (h) encouraging proponents of new developments or modified premises and consent authorities to facilitate the joint and shared use of the facilities of educational establishments with the community through appropriate design.*

The proposed development is defined as an educational establishment and the subject site is zoned R2 Low Density Residential under *Penrith Local Environmental Plan 2010* (PLEP 2010). Under the R2 Low Density Residential zone in PLEP 2010 educational facilities are not nominated as a “permitted with consent” use. However, the Education SEPP applies to the site and under Clause 35(1) development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. For the purpose of Clause 35(1) the R2 Low Density Residential zone is a prescribed zone. Hence the proposed development is a permissible use on the site.

Under Clause 35 (6) of the Education SEPP before determining this development application Penrith City must take into consideration the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4 of the Education SEPP and consider whether the

development enables the use of school facilities (including recreational facilities) to be shared with the community. A Design Verification Statement, prepared by BKA Architecture, is contained in **Appendix M** and addresses the principles set out in Schedule 4 of the Education SEPP. It is noted that the proposed multi-purpose hall will enable the use of the school facilities to be shared with the community.

6.3 Penrith Local Environmental Plan 2010

The following provides an overview of the relevant clauses applicable to the proposed development.

6.3.1 Part 2 - Zoning

As identified in Clause 2.2 of PLEP 2010 the site is zoned R2 Low Density Residential. As identified in Section 6.2 of this SEE the proposed development is permissible pursuant to Clause 35(1) of the Education SEPP.

Zoning Objectives

The objectives of the R2 Low Density Residential are set out as follows:

- To provide for the housing needs of the community within a low-density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To promote the desired future character by ensuring that development reflects features or qualities of traditional detached dwelling houses that are surrounded by private gardens.
- To enhance the essential character and identity of established residential areas.
- To ensure a high level of residential amenity is achieved and maintained.
- To provide temporary overnight accommodation for the working population and businesses in the area.

The proposed development is located within the confines of an existing school site. Whilst the proposed development does not provide housing it does provide educational facilities needed by the community. The proposed development will provide a more contemporary and functional space that will continue to meet the day to day needs to the local residents. The proposed development will form part of the existing environment of Nepean CAPA HS. Considerable separation between the proposed building and existing residential development, mostly detached dwellings, will not impact upon the desired future character of the area. The proposed development will not interfere with the ability to enhance the essential character and identity of the surrounding residential areas. The proposed development does not provide temporary overnight accommodation but is not inconsistent with this objective.

It is considered that the proposed development is therefore consistent with the objectives of the R2 Low Density Residential zone.

6.3.2 Part 4 - Principal development standards

Clause 4.1 of PLEP 2010 relates to the subdivision of land. The proposed development does not involve subdivision of the land.

Clause 4.2 of PLEP 2010 relates to the subdivision of rural land. The proposed development is not located on land zoned rural as nominated in Clause 4.2(2).

Clause 4.2A of PLEP 2010 relates to the prohibition of development that is residential accommodation on a lot resulting from the closure of a road. The proposed development is not residential accommodation.

Clause 4.3(2) of PLEP 2010 states that the height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map. The maximum building height shown for the subject site on the Height of Buildings Map in PLEP 2010 is 8.5 metres. The existing ground level at the site of the proposed development is approximately 25.3 to 25.6 metres AHD. Council flood planning controls require a finished floor level of 26.5 metres AHD – 0.9 to 1.2 metres above the existing ground level. At its' maximum height the proposed multi-purpose hall will be 10.27 metres measured from the existing ground level. The proposed height exceeds the maximum building height specified.

Clause 4.4 of PLEP 2010 specifies the development standard of floor space ratio. The maximum floor space ratio for a building on any land is not to exceed the floor space ratio shown for the land on the Floor Space Ratio Map within PLEP 2010. No floor space ratio control applies to the R2 Low Density Residential zone nor the site.

Clause 4.6 of PLEP 2010 enables the consideration of exceptions to development standards including height of buildings controls. An application to vary the maximum building height standard in relation to this DA is contained in **Appendix D**. The application addresses the key matters outlined in Council correspondence, refer to Section 1.6 of this SEE and has regard for the key principles established by the NSW Land and Environment Court. The application concludes that compliance with the maximum height is unreasonable and unnecessary in this instance and requests the variation to the maximum building height development standard.

6.3.3 Part 5 - Miscellaneous Provisions

Clause 5.10 sets requirements with respect to heritage conservation. Clause 5.10 and Schedule 5 of PLEP 2010 identifies whether a site is a Conservation area or is an item of environmental heritage.

The site is not identified within Schedule 5 of PLEP 2010 - environmental heritage items (Part 1 Heritage items, Part 2 Heritage conservation areas and Part 3 Archaeological sites).

To the south of the school site on the northern corner of the intersection of the Great Western Highway with Gardenia Avenue is the Arms of Australia Inn Museum, refer to **Figure 1** on page 5 of this SEE. The inn was once a staging post for travellers making the trip from Sydney over the Blue Mountains to Bathurst and the goldfields. Built in two sections, the first in 1826, it is one of the oldest buildings in Penrith, if not the oldest. It now operates as a museum. The site is listed as Item 327 in Schedule 5 of PLEP 2010. The proposed hall will be located at the rear of the existing Nepean CAPA HS buildings, approximately 120 metres from the heritage item and will not be visible from the heritage item. Accordingly, the potential effect of the proposed development on the heritage significance of the item has been considered and it is concluded that the proposed development will not adversely affect the heritage significance of the heritage item and a heritage impact statement is not required.

To the north of the school site is the site of the former Australia Arms Inn (Item 61 in Schedule 5 of PLEP 2010). The site now operates as a dwelling. The proposed hall will be approximately 370 metres to the south-west from the heritage item and will not be visible when attempting to view the hall from the heritage item. Accordingly, the potential effect of the proposed development on the heritage significance of the item has been considered and it is concluded that the proposed development is will not adversely affect the heritage significance of the heritage item.

6.3.4 Part 7 - Additional local provisions

Clause 7.2 of PLEP 2010 relates to flooding planning. The site is not identified as "Flood planning land" on the relevant clause application map. As stated in Section 5.2 in this SEE the proposed development site is not impacted by the 1% Annual Exceedance Probability (AEP) flood event. However, the site is within the flood plain affected by the Probable Maximum Flood (PMF) event. Council advice is that the site is located in a Low Flood Island which causes evacuation routes to be obstructed for storms at and above the 1% AEP.

As discussed in Section 5.2 of the SEE Council can be satisfied that the development will not adversely affect the safe and effective evacuation of the land and the surrounding area.

6.4 Penrith Development Control Plan 2014

Penrith Development Control Plan (DCP) 2014 supplements PLEP 2010 and provides additional information that should be taken into account when assessing a DA. **Table 1** below demonstrates how the proposed development complies with the relevant controls:

Table 2 Penrith DCP 2014 Compliance Table

DCP Section	Complies	Comment
Parts A and B – Introductory Material and overarching DCP Principles	Yes	Noted
Part C – City-wide controls		
C1 Site Planning and design principles		
1.1 Site Planning	Yes	Site Analysis – A comprehensive analysis of the features of the site is provided in Figure 1 of this SEE and in Appendix B – Architectural Plans . A shadow diagram for the proposed development is contained within the Architectural Plans contained in Appendix B and illustrates shadows cast by the completed building on 21st June (Winter Solstice). At 9AM the existing boundary fence between the school site and the adjoining residential properties casts a shadow into the rear of Number 5, 7 and 9 of Gardenia Avenue. The proposed development will extend the shadow a further 5 metres further into the backyards of these properties. However, by approximately 11AM the shadow from the proposed development will no longer impact these properties and accordingly the backyards will receive approximately 5 hours of uninterrupted sunlight during the winter solstice. The minor impact on the adjoining residential properties affected by overshadowing will be minimal.
C2 Vegetation Management		
2.1 Preservation of trees and vegetation	Yes	Adequately addressed in Section 5.1 of the SEE and Appendix E .
2.2 Biodiversity Corridors and Areas of Remnant Native Vegetation in Non-Urban Areas	Yes	Adequately addressed in Section 5.1 of the SEE and Appendix E .
2.3 Bush fire management	N/A	The site is not identified as bush fire prone land according to Council records and a recently issued Section 10.7 Planning Certificate.
C3 Water Management		
All provisions of C3	Yes	Flooding matters are adequately addressed in Section 5.2 of this SEE and in Appendix F and Appendix G . Stormwater and drainage is adequately addressed in Section 5.4 of this SEE and in Appendix I .
C4 Land Management		
4.3 Erosion and sediment control	Yes	Adequately addressed in Section 5.4 of the SEE and Appendix I .

STATEMENT OF ENVIRONMENTAL EFFECTS

DCP Section	Complies	Comment
C5 Waste Management		
5.1 Waste Management	Yes	Adequately addressed in Section 5.5 of the SEE and Appendix J.
C6 Landscape Design		
6.1 Controls	Yes	Adequately addressed in the Landscape Plan provided in Appendix C.
C10 Transport, Access and Parking		
10.1 Transport and Land Use	Yes	Development is not considered to have a significant impact on transport or require Transport Management and Accessibility Plan, or a Traffic Impact Report – refer to Section 5.11 of this SEE. The operation of the hall will not increase classroom space, staff numbers or student numbers.
C12 Noise and vibration		
12.4 Noise Impact Assessment	Yes	Adequately addressed in Section 5.3 of this SEE and the Acoustic Report provided in Appendix H.
C13 Infrastructure and services		
13.2 Utilities and service provision	Yes	The site is currently used as the Nepean CAPA HS. There will be satisfactory capacity to meet the demand of the new hall.

7 ASSESSMENT OF ENVIRONMENTAL EFFECTS

7.1 Section 4.15(1) (a) – Statutory Planning Considerations

In determining the subject DA, Council is required to consider those relevant matters listed in Section 4.15 (1) of the EP&A Act. Each of the relevant matters is addressed below.

Section 4.15 (1) (a) requires the consent authority to take into consideration:

“(a) the provisions of:

any [environmental planning instrument](#), and

any draft [environmental planning instrument](#) that is or has been placed on public exhibition and details of which have been notified to the [consent authority](#) (unless the [Director-General](#) has notified the [consent authority](#) that the making of the draft instrument has been deferred indefinitely or has not been approved), and

any [development control plan](#), and

(iia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and

(iv) the [regulations](#) (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the [land](#) to which the [development application](#) relates,”

These matters (and others) are addressed in Section 5 and Section 6 of this SEE and below.

The proposed development is permitted with the consent by virtue of Clause 35(1) of the Education SEPP and nevertheless is consistent with the provisions and objectives of PLEP 2010 and the guidelines within Penrith DCP 2014.

7.2 Section 4.15 (1) (b) – Environmental, Social and Economic Impacts

Section 4.15 (1) (b) requires the consent authority to consider:

“(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.”

7.2.1 Impacts on the Natural Environment

The proposed development has been considered in the context of the natural environment. It is not anticipated that the development in its current form will have any adverse impact on the existing natural context. Tree replanting will occur at an indicative ratio of two trees for every one tree removed and implemented via an appropriate condition of consent for the development.

7.2.2 Impacts on the Built Environment

The proposed development is generally consistent with the objectives and development controls contained within relevant environmental planning instruments and development control plans that apply to the site (see Section 5 and Section 6). The multi-purpose hall will contribute to the existing urban form of the school. A shadow diagram for the proposed development is contained within the Architectural Plans contained in **Appendix B** and illustrates shadows cast by the completed building on 21st June (Winter Solstice). At 9AM the existing boundary fence between the school site and the adjoining residential properties casts a shadow into the rear of Number 5, 7 and 9 of Gardenia Avenue. The proposed development will extend the shadow a further 5 metres further into the backyards of these properties. However, by approximately 11AM the

shadow from the proposed development will no longer impact these properties and accordingly the backyards will receive approximately 5 hours of uninterrupted sunlight during the winter solstice.

It is considered that the proposed development will be a positive contribution to the school and the wider community, the impact on the adjoining residential properties affected will be minimal and the development will not adversely affect the surrounding residential amenity.

7.2.3 Social and Economic Impacts

The proposed multi-purpose hall will cater for the current student population with the development meeting 'Stream 9' facility requirements (up to 1,500 students). The proposed multi-purpose hall is not seeking to address additional growth. The proposed hall will provide much-needed facilities for the school.

During construction the project is expected to generate employment and business opportunities for contractors and flow-on effects for businesses. Overall, the proposed development will be a positive contribution to the school and the wider community.

7.3 Section 4.15(1) (c) – The Suitability of the Site

Section 4.15 (1) (c) requires the consent authority to consider:

“(c) the suitability of the site for the development.”

The suitability of the site for the proposed development is dealt with in Section 2 and Section 4 of this SEE. The site will continue to have access to all services. It is therefore considered that the site is eminently suitable for the development proposed.

7.4 Section 4.15(1)(d) – Submissions

Section 4.15(1)(d) requires the consent authority to consider:

“(d) any submissions made in accordance with this Act or the regulations”.

Any relevant representations will need to be considered by Council in the determination of the development application.

7.5 Section 4.15(1)(e) – Public Interest

Section 4.15(1)(e) requires the consent authority to consider:

“(e) the public interest”.

The public interest is best served by the orderly and economic use of land for purposes permissible under the relevant planning regime and predominantly in accordance with the prevailing planning controls. The development is a permissible form of development and is therefore considered to be in the public interest.

8 CONCLUSION

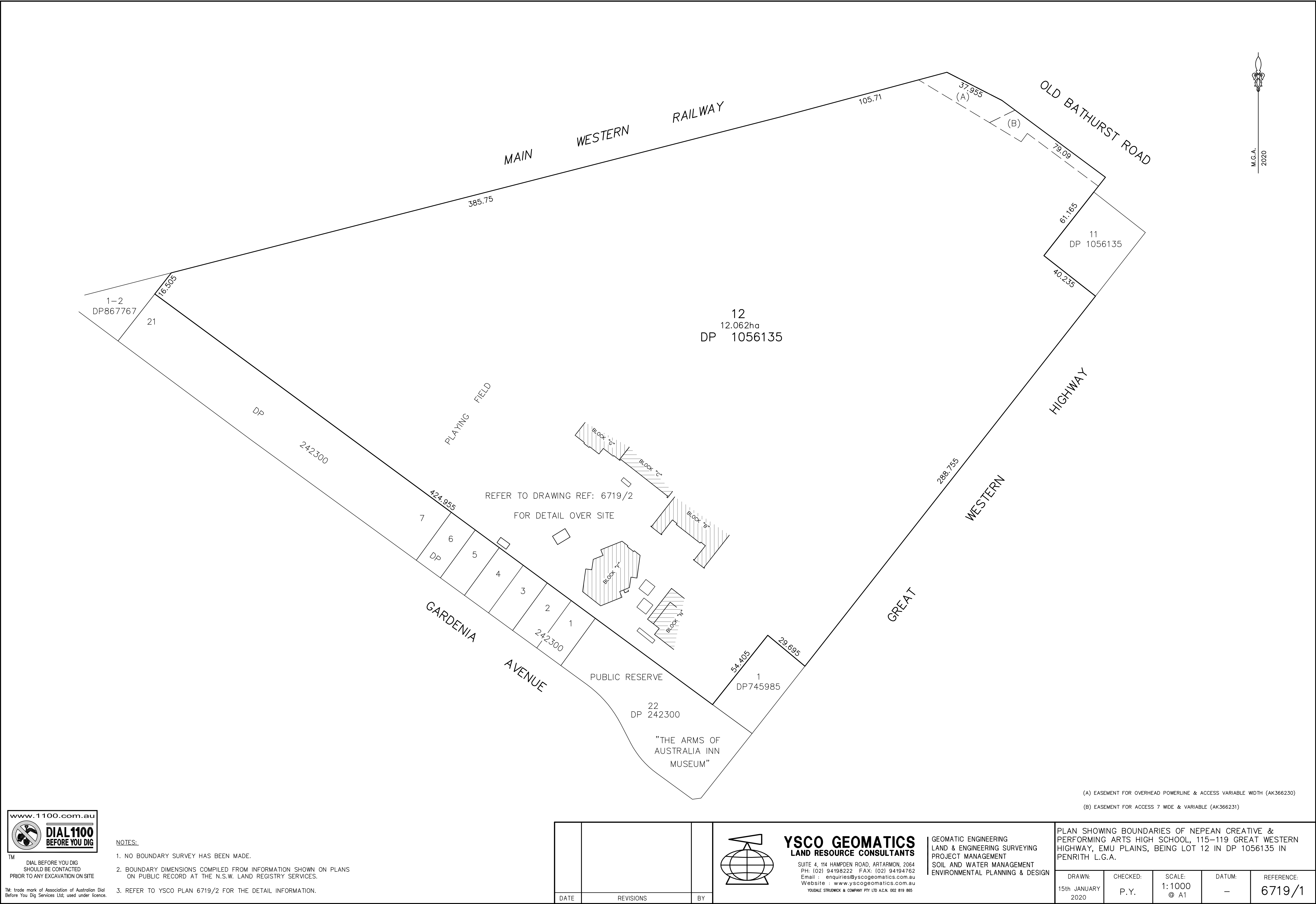
This DA seeks consent for the construction and operation of a new multi-purpose hall at Nepean CAPA HS. The new multi-purpose hall will be located west of the existing performing arts hall and will enable Nepean CAPA HS to provide upgraded sport and multi-purpose facilities for its' student base.

Construction of the multi-purpose hall may have some minor adverse effects. These have been identified within this SEE and are considered minor and only short term. During construction the project is expected to generate employment and business opportunities for local contractors and flow-on effects for local businesses. Overall, the proposed development will be a positive contribution to the school and the wider community.

The proposed development has been formulated having full and proper regard to existing development controls and to the environmental qualities of the site and its surroundings. It comprises a permissible form of development that complies with all the provisions of the relevant environmental planning instruments, as well as the provisions of Council's Development Control Plan.

The proposal is reasonable and appropriate when considered under the relevant heads of consideration in Section 4.15 of the EP&A Act and is worthy of favourable consideration by Council.

Appendix A Survey Plan





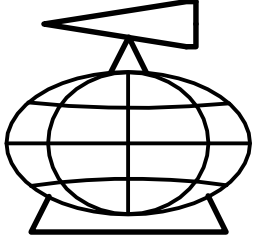
DIAL 1100
BEFORE YOU DIG

TM: trade mark of Association of Australian Dial Before You Dig Services Ltd; used under licence.

NOTES:

1. NO BOUNDARY SURVEY HAS BEEN MADE.
2. BOUNDARY DIMENSIONS COMPILED FROM INFORMATION SHOWN ON PLANS ON PUBLIC RECORD AT THE N.S.W. LAND REGISTRY SERVICES.
3. REFER TO YSCO PLAN 6719/2 FOR THE DETAIL INFORMATION.

DATE	REVISIONS	BY



YSCO GEOMATICS
LAND RESOURCE CONSULTANTS

SUITE 4, 114 HAMPDEN ROAD, ARTARMON, 2064
PH: (02) 94198222 FAX: (02) 94194762
Email : enquiries@yscogeomatics.com.au
Website : www.yscogeomatics.com.au
YOUDALE STRUDWICK & COMPANY PTY LTD A.C.N. 002 819 865

GEOMATIC ENGINEERING
LAND & ENGINEERING SURVEYING
PROJECT MANAGEMENT
SOIL AND WATER MANAGEMENT
ENVIRONMENTAL PLANNING & DESIGN

PLAN SHOWING BOUNDARIES OF NEPEAN CREATIVE & PERFORMING ARTS HIGH SCHOOL, 115-119 GREAT WESTERN HIGHWAY, EMU PLAINS, BEING LOT 12 IN DP 1056135 IN PENRITH L.G.A.	DRAWN: 15th JANUARY 2020	CHECKED: P.Y.	SCALE: 1:1000 © A1	DATUM: —	REFERENCE: 6719/1
---	--------------------------------	------------------	--------------------------	-------------	----------------------

Appendix B

Architectural Plans

Nepean Creative and Performing Arts High School

Development Application - New Multi-Purpose Hall



 Site Boundary

 Proposed development - Refer to A001 for Site Plan

Drawing List - DA	
Drawing Number	Drawing Name
DA000	Cover Page
DA010	Site Analysis Plan
DA011	Site Plan
DA020	Building Site plan
DA030	Demolition Plan
DA040	Wall Types
DA100	Ground Floor Plan
DA101	Roof Plan
DA200	Elevations Sheet 01
DA201	Elevations Sheet 02
DA300	Sections Sheet 01
DA301	Sections Sheet 02
DA450	Details Wall Sections
DA700	External Colours Scheme
DA800	Shadow Diagrams
DA900	3D Perspective

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application

Client
SINSW

 **Education**
School Infrastructure

Architect
BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Rosebery,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow
NSW 2479
T: +61 2 4926 5563

Scale at A1

Date
11/12/20

North

Drawn
TN, GL

Project
Nepean Creative and
Performing Arts High School

Checked
MK

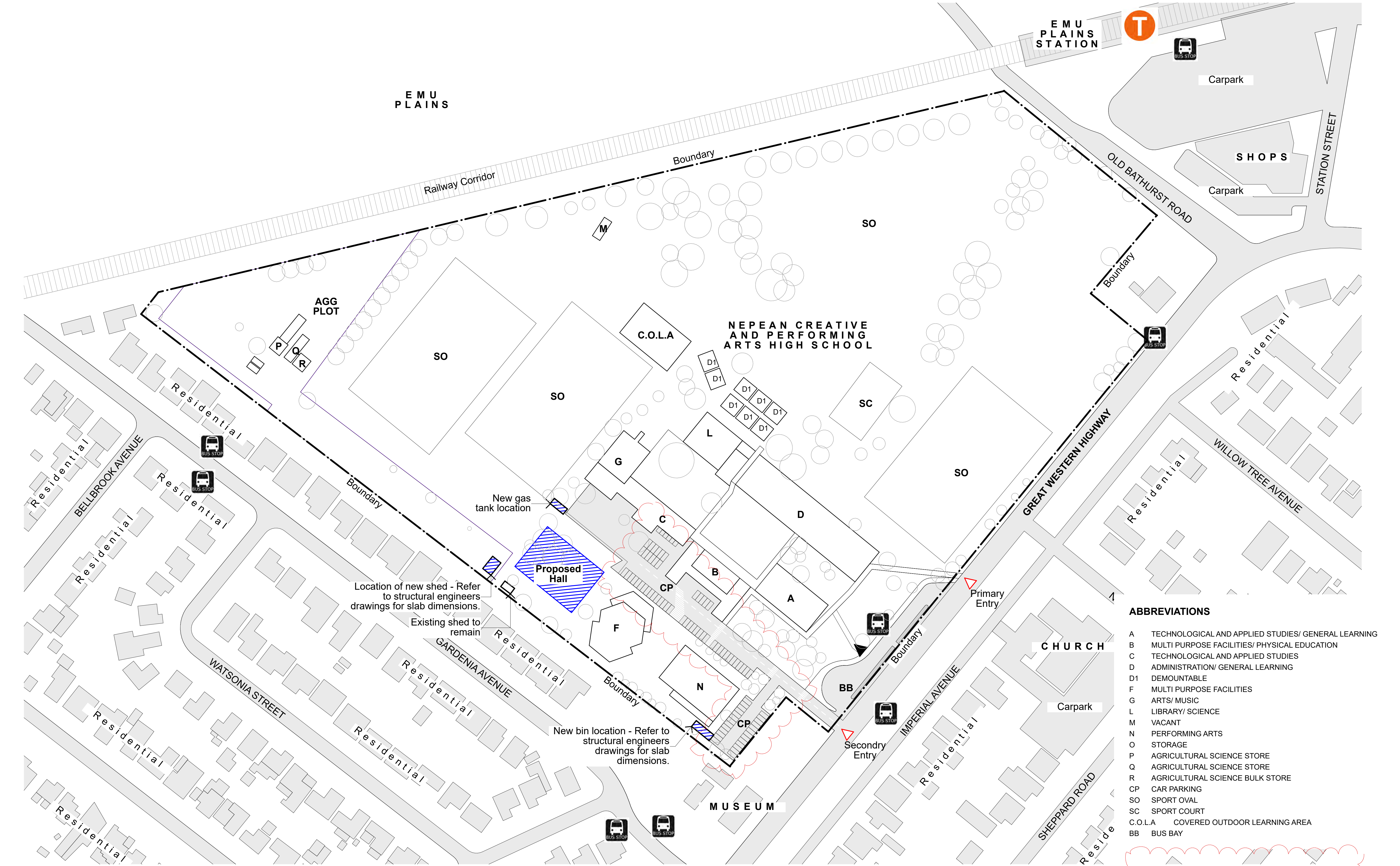
Status
Development
Application

Drawing
Cover Page

Project No.
20001

Revision
A

Drawing No.
DA000



1 Site Analysis Plan
1:1000

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application
B	26/2/21	Additional Information

Client
SINSW

 **Education**
School Infrastructure

Architect
BKA Architecture

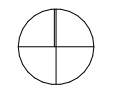
SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:1000

Date
26/2/21

North

Drawn
TN, GL

Project
Nepean Creative and
Performing Arts High School

Checked
MK

Status
Development
Application

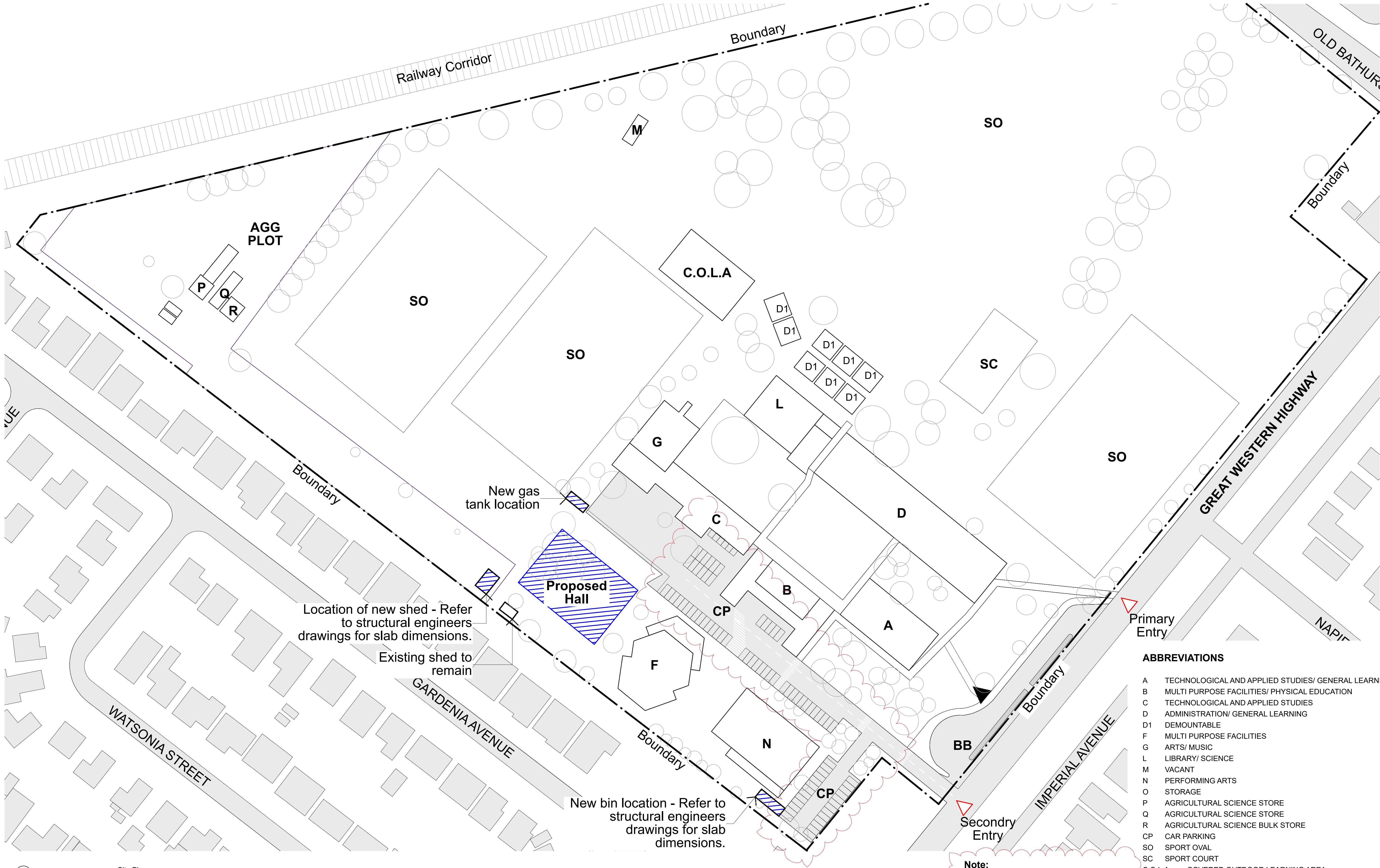
Drawing
Site Analysis Plan

Project No.
20001

Revision
B

Drawing No.
DA010

Note:
Carparking layout/number is shown indicatively



1 Site Plan
1:750

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing, BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application
B	26/2/21	Additional Information

Client
SINSW



Architect

BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow,
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:750

Date
26/2/21

North



Drawn
TN, GL

Project

Nepean Creative and
Performing Arts High School

Checked
MK

Status

Development
Application

Drawing

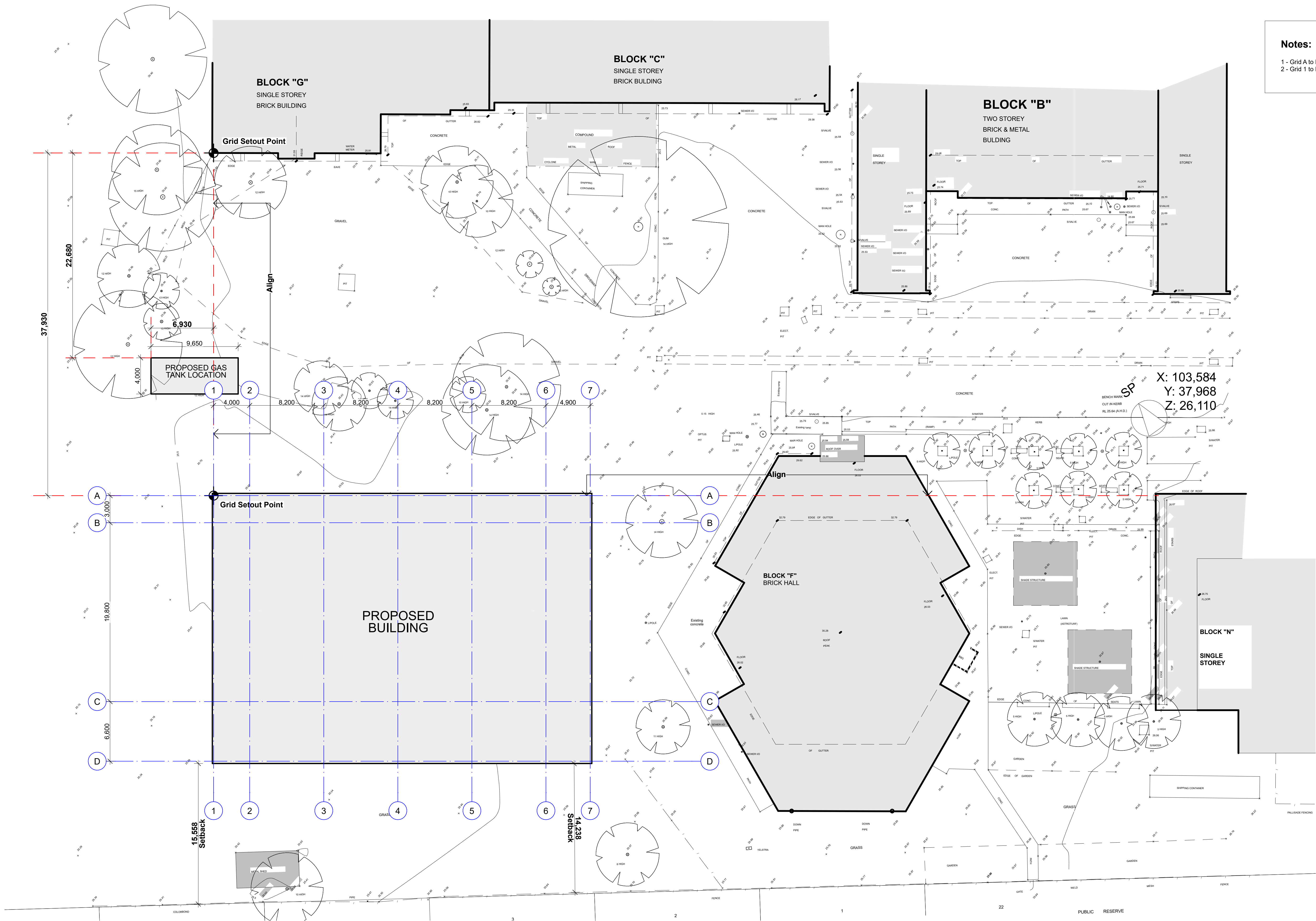
Site Plan

Project No.
20001

Revision
B

Drawing No.
DA011

Notes:
1 - Grid A to line up with Block N
2 - Grid 1 to line up with corner of Block G



General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing, BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev A Date 11/12/20 Issue Development Application

Client SINSW



Architect
BKA Architecture

SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE 19 Bolton St, Newcastle NSW 2300
T: +61 2 4926 5563

BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479
T: +61 2 4926 5563

Scale at A1
1:200

Date
11/12/20

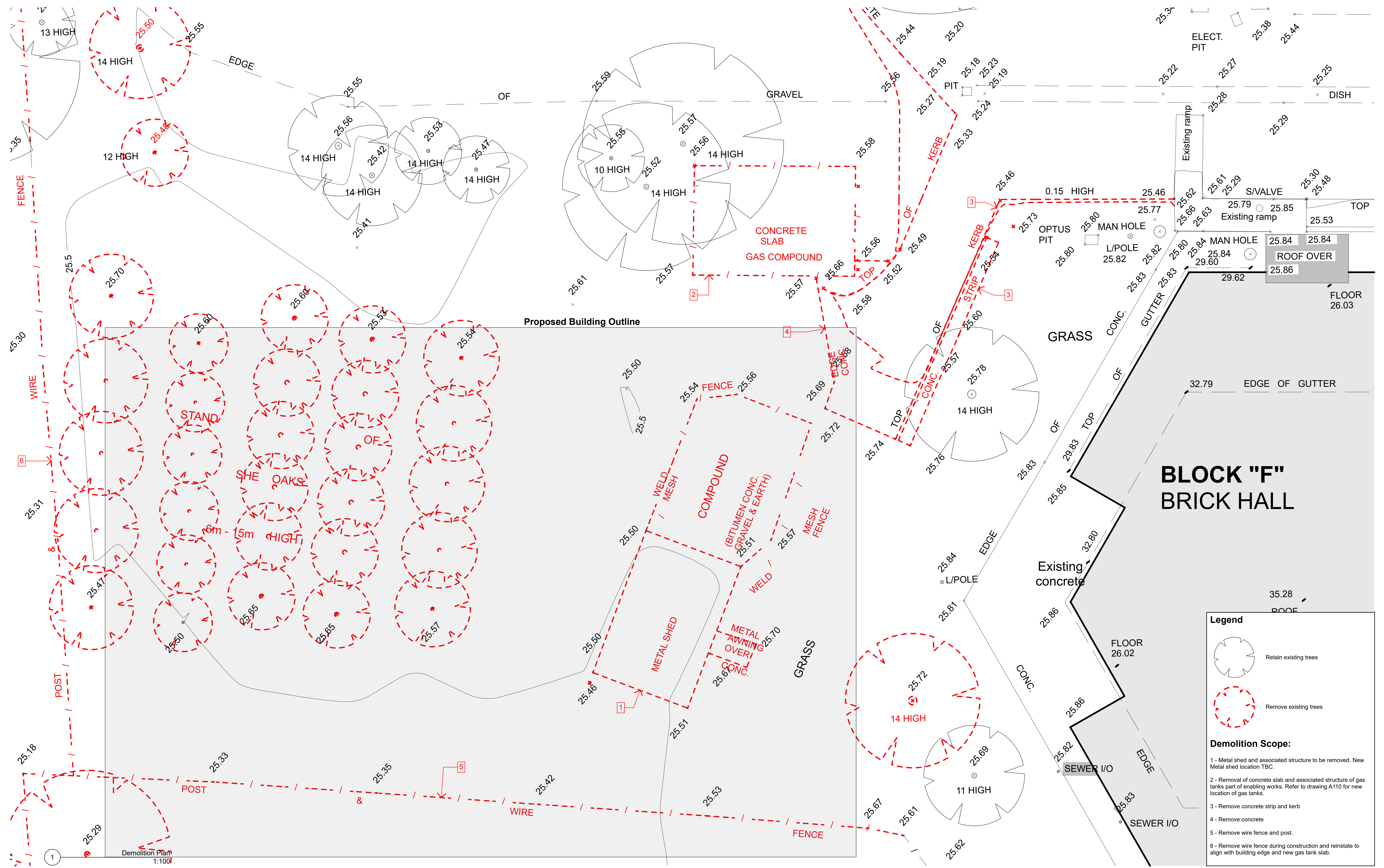
North
Drawn
TN, GL

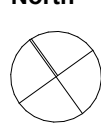
Project
Nepean Creative and Performing Arts High School

Checked MK
Status Development Application

Drawing
Building Site plan

Project No. **20001**
Revision **A**
Drawing No. **DA020**



General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.	<table><tr><th>Rev</th><th>Date</th><th>Issue</th></tr><tr><td>A</td><td>11/12/20</td><td>Development Application</td></tr></table>	Rev	Date	Issue	A	11/12/20	Development Application	Client SINSW  Education School Infrastructure	Architect BKA Architecture SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563 BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563	Scale at A1 1:100 Date 11/12/20 North  Drawn TN, GL	Project Nepean Creative and Performing Arts High School Checked MK Status Development Application	Drawing Demolition Plan <table><tr><td>Project No.</td><td>Revision</td><td>Drawing No.</td></tr><tr><td>20001</td><td>A</td><td>DA030</td></tr></table>	Project No.	Revision	Drawing No.	20001	A	DA030
Rev	Date	Issue																
A	11/12/20	Development Application																
Project No.	Revision	Drawing No.																
20001	A	DA030																

WALL TYPES

CODE	DESCRIPTION	CONSTRUCTION
A1	External Wall - Brick + Stud 1. Brickwork 2. 50mm Cavity 3. Heavy Duty Vapour permeable sarking membrane 4. 150mm Steel Stud at 600 cts with selected Insulation 5. 50mm Furring Channel 6. 13mm Impact Resistant PB lining with selected Paint finish	
A2	External Wall - Metal Cladding + Stud 1. Selected metal cladding as per manufacturers specification 2. 75mm Furring Channel 3. Heavy Duty Vapour permeable sarking membrane 4. 150mm Steel Stud at 600 cts with selected Insulation 5. 50mm Furring Channel 6. 13mm Impact Resistant PB lining with selected Paint finish	
A3	External Wall - FC Cladding + Double Stud 1. CFC sheet as per manufacturers specification 2. 35mm Furring Channel 3. Heavy Duty Vapour permeable sarking membrane 4. 150mm Steel Stud at 600 cts with selected Insulation 5. 40mm Cavity 6. 92mm Steel Stud 7. 13mm Impact Resistant PB lining with selected Paint finish	
A4	External Wall - Brick + Double Stud 1. Brickwork 2. 50mm Cavity 3. Heavy Duty Vapour permeable sarking membrane 4. 150mm Steel Stud at 600 cts with selected Insulation 5. 40mm Cavity 6. 92mm Steel Stud 7. 13mm Impact Resistant PB lining with selected Paint finish	
A5	External Wall - Metal Cladding + Double Stud 1. Selected metal cladding as per manufacturers specification 2. 75mm Furring Channel 3. Heavy Duty Vapour permeable sarking membrane 4. 150mm Steel Stud at 600 cts with selected Insulation 5. 40mm Cavity 6. 92mm Steel Stud 7. 13mm Impact Resistant PB lining with selected Paint finish	

CODE	DESCRIPTION	CONSTRUCTION
B1	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 92mm steel studs at 600 cts with selected insulation Notes: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles - For acoustic compliance, allow for 2x13mm PB lining to both wall sides where recommended by Acoustic consultant	
B2	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 150mm steel studs at 600 cts with selected insulation Notes: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles - For acoustic compliance, allow for 2x13mm PB lining to both wall sides where recommended by Acoustic consultant	
B3	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 35mm Furring Channel 3. 190mm core-filled blockwork 4. 35mm Furring Channel Note: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles	
B4	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 76mm steel studs at 600 cts with selected insulation Notes: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles - For acoustic compliance, allow for 2x13mm PB lining to both wall sides where recommended by Acoustic consultant	
B5	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 2x 150mm steel studs at 600 cts with selected insulation 3. 20mm gap between studs Notes: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles - For acoustic compliance, allow for 2x13mm PB lining to both wall sides where recommended by Acoustic consultant	
B6	Internal Wall 1. 13mm Impact Resistant PB lining to both wall sides with selected paint finish 2. 2x 76mm steel studs at 600 cts with selected insulation 3. 20mm gap between studs Notes: - For Wet Areas, substitute PB for FC sheeting with recessed edge, waterproofing and nominated tiles	
B7	Internal Wall - Fire Rated 60/60/60 1. 1 x 16mm Gyprock FyrcekPlasterboard lining to both wall sides with selected paint finish 2. 76mm steel studs at 600 cts with selected insulation Notes: - For Electrical Distribution Boards, allow for 120/120/120 FR	
B8	Internal Wall - Fire Rated 60/60/60 1. FC sheeting with recessed edge, waterproofing and nominated tiles 2. 64mm steel studs at 600 cts with selected insulation	

NOTES

All Vapour Permeable Sarking Membrane to be heavy duty and in accordance with AS/NZS 4200.1 Parts 1 and 2.

All Cladding to be installed as per Manufacturer's Specification and as per wind loading recommendations. Ensure Capping to roof and wall junctions, corner flashing to wall junction detail.

Refer to general Materials, Finishes and Fixtures schedule for nominated external and internal finishes.

Note for Termination of Membranes - Penetrations as per AS 4654.2

Any fixings that penetrate the membrane shall be sealed. The sealant shall be compatible with the surface material. Where backing rods are used to support the sealant, they shall be a minimum of 12 mm. Refer to AS 4654.2 - Typical details of penetrations are shown in Figures 2.10 and 2.11. Refer to AS 4654.2 - Typical details of metal post supports are shown in Figure 2.12.

Notes for Acoustic Requirements

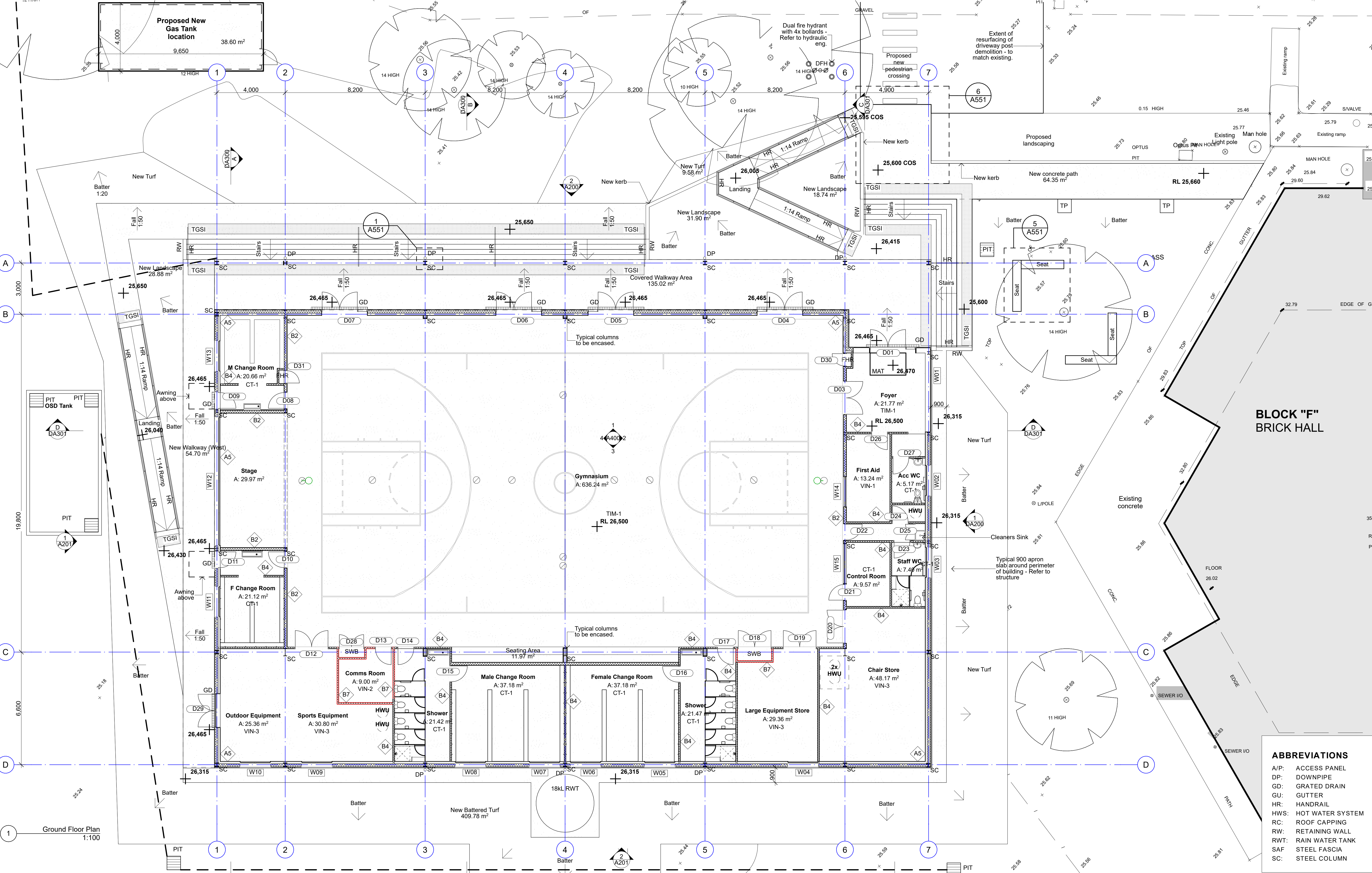
Compliance with Statutory Requirements – Ensure Compliance with AS1668 for emergency requirements is to be followed. External noise levels requirements of the building management, local council and any other site specific requirements to be adhered to

Vibration isolation – All plant and equipment to be installed as part of the fitout is required to be vibration isolated from the building structure such that internal noise levels detailed in this report are complied with

Sealants – All sealants to be used on the project are to include a flexible acoustic sealant. All walls should be sealed at the head and base with backing rods and non-hardening flexible mastic, or be sealed under the head and bottom plates. The non-hardening mastic may be acrylic, polyurethane or silicone; any other proposed acoustic sealant should be approved by the acoustic consultant.

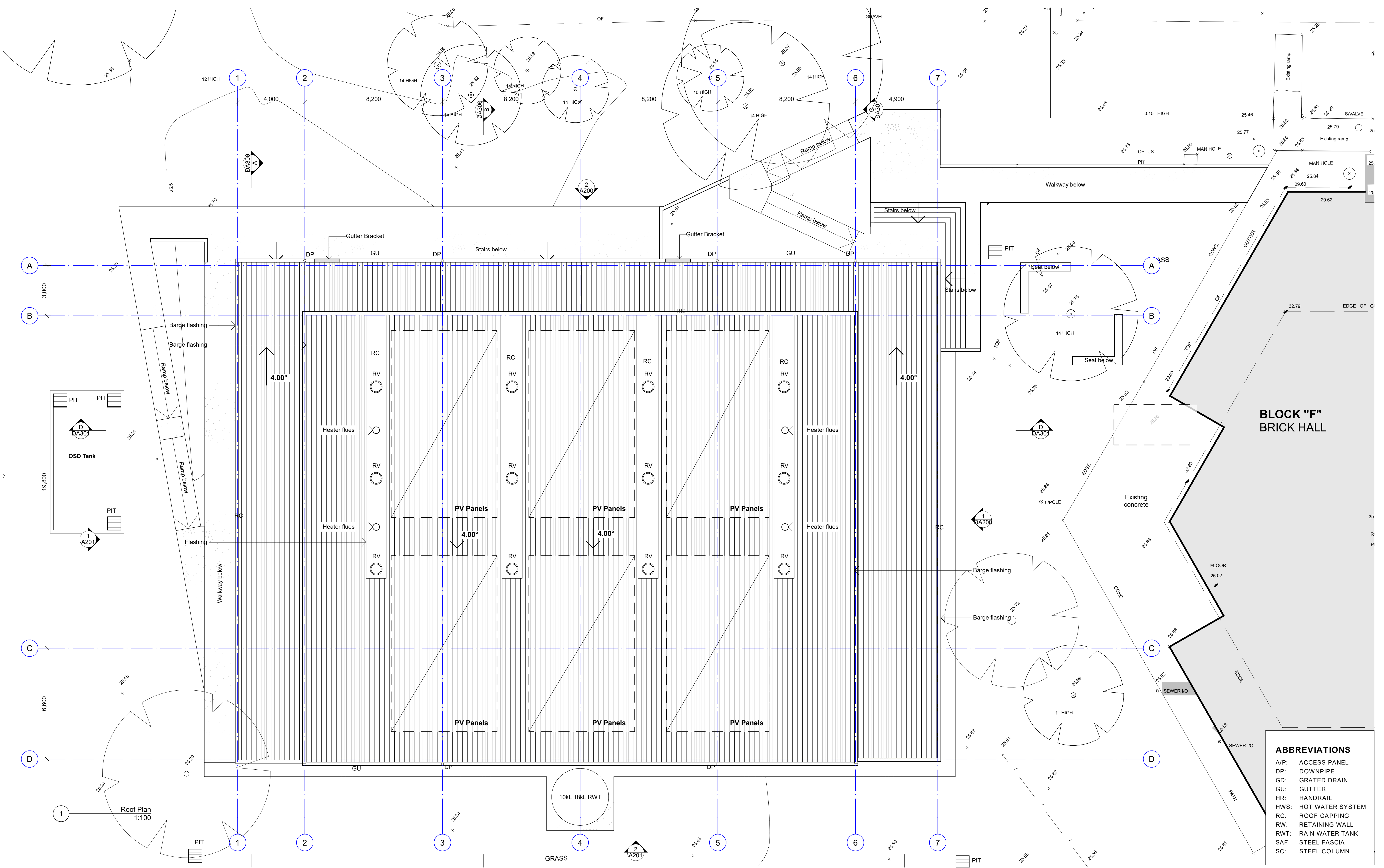
Refer to Section J Report and Acoustic Report for insulation requirements

General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.		Rev A	Date 11/12/20	Issue Development Application	Client SINSW 	Architect BKA Architecture SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563 BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563	Scale at A1 Date 11/12/20	North Drawn TN, GL	Project Nepean Creative and Performing Arts High School Checked MK Status Development Application	Drawing Wall Types Project No. 20001 Revision A Drawing No. DA040
--	--	-----------------	-------------------------	---	--------------------------------	--	---	--	---	--



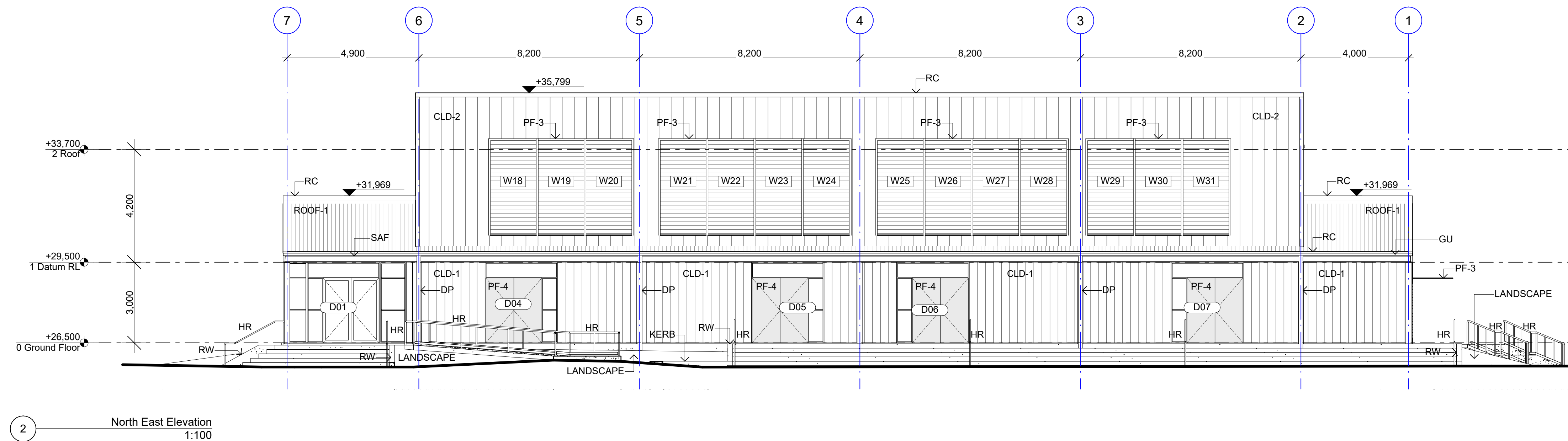
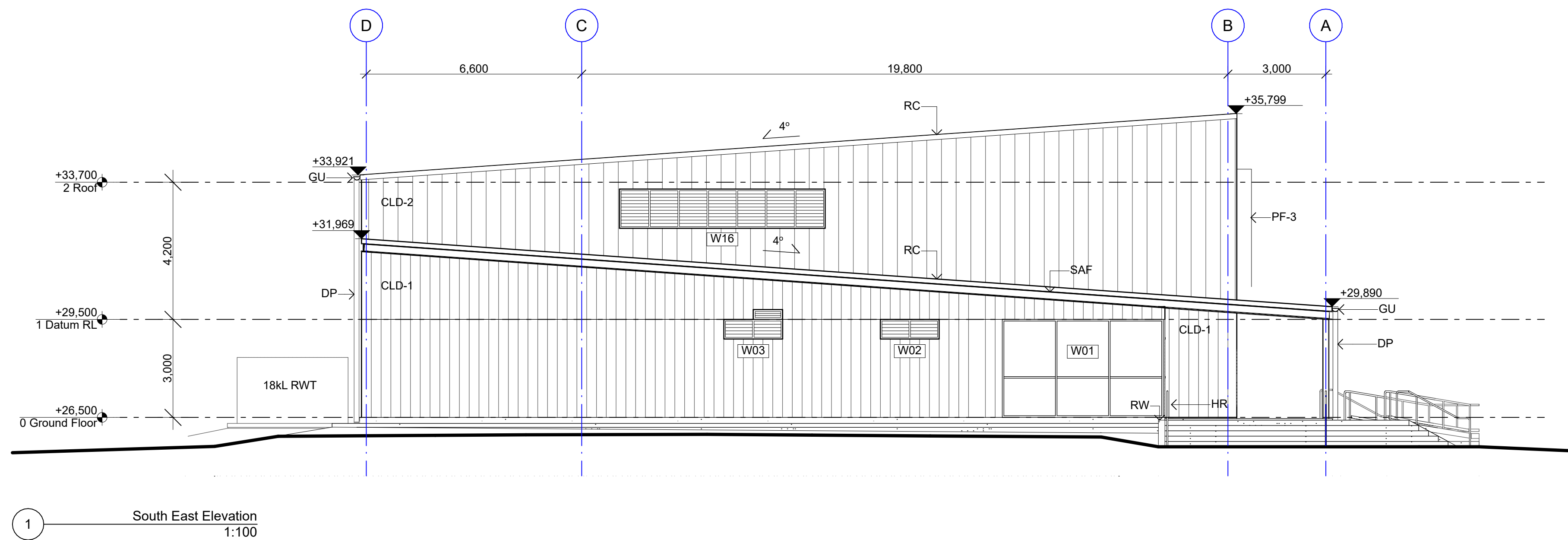
ABBREVIATIONS			
A/P:	ACCESS PANEL		
DP:	DOWNSPIPE		
GD:	GRATED DRAIN		
GU:	GUTTER		
HR:	HANDRAIL		
HWS:	HOT WATER SYSTEM		
RC:	ROOF CAPPING		
RW:	RETAINING WALL		
RWT:	RAIN WATER TANK		
SAF:	STEEL FASCIA		
SC:	STEEL COLUMN		

General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION. All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.	Rev A	Date 11/12/20	Issue Development Application	Client SINSW	Architect BKA Architecture SYDNEY Suite 104, 77 Dunning St, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au NEWCASTLE 19 Bolton St, Newcastle, NSW 2300 T: +61 2 4926 5563 BYRON BAY Unit 1, 10 Station St, Bangalow, NSW 2479 T: +61 2 4926 5563	Scale at A1 1:100	North 	Project Nepean Creative and Performing Arts High School	Drawing Ground Floor Plan	Date 11/12/20	Drawn TN, GL	Checked MK	Status Development Application	Project No. 20001	Revision A	Drawing No. DA100



ABBREVIATIONS	
A/P:	ACCESS PANEL
DP:	DOWNSPIPE
GD:	GRATED DRAIN
GU:	GUTTER
HR:	HANDRAIL
HWS:	HOT WATER SYSTEM
RC:	ROOF CAPPING
RW:	RETAINING WALL
RWT:	RAIN WATER TANK
SAF:	STEEL FASCIA
SC:	STEEL COLUMN

General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.	<table><tr><th>Rev</th><th>Date</th><th>Issue</th></tr><tr><td>A</td><td>11/12/20</td><td>Development Application</td></tr></table>	Rev	Date	Issue	A	11/12/20	Development Application	Client SINSW  Education School Infrastructure	Architect BKA Architecture <table><tr><td>SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au</td><td>NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563</td><td>BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563</td></tr></table>	SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au	NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563	BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563	Scale at A1 1:100 Date 11/12/20	North  Drawn TN, GL	Project Nepean Creative and Performing Arts High School Checked MK Status Development Application	Drawing Roof Plan <table><tr><th>Project No.</th><th>Revision</th><th>Drawing No.</th></tr><tr><td>20001</td><td>A</td><td>DA101</td></tr></table>	Project No.	Revision	Drawing No.	20001	A	DA101
Rev	Date	Issue																				
A	11/12/20	Development Application																				
SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au	NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563	BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563																				
Project No.	Revision	Drawing No.																				
20001	A	DA101																				



ABBREVIATIONS

A/P:	ACCESS PANEL
DP:	DOWNPIPE
GD:	GRATED DRAIN
GU:	GUTTER
HR:	HANDRAIL
HWS:	HOT WATER SYSTEM
RC:	ROOF CAPPING
RW:	RETAINING WALL
RWT:	RAIN WATER TANK
SAF:	STEEL FASCIA
SC:	STEEL COLUMN

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.
All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application

Client
SINSW



Architect

BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow,
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:100

Date
11/12/20

North

Drawn
TN, GL

Project

Nepean Creative and
Performing Arts High School

Checked
MK

Status

Development
Application

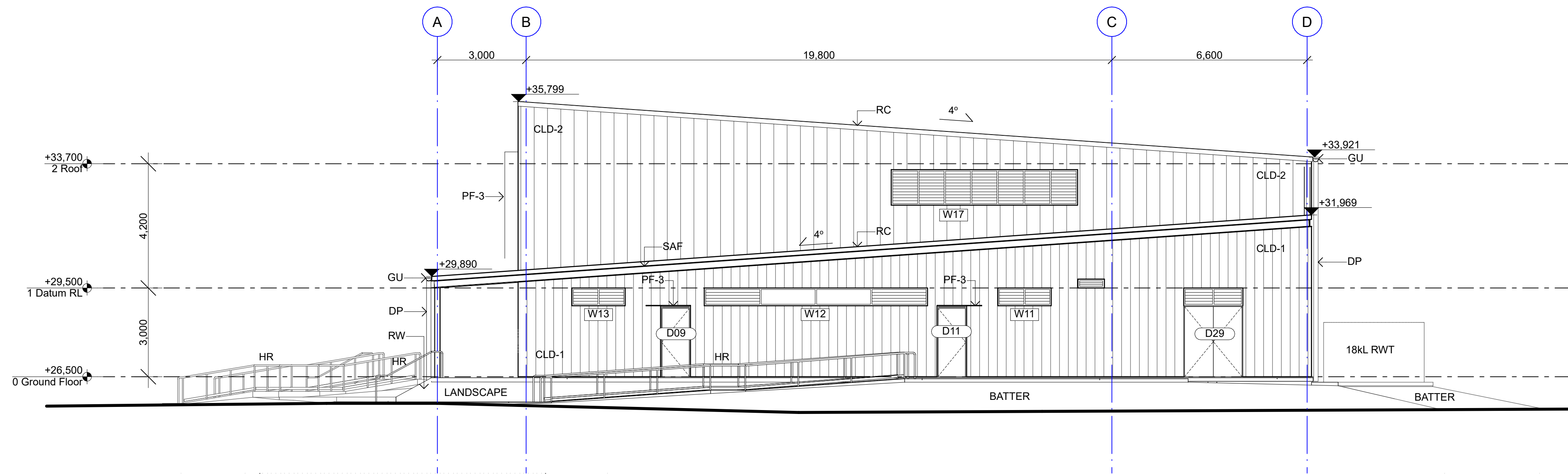
Drawing

Elevations Sheet 01

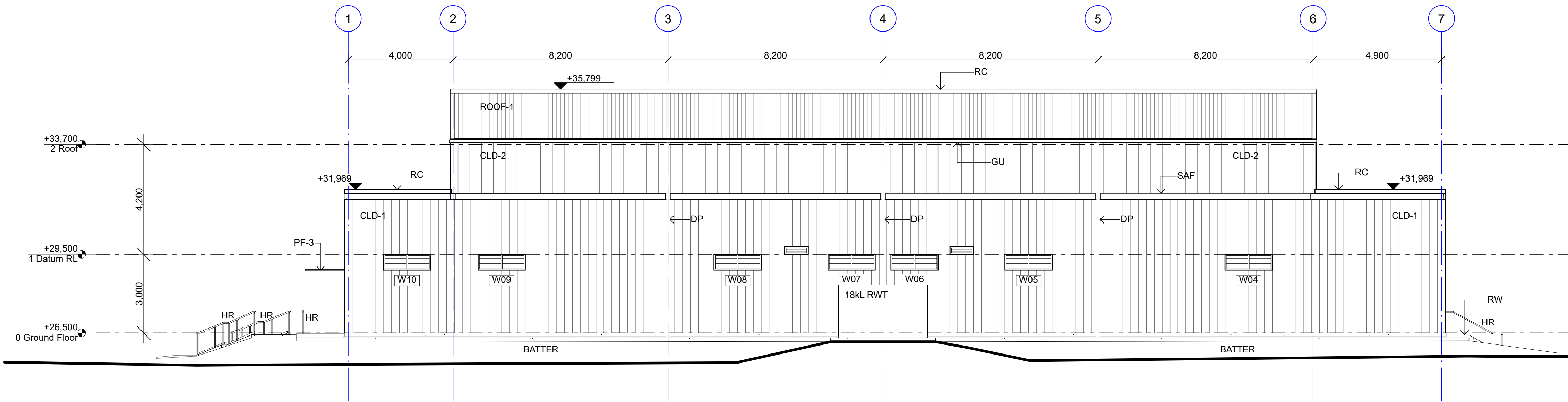
Project No.
20001

Revision
A

Drawing No.
DA200



1 North West Elevation
1:100



2 South West Elevation
1:100

ABBREVIATIONS

A/P:	ACCESS PANEL
DP:	DOWNPIPE
GD:	GRATED DRAIN
GU:	GUTTER
HR:	HANDRAIL
HWS:	HOT WATER SYSTEM
RC:	ROOF CAPPING
RW:	RETAINING WALL
RWT:	RAIN WATER TANK
SAF:	STEEL FASCIA
SC:	STEEL COLUMN

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.
All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application

Client
SINSW



Architect

BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow,
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:100

Date
11/12/20

North

Drawn
TN, GL

Project

Nepean Creative and
Performing Arts High School

Checked
MK

Status

Development
Application

Drawing

Elevations Sheet 02

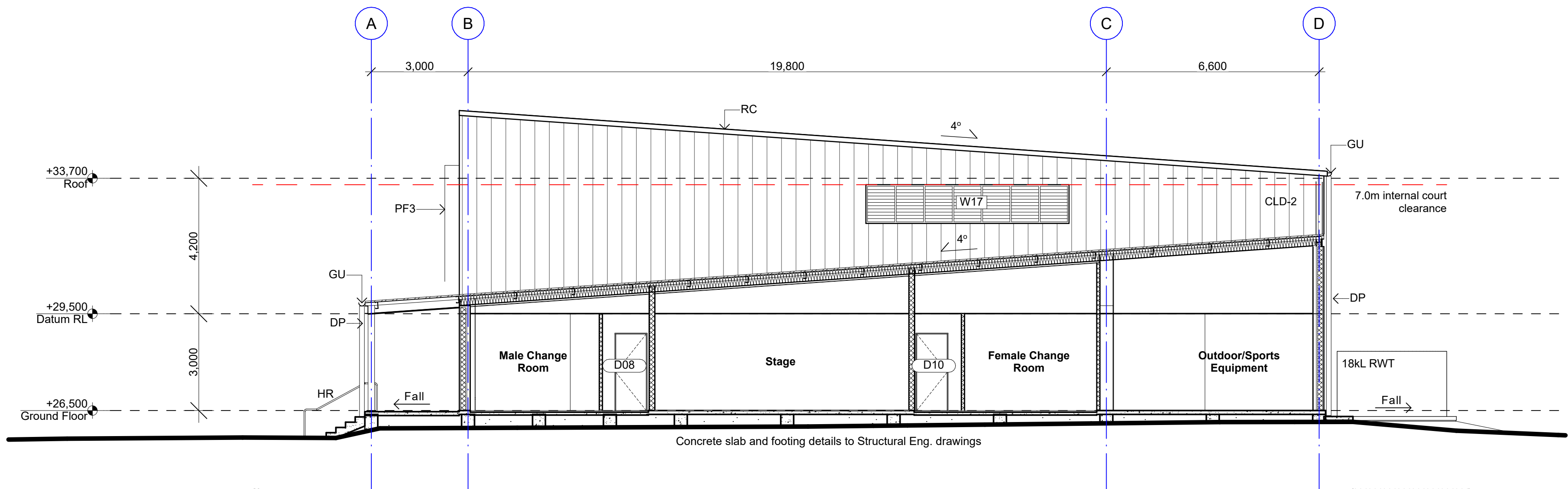
Project No.
20001

Revision
A

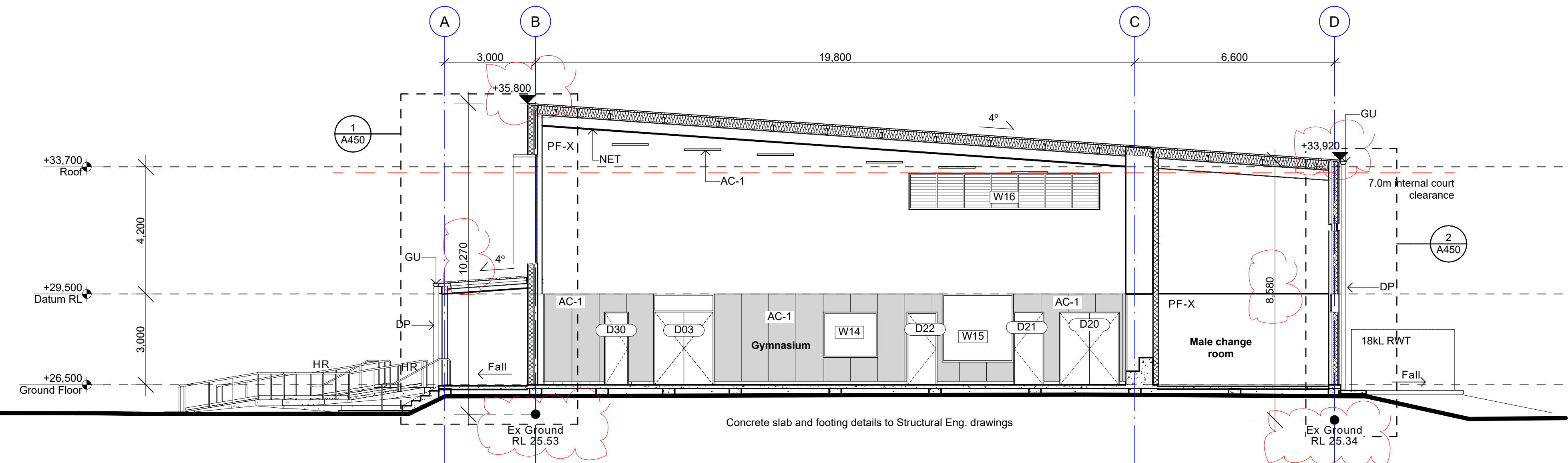
Drawing No.
DA201

Notes:

1 - For concrete and slab footing details refer to structural engineers drawings



1 Section A
1:100



2 Section B
1:100

ABBREVIATIONS

A/P: ACCESS PANEL
DP: DOWNPIPE
GD: GRATED DRAIN
GU: GUTTER
HR: HANDRAIL
HWS: HOT WATER SYSTEM
RC: ROOF CAPPING
RW: RETAINING WALL
RWT: RAIN WATER TANK
SAF: STEEL FASCIA
SC: STEEL COLUMN

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application
B	11/2/21	Additional Information

Client
SINSW



Architect
BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Rosebery,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:100

Date
11/2/21

North

Drawn
TN, GL

Project
Nepean Creative and
Performing Arts High School

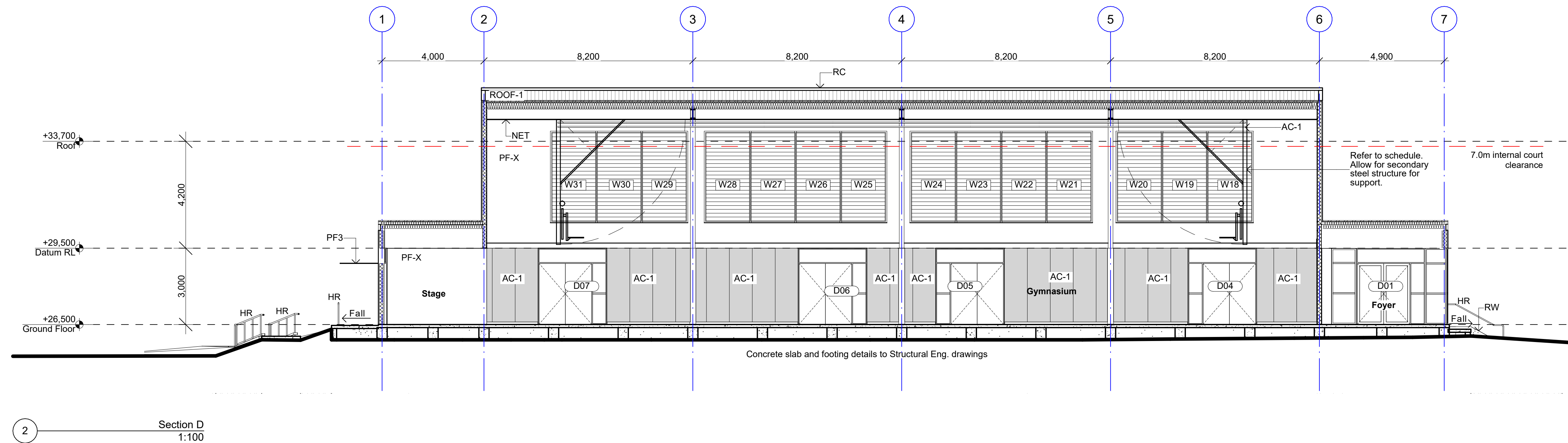
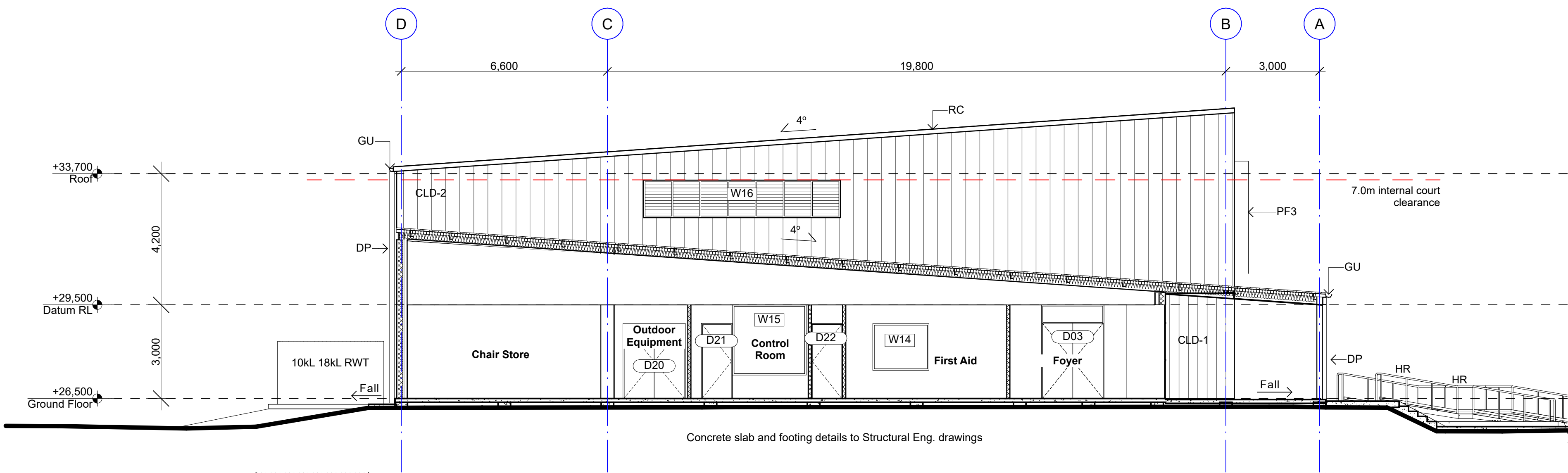
Checked	Status
MK	Development Application

Drawing
Sections Sheet 01

Project No.	Revision	Drawing No.
20001	B	DA300

Notes:

1 - For concrete and slab footing details refer to structural engineers drawings



ABBREVIATIONS

A/P: ACCESS PANEL
DP: DOWNPIPE
GD: GRATED DRAIN
GU: GUTTER
HR: HANDRAIL
HWS: HOT WATER SYSTEM
RC: ROOF CAPPING
RW: RETAINING WALL
RWT: RAIN WATER TANK
SAF: STEEL FASCIA
SC: STEEL COLUMN

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.
All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing, BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev A Date 11/12/20 Issue Development Application

Client SINSW



Architect BKA Architecture

SYDNEY Suite 104, 77 Dunning Ave, Roseberry, NSW 2018
NEWCASTLE 19 Bolton St, Newcastle NSW 2300
BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479
T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au
T: +61 2 4926 5563 T: +61 2 4926 5563

Scale at A1 1:100

Date 11/12/20

North

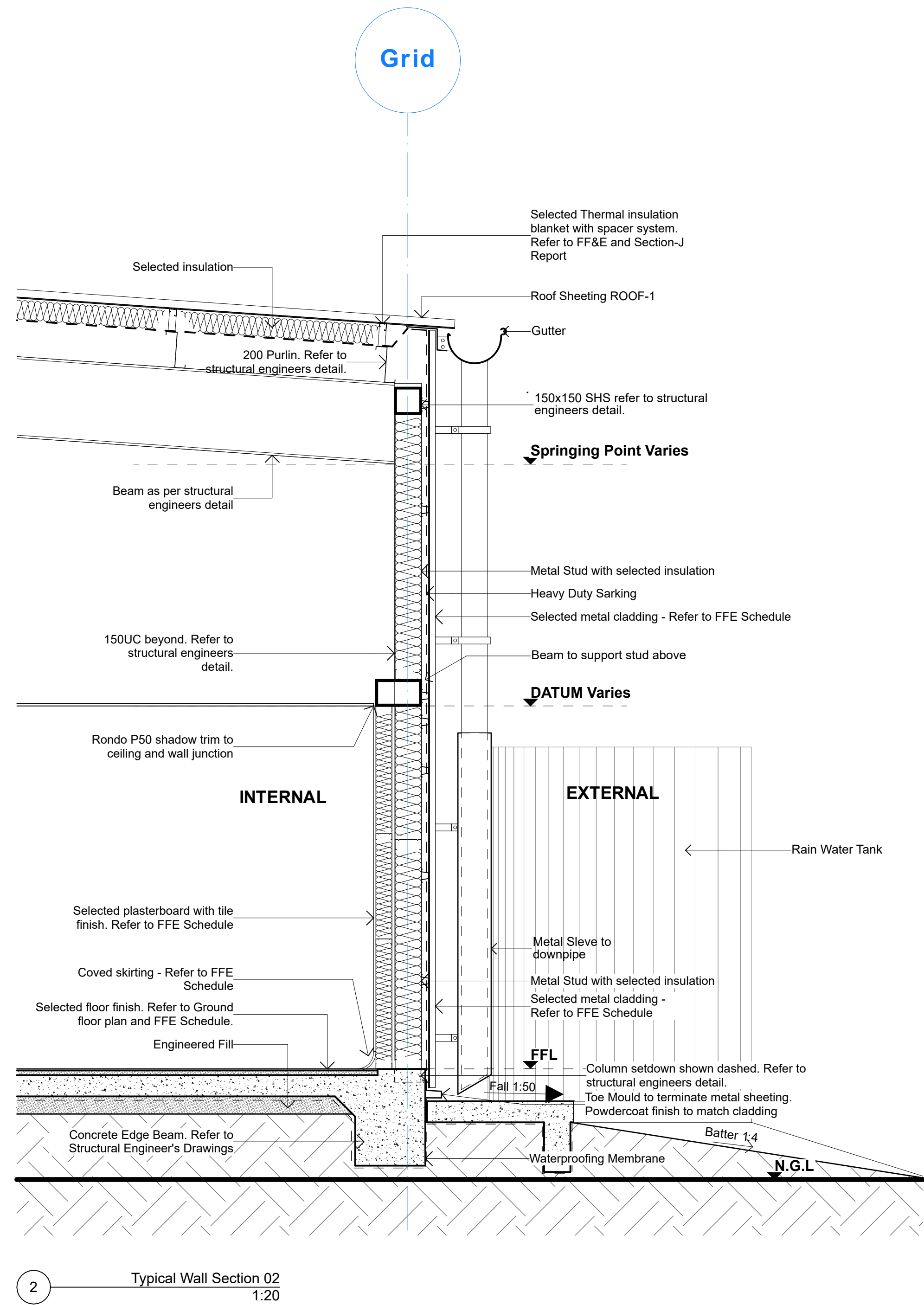
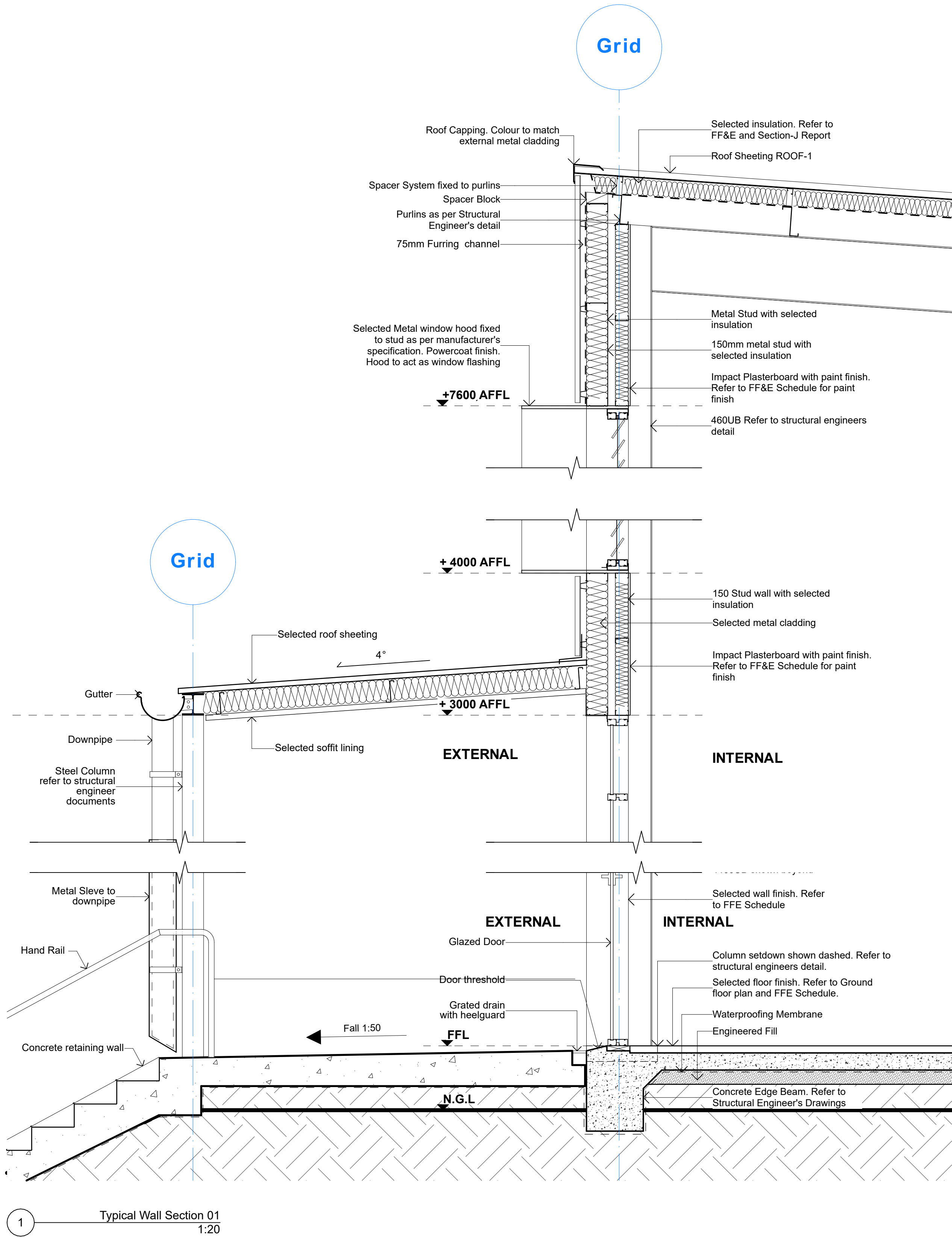
Drawn TN, GL

Project Nepean Creative and Performing Arts High School

Checked MK Status Development Application

Drawing Sections Sheet 02

Project No. 20001 Revision A Drawing No. DA301



General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.
All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev

A

Date

11/12/20

Issue

Development Application

Client

SINSW



Education
School Infrastructure

Architect

BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow,
NSW 2479
T: +61 2 4926 5563

Scale at A1

1:20

Date

11/12/20

North

Drawn
TN, GL

Project

Nepean Creative and
Performing Arts High School

Checked

MK

Status

Development
Application

Drawing

Details Wall Sections

Project No.

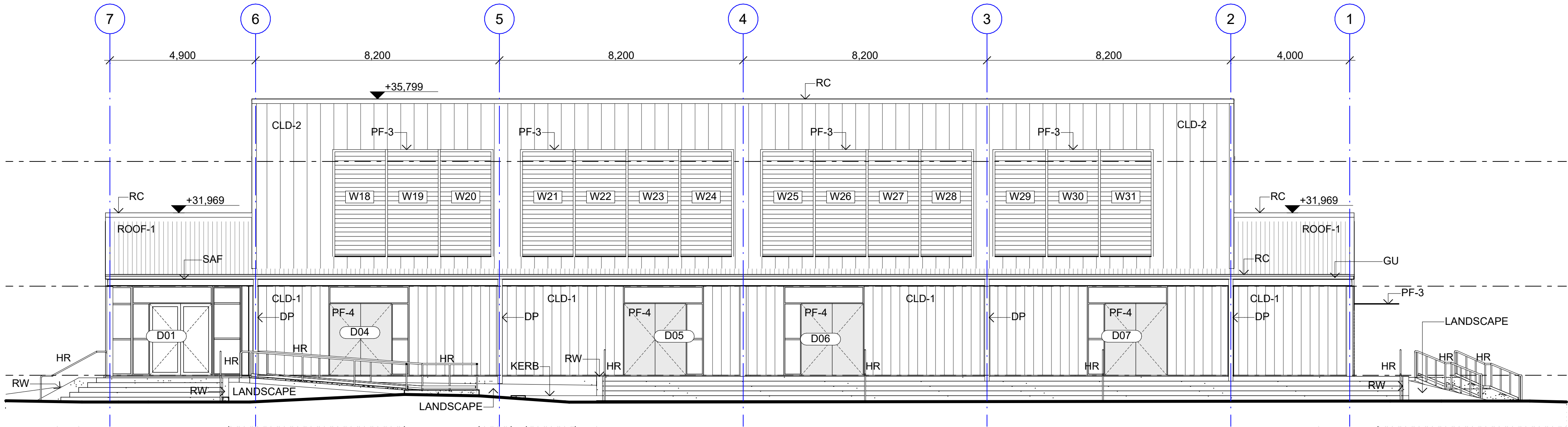
20001

Revision

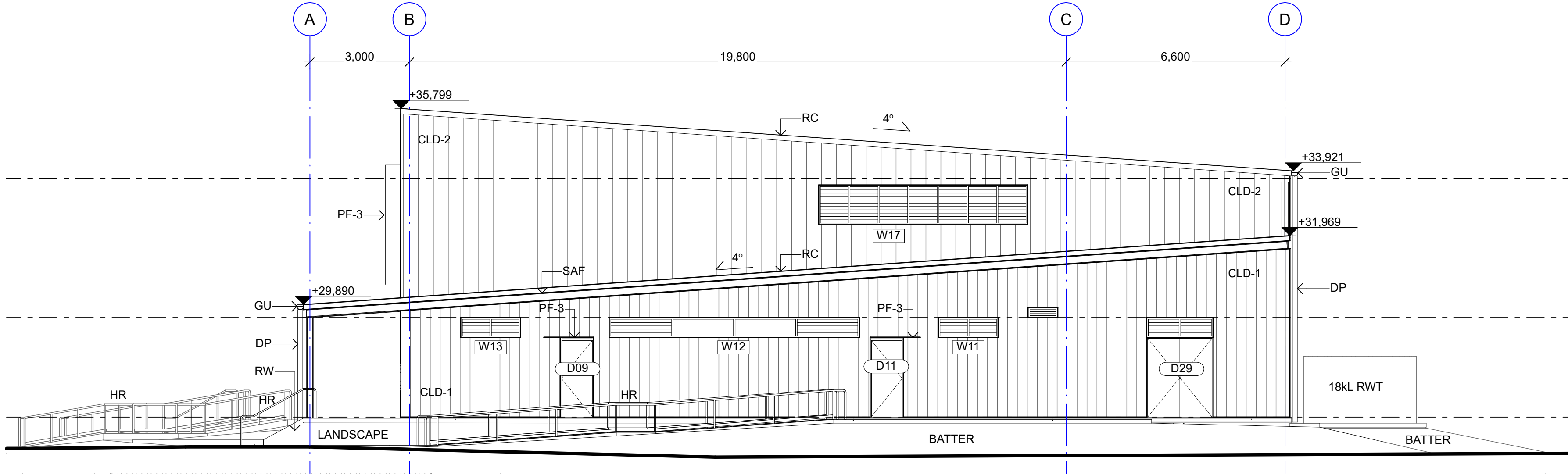
A

Drawing No.

DA450



1 North East Elevation
1:100



2 North West Elevation
1:100

ABBREVIATIONS

A/P: ACCESS PANEL
DP: DOWNPIPE
GD: GRATED DRAIN
GU: GUTTER
HR: HANDRAIL
HWS: HOT WATER SYSTEM
RC: ROOF CAPPING
RW: RETAINING WALL
RWT: RAIN WATER TANK
SAF: STEEL FASCIA
SC: STEEL COLUMN



SAF
Dulux - Shale Grey



CLD-1 / CLD-2 / CLD-3 / ROOF-1 / RC / DP / GU
Colorbond - Shale Grey



PF-3
Dulux - Strap grey



PF-4
Dulux Duratec Intensity - Sunshine Gloss



CLD-1 STEEL CLADDING
Lysaght LONGLINE 305 Profile - Shale Grey



CLD-2 STEEL CLADDING
Lysaght ENSEAM Profile - Shale Grey
(Windspray pictured)



CLD-3 SOFFIT LINING
Lysaght Custom Orb Profile - Shale Grey



ROOF-1
Lysaght Klip-Lok 700 - Shale Grey

General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise.

All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing, BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application

Client
SINSW



Architect
BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow,
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:100

Date
11/12/20

North

Drawn
TN, GL

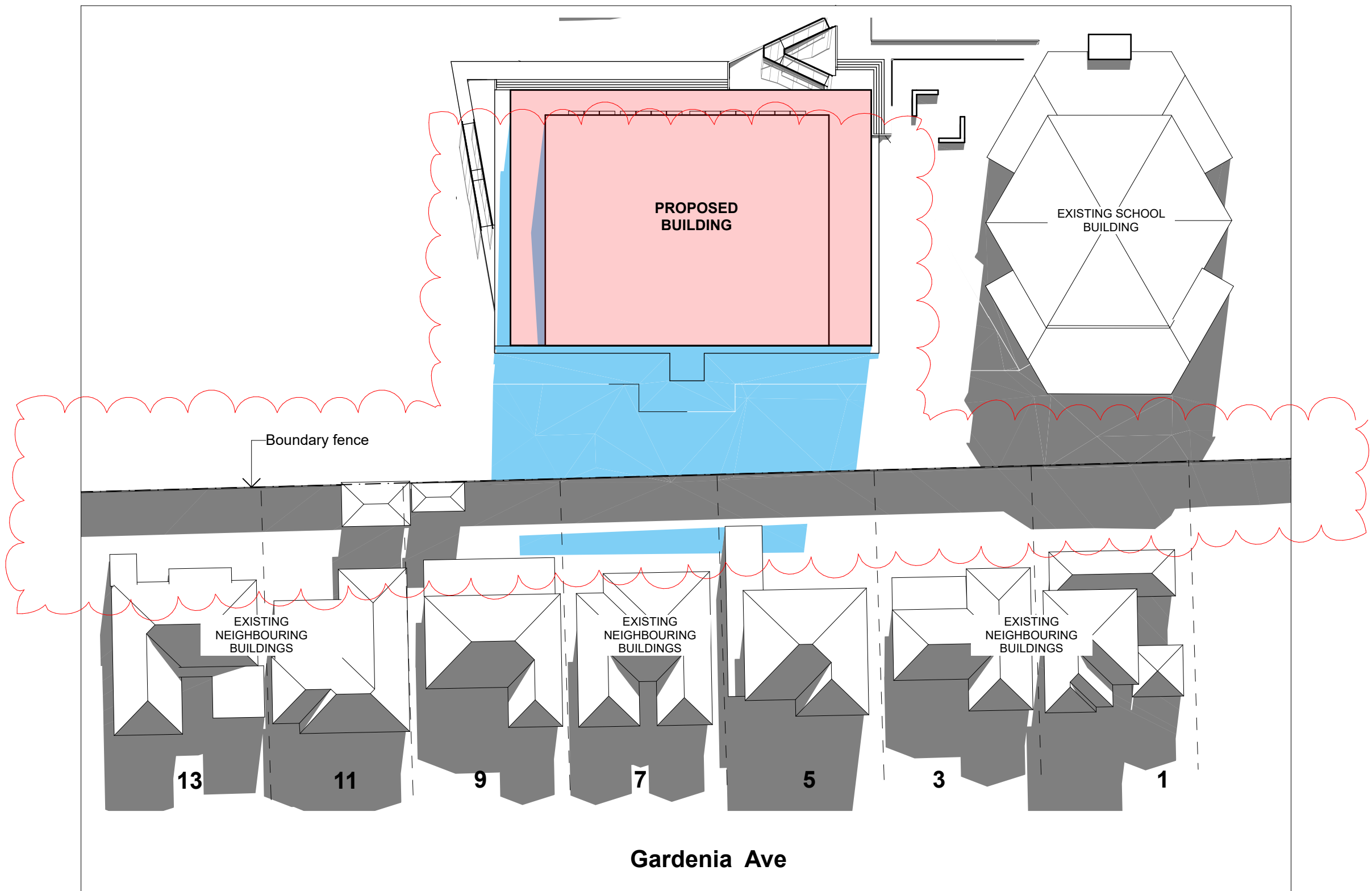
Project
Nepean Creative and
Performing Arts High School

Checked
MK

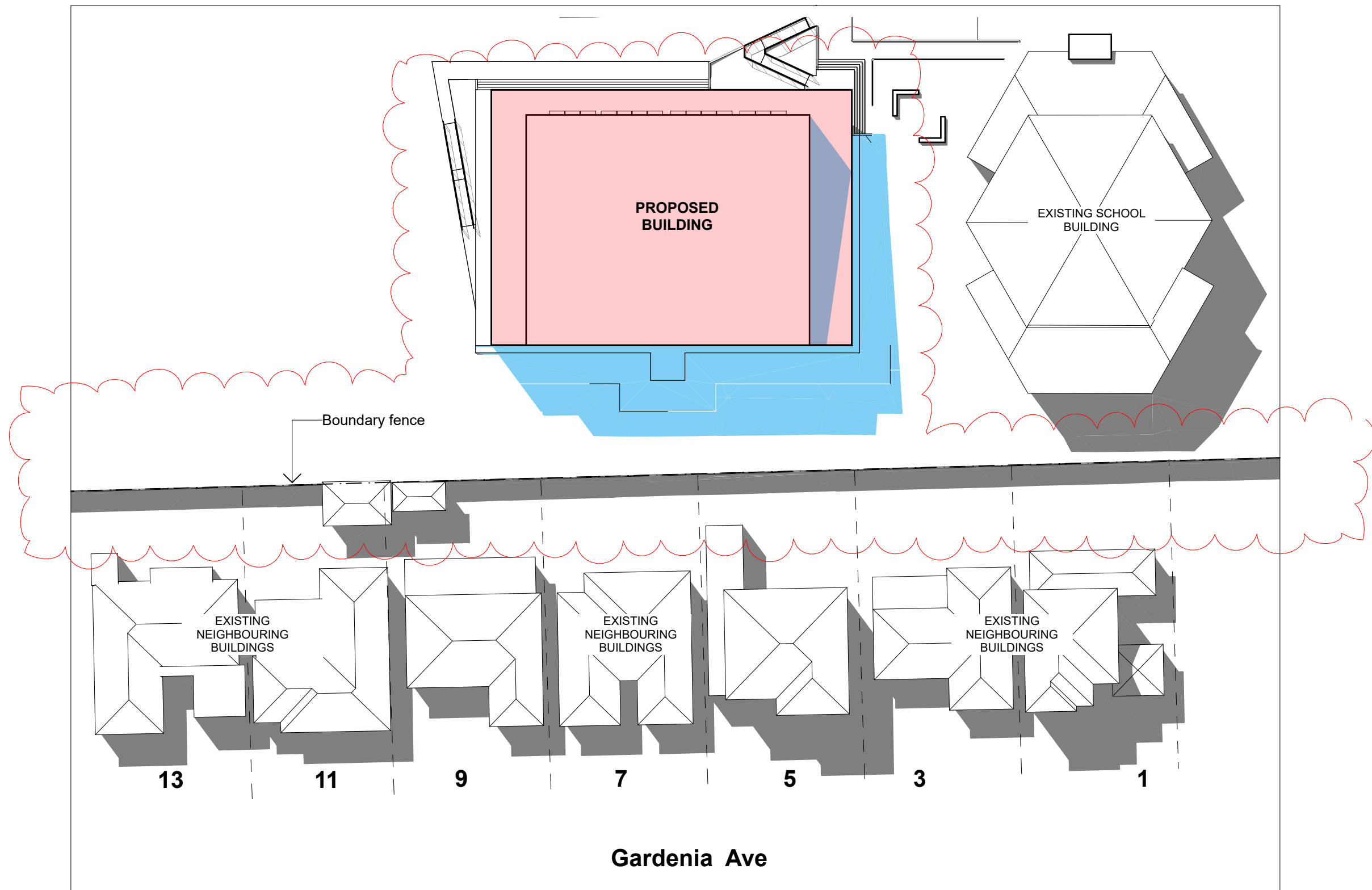
Status
Development
Application

Drawing
External Colours Scheme

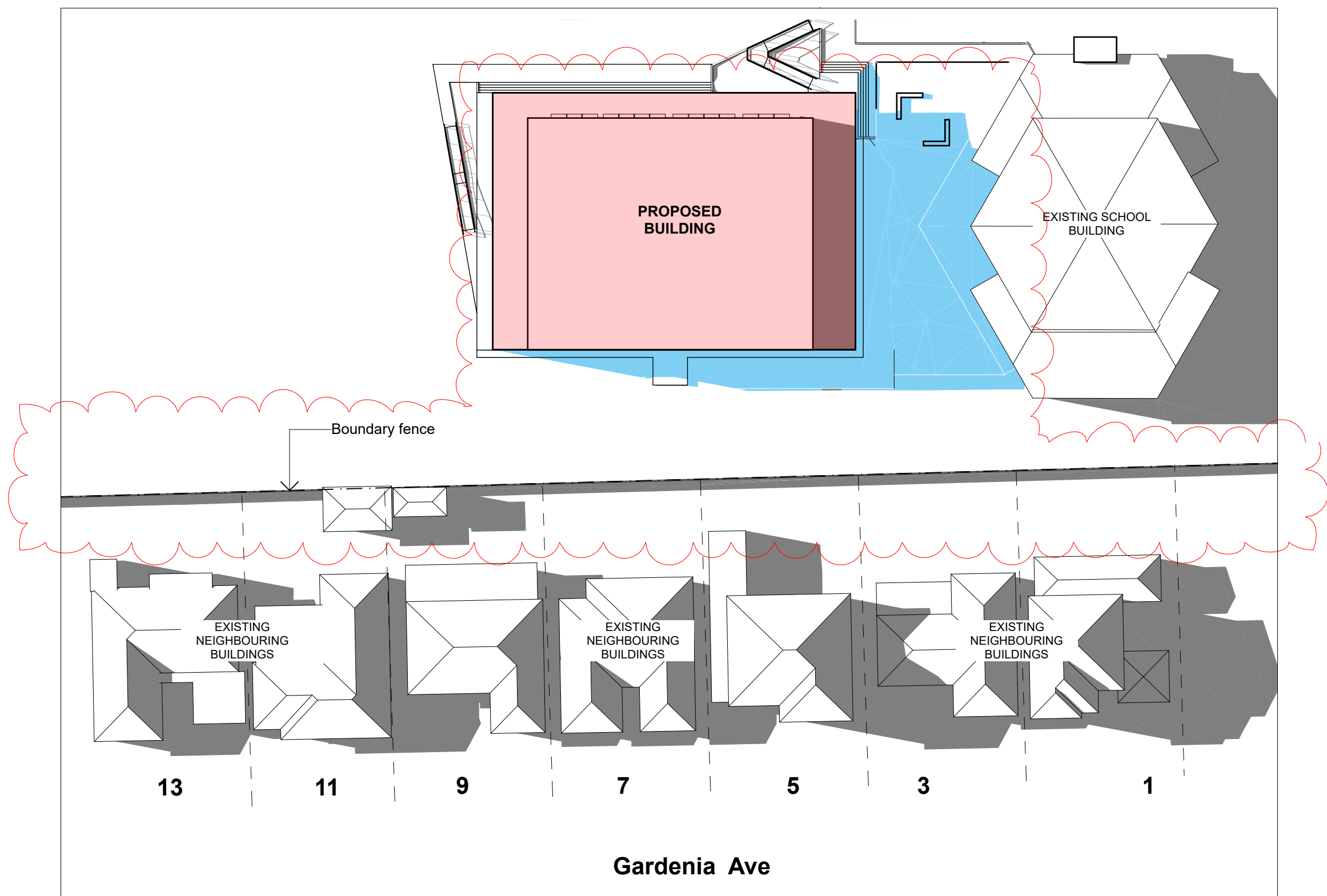
Project No.	Revision	Drawing No.
20001	A	DA700



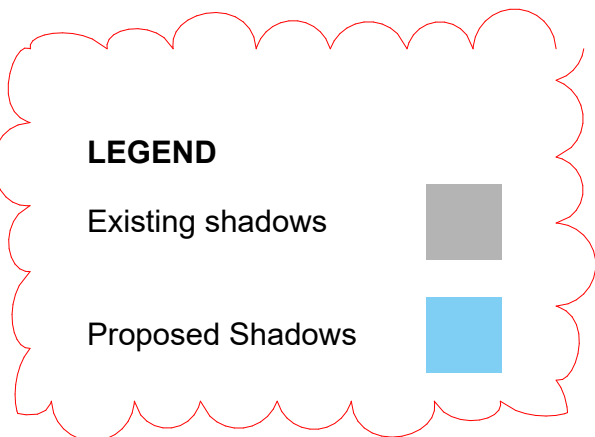
1 Winter Solstice (21 June) - 9:00 am
1:500



1 Winter Solstice (21 June) - 12:00 noon
1:500



1 Winter Solstice (21 June) - 3:00 pm
1:500



General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing, BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application
B	11/2/21	Additional Information

Client
SINSW



Architect

BKA Architecture

SYDNEY
Suite 104,
77 Dunning Ave,
Roseberry,
NSW 2018
T: +61 2 9318 9200
E: bka@bka.com.au
W: www.bka.com.au

NEWCASTLE
19 Bolton St,
Newcastle
NSW 2300
T: +61 2 4926 5563

BYRON BAY
Unit 1,
10 Station St,
Bangalow
NSW 2479
T: +61 2 4926 5563

Scale at A1
1:500

Date
11/2/21

North



Drawn
TN, GL

Project

Nepean Creative and
Performing Arts High School

Checked

MK

Status

Development
Application

Drawing

Shadow Diagrams

Project No.

20001

Revision

B

Drawing No.

DA800



General Notes

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION

All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.

Rev	Date	Issue
A	11/12/20	Development Application

Client
SINSW

 **Education**
School Infrastructure

Architect
BKA Architecture

SYDNEY Suite 1.04, 77 Dunning Ave, Rosebery, NSW 2018 T: +61 2 9318 9200 E: bka@bka.com.au W: www.bka.com.au	NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563	BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563
--	--	---

Scale at A1

Date
11/12/20

North

Drawn
TN, GL

Project
Nepean Creative and
Performing Arts High School

Checked
MK

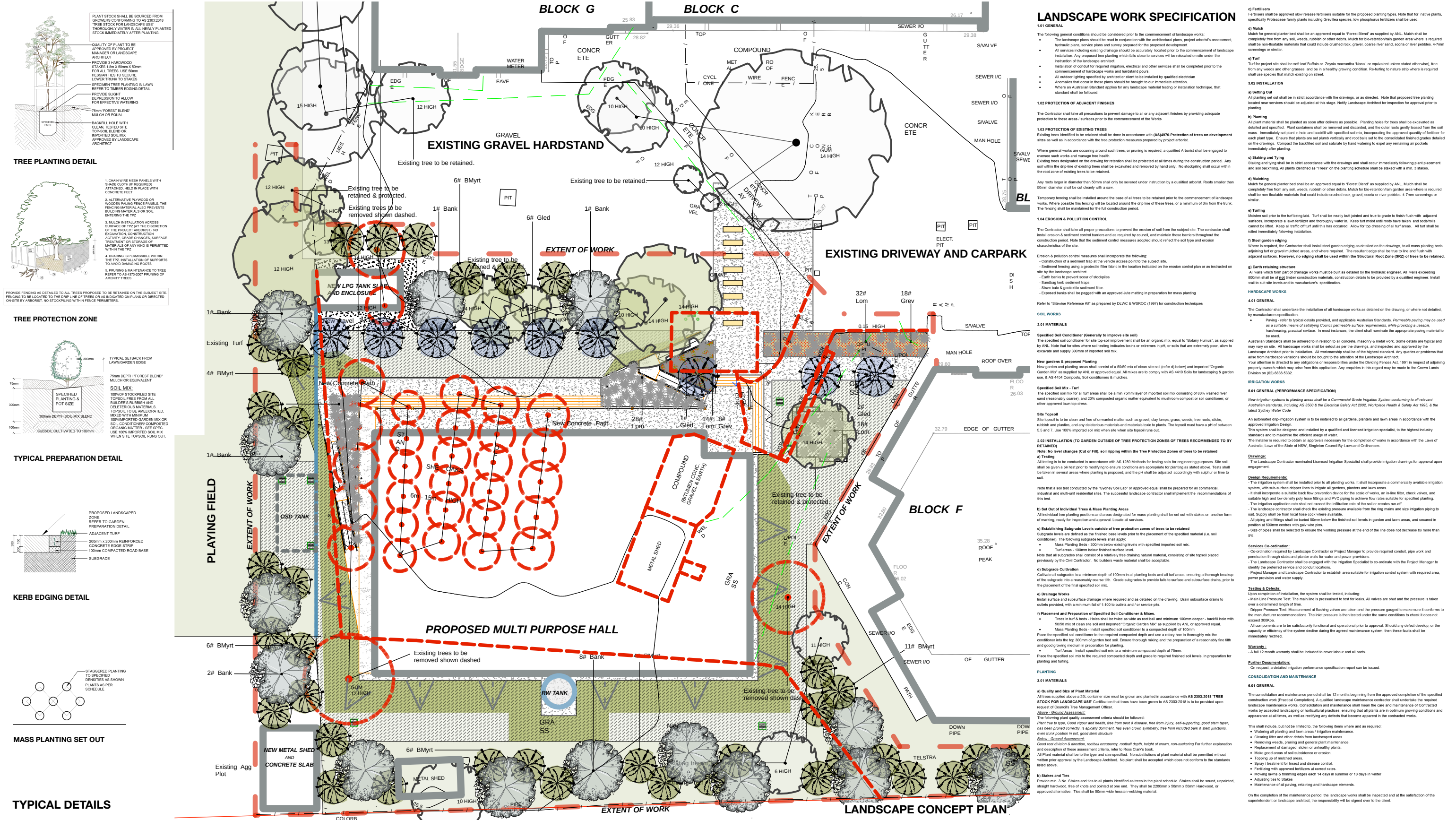
Status
Development
Application

Drawing
3D Perspective

Project No. 20001	Revision A	Drawing No. DA900
-----------------------------	----------------------	-----------------------------

Appendix C

Landscape Concept Plan



	Botanical Name: Grevillea 'Bronze Rambler' Common Name: Grevillea Pot Size: 3Lt Mature H x S: 0.3-1.5m x 2-4m Qty Required: 26		Botanical Name: Lomandra longifolia x confertifolia spp. pallida Common Name: Lomandra lime Tuff Pot Size: 5Lt Mature H x S: 0.3 - 0.6m x 0.3 - 0.6m Qty Required: 62		Botanical Name: Banksia Integrifolia Common Name: Coast Banksia (Native) Pot Size: 75Lt Mature H x S: 4-6m x 2-4m Qty Required: 14		Botanical Name: Backhousia Myrtifolia Common Name: Grey Myrtle (Native) Pot Size: 75Lt Mature H x S: 4-5m x 2-4m Qty Required: 34		Botanical Name: Gleditsia triacanthos inerms Common Name: 'Sunburst' Pot Size: 75Lt Mature H x S: 5-9m x 3-6m Qty Required: 9														
General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.	NOTES: TWO TREES PLANTED FOR EACH TREE PROPOSED TO BE REMOVED SUBJECT TO COUNCIL REQUIREMENTS.	<table><tr><th>Rev</th><th>Date</th><th>Issue</th></tr><tr><td>A</td><td>06/11/20</td><td>Schematic Design Submission</td></tr><tr><td>B</td><td>12/11/20</td><td>Schematic Design Submission</td></tr><tr><td>C</td><td>07/12/20</td><td>Schematic Design Submission</td></tr><tr><td>D</td><td>10/03/21</td><td>Issue to Client / DA Submission</td></tr></table>	Rev	Date	Issue	A	06/11/20	Schematic Design Submission	B	12/11/20	Schematic Design Submission	C	07/12/20	Schematic Design Submission	D	10/03/21	Issue to Client / DA Submission	Client SINSW 	Architect BKA Architecture SYDNEY Suite 1.04, 77 Dunning Ave, Roseberry, NSW 2018 T: +61 2 903 9200 E: bka@bka.com.au W: www.bka.com.au NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563 BYRON BAY Unit 1, 10 Station St, Bangalow, NSW 2479 T: +61 2 4926 5563	Scale at A1 1:100 Date 06/11/20	North  Drawn TN, DC	Project Address Nepean Creative and Performing Arts High School Checked JB Status Not for Construction	Drawing Concept Landscape Plan Project No. 20001 Revision D Drawing No. L 100
Rev	Date	Issue																					
A	06/11/20	Schematic Design Submission																					
B	12/11/20	Schematic Design Submission																					
C	07/12/20	Schematic Design Submission																					
D	10/03/21	Issue to Client / DA Submission																					

Appendix D

Request for Clause 4.6 variation

APPLICATION FOR VARIATION TO A DEVELOPMENT STANDARD

New multi-purpose hall at Nepean Creative and Performing Arts High
School



PR147922-3
2
15 February 2021

rpsgroup.com

CLAUSE 4.6 REQUEST

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
1	Submission with SEE and DA	Shaun Smith	Rob Dwyer	Rob Dwyer	29-01-21
2	Post-client review for DA submission	Shaun Smith	Rob Dwyer	Rob Dwyer	15-02-21

Approval for issue

Rob Dwyer



15 February 2021

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by:

RPS

Rob Dwyer
Planning Manager - Newcastle

Unit 2A, 45 Fitzroy Street
Carrington NSW 2294

T +61 2 4940 4200
E rob.dwyer@rpsgroup.com.au

Prepared for:

NSW Department of Education (SI NSW)

Thu Thanapalasuntheram
Project Officer – Infrastructure Delivery

GPO BOX 33
SYDNEY NSW 2001

T
E

Contents

1	INTRODUCTION	1
1.1	Key matters	1
2	CLAUSE 4.6 EXCEPTIONS TO DEVELOPMENT STANDARDS	4
3	JUSTIFICATION FOR EXCEPTION TO THE BUILDING HEIGHT STANDARD	6
3.1	Consistency with the development standard objectives and the zone objectives (clause 4.6(4)(a)(ii))	6
3.2	Sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b)).....	8
3.3	Compliance is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a))	8
4	CONCLUSION	10

Figures

Figure 1	Location plan – Multi-purpose hall at Nepean CAPA High School	2
Figure 2	Proposed building height and existing ground levels.....	3

1 INTRODUCTION

An application is made to vary the maximum building height development standard in relation to a development application (DA) for a new multi-purpose hall at the Nepean Creative and Performing Arts (CAPA) High School at 115-119 Great Western Highway, Emu Plains, NSW.

This application is made having regard to:

- The provisions of Clause 4.6 *Penrith Local Environmental Plan 2010* (PLEP 2010);
- *Varying development standards: A Guide* (August 2011) prepared by the Department of Planning and Infrastructure (DPIE); and
- Key principles established by the NSW Land and Environment Court.

1.1 Key matters

- The subject site is zoned R2 Low Density Residential under PLEP 2010. Under the R2 Low Density Residential zone educational facilities are not nominated as a “permitted with consent” use. However, *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* applies to the site and under Clause 35(1) development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. For the purpose of Clause 35(1) the R2 Low Density Residential zone is a prescribed zone. Hence the proposed development is a permissible use on the site.
- The maximum building height shown for the subject site on the *Height of Buildings Map* in PLEP 2010 is 8.5 metres.
- The maximum height of the proposed multi-purpose hall will be 10.27 metres measured from the existing ground level to the highest point of the sloping roof. **Figure 1** is a location plan of the proposed multi-purpose hall showing its context with existing school buildings and surrounding development. **Figure 2** is an extracted elevation plan with building height and existing ground levels.
- The existing ground level at the site of the proposed development is approximately 25.3 to 25.6 metres AHD. Council flood planning controls require a finished floor level of 26.5 metres AHD – 0.9 to 1.2 metres above the existing ground level.
- As articulated in the Statement of Environmental Effects for the proposed development three options for the location of the proposed development were considered during the planning phase. Whilst possible the key disadvantages of the alternative location sites were:
 - New building will not enhance the sense of arrival if its not in close proximity to the existing school Hall and Nepean Arts Centre.
 - Distance away from the arrival point and carparking will require a detailed way finding strategy for visitors to navigate through the campus.
 - If located directly adjacent to sports oval to the north it will be disconnected from the events precinct with inherent risk of damage to the facility.
 - If positioned adjacent to the general learning and teaching facilities, it will impact on future master planning options for future school growth / potential for additional school buildings to cater for growing school population.

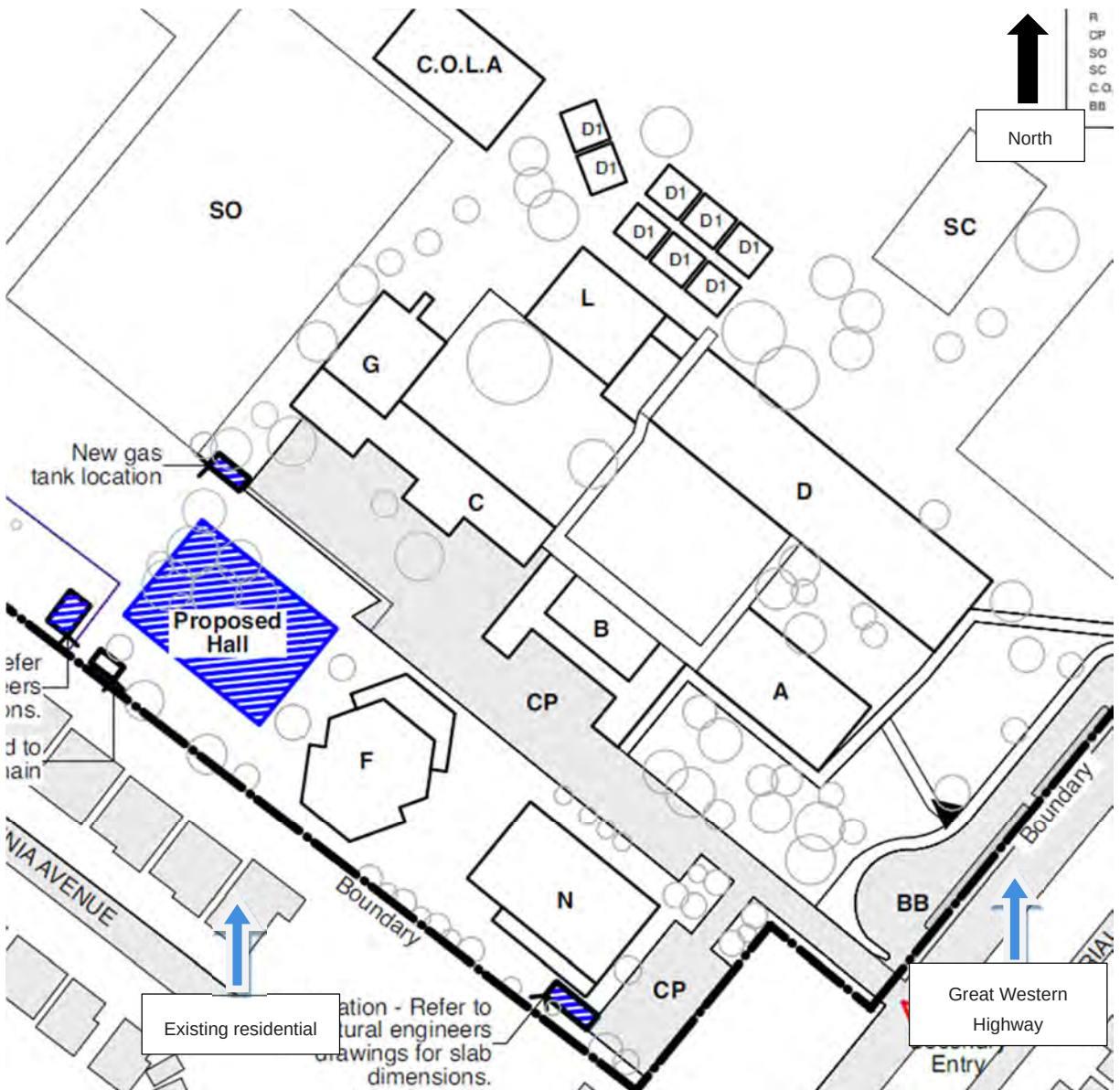


Figure 1 Location plan – Multi-purpose hall at Nepean CAPA High School

CLAUSE 4.6 REQUEST

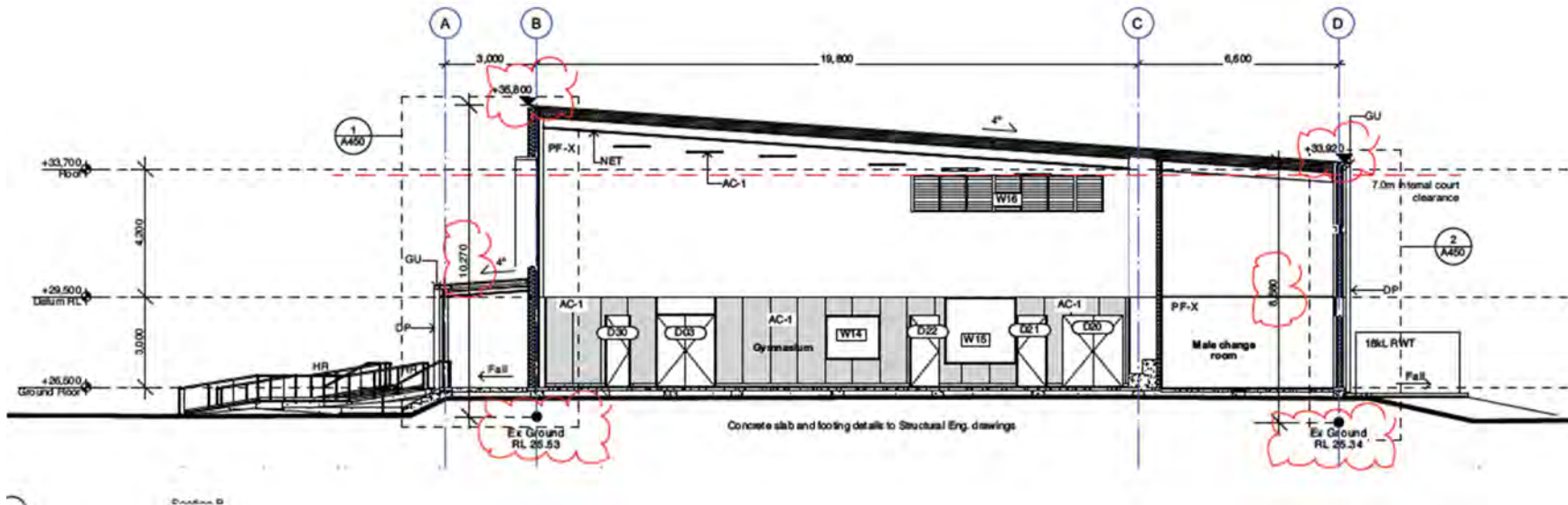


Figure 2 Proposed building height and existing ground levels.

2 CLAUSE 4.6 EXCEPTIONS TO DEVELOPMENT STANDARDS

The maximum height control is a “development standard” to which exceptions can be granted pursuant to clause 4.6 of the PLEP 2010.

The objectives and provisions of clause 4.6 are as follows:

Clause 4.6 Exceptions to development standards

- (1) *The objectives of this clause are as follows—*
 - (a) *to provide an appropriate degree of flexibility in applying certain development standards to particular development,*
 - (b) *to achieve better outcomes for and from development by allowing flexibility in particular circumstances.*
- (2) *Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.*
- (3) *Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating—*
 - (a) *that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
 - (b) *that there are sufficient environmental planning grounds to justify contravening the development standard.*
- (4) *Development consent must not be granted for development that contravenes a development standard unless—*
 - (a) *the consent authority is satisfied that—*
 - (i) *the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
 - (ii) *the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and*
 - (b) *the concurrence of the Secretary has been obtained.*
- (5) *In deciding whether to grant concurrence, the Secretary must consider—*
 - (a) *whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
 - (b) *the public benefit of maintaining the development standard, and*
 - (c) *any other matters required to be taken into consideration by the Secretary before granting concurrence.*

CLAUSE 4.6 REQUEST

(6) *Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if—*

(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or

(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.

(7) *After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).*

(8) *This clause does not allow development consent to be granted for development that would contravene any of the following—*

(a) a development standard for complying development,

(b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,

(c) clause 5.4,

(ca) clause 6.2 or 6.3,

(cb) clause 7.11.

The development standard in clause 4.3 of PLEP 2010 is not “expressly excluded” from the operation of clause 4.6 of PLEP 2010. This submission will address the requirements of subclauses 4.6(3) & (4) of PLEP 2010 in order to demonstrate that the exception sought is consistent with the exercise of “an appropriate degree of flexibility” in applying the development standard and is therefore consistent with objective 1(a) of Clause 4.6. In this regard it is noted that the extent of the discretion afforded by subclause 4.6(2) is not numerically limited as compared with the development standards referred to in subclause 4.6(6) for example.

The balance of this request will be divided into the following sections, each dealing with the nominated aspect of clause 4.6:

- Consistency with the development standard objectives and the zone objectives (clause 4.6(4)(a)(ii));
- Sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b)); and
- Compliance is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a)).

Where necessary the information addresses key principles established by the NSW Land and Environment Court.

3 JUSTIFICATION FOR EXCEPTION TO THE BUILDING HEIGHT STANDARD

3.1 Consistency with the development standard objectives and the zone objectives (clause 4.6(4)(a)(ii))

The objectives and provisions of clause 4.3 are as follows:

Clause 4.3 Height of buildings

(1) *The objectives of this clause are as follows—*

- (a) *to ensure the height of buildings is compatible with that of adjoining development and the overall streetscape,*
- (b) *to minimise the impact of overshadowing, visual impact and loss of privacy on adjoining properties and open space areas.*

(2) *The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.*

The Height of Buildings Map nominates a maximum height of 8.5m for the site. It is hereby requested that an exception to this development standard be granted pursuant to clause 4.6 to permit a breach to a maximum of 10.27m in height.

In order to address the requirements of subclause 4.6(4)(a)(ii), each of the relevant objectives of clause 4.3 of PLEP 2010 are addressed in turn below.

Objective (a) - To ensure the height of buildings is compatible with that of adjoining development and the overall streetscape,

Response – Figure 2 is an extracted elevation plan showing the south-east elevation and highlighting the component of the roofline which exceeds the building height control. The area of the building that exceeds the building height standard is located at the northern extent of the building and faces towards existing school buildings. The southern extent of the proposed building is approximately 16 metres from the common property boundary between the school and existing residential lots to the south.

The proposed design is an appropriate response to the constraints of the site. The hall is designed as a multi-purpose space to meet school needs and NSW Department of Education Educational Facilities Standards and Guidelines (EFSG) standards. It will facilitate indoor sports with large storage requirements to house sporting and performing arts equipment. The proposed multi-purpose hall will be compatible with the architecture of the existing hall and strengthen the school's current relationships with the wider community and school groups.

The proposed multi-purpose hall is approximately 16 metres from the common property boundary between the school and existing residential lots to the south. Between the proposed hall and the common property boundary are a number of mature trees which provide significant visual screening from the school for residents to the south. Trees along the common property boundary will be retained. A 1.8 metre colourbond fence runs along the common property boundary.

From a streetscape perspective the proposed development will not be visible from the Great Western Highway or surrounding residential streets.

Objective (a) refers to being "compatible" with adjoining development and the streetscape. It is considered that "compatible" does not promote "sameness" in built form, but rather requires that development fits comfortably with its urban context. Of relevance to this assessment are the comments of Roseth SC in *Project Venture Developments Pty Ltd v Pittwater Council* [2005] NSWLEC 191 as stated on the following page.

CLAUSE 4.6 REQUEST

"22 There are many dictionary definitions of compatible. The most apposite meaning in an urban design context is capable of existing together in harmony. Compatibility is thus different from sameness. It is generally accepted that buildings can exist together in harmony without having the same density, scale or appearance, though as the difference in these attributes increases, harmony is harder to achieve."

The proposed height encroachments are distanced from the adjacent residential dwellings to the south and the Great Western Highway. Existing tree screening between the proposed building and the adjacent residential dwellings will remain. It is noted that the future character of the land subject of the proposed development will remain as a high school. The overall massing of the proposed building is sympathetic with existing school buildings.

Accordingly, it is considered that the scale of the building is suitably mitigated by its sloping roof design and through its integration with the surrounding school building landscape. It provides compatibility with existing development on the school site, is consistent with the future character of the site and existing tree screening will remain. The height breach is considered appropriate and supportable in design and scale and satisfies Objective (a).

Objective (b) - to minimise the impact of overshadowing, visual impact and loss of privacy on adjoining properties and open space areas.

Response – The proposed building will be located approximately 16 metres from the common property boundary between the school and existing residential lots to the south. Shadow diagrams for the proposed development, refer to Appendix B of the Statement of Environmental Effects (RPS, PR147922-1) show only a marginal increase in overshadowing on adjoining properties at 9AM on 21 June. No overshadowing occurs after approximately 11AM onwards.

Visually the proposed development will result in minimal impact to adjoining properties. The 16 metre separation between existing development and the proposed is considered appropriate and tree screening along the common boundary will remain. The proposed building will sit comfortably in the setting and be integrated into the high school character of the site.

The addition of the non-compliant height will not increase the shadowing caused by a compliant scheme due to its location within the high school site and its generous setback to the common property boundary. The additional height proposed will not increase the potential for overlooking due to its setback and intended use. Location of the windows and doors of the proposed multi-purpose hall and the existing fence and established vegetation on the site near the fence will ensure privacy of the surrounding residential dwellings is maintained.

The proposed development is therefore consistent with the objectives for maximum height, despite the numeric non-compliance.

Zone Objectives

Clause 4.6 (4) also requires consideration of the relevant zone objectives. The site is zoned R2 Low Density Residential under PLEP 2010. Under the R2 Low Density Residential zone educational facilities are not nominated as a permitted with consent use. However, *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017* applies to the site and under Clause 35(1) development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. For the purpose of Clause 35(1) the R2 Low Density Residential zone is a prescribed zone. Hence the proposed development is a permissible use on the site. The objectives of the R2 Low Density Residential zone and consideration of the proposed development against the objectives are provided below.

- To provide for the housing needs of the community within a low-density residential environment.

The proposal is located within the confines of an existing school site. Whilst the proposal does not provide housing it does provide educational facilities needed by the community. The proposed development is consistent with this objective.

- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

The proposal will enable Nepean CAPA to provide multi-purpose facilities. . Day to day needs of residents attending the school will be met. The proposed development is consistent with this objective.

- To promote the desired future character by ensuring that development reflects features or qualities of traditional detached dwelling houses that are surrounded by private gardens.

The proposed development will form part of the existing environment of Nepean CAPA High School. Considerable separation between the proposed building and existing residential development, mostly detached dwellings, will not impact upon the desired future character of the area. The proposed development is consistent with this objective.

- To enhance the essential character and identity of established residential areas.

The proposal will not interfere with the ability to enhance the essential character and identity of the surrounding residential areas. The proposed development is consistent with this objective.

- To ensure a high level of residential amenity is achieved and maintained.

The proposal will not interfere with the residential amenity of the surrounding area. The proposed development is not inconsistent with this objective.

- To provide temporary overnight accommodation for the working population and businesses in the area.

The proposed development does not provide temporary overnight accommodation but is not inconsistent with this objective.

The proposed development is therefore consistent with the objectives of the zone, despite the numeric non-compliance to building height and as such is considered to be in the public interest.

3.2 Sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b))

There are sufficient environmental planning grounds to justify the variation of the height control and the variation in height will achieve a better outcome for and from development, particularly given that:

- The multi- purpose hall is designed to meet the school needs and NSW Department of Education EFSG standards. It will facilitate indoor sports with large storage requirements to house sporting and performing arts equipment and consequently requires additional height for these essential purposes.
- The existing ground level at the site of the proposed development is approximately 25.3 to 25.6 metres AHD. Council flood planning controls require a finished floor level of 26.5 metres AHD which is 0.9 to 1.2 metres above the existing ground level. Based upon this situation the building upon the finished floor level can be no greater than 7.3 - 7.6 metres above the finished floor level to comply with the building height control. The height variation occurs in part due to the planning control level.
- The proposed development provides a modest building mass and articulated built form. Strict compliance with the building height standard would result in a multi- purpose hall that does not meet the NSW Department of Education EFSG standards.
- The maximum height encroachment occurs to the northern end of the building.
- The proposed height variation will not be visually dominant from the street frontage of the Great Western Highway or adjoining properties to the south. This is due to the sloped roofline.
- The additional building height will not result in any overshadowing or loss of privacy to adjoining properties.

3.3 Compliance is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a))

In *Wehbe V Pittwater Council (2007) NSW LEC 827* Preston CJ sets out ways of establishing that compliance with a development standard is unreasonable or unnecessary. It states, inter alia:

“An objection under SEPP 1 may be well founded and be consistent with the aims set out in clause 3 of the Policy in a variety of ways. The most commonly invoked way is to establish that compliance with the

CLAUSE 4.6 REQUEST

development standard is unreasonable or unnecessary because the objectives of the development standard are achieved notwithstanding non-compliance with the standard."

However, in *Four2Five v Ashfield Council* [2015] NSWLEC 90, the Land and Environment Court said that whether something was 'unreasonable or unnecessary' is now addressed specifically in clause 4.6(4)(a)(ii), with separate attention required to the question of whether compliance is unreasonable or unnecessary. Accordingly, while the objectives of the standard are achieved despite non-compliance with the standard, this request goes further. It seeks to demonstrate that requiring strict adherence to the standard would be 'unreasonable or unnecessary' for reasons that are additional to mere consistency with the development standard.

Preston CJ in the judgement then expressed the view that there are 5 different ways in which an objection may be well founded and that approval of the objection may be consistent with the aims of the policy, as follows (with emphasis placed on number 1 for the purposes of this Clause 4.6 variation):

1. *The objectives of the standard are achieved notwithstanding non-compliance with the standard*
2. *The underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary;*
3. *The underlying object of purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable;*
4. *The development standard has been virtually abandoned or destroyed by the Council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable;*
5. *The zoning of the particular land is unreasonable or inappropriate so that a development standard appropriate for that zoning is also unreasonable and unnecessary as it applies to the land and compliance with the standard that would be unreasonable or unnecessary. That is, the particular parcel of land should not have been included in the particular zone.*

Additionally, in an analogous context, in *Botany Bay City Council v Saab Corp* [2011] NSWCA 308, the Court of Appeal said that a requirement may be unreasonable when 'the severity of the burden placed on the applicant is disproportionate to the consequences attributable to the proposed development' (at paragraph 15).

Having regard to the above, it is considered that compliance with the maximum building height development standard is unreasonable or unnecessary in the circumstances of this case for the reasons set out below:

- The development achieves the objectives of the zone.
- The development achieves the objectives of the height of buildings development standard, notwithstanding the numerical non-compliance.
- Strict compliance with the height control will inevitably result in the following consequences:
 - It will result in a result in a multi-purpose that does not meet the NSW Department of Education EFSG standards.
 - It will result in a larger and lower building that would have increased bulk and be less compatible with the existing school hall, which if required to be reduced would then compromise the ability of the development to meet the day to day needs to the local residents.

Each of these consequences carries a social, economic, and environmental cost and would lead to a suboptimal environmental planning outcome (in comparison with the proposed development).

Given that compliance with the zone and development standard objectives is achieved, insistence on strict compliance with the building height standard is unreasonable and unnecessary in the circumstances of the case. The proposal is consistent with the relevant zone objectives and will result in a better planning and environmental outcome for the site. The additional height allows for a building footprint and multi-purpose hall that will meet NSW Department of Education standards.

The proposal is therefore justified on environmental planning grounds. For the reasons above, the proposed building height variation is consistent with the requirements of Clause 4.6(3) of the LEP.

4 CONCLUSION

The proposed design is an appropriate response to the constraints of the site. The proposed multi-purpose hall is designed as a space to meet school needs and NSW Department of Education Educational Facilities Standards and Guidelines (EFSG) standards. It will facilitate indoor sports with large storage requirements to house sporting and performing arts equipment. The multi-purpose hall will be compatible with the architecture of the existing hall and strengthen the school's current relationships with the wider community and school groups.

From a streetscape perspective the proposed development will not be visually dominant from the Great Western Highway or surrounding residential streets.

The development is consistent with the objectives of the building height development standard and the objectives for development within the R2 Low Density Residential on which the development is proposed to be carried out.

The proposal will provide direct employment opportunities during construction and indirect employment through the companies it will service and also through supply contracts for equipment and maintenance.

The contravention of the building height development standard in the proposal does not cause any matter of significance for State or regional environmental planning. Beyond the non-compliance with the height standard, the proposal complies with the relevant development standards of the LEP and the relevant controls of the DCP.

The contravention to the standard is considered to be in the public interest and there would be no public benefit in not supporting the variation request given the benefits to the school and community that the design affords.

Accordingly, for the reasons stated above, we respectfully suggest that compliance with the maximum height is unreasonable and unnecessary and request that the consent authority permit the variation to the maximum building height development standard.

Appendix E

Flora and Fauna Assessment

A stylized topographic map with contour lines in shades of green and grey, covering the left side of the page.

Nepean School Flora and Fauna Assessment

MBB Group Pty Ltd

DOCUMENT TRACKING

Project Name	Nepean School Flora and Fauna Assessment
Project Number	21SYD - 18159
Project Manager	Roshan Kalugalage
Prepared by	Julia Ryeland
Reviewed by	Mike Lawrie
Approved by	David Bonjer
Status	Final
Version Number	2
Last saved on	12 February 2021

This report should be cited as 'Eco Logical Australia 2021. *Nepean School Flora and Fauna Assessment*. Prepared for MBB Group Pty Ltd.'

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Ross Tiernan

Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and MBB Group Pty Ltd. The scope of services was defined in consultation with MBB Group Pty Ltd, by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Template 2.8.1

Contents

1. Introduction	3
1.1 Purpose of this report.....	3
1.2 Subject site and subject site	3
1.3 Proposed work.....	3
1.4 Impact Assessment.....	3
2. Legislative context.....	5
3. Methodology.....	6
3.1 Literature review and database search	6
3.2 Field survey.....	6
3.2.1 Vegetation communities.....	6
3.2.2 Fauna survey	6
3.2.3 Survey limitation	7
4. Results	8
4.1 Literature review and database search	8
4.1.1 Vegetation communities.....	8
4.1.2 Threatened species	8
4.2 Field survey.....	11
4.2.1 Vegetation validation.....	11
4.2.2 Threatened species habitat	14
5. Impact assessment	16
5.1 Summary of impacts.....	16
5.1.1 Direct impacts	16
5.1.2 Indirect impacts	18
5.2 NSW <i>Biodiversity Conservation Act 2016</i> (BC Act)	18
5.2.1 Area clearing threshold.....	19
5.2.2 Biodiversity Values Map	19
5.2.3 Key Threatening Processes	19
5.2.4 Test of Significance	19
5.3 <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).....	20
6. Mitigation Measures and Recommendations.....	21
6.1 Prior to the works beginning	21
6.2 During construction works.....	21
7. Conclusion.....	22

8. References	23
Appendix A Likelihood of occurrence table	24
Appendix B Biodiversity Conservation Act 2016 Tests of Significance	25
B1 Microbats	25
B2 <i>Pteropus poliocephalus</i> (Grey-headed Flying-fox)	27
Appendix C Significant Impact Criteria (EPBC Act).....	29
C1 Environment Protection and Biodiversity Conservation Act 1999 Assessment of Significance for the Grey-headed Flying Fox	29
Appendix D Ultrasonic Analysis Report	32
Appendix E Species Planting List	47

List of Figures

Figure 1: Study area location and surrounding area.....	4
Figure 2: Previous vegetation mapping within the locality (OEH, 2013)	9
Figure 3: Threatened species previously recorded in the locality (BioNet, 2021)	10
Figure 4: Plant natives and exotic cleared vegetation located within the subject site.....	12
Figure 5: Site photos of existing vegetation.....	13
Figure 6: Direct Construction impacts of the proposed works	17
Figure 7. Call profile for <i>Austronomus australis</i> (White-striped Free-tailed Bat) recorded on WOL-05 at 0124 (1.24 a.m.) on 29 January 2021.	41
Figure 8. Call profile for <i>Chalinolobus gouldii</i> (Gould's Wattled Bat) recorded on WOL-04 at 2302 (11.02 p.m.) on 25 January 2021.....	41
Figure 9. Call profile for <i>Chalinolobus morio</i> (Chocolate Wattled Bat) recorded on WOL-04 at 0409 (4.09 a.m.) on 26 January 2021.	42
Figure 10. Potential call profile for <i>Falsistrellus tasmaniensis</i> (Eastern False Pipistrelle), <i>Scoteanax rueppellii</i> (Greater Broad-nosed Bat), <i>Scotorepens orion</i> (Eastern Broad-nosed Bat) recorded on WOL-04 at 0432 (4:32 a.m.) on 26 January 2021.....	42
Figure 11. Call profile for <i>Micronomus norfolkensis</i> (Eastern Coastal Fee-tailed Bat) recorded on WOL07 at 2304 (11:04 p.m.) on 25 January 2021.	43
Figure 12. Call profile for <i>Miniopterus orianae oceanensis</i> (Large Bent-winged Bat) recorded on WOL-04 at 0144 (1:44 a.m.) on 26 January 2021.....	43
Figure 13. Potential call profile for <i>Myotis macropus</i> (Southern Myotis) recorded on WOL-04 at 2051 (8:51 p.m.) on 25 January 2021.....	44
Figure 14. Potential call profile for <i>Myotis macropus</i> (Southern Myotis) / <i>Nyctophilus gouldi</i> (Gould's Long-eared Bat) / <i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat) recorded on WOL05 at 2033 (8:33 p.m.) on 27 January 2021.	44
Figure 15. Call profile <i>Ozimops ridei</i> (Ride's Free-tailed Bat) recorded on WOL-04 at 2304 (11:04 p.m.) on 25 January 2021.	45

Figure 16. Potential call profile for *Vespadelus pumilus* (Eastern Forest Bat) / *Vespadelus troughtoni* (Eastern Cave Bat) / *Vespadelus vulturnus* (Little Forest Bat) recorded on WOL-04 at 0037 (12:37 a.m.) on 28 January 2021.45

List of Tables

Table 1: Legislative context of the proposed development.....	5
Table 2: Direct impact to vegetation within the subject site	16
Table 3: Area clearing threshold	19
Table 4: Correlations between current and previous nomenclature for the Free-tailed bats of NSW ...	33
Table 5: Microbat species diversity recorded ultrasonically within the Subject site	37
Table 6: Microbat species diversity recorded ultrasonically at each survey site at the Subject site between the 25 and 29 of January 2021.....	38

Abbreviations

Abbreviation	Description
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016</i>
BC Regulation	<i>Biodiversity Conservation Regulation 2017</i>
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
DAWE	Commonwealth Department of Agriculture, Water and Environment
DPIE	NSW Department of Planning, Industry and Environment
ELA	Eco Logical Australia
ELA	Eco Logical Australia
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFA	Flora and Fauna Assessment
GIS	Geographic Information System
GPS	Global Positioning System
KFH	Key Fish Habitat
MNES	Matters of National Environmental Significance
NRAR	Natural Resources Access Regulator
PCT	Plant Community Type
SAII	Serious and Irreversible Impact
SEPP	State Environmental Planning Policy

Abbreviation	Description
STIF or TIF	Sydney Turpentine Ironbark Forest
TEC	Threatened Ecological Community

Executive Summary

Eco Logical Australia (ELA) was engaged by MBB Group to address the rejection of a tree removal plan, submitted to Penrith City Council (Council) on 11 November 2020. The removal of trees is required for the proposed construction of a new hall at the Nepean Creative and Performing Arts High School. However, the previous tree removal plan was rejected due to the following reasons:

Insufficient evidence to demonstrate that the trees are of ill health or poor structure

A vegetation permit will generally not be issued to facilitate Complying Development. A Development Application will be required if a complying development proposal does not meet the complying development controls in relation to trees and other vegetation.

As a result of this outcome, Council requested that additional information be provided to determine the viability of the proposed development. This request included addressing the following:

- *The removal of the trees does not impact on biodiversity/habitat.*
- *A thorough fauna survey has been undertaken, in particular a night-time survey and a survey over seasons.*
- *The proposed removal of trees can be sufficiently compensated for through the provision of replacement plantings;*

As such, ELA prepared a Flora and Fauna assessment (FFA), including a field survey and ultrasonic call detection for microchiropteran bat (microbat) species to address these concerns. A desktop and field survey (including nocturnal microbat surveys) was conducted in January 2021 to determine the vegetation community present on site and the presence of threatened fauna and flora. Although several threatened flora, fauna and ecological communities have been recorded in the surrounding area, none have previously been recorded on the subject site and none were observed during the diurnal field surveys. Several threatened microchiropteran species were recorded during the microbat surveys, all with low activity levels which indicated low densities on site.

The site is highly degraded, with mostly planted native vegetation and cleared/exotics. The ground is predominately covered by mulch and gravel. Although several microbat species were recorded on site, due to the degraded nature, low connectivity to surrounding habitat, absence of permanent water bodies and hollow bearing trees, the site provides limited foraging and roosting habitat for these species.

The proposed works will result in the removal of 0.10 ha of planted native vegetation, which provides marginal foraging habitat to the following species, which were recorded as present on site through ultrasonic detection:

- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*)

Three (3) other species listed as Vulnerable could potentially be present within the subject site including:

- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Eastern Cave Bat (*Vespadelus troughtoni*)
- Grey-Headed Flying Fox (*Pteropus poliocephalus*)

Tests of Significance in accordance with Section 7.3 of the *Biodiversity Conservation Act 2016* (BC Act) were undertaken for the above threatened species, which concluded that the proposed works are unlikely to have a significant impact. Therefore, the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not recommended.

A Significance Assessment in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was also undertaken for the Grey-Headed Flying fox, which also concluded that the proposed development is unlikely to have a significant impact.

1. Introduction

1.1 Purpose of this report

Eco Logical Australia Pty Ltd was engaged by MBB Group Pty Ltd to prepare a Flora and Fauna assessment (FFA) for the proposed construction of a new hall at the Nepean Creative and Performing Arts High School. The development footprint for the hall construction is situated within the current school grounds, consisting of both cleared and vegetated areas. The proposed development will be submitted as a Part 4 Development Application (DA) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This report describes the impacts on native vegetation, threatened species, populations and communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The impact assessment within this report is based on information gathered from database searches and field investigation. The report sets out the legislative context, methods used, impacts on the environment and recommendations to mitigate, or reduce these impacts.

1.2 Subject site and subject site

For the purposes of this assessment, the following terms have been defined:

- **Study area** – the area where survey was undertaken
- **Subject site** – The area outside of the subject site that may be indirectly impacted by the proposed activity (a 5km radius from the subject site).

1.3 Proposed work

The proposed work will involve the construction of a new hall in the south west of the school, within the current school boundaries (Figure 1). The construction of the hall will impact on some vegetation within study area. The study area (0.63 ha) contains a total of 0.27 ha of vegetation, the remainder of the study area is cleared consisting of exotic grasses and hard surfaces such as carparks (0.15 ha topped with gravel).

1.4 Impact Assessment

The assessment of impacts of the proposed works on threatened species and communities was undertaken in accordance with the following steps:

- Identification of known or potential habitat for threatened species and communities within the subject site and subject site
- Targeted surveys for microchiropteran bat (microbat) species
- Assessment of the likely impact of the proposed works to any threatened species or communities
- Identification of any additional controls or mitigation measures to reduce impacts

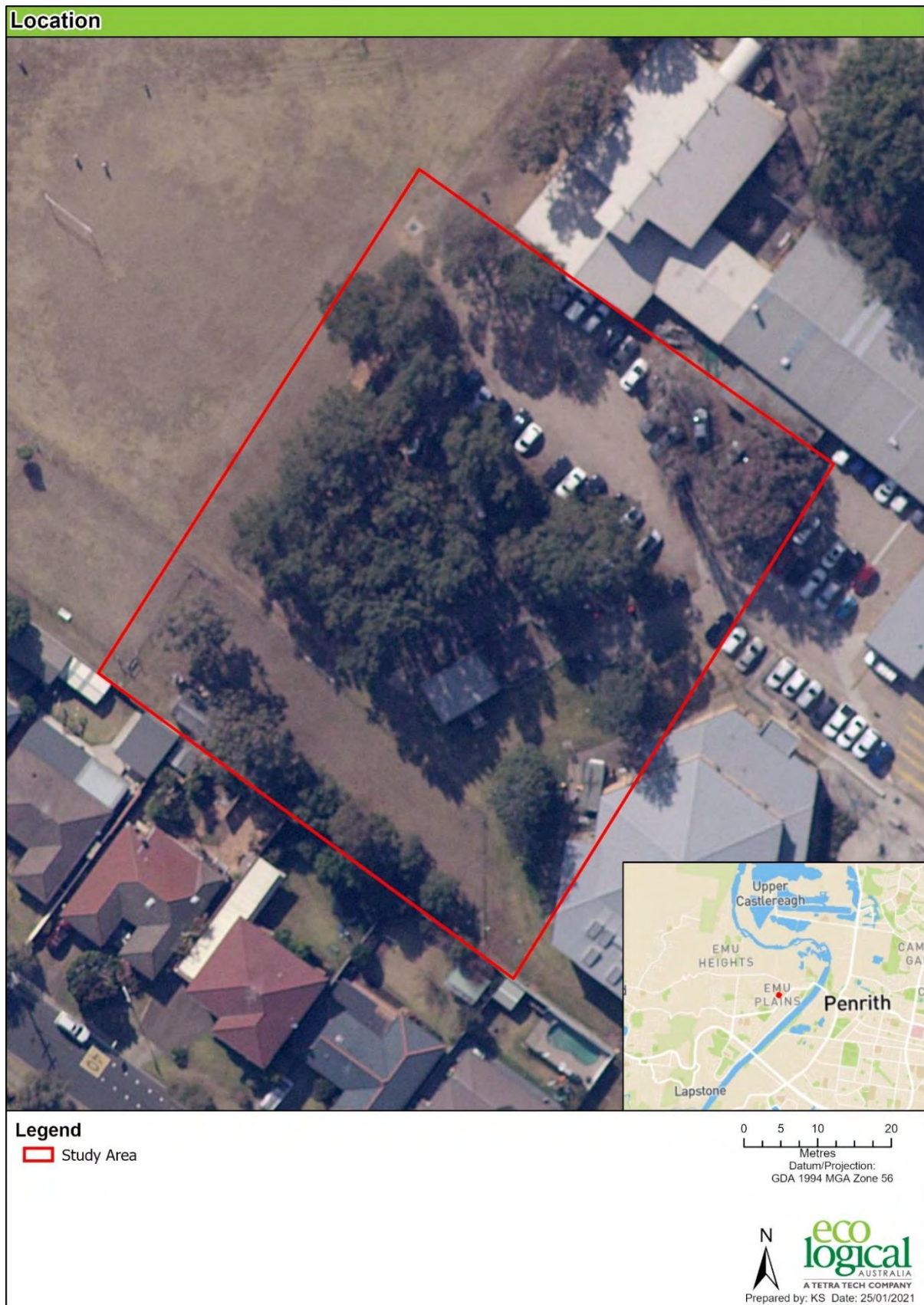


Figure 1: Study area location and surrounding area

2. Legislative context

Table 1: Legislative context of the proposed development

Name	Relevance to the project
Commonwealth	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act aims to protect Matters of National Environmental Significance (MNES), including vegetation communities and species listed under the EPBC Act. If a development is likely to have a significant impact on MNES, it is likely to be considered a 'Controlled Action' by the Commonwealth and requires assessment and approval by the Commonwealth in order to proceed. The MNES that have been considered during this assessment are: - Listed threatened species and communities - Listed migratory species
State	
Environmental Planning and Assessment Act 1979 (EP&A Act)	The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of development proposals. The proposed works are being assessed under Part 4 of the EP&A Act.
Biodiversity Conservation Act 2016 (BC Act)	The overall purpose of the BC Act is to provide the legislative framework to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. Among other things, the BC Act outlines the assessment requirements to determine whether a proposed development or activity (Part 4/Part 5 of the EP&A Act) is likely to significantly affect threatened species or ecological communities, or their habitats under section 7.3 of the Act, and whether the Biodiversity Offsets Scheme (BOS) will be triggered. If thresholds for the BOS and application of the Biodiversity Assessment Method (BAM) are triggered, a Biodiversity Development Assessment Report (BDAR) would be required. Triggers for the BOS and BAM are as follows: - Exceeding a native vegetation area clearance threshold relative to minimum lot size; or - Clearing of native vegetation identified on the NSW Government Biodiversity Values (BV) Map; or - A significant impact on a threatened species or ecological community (as assessed by a qualified ecologist). The BC Act also introduces the principle of Serious and Irreversible Impacts (SAII). SAII's are not a threshold trigger for the BOS however they must be addressed if a BDAR is required to be prepared. The BC Act requires a local council to reject a local development (under Part 4 of the EP&A Act) if an action is likely to have a serious and irreversible impact on biodiversity values. This report documents that clearing of native vegetation does not exceed the clearance threshold relative to minimum lot size; the study area is not mapped on the BV Map; it assesses the likelihood of threatened species and concludes that the development is not likely to have a significant impact on threatened species or their habitats; and as a result the BOS is not triggered by the development.
Planning Instruments	
State Environmental Planning Policy (SEPP) (Koala Habitat Protection) 2020	The Penrith City Council local government area (LGA) is not a listed LGA for which the State Environmental Planning Policy (Koala Habitat Protection) 2020 applies.
Local	
Penrith Local Environmental Plan (LEP) 2010	The subject site is not mapped on land that is located on the Terrestrial Biodiversity Layer of the Penrith LEP.

3. Methodology

3.1 Literature review and database search

A review of readily available databases pertaining to the ecology and environmental features of the subject site and study area, including existing vegetation mapping, was conducted to identify records of threatened species, populations and communities and their potential habitat. Databases and vegetation mapping that were reviewed included:

- BioNet (Atlas of NSW Wildlife) database search (5 km) threatened species, populations and ecological communities listed under the BC Act (accessed 22 January 2021).
- EPBC Act Protected Matters Search Tool (5 km) for threatened and migratory species, populations and ecological communities listed under the Commonwealth EPBC Act 1999 (accessed 22 January 2021).
- Remnant Vegetation of the western Cumberland subregion, 2013 Update (OEH, 2013)
- Aerial mapping and vegetation mapping to assess the extent of vegetation including mapped TECs listed under the BC Act and / or EPBC Act.

Aerial photography (Google Maps and SIX Maps) of the subject site and surrounds were also used to investigate the extent of vegetation cover and landscape features. In addition, relevant Geographic Information System (GIS) datasets (soil, geology, drainage) were reviewed.

Species from both the Atlas of NSW Wildlife and Protected Matters Search Tool were combined to produce a list of threatened species, populations and communities that may occur within the subject site (Appendix A).

3.2 Field survey

A field survey was conducted on 26 January 2021 by ELA ecologist Julia Ryeland. The field survey took approximately two hours. Conditions during the survey were calm and sunny (39 °C). The field survey aimed to complete the following:

- Determine best-fit Plant Community Type (PCT), condition and extent.
- Threatened flora and fauna habitat assessment.
- Hollow bearing tree search.
- Opportunistic fauna sightings.

3.2.1 Vegetation communities

Rapid point assessments were used to identify what vegetation communities and species were present within the subject site.

3.2.2 Fauna survey

Any opportunistic fauna sightings were noted during the field survey. Habitat features, such as hollow-bearing trees, culverts and rock outcrops, were marked spatially using a handheld GPS unit. In addition

to this, targeted searches for *Meridolum corneovirens* (Cumberland Plain Land Snail) were conducted under mature native canopy species.

Target surveys for microbats were also conducted via ultrasonic call detectors (Anabat Swift Passive Detectors, Titley Scientific) deployed across the site. Call detection can aid in identifying species and activity levels on site by analysis of high frequency, echolocation calls made by bats. Five Anabat recorders were deployed for four survey nights (25 January to 29 January 2021), automatically programmed to record between dusk and dawn (1800 – 600, giving a total of 20 Anabat survey nights. Detectors were evenly spaced, one in each corner of the site, and one in the centre of the site amongst vegetation. Four Anabats were attached to trees on site, and one to a fence adjacent an existing building. All detectors were placed so as that the microphone faced into the subject site. Microchiropteran calls were analysed in Anabat Insight (Version 1.9.2-0g2fd2328) (Titley Scientific) and Microbat identifications based upon the recorded calls were made by Rodney Armistead from ELA using regional based guides to the echolocation calls of microbats in New South Wales. The full description of methods for microbat surveys is presented in Appendix D.

3.2.3 Survey limitation

No additional targeted surveys for threatened flora and fauna species (other than those specified above) were conducted during the field survey. Instead, a habitat assessment was undertaken to determine the suitability of the subject site to provide habitat. Assessing the habitat features present was considered sufficient to assist in determining whether any threatened species are likely to be present and inform the potential requirements for impact assessments and pre-clearance surveys prior to works commencing.

4. Results

4.1 Literature review and database search

4.1.1 Vegetation communities

A review of the available vegetation mapping (OEH, 2013) returned no previously mapped vegetation within the study area (Figure 2). The nearest mapped native vegetation is approximately 530 m to the south west of the study area and 700 m to the east along the Nepean River. The following vegetation community was mapped in these areas:

- *PCT 835: Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion*

This vegetation community is equivalent to the threatened ecological community (TEC) *River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions* listed as an Endangered Ecological Community (EEC) under the BC Act, and Critically Endangered Ecological Community (CEEC) listed under the EPBC Act.

4.1.2 Threatened species

The BioNet Atlas search and EPBC Protect Matters Search Tool returned a total of 57 fauna species, 25 flora species and 23 TECs as occurring, or having the potential to occur, within a 5 km radius of the subject site. No threatened species have been previously recorded within the study area (Figure 3).



Figure 2: Previous vegetation mapping within the locality (OEH, 2013)

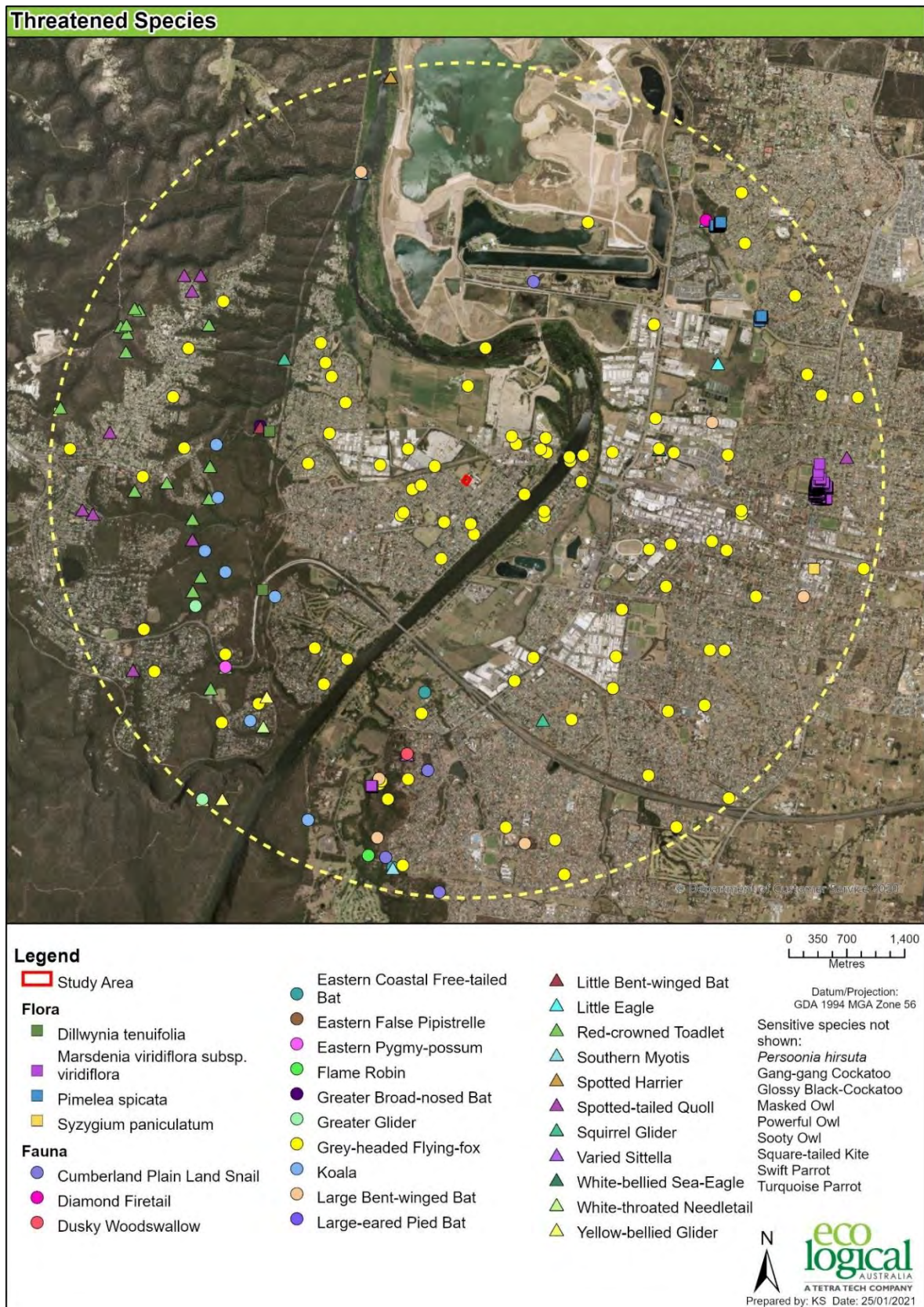


Figure 3: Threatened species previously recorded in the locality (BioNet, 2021)

4.2 Field survey

4.2.1 Vegetation validation

The field survey confirmed the presence of the following vegetation communities (Figure 4):

- **Planted natives** – a variety of planted native species that are not endemic to the area (poor).
- **Exotic/cleared** – cleared areas dominated by exotics or covered in gravel.

Below is a description of the vegetation identified during the field survey. No plant community types were identified, with all native vegetation having been planted. The majority of natives were non-endemic, and clearly planted by their occurrence in rows. Historically, the vegetation on site would have represented Cumberland Plains Woodland, but the site has previously been cleared and replanted with predominately natives.

4.2.1.1 Planted natives

This vegetation zone was characterised as follows:

- A patch of *Casuarina glauca* (Swamp Sheoaks) cover the majority of the site, occurring in rows (i.e. previously planted).
- On the southern boundary of the subject site, a single row of Narrow-leaved Bottlebrush (*Callistemon linearis*) occur.
- Several other planted natives occur on site including Silky Oak (*Grevillia robusta*), a single Red Ironbark (*Eucalyptus sideroxylon*), and a single Grey Box (*Eucalyptus moluccana*)

Much of the site with planted natives also had large mulch piles covering the ground layer. As such, little ground cover was able to grow within this area (

Figure 5).

4.2.1.2 Exotic/cleared

All ground cover vegetation and several trees represented exotic/cleared vegetation. Several *Poplar sp.* have been planted on site. The groundcover consisted of predominately managed *Stenotaphrum secundatum* (Buffalo grass) and sections of self-seeded *Solanum lycopersicum* (tomato) and *Tradescantia fluminensis* (Wandering Trad). A substantial section of the site was covered in gravel (

Figure 5).



Figure 4: Plant natives and exotic cleared vegetation located within the subject site



Figure 5: Site photos of existing vegetation

4.2.2 Threatened species habitat

The subject site is surrounded predominately by urban settlement, with minimal connectivity to other habitat patches. This would likely decrease the potential for threatened fauna to use the site for foraging, roosting or nesting. The habitat also lacks complexity and diversity with minimal midstory vegetation which would decrease the suitability for many species, particularly given the high abundance of exotic ground cover. No threatened species were observed on site, nor have been observed on site historically. Targeted survey for the Cumberland Plain Land Snail identified no presence of this species within the study area.

Several mature *Eucalyptus sp.* were observed on site, which may provide foraging habitat for highly mobile species such as the *Pteropus poliocephalus* (Grey-headed Flying Fox) and *Phascolarctos cinereus* (Koala), for which there are several records of each within 5 km of the subject site. However, the subject site has poor connectivity, no permanent water sources and is highly degraded. More suitable habitat is available for these species in the nearby Nepean River riparian habitat or the lower Blue Mountains. These alternative sites would provide better quality habitat and are therefore likely preferred by highly mobile species such as these. Given these species are most likely to forage in higher quality habitat located in the study area, the importance of the vegetation identified on the subject site during the field survey for these species is low.

Several Microchiropteran species were been observed on the subject site during nocturnal surveys, including *Miniopterus orianae oceanensis* (Large bent-winged Bat), *Chalinolobus dwyeri* (Large-eared Pied Bat) and *Miniopterus australis* (Little Bent-winged Bat). During the four observation nights, five threatened microbat species were recorded in low densities (indicated by low activity levels). This included:

Three (3) Vulnerable species listed under the BC Act were deemed to have been present within the subject site:

- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*)

Two (2) other species listed as Vulnerable could potentially be present within the subject site including:

- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Eastern Cave Bat (*Vespadelus troughtoni*)

However, the activity levels of these species were low, and as such it is likely that all species occur in low densities in the surrounding area. The site is highly degraded, with few important habitat features for these species (i.e. connectivity to waterways for foraging for *M. macropus* or hollowing bearing trees for roosting *M. norfolkensis* and *S. rueppellii*). These species likely use the site infrequently, potentially only moving through the site, and are unlikely to rely on the site for roosting or foraging. The surrounding areas present higher quality vegetation (i.e. along the Nepean River) and are likely to be preferred over that present on site. The full results of the microbat survey are provided in Appendix D.

The site is used by common fauna species however, such as *Gymnorhina tibicen* (Australian Magpie) and *Manorina melanocephala* (Noisy Miner), observed during the field survey. Several frog species were

also heard in the surrounding area including *Ranoidea caerulea* (Green Tree Frog), *Limnodynastes peronii* (Striped Marsh Frogs) and *Litoria dentata* (Bleating Tree Frog).

No threatened flora species were observed during the diurnal field survey and none are considered likely to occur given the subject site is degraded.

5. Impact assessment

5.1 Summary of impacts

5.1.1 Direct impacts

5.1.1.1 *Vegetation communities*

A summary of the extent of impacts to vegetation is provided in Table 2 below, and visually represented in Figure 6.

Table 2: Direct impact to vegetation within the subject site

Vegetation community	PCT	Direct Impact (ha)
Planted Native Vegetation	N/A	0.10
Exotic/cleared	N/A	0.07

The vegetation on site was predominately planted natives or exotics that did not make up any PCT. As such, the proposed activity will not impact any of threatened ecological communities and a test of significance under the BC Act is not required. Similarly, because the vegetation is planted natives, it is not recognised under the EPBC Act. As such, the clearance of vegetation on site does not require consideration under the EPBC Act.



Figure 6: Direct Construction impacts of the proposed works

5.1.1.2 Threatened flora

No threatened flora species occur on site, and the proposed development will not have a direct or indirect impact on any local populations of threatened flora species.

5.1.1.3 Threatened fauna

Due to the degraded nature of the site, as well as the low connectivity to surrounding habitat and waterways, the site is considered to be of low importance to the persistence of any threatened fauna populations in the locality. Although several microbat species were recorded in low densities on the site, the habitat available within the subject area is low quality for these species, with higher quality vegetation available in the surrounding area. No potential roosting habitat in the form of hollow bearing trees will be removed as a result of the development. As such, the removal of vegetation on site is unlikely to have a significant impact on any threatened fauna in the surrounding area.

A single test of Significance in accordance with Section 7.3 of the *Biodiversity Conservation Act 2016* (BC Act) was undertaken for the threatened microbat species which may potentially use the site for foraging. It concluded that the proposed works are unlikely to have a significant impact on these species. Therefore, the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not recommended.

A Test of Significance in accordance with the BC Act, and a Significance Assessment in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was also undertaken for the Grey-Headed Flying fox, which also concluded that the proposed development is unlikely to have a significant impact on this species.

5.1.2 Indirect impacts

Indirect impacts are those that do not directly affect the habitat or species within the subject site but have the potential to interfere through indirect actions. Indirect impacts associated with the proposed activity are:

- Increased spread of exotic species due to increase in access to the subject site and as a result of earthwork.

The overall effect of this potential impact is considered to be negligible for any threatened fauna species which may occur within the study area.

5.2 NSW Biodiversity Conservation Act 2016 (BC Act)

In November 2016 the NSW parliament passed the BC Act, that replaced the *Threatened Species Conservation Act 1995*, and which took effect on 25 August 2017. Among other things, the BC Act introduces new requirements for biodiversity assessment (Biodiversity Assessment Methodology (BAM)) and requires proponents to offset certain biodiversity impacts through the purchase and retirement of biodiversity credits known as the Biodiversity Offset Scheme (BOS). For a local development under Part 4 of the *Environmental Planning and Assessment Act 1979*, the BOS and the BAM may be triggered by the following means:

- Exceeding the area of clearing threshold associated with the minimum lot size for the property (Table 3)
- The impacts occur on an area mapped on the NSW Government Biodiversity Values Map.

Table 3: Area clearing threshold

Minimum lot size associated with the property	Threshold for clearing native vegetation, above which the BAM and offsets scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

5.2.1 Area clearing threshold

The threshold for clearing, above which the BAM and offsets scheme apply, for a property with a minimum lot size in the LEP of less than 1 ha is 0.25 ha or more. The property has a minimum lot size of 550 m², and the proposed clearing for the development will remove 0.1 ha of native and exotic plantings; therefore, it does not meet the threshold trigger for the Biodiversity Offset Scheme under s7.3 of the BC Act.

5.2.2 Biodiversity Values Map

The BV Map identifies land considered to have high biodiversity value as defined by the Biodiversity Conservation Regulation 2017. The study area does not contain any areas mapped as high biodiversity value on the BV Map (accessed on 02 February 2021).

5.2.3 Key Threatening Processes

The Key Threatening Processes (KTPs) listed under the BC Act and / or EPBC Act that are likely to be relevant to the proposed development include:

- Clearing of native vegetation (BC Act) / land clearance (EPBC Act)

5.2.4 Test of Significance

Three species of microbat; the *Micronomus norfolkensis* (Eastern Coastal Free-tailed Bat), *Miniopterus orianae oceanensis* (Large Bent-winged Bat) and *Myotis Macropus* (Southern Myotis) utilise foraging resources within the study area, and two additional species of microbat; *Scoteanax rueppellii* (Greater Broad-nosed Bat), *Vespadelus troughtoni* (Eastern Cave Bat), may utilise foraging resources within the study area.

A single test of Significance in accordance with Section 7.3 of the BC Act was undertaken for the above threatened microbat species which may potentially use the site for foraging. It concluded that the proposed works are unlikely to have a significant impact on these species (Appendix B).

A Test of Significance in accordance with the BC Act was also undertaken for the Grey-Headed Flying fox, which also concluded that the proposed development is unlikely to have a significant impact on this species (Appendix B).

5.2.4.1 Endangered Ecological Communities

No endangered ecological communities were present within the study area, hence no further assessment is required under Section 7.3 of the BC Act for endangered ecological communities.

5.2.4.2 Threatened Flora

No threatened flora species were recorded within the study area during the survey. Furthermore, no suitable habitat was considered to be present for any threatened flora species due to the high level of vegetation modification and disturbance. Hence no further assessment is required under Section 7.3 of the BC Act for threatened flora species.

5.2.4.3 Threatened fauna

Due to the degraded nature of the site, as well as the low connectivity to surrounding habitat and waterways, the site is considered to be of low importance to the persistence of any threatened fauna populations in the locality. Although several microbat species were recorded in low densities on the site, the habitat available within the subject area is low quality for these species, with higher quality vegetation available in the surrounding area. No potential roosting habitat in the form of hollow bearing trees will be removed as a result of the development. As such, the removal of 0.1 ha of native vegetation on site is unlikely to have a significant impact on any threatened fauna in the surrounding area. Therefore, no Test of Significance under the BC and EPBC Act was undertaken.

5.3 Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. Under the Act, any action which “has, will have, or is likely to have a significant impact on a MNES” is defined as a controlled action and requires approval from the Commonwealth Department of Agriculture, Water and the Environment (DAWE) which is responsible for administering the EPBC Act.

No threatened ecological communities, flora or fauna species listed under the EPBC Act were recorded during the diurnal field surveys and based on habitat assessments, are unlikely to be adversely impacted by the proposal. One nationally threatened fauna species, *Pteropus poliocephalus* (Grey-headed Flying-fox), may utilise foraging resources within the study area. In accordance with the EPBC Act, Significant Impact Criteria was applied to the Grey-headed Flying-fox which concluded that the activity is unlikely to constitute a significant impact on this species (Appendix C).

6. Mitigation Measures and Recommendations

The following recommendations have been made to reduce, eliminate or mitigate any detrimental effects that the proposed activities could have on, fauna, flora and the surrounding environment.

6.1 Prior to the works beginning

It is recommended that the following measures be in place prior to construction work beginning:

- Tree guard protection should be set up around all trees that are not to be impacted. Ideally, these measures would include physical barriers to prevent any accidental damage to these trees and utilise high visibility colouration to place emphasis on their location

6.2 During construction works

- Ensure tree guard protection remains installed around vegetation outside the impact area
- Ensure adequate sediment and erosion controls are in place to contain soil within the subject site

7. Conclusion

Eco Logical Australia Pty Ltd was engaged by MBB Group to prepare a FFA for the proposed construction of a new hall at the Nepean Creative and Performing Arts High School. No threatened ecological communities were identified on site, with the site represented by planted natives and exotic/cleared vegetation. No threatened flora have previously been recorded on site, and were not recorded during the field survey. As a result, no assessment of significance was required for the removal of this vegetation under the BC Act or EPBC Act.

Although several threatened microbat species were recorded during surveys, the subject site is highly degraded, and has no hollow bearing trees or rocky outcrops that would be suitable for roosting for any microbat species. The vegetation on site may provide marginal foraging habitat, but its removal is unlikely to have a significant impact on any microbat species, with higher quality habitat available in the surrounding area (such as the riparian corridor along the Nepean River and lower Blue Mountains). A single test of Significance in accordance with Section 7.3 of the BC Act was undertaken for the above threatened microbat species which may potentially use the site for foraging. It concluded that the proposed works are unlikely to have a significant impact on these species (Appendix B). Additionally, the low level of activity for these species recorded during the targeted surveys indicated low densities of these species within the study area.

Marginal foraging habitat is available for Grey-headed Flying Fox which may utilise the subject site on an occasional basis, however, is unlikely to rely on these limited foraging resources for survival. It is unlikely that any additional threatened fauna utilise the subject site, due to the lack of records within the subject site, the degraded nature of the vegetation and the availability of larger high quality patches of vegetation located in the surrounding area. However, a Test of significance in accordance with the BC Act was applied for this species which concluded that the development is unlikely to constitute a significant impact (Appendix B). In accordance with the EPBC Act, Significant Impact Criteria was also applied to the Grey-headed Flying-fox which concluded that the activity is unlikely to constitute a significant impact on this species (Appendix C).

A vegetation species planting list has also been provided in Appendix E. This list has been based off the previous occurrence of native vegetation in the broader study area and can be used as a guide for future vegetation replanting and landscaping works.

8. References

Department of Environment and Energy (DoEE) 2020. *EPBC Act Protected Matters Search Tool*: <http://www.environment.gov.au/epbc/pmst/>. Accessed 01 February 2021.

Office of Environment and Heritage (OEH) 2019. *Cumberland Plain Woodland in the Sydney Basin Bioregion – Profile*
<https://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10191>. Accessed 01 February 2021.

Office of Environment and Heritage (OEH) 2020. *Atlas of NSW Wildlife*. <http://www.bionet.nsw.gov.au/>
Accessed 01 February 2021.

Appendix A Likelihood of occurrence table

An assessment of likelihood of occurrence was made for threatened and migratory species identified from the database search. Five terms for the likelihood of occurrence of species are used in this report. This assessment was based on database or other records, presence or absence of suitable habitat, features of the proposal site, results of the site inspection and professional judgement. Some Migratory or Marine species identified from the Commonwealth database search have been excluded from the assessment, due to lack of habitat. The terms for likelihood of occurrence are defined below:

- 'known' = the species was or has been observed on the site
- 'likely' = a medium to high probability that a species uses the site
- 'potential' = suitable habitat for a species occurs on the site, but there is insufficient information to categorise the species as likely to occur, or unlikely to occur
- 'unlikely' = a very low to low probability that a species uses the site
- 'no' = habitat within the subject site and in the vicinity is unsuitable for the species

Information provided in the habitat associations' column has primarily been extracted (and modified) from the Commonwealth Species Profile and Threats Database and the NSW Threatened Species Profiles. Species and communities that have the potential to occur, are likely to occur or are known to occur have been boldened in the below table

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
ECOLOGICAL COMMUNITIES					
Castlereagh Scribbly Gum Woodland in the Sydney Basin Bioregion	V / CE	E	Typically a low woodland, with canopy species reaching an average 15 m in height. The canopy is often dominated by one or more of <i>Angophora bakeri</i> (narrow leaved apple), <i>Eucalyptus racemosa</i> (narrow-leaved scribbly gum) and <i>E. parramattensis subsp. parramattensis</i> (Parramatta red gum). Melaleuca species including <i>M. decora</i> (paperbark) may also be prominent in the canopy and/or mid layer. The understorey has a prominent and diverse mid-layer of sclerophyll shrubs, sometimes dominated by either Banksia or Melaleuca species. It typically has a patchy ground cover of sedges and grasses. The isolation of the alluvial deposits in the Hawkesbury-Nepean river valley and differences in the soil characteristics have led to the development of differences in species composition and abundance across the range of the ecological community. In addition, the Agnes Banks vegetation occurs on aeolian sand and can contain a number of species reminiscent of communities closer to the coast, such as <i>Dillwynia glaberrima</i>, <i>Ricinoscarpos pinifolius</i> (wedding bush) and <i>Banksia aemula</i> (wallum).	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	E	E	The structure of the community may vary from open forests to low woodlands, scrubs or reedlands with scattered trees. It has a dense to sparse tree layer in which <i>Casuarina glauca</i> (swamp oak) is the dominant species northwards from Bermagui. Other trees including <i>Acmena smithii</i> (lilly pilly), <i>Glochidion</i> spp. (cheese trees) and <i>Melaleuca</i> spp. (paperbarks) may be present as subordinate species, and are found most frequently in stands of the community northwards from Gosford. <i>Melaleuca ericifolia</i> is the only abundant tree in this community south of Bermagui. The understorey is characterised by frequent occurrences of vines, <i>Parsonsia straminea</i>, <i>Geitonoplesium cymosum</i> and <i>Stephania japonica</i> var. <i>discolor</i>, a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter. The composition of the ground stratum varies depending on levels of salinity in the groundwater. Coastal floodplains of NSW. Known from parts of the Local Government Areas of Tweed, Byron, Lismore, Ballina, Richmond Valley, Clarence Valley, Coffs Harbour, Bellingen, Nambucca, Kempsey, Hastings, Greater Taree, Great Lakes, Port Stephens, Maitland, Newcastle, Cessnock, Lake Macquarie, Wyong, Gosford, Pittwater, Warringah, Hawkesbury, Baulkham Hills, Hornsby, Lane Cove, Blacktown, Auburn, Parramatta, Canada Bay, Rockdale, Kogarah, Sutherland, Penrith, Fairfield, Liverpool, Bankstown, Wollondilly, Camden, Campbelltown, Wollongong, Shellharbour, Kiama, Shoalhaven, Eurobodalla and Bega Valley	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	CE	Ranges from open forest to low woodland, with a canopy dominated by <i>Eucalyptus fibrosa</i> (Broad-leaved Ironbark) and <i>Melaleuca decora</i> (Paperbark). The canopy may also include other eucalypts such as <i>E. longifolia</i> (Woolybutt). The dense shrubby understorey consists of <i>Melaleuca nodosa</i> (Prickly-leaved Paperbark) and <i>Lissanthe strigosa</i> (Peach Heath), with a range of 'pea' flower shrubs, such as <i>Dillwynia tenuifolia</i>, <i>Pultenaea villosa</i> (Hairy Bush-pea) and <i>Daviesia ulicifolia</i> (Gorse Bitter Pea). The sparse ground layer contains a range of grasses and herbs. Occurs in western Sydney, with the most extensive stands occurring in the Castlereagh and Holsworthy areas. Smaller remnants occur in the Kemps Creek area and in the eastern section of the Cumberland Plain.	No - this community was not identified within the subject site during field survey.	No
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	CE	CE	The minimum projected foliage cover of canopy trees is 10% or more and the tree canopy is typically dominated by <i>Eucalyptus moluccana</i> (Grey Box), <i>E. tereticornis</i> (Forest Red Gum) and/or <i>E. fibrosa</i> (Red Ironbark). A sparse lower tree layer may be present, typically with young eucalypts of upper tree canopy species and species of <i>Acacia</i>, <i>Exocarpos</i> and <i>Melaleuca</i>. The understorey typically is dominated by the ground layer, typically comprising a variety of perennial native graminoids and forbs. Endemic to the shale hills and plains of the Sydney Basin Bioregion in NSW, occurring primarily in, but not limited to, the Cumberland Sub-region.	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	E	CE	The structure of the community may vary from tall open forests (>40m) to woodlands. The most widespread and abundant dominant trees include <i>Eucalyptus tereticornis</i> (forest red gum), <i>E. amplifolia</i> (cabbage gum), <i>Angophora floribunda</i> (rough-barked apple) and <i>A. subvelutina</i> (broad-leaved apple). <i>Eucalyptus baueriana</i> (blue box), <i>E. botryoides</i> (bangalay) and <i>E. elata</i> (river peppermint) may be common south from Sydney. <i>E. ovata</i> (swamp gum) occurs on the far south coast, <i>E. saligna</i> (Sydney blue gum) and <i>E. grandis</i> (flooded gum) may occur north of Sydney, while <i>E. benthamii</i> is restricted to the Hawkesbury floodplain. A layer of small trees may be present, including <i>Melaleuca decora</i>, <i>M. styphelioides</i> (prickly-leaved teatree), <i>Backhousia myrtifolia</i> (grey myrtle), <i>Melia azadarach</i> (white cedar), <i>Casuarina cunninghamiana</i> (river oak) and <i>C. glauca</i> (swamp oak). Scattered shrubs include <i>Bursaria spinosa</i>, <i>Solanum prinophyllum</i>, <i>Rubus parvifolius</i>, <i>Breynia oblongifolia</i>, <i>Ozothamnus diosmifolius</i>, <i>Hymenanthera dentata</i>, <i>Acacia floribunda</i> and <i>Phyllanthus gunnii</i>. The groundcover is composed of abundant forbs, scramblers and grasses. Found on the river flats of the coastal floodplains. Known from parts of the Local Government Areas of Port Stephens, Maitland, Singleton, Cessnock, Lake Macquarie, Wyong, Gosford, Hawkesbury, Baulkham Hills, Blacktown, Parramatta, Penrith, Blue Mountains, Fairfield, Holroyd, Liverpool, Bankstown, Wollondilly, Camden, Campbelltown, Sutherland, Wollongong, Shellharbour, Kiama, Shoalhaven, Palerang, Eurobodalla and Bega Valley.	No - this community was not identified within the subject site during field survey.	No
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	CE	CE	The main tree species include <i>Eucalyptus tereticornis</i> (Forest Red Gum), <i>E. punctata</i> (Grey Gum), stringybarks (<i>E. globoidea</i>, <i>E. eugenioides</i>) and ironbarks (<i>E. fibrosa</i> and <i>E. crebra</i>). Areas of low sandstone influence (more clay-loam soil texture) have an understorey that is closer to Cumberland Plain Woodland. Occurs at the edges of the Cumberland Plain in western Sydney, most now occurs in the Hawkesbury, Baulkham Hills, Liverpool, Parramatta, Penrith, Campbelltown and Wollondilly local government areas.	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Shale Sandstone Transition Forest of the Sydney Basin Bioregion		E	Temporary or permanent swamps with a substrate of peat over sandstone, and vegetation characterised by the presence of sedges, graminoids and forbs, with or without shrubs. The structure of the vegetation varies from open shrubland to closed heath or open heath (dominated by shrub species but with a sedge and graminoid understorey and occasionally with scattered low trees) to sedgeland and closed sedgeland. Components of the community include the Blue Mountains Swamps, Butler's Swamp, Jackson's Bog (Mila Swamp), Newnes Plateau Swamps, Paddy's River Swamps - Hanging Rock, Long, Mundego and Stingray Swamps, Wildes Meadow Swamp and Wingecarribee Swamp.	No - this community was not identified within the subject site during field survey.	No
Temperate Highland Peat Swamps on Sandstone	E	CE	A medium-height open forest with a lower tree layer, an open low shrub layer and a prominent ground layer. Western outliers of the community in wetter habitats may have a tall open forest structure. On the lowlands, the canopy is dominated by <i>Syncarpia glomulifera</i> (Turpentine), with <i>Eucalyptus paniculata</i> (Grey Ironbark) and <i>E. eugenioides</i> (Thin-leaved Stringybark) occurring less frequently. On the margin of the Cumberland Plain, the vegetation is dominated by <i>Eucalyptus punctata</i> (Grey Gum) and <i>Syncarpia glomulifera</i> , with species such as <i>Corymbia gummifera</i> (Red Bloodwood) and <i>Eucalyptus globoidea</i> (White Stringybark) occurring sporadically. The westernmost occurrences of the community are dominated by species such as <i>Syncarpia glomulifera</i> , <i>Eucalyptus globoidea</i> , <i>Eucalyptus cypellocarpa</i> (Monkey Gum), <i>E. notabilis</i> (Mountain Mahogany) and <i>E. paniculata</i> (Grey Ironbark) in southern areas. <i>Eucalyptus punctata</i> (Grey Gum) and/or <i>E. piperita</i> (Sydney Peppermint) are common in areas with sandstone influence. Cumberland Lowlands, with remnants also occurring to the west on shale-capped ridges in the Blue Mountains.	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Turpentine-Ironbark Forest in the Sydney Basin Bioregion		E	Typically occurs as an open to tall open forest with a sparse to dense layer of shrubs and vines, and a diverse understorey of native grasses, forbs, twiners and ferns. Dominant canopy species are most often <i>Eucalyptus fastigata</i> (brown barrel), <i>E. viminalis</i> (ribbon gum) and <i>E. radiata subsp. radiata</i> (narrow-leaved peppermint). <i>Eucalyptus obliqua</i> (messmate stringybark), <i>E. elata</i> (river peppermint), <i>E. quadrangulata</i> (white-topped box) and <i>E. smithii</i> (ironbark peppermint) are also common. <i>Eucalyptus oreades</i> (Blue Mountains ash) and <i>E. blaxlandii</i> (Blaxland's stringybark) are prevalent in the Blue Mountains forms. <i>Eucalyptus cypellocarpa</i> (mountain grey gum) is widespread in drier sites, while <i>E. piperita</i> (Sydney peppermint) and <i>Eucalyptus ovata</i> (swamp gum) may also be present. <i>Acacia melanoxylon</i> (blackwood) is a common subcanopy tree. Occasional rainforest trees such as <i>Doryphora sassafras</i> (sassafras) and <i>Hedycarya angustifolia</i> (native mulberry) may also occur. Generally confined to the Sydney Basin bioregion, including the Moss Vale, Ettrema, Burragorang, Sydney Cataract, and Wollemi IBRA sub-regions. However, some patches may extend into in the Kanangra and Oberon IBRA sub-regions of the South Eastern Highlands bioregion.	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	E	CE	Typically a low closed forest, slightly more open in the moist woodland form, with emergent trees up to 25 m high and a lower tree layer. In sheltered gullies and on lower slopes the canopy layer is typically dominated by <i>Melaleuca styphelioides</i> (prickly-leaved paperbark). Other diagnostic tree species include <i>Acacia implexa</i> (hickory wattle), <i>Alectryon subcinereus</i> (native quince), <i>Brachychiton populneus</i> (kurrajong), <i>Corymbia maculata</i> (spotted gum), <i>Melicope micrococca</i> (white euodia) and <i>Streblus pendulinus</i> (whalebone tree). Generally on upper slopes to undulating terrain, or at more disturbed sites, the ecological community exhibits its moist woodland form with the canopy dominated by <i>E. moluccana</i>, <i>E. tereticornis</i>, <i>E. crebra</i> and/or <i>Corymbia maculata</i>. Characteristic shrub species include <i>Breynia oblongifolia</i> (false coffee bush), <i>Clerodendrum tomentosum</i> (hairy clerodendrum) and <i>Notelaea longifolia f. longifolia</i> (large mock-olive). Vines and other climber species are typically common. The ground layer is variable and generally sparse with a diverse mix of forbs, ferns and shade-tolerant grasses. Cumberland Plain Sub-region of the Sydney Basin Bioregion.	No - this community was not identified within the subject site during field survey.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
Western Sydney Dry Rainforest and Moist Woodland on Shale	V / CE	E	Typically a low woodland, with canopy species reaching an average 15 m in height. The canopy is often dominated by one or more of <i>Angophora bakeri</i> (narrow leaved apple), <i>Eucalyptus racemosa</i> (narrow-leaved scribbly gum) and <i>E. parramattensis subsp. parramattensis</i> (Parramatta red gum). <i>Melaleuca</i> species including <i>M. decora</i> (paperbark) may also be prominent in the canopy and/or mid layer. The understorey has a prominent and diverse mid-layer of sclerophyll shrubs, sometimes dominated by either <i>Banksia</i> or <i>Melaleuca</i> species. It typically has a patchy ground cover of sedges and grasses. The isolation of the alluvial deposits in the Hawkesbury-Nepean river valley and differences in the soil characteristics have led to the development of differences in species composition and abundance across the range of the ecological community. In addition, the Agnes Banks vegetation occurs on aeolian sand and can contain a number of species reminiscent of communities closer to the coast, such as <i>Dillwynia glaberrima</i> , <i>Ricinocarpos pinifolius</i> (wedding bush) and <i>Banksia aemula</i> (wallum).	No - this community was not identified within the subject site during field survey.	No

FLORA

<i>Acacia bynoeana</i>	E1	V	Found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. Heath or dry sclerophyll forest on sandy soils.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Allocasuarina glareicola</i>	E1	E	Primarily restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool. Castlereagh woodland on lateritic soil. Found in open woodland with <i>Eucalyptus parramattensis</i> , <i>Eucalyptus fibrosa</i> , <i>Angophora bakeri</i> , <i>Eucalyptus sclerophylla</i> and <i>Melaleuca decora</i> .	Unlikely - suitable habitat not identified within the study area or subject site	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Cynanchum elegans</i>	E1	E	Restricted to eastern NSW, from Brunswick Heads on the north coast to Gerroa in the Illawarra region, and as far west as Merriwa in the upper Hunter River valley. Dry rainforest; littoral rainforest; <i>Leptospermum laevigatum</i> - <i>Banksia integrifolia</i> subsp. <i>integrifolia</i> (Coastal Tea-tree–Coastal Banksia) coastal scrub; <i>Eucalyptus tereticornis</i> (Forest Red Gum) or <i>Corymbia maculata</i> (Spotted Gum) open forest and woodland; and <i>Melaleuca armillaris</i> (Bracelet Honeymyrtle) scrub.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Dillwynia tenuifolia</i>	E2,V		Occurs in the area bounded by Western Road, Elizabeth Drive, Devonshire Road and Cross Street, Kemps Creek in the Liverpool Local Government Area. Transition from Castlereagh Ironbark Forest to Castlereagh Scribbly Gum Woodland.	Unlikely – one record of the species occurring within a 5km was found, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No
<i>Dillwynia tenuifolia</i>	E2,V		Near the junction of Wisemans Ferry and Sackville Roads within the Baulkham Hills local government area. Vegetation similar to Cumberland Plain Woodland, on Wianamatta Shale soils.	Unlikely – one record of the species occurring within a 5km was found, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Dillwynia tenuifolia</i>	V		Mainly on the Cumberland Plain, but also Bulga Mountains at Yengo in the north, and Kurrajong Heights and Woodford in the Lower Blue Mountains. Scrubby/dry heath areas within Castlereagh Ironbark Forest and Shale Gravel Transition Forest, transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland, and disturbed escarpment woodland on Narrabeen sandstone.	Unlikely – one record of the species occurring within a 5km was found, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No
<i>Eucalyptus aggregata</i>	E2,V	V	Population located in the Wingecarribee local government area, at Berrima, Medway and Sutton Forest. Alluvial soils, on cold, poorly drained flats and hollows adjacent to creeks and small rivers. Usually occurs in open woodland with a grassy groundlayer.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Genoplesium baueri</i>	E1	E	Has been recorded from locations between Nowra and Pittwater and may occur as far north as Port Stephens. Dry sclerophyll forest and moss gardens over sandstone.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Haloragis exalata</i> <i>subsp. exalata</i>	V	V	Disjunct distribution in the Central Coast, South Coast and North Western Slopes botanical subdivisions of NSW. Protected and shaded damp situations in riparian habitats.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Marsdenia viridiflora</i> <i>subsp. viridiflora</i>	E2		Razorback Range, also recorded at Prospect, Bankstown, Smithfield, Cabramatta Creek and St Marys. Vine thickets and open shale woodland.	Unlikely – a cluster of record of the species occurs approximately 4.5km from site, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Melaleuca deanei</i>	V	V	Ku-ring-gai/Berowra area, Holsworthy/Wedderburn area, Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas. Heath on sandstone.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Micromyrtus minutiflora</i>	E1	V	Restricted to the general area between Richmond and Penrith, western Sydney. Castlereagh Scribbly Gum Woodland, Ironbark Forest, Shale/Gravel Transition Forest, open forest on tertiary alluvium and consolidated river sediments.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Persicaria elatior</i>	V	V	In south-eastern NSW recorded from Mt Dromedary, Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW known from Raymond Terrace (near Newcastle) and the Grafton area (Cherry Tree and Gibberagee State Forests). Beside streams and lakes, swamp forest or disturbed areas.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Persoonia hirsuta</i>	E1,P,3	E	Scattered distribution around Sydney, from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. Sandy soils in dry sclerophyll open forest, woodland and heath on sandstone.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Persoonia nutans</i>	E1	E	Restricted to the Cumberland Plain in western Sydney, between Richmond in the north and Macquarie Fields in the south. Northern populations: sclerophyll forest and woodland (Agnes Banks Woodland, Castlereagh Scribbly Gum Woodland and Cooks River / Castlereagh Ironbark Forest) on aeolian and alluvial sediments. Southern populations: tertiary alluvium, shale sandstone transition communities and Cooks River / Castlereagh Ironbark Forest.	Unlikely - suitable habitat not identified within the study area or subject site	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Pimelea spicata</i>	E1	E	Two disjunct areas; the Cumberland Plain (Marayong and Prospect Reservoir south to Narellan and Douglas Park) and the Illawarra (Landsdowne to Shellharbour to northern Kiama). Well-structured clay soils. Eucalyptus moluccana (Grey Box) communities and in areas of ironbark on the Cumberland Plain. Coast Banksia open woodland or coastal grassland in the Illawarra.	Unlikely – two clusters of record of the species occur approximately 4.8km from site, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No
<i>Pomaderris brunnea</i>	E1	V	In NSW, found around the Colo, Nepean and Hawkesbury Rivers, including the Bargo area and near Camden. It also occurs near Walcha on the New England tablelands. Moist woodland or forest on clay and alluvial soils of flood plains and creek lines.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Pterostylis saxicola</i>	E1	E	Restricted to western Sydney between Freemans Reach in the north and Picton in the south. Small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines, adjacent to sclerophyll forest or woodland on shale/sandstone transition soils or shale soils.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Pultenaea parviflora</i>	E1	V	Endemic to the Cumberland Plain. Mainly from Windsor to Penrith and east to Dean Park, with outlier populations at Kemps Creek and Wilberforce. Dry sclerophyll forest, especially Castlereagh Ironbark Forest, Shale Gravel Transition Forest and transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Rhizanthella slateri</i>	E2,V	E	The population occurs near Bulahdelah (within the Great Lakes LGA). Sclerophyll forest in shallow to deep loams.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Rhizanthella slateri</i>	V	E	In NSW, currently known from fewer than 10 locations, including near Bulahdelah, the Watagan Mountains, the Blue Mountains, Wiseman's Ferry area, Agnes Banks and near Nowra. Sclerophyll forest in shallow to deep loams.	Unlikely - suitable habitat not identified within the study area or subject site	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Thelymitra kangaloonica</i>	CE		Only known to occur on the southern tablelands of NSW in the Moss Vale / Kangaloon / Fitzroy Falls area at 550-700 m above sea level. Swamps in sedgeland over grey silty grey loam soils.	Unlikely - suitable habitat not identified within the study area or subject site	No
<i>Syzygium paniculatum</i>	E1	V	Only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. Subtropical and littoral rainforest on gravels, sands, silts and clays.	Unlikely – only one record of the species occurs approximately 4.6km from site, but no suitable habitat was identified within the subject site with much of the site cleared or having been topped with gravel or mulch.	No
<i>Thelymitra kangaloonica</i>	E4A	CE	Only known to occur on the southern tablelands of NSW in the Moss Vale / Kangaloon / Fitzroy Falls area at 550-700 m above sea level. Swamps in sedgeland over grey silty grey loam soils.	Unlikely - suitable habitat not identified within the study area or subject site	No
FAUNA					
<i>Anthochaera phrygia</i>	E4A	CE	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions. Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of <i>Casuarina cunninghamiana</i> (River Oak).	Unlikely – preferred foraging habitat not present.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Artamus cyanopterus cyanopterus</i>	V, P		Widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. rimarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris.	Potential – marginal foraging habitat available, few flowering Eucalypts, minimal species diversity. No fallen timber or ground storey vegetation	No – low quality habitat unlikely to be used on regular basis. Negligible loss of foraging habitat resulting from proposed development
<i>Botaurus poiciloptilus</i>	E1	E	Found over most of NSW except for the far north-west. Permanent freshwater wetlands with tall, dense vegetation, particularly <i>Typha</i> spp. (bullrushes) and <i>Eleocharis</i> spp. (spikerushes).	Unlikely – suitable habitat not present within study area	No
<i>Calidris ferruginea</i>	E1	CE, M	Occurs along the entire coast of NSW, and sometimes in freshwater wetlands in the Murray-Darling Basin. Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	Unlikely – suitable habitat not present within study area	No
<i>Callocephalon fimbriatum</i>	V		In NSW, distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. Isolated records known from as far north as Coffs Harbour and as far west as Mudgee. Tall mountain forests and woodlands in summer; in winter, may occur at lower altitudes in open eucalypt forests and woodlands, and urban areas.	Unlikely – small patch size, with few feed trees on site. The site is degraded and provides poor foraging habitat	No
<i>Calyptorhynchus lathamii</i>	V		In NSW, widespread along coast and inland to the southern tablelands and central western plains, with a small population in the Riverina. Open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur.	Unlikely – small patch size, with few feed trees on site. The site is degraded and provides poor foraging habitat	No
<i>Cercartetus nanus</i>	V		In NSW it extents from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Rainforest, sclerophyll forest (including Box-Ironbark), woodland and heath.	Unlikely – unsuitable habitat type due to highly degraded vegetation available	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Chalinolobus dwyeri</i>	V,P	V	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years.	Unlikely – no caves or rock structures suitable for roosting within or in proximity to the subject site.	No
<i>Circus assimilis</i>	V		Found throughout the Australian mainland, except in densely forested or wooded habitats, and rarely in Tasmania. Grassy open woodland, inland riparian woodland, grassland, shrub steppe, agricultural land and edges of inland wetlands.	Unlikely – suitable habitat not present	No
<i>Daphoenositta chrysoptera</i>	V		Distribution in NSW is nearly continuous from the coast to the far west. Inhabits eucalypt forests and woodlands, mallee and Acacia woodland.	Unlikely – suitable habitat not present due to highly degraded vegetation and lack of suitable understorey	No
<i>Dasyurus maculatus</i>	V,P	E	Now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites.	Unlikely – small, isolated patch with no available den sites (rock outcrops, hollows, fallen logs etc.)	No
<i>Falco hypoleucos</i>	E1		Arid and semi-arid zones. In NSW, found chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Shrubland, grassland and wooded watercourses, occasionally in open woodlands near the coast, and near wetlands.	Unlikely – suitable habitat not present	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Falsistrellus tasmaniensis</i>	V		South-east coast and ranges of Australia, from southern Qld to Victoria and Tasmania. In NSW, records extend to the western slopes of the Great Dividing Range. Tall (greater than 20m) moist habitats.	Unlikely – Marginal foraging habitat available, however, not recorded during targeted microbat survey	No
<i>Gallinago hardwickii</i>		M	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW. Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	Unlikely – suitable habitat not present within study area.	No
<i>Grantiella picta</i>	V	V	Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas. Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	Unlikely – marginal foraging habitat, with few flowering Eucalypts	No
<i>Haliaeetus leucogaster</i>	V,P		Distributed around the Australian coastline, as well inland along rivers and wetlands of the Murray Darling Basin. In NSW, it is widespread along the east coast, and along all major inland rivers and waterways.	Unlikely – no foraging habitat available within the study area due to absence of large waterbodies.	No
<i>Heleioporus australiacus</i>	V	V	South eastern NSW and Victoria, in two distinct populations: a northern population in the sandstone geology of the Sydney Basin as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria. Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	Unlikely – no permanent freshwater or connectivity to waterways or moist habitats. Degraded site with no suitable vegetation	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Hirundapus caudacutus</i>	P		Migratory and usually seen in eastern Australia from October to April. Breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan June-August. Most often seen in eastern Australia before storms, low pressure troughs and approaching cold fronts and occasionally bushfire. These conditions are often used by insects to swarm (e.g. termites and ants) or tend to lift insects away from the surface which favours sighting of White-throated Needleetails as they feed. More common in coastal areas, less so inland.	Unlikely – suitable habitat not present. May occasionally fly over the site.	No
<i>Hieraaetus morphnoides</i>	V		Throughout the Australian mainland, with the exception of the most densely-forested parts of the Dividing Range escarpment. Open eucalypt forest, woodland or open woodland, including sheoak or Acacia woodlands and riparian woodlands of interior NSW.	Unlikely – marginal foraging habitat, and no suitable breeding habitat (i.e. few large mature trees).	No
<i>Hoplocephalus bungaroides</i>	E1	V	Largely confined to Triassic and Permian sandstones within the coast and ranges in an area within approximately 250 km of Sydney. Dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	Unlikely – No shelters available with no rocks or escarpments. Low connectivity to surround areas	No
<i>Lathamus discolor</i>	E1,P,3	CE	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations	Unlikely – No suitable breeding habitat and preferred foraging habitat not present.	No
<i>Litoria aurea</i>	E1	V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region. Marshes, dams and stream-sides, particularly those containing Typha spp. (bullrushes) or Eleocharis spp. (spikerushes). Some populations occur in highly disturbed areas.	Unlikely – no permanent freshwater or connectivity to waterways or moist habitats. Degraded site with no suitable vegetation	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Lophoictinia isura</i>	V		In NSW, it is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast. Timbered habitats including dry woodlands and open forests, particularly timbered watercourses.	Unlikely – no permanent freshwater or connectivity to waterways or moist habitats. Degraded site with no suitable vegetation	No
<i>Meridolum corneovirens</i>	E1		Areas of the Cumberland Plain west of Sydney, from Richmond and Windsor south to Picton and from Liverpool, west to the Hawkesbury and Nepean Rivers at the base of the Blue Mountains. Primarily inhabits Cumberland Plain Woodland. Also known from Shale Gravel Transition Forests, Castlereagh Swamp Woodlands and the margins of River-flat Eucalypt Forest.	Unlikely – very degraded habitat with mostly cleared, mulched or gravel ground cover. Not recorded during targeted surveys	No
<i>Merops ornatus</i>			Distributed across much of mainland Australia, including NSW. Open forests and woodlands, shrublands, farmland, areas of human habitation, inland and coastal sand dune systems, heathland, sedgeland, vine forest and vine thicket.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal foraging habitat	No
<i>Micronomus norfolkensis</i>	V, P		Found along the east coast from south Qld to southern NSW. Dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	Yes – Calls recorded in low numbers during survey. Poor quality foraging habitat it available in the study area. Roosting habitat not present.	Yes
<i>Miniopterus australis</i>	V, P		East coast and ranges south to Wollongong in NSW. Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub.	Yes – Calls recorded in low numbers during survey. Poor quality foraging habitat it available in the study area. Roosting habitat not present.	Yes

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Miniopterus orianae oceanensis</i>	V, P		In NSW it occurs on both sides of the Great Dividing Range, from the coast inland to Moree, Dubbo and Wagga Wagga. Rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland.	Yes – Calls recorded in low numbers during survey. Poor quality foraging habitat it available in the study area. Roosting habitat not present.	Yes
<i>Mixophyes balbus</i>	E1	V	Along the east coast of Australia from southern Qld to north-eastern Victoria. Rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range.	Unlikely – suitable habitat not present within study area	No
<i>Monarcha melanopsis</i>		M	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland. Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal foraging habitat	No
<i>Monarcha trivirgatus</i>			Coastal eastern Australia south to Port Stephens in NSW. Mountain/lowland rainforest, wooded gullies, riparian vegetation including mangroves.	Unlikely – no permanent freshwater or connectivity to waterways with limited connectivity to surrounding vegetation	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Myotis macropus</i>	V		In NSW, found in the coastal band. It is rarely found more than 100 km inland, except along major rivers. Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20m.	Yes – Calls recorded in low numbers during survey. However, no permanent freshwater or connectivity to waterways occurs on site with limited connectivity to surrounding vegetation. The site represents poor foraging habitat (i.e. no waterbodies), with high quality foraging habitat available nearby (i.e. the Nepean River).	Yes
<i>Neophema pulchella</i>	V		Occurs along the length of NSW from the coastal plains to the western slopes of the Great Dividing Range. Eucalypt and cypress pine open forests and woodlands, ecotones between woodland and grassland, or coastal forest and heath.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal foraging habitat	No
<i>Ninox strenua</i>	V		In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains. Woodland, open sclerophyll forest, tall open wet forest and rainforest.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal roosting and foraging habitat	No
<i>Pandion haliaetus</i>	V		Common around the northern NSW coast, and uncommon to rare from coast further south. Some records from inland areas. Rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes.	Unlikely – no permanent freshwater or connectivity to waterways	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Petauroides volans</i>	V	V	Forest dependent and prefer older tree age classes in moist forest types. They are obligate users of hollow-bearing trees for shelter and nesting, with each family group using multiple den trees within its home range	Unlikely – degraded vegetation with no hollow bearing trees on site	No
<i>Petaurus australis</i>	E2,V		The endangered population of the Yellow-bellied Glider occurs on the Bago Plateau; a westward extension of the Kosciuszko highlands in southern NSW. The habitat on the Bago Plateau consists of tall wet sclerophyll forest dominated by <i>Eucalyptus delegatensis</i> (Alpine Ash), <i>E. dalrympleana</i> (Mountain Gum), <i>E. radiata</i> (Narrow-leaved Peppermint), and <i>E. rubida</i> (Candlebark).	Unlikely – degraded vegetation with no hollow bearing trees on site	No
<i>Petrogale penicillata</i>	E1	V	In NSW they occur from the Qld border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges.	Unlikely – degraded vegetation with no rocky escarpment, outcrops or cliffs	No
<i>Petroica phoenicea</i>	V		In NSW, breeds in upland areas, and in winter many birds move to the inland slopes and plains, or occasionally to coastal areas. Likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands. In winter uses dry forests, open woodlands, heathlands, pastures and native grasslands. Occasionally occurs in temperate rainforest, herb fields, heathlands, shrublands and sedgeland at high altitudes.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal foraging habitat.	No
<i>Phascolarctos cinereus</i>	V, P	V	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. Live in a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by eucalypt species	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Limited foraging habitat, with few mature Eucalypts. Low connectivity to surrounding habitat.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Pommerhelix duralensis</i>	E		The species is a shale-influenced-habitat specialist, which occurs in low densities along the western and northwest fringes of the Cumberland IBRA subregion on shale-sandstone transitional landscapes.	Unlikely – very degraded habitat with mostly cleared, mulched or gravel ground cover	No
<i>Pseudomys novaehollandiae</i>		V	Fragmented distribution across eastern NSW. Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	Unlikely – degraded site with little ground storey vegetation	No
<i>Pseudophryne australis</i>	V		Confined to the Sydney Basin, from Pokolbin in the north, the Nowra area to the south, and west to Mt Victoria in the Blue Mountains. Open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings.	Unlikely – no permanent freshwater or connectivity to waterways	No
<i>Pteropus poliocephalus</i>	V, P	V	Generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Potential – very degraded habitat with mostly cleared or planted vegetation. Marginal foraging habitat, with few mature Eucalypts. Low connectivity to surrounding habitat. Known camp approximately 1.5 km to the north-east.	Yes
<i>Rhipidura rufifrons</i>		M	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great Divide in NSW. Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and woodlands.	Unlikely – suitable habitat not present.	No
<i>Rostratula australis</i>	E1	E	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Swamps, dams and nearby marshy areas.	Unlikely – suitable habitat not present.	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Scoteanax rueppellii</i>	V		Both sides of the great divide, from the Atherton Tableland in Qld to north-eastern Victoria, mainly along river systems and gullies. In NSW it is widespread on the New England Tablelands. Woodland, moist and dry eucalypt forest and rainforest.	Yes – Calls recorded in low numbers during survey. Poor quality foraging habitat it available in the study area. Roosting habitat not present.	Yes
<i>Stagonopleura guttata</i>	V		Widely distributed in NSW, mainly recorded in the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina, and less commonly found in coastal areas and further inland. Grassy eucalypt woodlands, open forest, mallee, Natural Temperate Grassland, secondary derived grassland, riparian areas and lightly wooded farmland.	Unlikely – degraded site with low quality foraging habitat.	No
<i>Tyto novaehollandiae</i>	V		Recorded over approximately 90% of NSW, excluding the most arid north-western corner. Most abundant on the coast but extends to the western plains. Dry eucalypt forests and woodlands from sea level to 1100 m.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal roosting and foraging habitat	No
<i>Tyto tenebricosa</i>	V		Occupies the easternmost one-eighth of NSW, occurring on the coast, coastal escarpment and eastern tablelands. Dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests.	Unlikely – very degraded habitat with mostly cleared or planted vegetation. Marginal roosting and foraging habitat	No

Scientific Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Likelihood of Occurrence	Test of significance required
<i>Vespadelus troughtoni</i>	V		The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals	Low – Potential calls recorded in low numbers during survey. Yes –Poor quality foraging habitat it available in the study area. Unlikely to utilise the study area due to absence of nearby caves or cliff lines.	Yes

Appendix B Biodiversity Conservation Act 2016 Tests of Significance

The 'Assessment of significance' (5-part test) is applied to species, populations and ecological communities listed on Schedules 1 and 2 of the BC Act. The assessment sets out five factors, which when considered, allow proponents to undertake a qualitative analysis of the likely impacts of an action and to determine whether a significant impact is likely. All factors must be considered, and an overall conclusion made based on all factors in combination.

B1 Microbats

Due to similar foraging habitat requirements, a single test was undertaken for the following species, which are all listed as vulnerable under the BC Act:

- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Southern Myotis (*Myotis macropus*)
- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Eastern Cave Bat (*Vespadelus troughtoni*)

The description and habitat associations of each of the above-listed threatened species are presented in Appendix A. Potential foraging habitat for these species is available within the 0.1 ha of vegetation proposed to be removed. No hollow bearing trees, which represents potential roosting habitat for these species are proposed for removal. The study area did not contain suitable breeding habitat for any of these threatened microbat species.

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction	The proposed works will result in the removal 0.10 ha of planted native vegetation. It is considered unlikely that the proposed works will place a viable local population of any of these potentially affected species at risk of extinction given that suitable habitat is available within the tracts of connective vegetation near the Nepean River and lowed Blue Mountains area. Additionally, the species are highly mobile.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not applicable
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community: Whether the proposed development or activity is likely to substantially and adversely modify the composition of the ecological	Not applicable

BC Act	Question	Response
	community such that its local occurrence is likely to be placed at risk of extinction.	
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity	Vegetation removal (0.10 ha) will be minimal. There is similar habitat available immediately adjacent to the study area and the potentially affected species are highly mobile.
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community: Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity	Habitat for these species is already fragmented by the existing school and residential developments in the surrounding area The construction of the school hall is unlikely to increase fragmentation or isolation of areas of habitat. The highly mobile species will still be able to access similar vegetation located adjacent to the study area.
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	The construction works will impact up to 0.10 ha of potential habitat for threatened microbat species, including one hollow bearing tree. The small area of habitat to be impacted is not considered vital to the long-term survival of these species within the locality.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	The proposed works will not impact any declared area of outstanding biodiversity value.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	One key threatening processes, the removal of native vegetation is relevant to this proposal. The proposed works are unlikely to contribute significantly to either process given that only 0.10 ha of planted native vegetation is proposed to be removed and suitable habitat is available within the tracts of connective vegetation associated with the Nepean river and lower Blue Mountains area.
Conclusion	Is there likely to be a significant impact?	No. The proposed activity is unlikely to have a significant impact on Eastern Coastal Free-tailed Bat, Large Bent-winged Bat, Southern Myotis, Greater Broad-nosed Bat, or Eastern Cave Bat for the following reasons: - The extent of vegetation to be removed is minimal (0.10 ha) and more suitable habitat for these highly mobile species is available adjacent to the study area. - No hollow bearing trees or habitat features which can be utilised for roosting are to be removed as part of the development.

B2 *Pteropus poliocephalus* (Grey-headed Flying-fox)

The Grey-headed Flying-fox is listed as vulnerable under the BC Act and EPBC Act. This species was not observed during field survey and has not been recording in the study area. The construction of the hall will remove 0.09 ha of native, planted vegetation – little which includes species that are potential foraging habitat for this species. No camps will be affected by the proposed development. The closest Nationally Important Camp is located approximately 21 km northeast of the study area, in Windsor. However, three other Flying-fox camps are located nearby along the Nepean River (approximately two, three and four km to the north).

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction	The proposed clearance on the subject site would result in removal of 0.09 ha of native, planted vegetation, of which on two trees represent potential foraging habitat for the Grey-headed Flying-fox (one <i>Grevillia robusta</i> and <i>Eucalyptus moluccana</i>). Most trees to be removed (<i>Casuarina gluaca</i>) are not known to be key feed trees of the Grey-headed flying fox (GHFF) (Eby and Law 2008). No breeding habitat will be impacted as part of the proposed works. It is considered unlikely that the proposed works will place a viable population of the species at risk of extinction given that the site has no permanent water bodies, has low connectivity to surrounding habitat and higher quality, similar habitat is available near to the study area. Given that the species is highly mobile, it is likely to move to these higher quality patches if present.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not applicable
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community: Whether the proposed development or activity is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	Not applicable
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity	The proposed clearance of the subject site will result in the removal of 0.09 ha of native, planted vegetation, most which is not considered key potential foraging habitat for the GHFF (i.e. <i>Casuarina gluaca</i>). Similar habitat is available along the nearby Nepean River.
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community:	Vegetation removal (0.09 ha) will be minimal. The vegetation available closer the known roosts is likely of higher quantity and would therefore be used preferentially by this highly mobile.

BC Act	Question	Response
	Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity	
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	The site is already isolated, with residential housing surrounding the site. Due to the poor connectivity and minimal habitat available on site, the species is unlikely to be using the vegetation that is proposed to be removed. This is supported by the lack of prior records on site.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	There are no areas of outstanding biodiversity within the subject site.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	One key threatening process, the removal of native vegetation, is relevant to this proposal. The proposed works are unlikely to contribute significantly to this process given that only 0.09 ha of isolated planted natives are proposed to be removed.
Conclusion	Is there likely to be a significant impact?	The proposal is unlikely to constitute to a significant impact on the Grey-headed Flying Fox given the following: • The site is in poor quality and constitutes planted natives, mostly which are not known to be significant roost or feed tree species • No camps of state or national significance occur in the local area, with individuals mostly sighted moving over suburban area near the subject site. As such, the clearance of the site will not impact any important populations. • As a result, the proposed development will not trigger the Biodiversity Offset Scheme with respect to impacts to the GHFF.

Appendix C Significant Impact Criteria (EPBC Act)

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. Under the Act, any action which “has, will have, or is likely to have a significant impact on MNES” is defined as a “controlled action”, and requires approval from the Commonwealth Department of Agriculture, Water and the Environment (DAWE), which is responsible for administering the EPBC Act.

The EPBC Act Significant Impact Criteria was applied to one species, *Pteropus poliocephalus* (Grey-headed Flying-fox), which may occur in the subject site. Grey-headed Flying-fox is listed as vulnerable under the EPBC Act.

C1 Environment Protection and Biodiversity Conservation Act 1999 Assessment of Significance for the Grey-headed Flying Fox

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species <i>Note: An ‘important population’ is a population that is necessary for a species’ long-term survival and recovery (DoAWE 2013).</i>	The Grey-headed Flying Fox (GHFF) is considered to be one population that intermixes up and down the east coast, therefore any GHFF population is a meta-population of this one “important population”. No roosting habitat (camps) will be affected by the proposed action. The proposed action will impact up to 0.09 ha of native vegetation, of which most species are not considered to be important feed species for GHFF (bar two trees, a <i>Grevillia robusta</i> and a <i>Eucalyptus moluccana</i>). The site is isolated, with minimal habitat connectivity to nearby camps – none of which are identified on the National Flying-fox Monitoring viewer as of National Importance (DotEE 2021). The Grey-headed Flying-fox is recorded as travelling long distances during foraging (up to 50 km) and as such, are likely to be sighted moving through the area to more suitable habitat along the Nepean River. Given the proximity of more suitable habitat, the removal of this potential habitat would not lead to the long-term decrease in the size of an important population of Grey-headed Flying-fox
2)	reduce the area of occupancy of an important population	No important populations occur within the local area, with the closest camp of National significance being approximately 21km to the north-west. Some individuals have been sighted in the local area, however these numbers are small in comparison to the known numbers at important roosting camps (<i>i.e.</i> which include hundreds of thousands of individuals). These individuals have all been sighted travelling across suburban areas, and no roosts have been sighted in any of the local vegetation patches connecting to the site.

Criterion	Question	Response
3)	fragment an existing important population into two or more populations	According to the Draft Recovery Plan for the Grey-headed Flying-fox 2017, “the Grey-headed Flying-fox is considered to be a single, mobile population with individuals distributed across Queensland, New South Wales, Victoria, South Australia, Tasmania and the ACT.” The proposed action will not fragment an existing important population into two or more populations. No camps will be affected by the proposed action and other areas of foraging habitat are available for this highly mobile species within the region.
4)	adversely affect habitat critical to the survival of a species <i>Note: ‘Habitat critical to the survival of a species or ecological community’ refers to areas that are necessary:</i> • <i>for activities such as foraging, breeding, roosting, or dispersal</i> • <i>for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)</i> • <i>to maintain genetic diversity and long term evolutionary development, or</i> • <i>for the reintroduction of populations or recovery of the species or ecological community.</i>	The proposed tree removal (0.09 ha), consists of predominately <i>Casuarina glauca</i> – not known to be an important feed trees of the GHFF (Eby and Law 2008). No roosting individuals have been recorded within subject site or any connecting vegetation. The species is recorded as travelling long distances (50 km) on feeding forays and similar habitat is available adjacent to the study area. As such, removal of the vegetation on site is unlikely to adversely affect habitat critical to the survival of a species
5)	disrupt the breeding cycle of an important population	The proposed action will not disrupt the breeding cycle of the Grey-headed Flying-fox given that no camps will be affected by the proposed action and suitable foraging habitat is available nearby to the study area.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will remove/modify up to 0.09 ha of vegetation, mostly of <i>Casuarina glauca</i> , not known was important foraging habitat for the Grey-headed Flying-fox. It is unlikely that the extent of this vegetation removal will cause the species to decline because suitable habitat is available nearby to the study area. Only two potential foraging trees will be removed – one <i>Grevillia robusta</i> and one <i>Eucalyptus moluccana</i> .
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species’ habitat	The proposal would not result in invasive species, such as weeds, that would be harmful to GHFF. It is unlikely that the proposed clearance of the subject site will result in a large increase in the number of weeds due to the current disturbed nature of the site, particularly if managed during development
8)	introduce disease that may cause the species to decline, or	Grey-headed Flying-fox are reservoirs for the Australian bat lyssavirus (ABL) and can cause clinical disease and mortality in GHFF. It is estimated that <1% of the entire population is affected by the disease (DotEE, 2017). The proposed action

Criterion	Question	Response
		is unlikely to present a significant ecological stress on any camps or on individuals that may utilise the subject site and therefore the works are unlikely to introduce or exacerbate this virus or any other disease that may cause this species to decline.
9)	interfere substantially with the recovery of the species.	The removal of a small number of foraging tree is unlikely to interfere substantially with the recovery of the species.
Conclusion	Is there likely to be a significant impact?	The proposal is unlikely to result in a significant impact on Grey-headed Flying-fox. No camps will be removed by the proposed action. More suitable foraging habitat for this highly mobile species is available nearby to the study area.

Appendix D Ultrasonic Analysis Report

PROJECT BACKGROUND AND SITE DESCRIPTION

Eco Logical Australia Pty Ltd (ELA) was engaged by MBB Group Pty Ltd to conduct an ultrasonic Microchiropteran bat call survey and prepare a MUAR at the Nepean Creative and Performing Arts School (Subject site). The need for this survey and MUAR report came from a request for additional information from Penrith City Council that is in relation to a tree removal application. The information collected during this survey will contribute to the preparation of Flora and Fauna Assessment report.

This MUAR report outlines the methodology used to record the microbat calls, how the recorded calls were analysed and the results of the data analysis.

METHODS

Four (4) Anabat Swift (AS) (Titley Electronics) ultrasonic microbat detectors were set at four (4) locations within the subject site between the 25 January and 29 January 2021. Each detector was set to record a full night of ultrasonic call data (e.g. dusk to dawn) across the four consecutive survey nights.

DATA ANALYSIS

The ultrasonic call data was recorded passively on four Anabat Swift ultrasonic microbat detectors (AS) (Titley Electronics). Microbat calls recorded were recorded as WAV sound files. These WAV files were viewed using the software program Anabat Insight (Version 1.9.2-0g2fd2328) (Titley Scientific) in either zero crossing (ZC) format or full spectrum formats.

Microbat identifications based upon the recorded calls were made by Rodney Armistead from ELA using regional based guides to the echolocation calls of microbats in New South Wales (Pennay et al 2004); and south-east Queensland and north-east New South Wales (Reinhold et al 2001) and the accompanying reference library of over 200 calls from Sydney Basin, NSW (which is available at <http://www.forest.nsw.gov.au/research/bats/default.asp>). Species identification was guided by considering probability of occurrence based upon the general distribution information that is provided in Churchill (2008); Pennay et al. (2011), Van Dyck and Strahan (2008), Van Dyck et al. (2013) and on the Australian Bat Society web page (Australian Bat Society Inc (viewed January 2021)). A technical review of this report and a sample of the calls was performed by Alicia Scanlon also from ELA. Alicia has over 14 years of experience in the identification of ultrasonic call recordings.

To ensure reliable and accurate results the following protocols (adapted from Lloyd et al. 2006) were applied:

- Search phase calls are used preferentially when analysing the data because they contain more diagnostic features, rather than cruise phase calls or feeding buzzes (McKenzie et al. 2002).
- Recorded calls containing less than three pulses are not analysed as they are often too short to confidently determine the identity of the species making the call (Law et al. 1999). These short sequences were either removed manually or were labelled as unidentifiable.
- For those calls that are able to be used to identify the species making the call, two categories of confidence are used (Mills et al. 1996):

- Definitely present – the quality and structure of the call profile is such that the identity of the bat species making the calls is not in doubt.
- Potentially present – the quality and structure of the call profile is such that there is some / low probability of confusion with species that produce similar calls profiles.
- Calls made by bats that cannot be used for identification purposes such as social calls, short and low-quality calls, cruise and approach phase calls were removed from the data.
- Sequences not attributed to microbat echolocation calls (e.g. insect buzzes, wind, train and vehicle movement) were dismissed from the analysis.
- *Nyctophilus* spp. (Long-eared bats) are difficult to identify or separate confidently to species level based upon their recorded calls. Therefore, we have made no attempt to identify any *Nyctophilus* spp. calls recorded during this survey to species level (Pennay et al. 2004). There are two non-threatened species, *Nyctophilus* species that potentially could occur within the subject area. This includes *N. geoffroyi* (Lesser Long-eared Bat) and *N. gouldi* (Gould's Long-eared Bat). Both of these species are relatively common and widely distributed across NSW.
- The Free-tailed Bats (previously referred to as the genus *Mormopterus* or *Tadarida*) have recently undergone taxonomic revision (Reardon et al. 2014) and now comprise four separate genus; *Austronomus*, *Micronomus*, *Ozimops* and *Setirostris* (Table 4). This report uses nomenclature for Free-tailed Bat species as referred to in Jackson and Groves (2015). The correlation between nomenclature used in this report and that used in NSW State legislation is presented in Table 2 below.
- Jackson & Groves (2015) list the Eastern Bent-winged Bat (*Miniopterus schreibersii oceanensis*) under the new name of *M. orianae* (Large Bent-winged Bat). However, we follow the NSW Department of Planning, Industry and Environment (DPIE) nomenclature as it applies to the eastern form of the species which occurs in NSW as a distinct sub-species; *M. o. oceanensis* (Large Bent-winged Bat) (see <https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10534>) (NSW Department of Planning, Industry and Environment (formerly the Office Environment and Heritage).

Table 4: Correlations between current and previous nomenclature for the Free-tailed bats of NSW

Jackson and Groves 2015	Previously known as	Common Name	BC Act
<i>Austronomus australis</i>	<i>Tadarida australis</i>	White-striped Free-tailed Bat	
<i>Micronomus norfolkensis</i>	<i>Mormopterus norfolkensis</i>	Eastern Coastal Free-tailed Bat	Vulnerable
<i>Ozimops petersi</i>	<i>Mormopterus</i> species 3 (small penis)	Inland Free-tailed Bat	
<i>Ozimops planiceps</i>	<i>Mormopterus</i> species 4 (long penis eastern form)	Southern Free-tailed Bat	
<i>Ozimops ridei</i>	<i>Mormopterus</i> species 2	Ride's Free-tailed Bat	
<i>Setirostris eleryi</i>	<i>Mormopterus</i> species 6	Bristle-faced Free-tailed Bat	Endangered

RESULTS

There were 426 call sequences recorded during this survey. Of these, 299 (70.19%) were deemed useful, because the call profile was of sufficient quality and/or length (number of pulses) to enable positive

identification of bat species. The remaining 127 (29.81%) call sequences were either too short (less than three pulses) or of low quality, thus preventing positive identification of a bat species.

There were at least nine (9) and up to fifteen (15) species recorded during this survey (Table 5 and Table 6). During this survey calls attributed to *Chalinolobus gouldii* (Gould's Wattled Bat) and *Ozimops ridei* (Ride's Free-tailed Bat) either as single species or grouped together as Gould's Wattled Bat / Ride's Free-tailed Bat combination because the calls could not be separated, were the most commonly recorded calls during this survey. Calls attributed to these two species (either alone or in combination) accounted for 229 (79.59%) of the 299 identifiable calls recorded during this survey. Definite and potential calls from these two species were recorded at all four locations surveyed.

Threatened species

Up to six (6) species that are listed as Vulnerable under the NSW *Biodiversity Conservation Act 2016* (BC Act) were recorded during this survey (Table 5 and Table 6, Figure 7 - Figure 16). Based on the call profiles, three (3) Vulnerable species listed under the BC Act were deemed to have been definitely present within the Subject site:

- *Micronomus norfolkensis* (Eastern Coastal Free-tailed Bat)
- *Miniopterus orianae oceanensis* (Large Bent-winged Bat)
- *Myotis macropus* (Southern Myotis)

Three (3) other species listed as Vulnerable could potentially be present within the Subject site including:

- *Falsistrellus tasmaniensis* (Eastern False Pipistrelle)
- *Scoteanax rueppellii* (Greater Broad-nosed Bat)
- *Vespadelus troughtoni* (Eastern Cave Bat).

The defining features of the recorded call profiles of Greater Broad-nosed Bat, Eastern False Pipistrelle and Eastern Cave Bat could either:

- have overlapped with one or more of the common and non-threatened species also recorded during this survey or known to occur in this region, or
- be of poor quality and therefore not possible to assign to a single microbat species.

INTERPRETATION OF SURVEY RESULTS

The Eastern Cave Bat, Large Bent-winged Bat (breeding habitat only) and Southern Myotis are categorised as species credits requiring targeted survey under the BC Act. If these species are recorded on site, impact assessment, credit calculations and further survey may be required. The Eastern Coastal Free-tailed Bat, Eastern False Pipistrelle and Greater Broad-nosed Bat are listed as ecosystem credit species that do not require targeted survey. A brief description of the six (6) threatened microbat species that were recorded or potentially recorded within the Subject site, and their habitat requirements is provided below.

Ecosystem credit - Hollow dependant microbat species

Three (3) of the threatened microbat species recorded or potentially recorded during this survey are hollow dependant species. This includes the Eastern Coastal Free-tailed Bat, Eastern False Pipistrelle

and the Greater Broad-nosed Bat. Six potential calls recorded on WOL-04 were attributed to the Eastern False Pipistrelle and Greater Broad-nosed Bat. One definite and one potential Eastern Coastal Free-tailed Bat call were recorded during this survey.

Species credit - Subterranean roosting species

Two (2) threatened microbat species that typically roost in subterranean or cave like environments, including caves, mines, tunnels, bridges, culverts, and buildings, were recorded, or potentially recorded during this survey (Churchill 2008). This includes the Eastern Cave Bat and Large Bent-winged Bat (Churchill 2008).

Potential Eastern Cave Bat calls were recorded during this survey. The Eastern Cave Bat will roost in sandstone caves, overhangs, boulder piles, mines and occasionally in buildings which would generally be within foraging range of sandstone escarpments (Churchill 2008). ELA ecologists have found this species roosting in buildings near suitable natural habitat features that would normally provide foraging and roosting habitat for this species at sites in the Hunter Valley and Sydney Basin in NSW and in Qld during surveys conducted in 2017 and more recently in 2020. The calls of this species overlap with those of other more common *Vespadelus* species that are also known to occur in the region. ELA understands that the building structures present in the subject site which could be used as roosting habitat by Eastern Cave Bats are not likely to be impacted during the proposed tree removal and the proposed works do not represent a high risk to this species. In order to determine whether this species is present on site harp trapping and positive identification of bats in the hand would be required with the optimal survey period between the months of November to end of January.

Just two calls, (one definite call, see Figure 12 and one potential call) were attributed to the Large Bent-winged Bat during this survey. The Large Bent-winged Bat is a subterranean roosting species that will roost in cement culverts, stormwater drains, bridges, disused mine shafts and caves (Churchill 2008). Breeding occurs over the summer months and bats disperse to other non-breeding winter and hibernation roosts between March and August / September each year (Churchill, 2008). This species only breeds (e.g. gives birth, lactates and provides maternal care) in a small number of caves in the Great Dividing Rang in NSW (Churchill 2008). Caves provide the perfect microclimatic conditions for rearing of young.

Between September / October and February / March each year a large proportion of the Large Bent-winged Bat population that inhabits the Sydney Basin throughout the colder winter months migrates to maternal caves in the Great Dividing Range. There are typically much lower densities of Large Bent-winged Bats recorded in the Sydney Basin between October and February. The low level of Large Bent-winged Bat activity that was recorded during this survey supports this fact. In order to evaluate whether the low activity levels of Large Bent-winged Bats is a true representation of the habitat value of the Subject site and not just an artefact of the lower densities present over summer, the surveys could be repeated during suitable microbat foraging conditions in winter. If similar results are obtained, then it can be inferred that the Subject site does not provide optimal foraging habitat for this species. Breeding habitat for this species does not occur within the Subject site. ELA understands that the building structures present in the subject site which could be used as winter roosts by Large Bent-winged Bats are not likely to be impacted during the proposed tree removal.

Species credit - Southern Myotis

There were five (5) definite and six (6) potential Southern Myotis calls (in combination with the two *Nyctophilus* species) recorded at two locations (WOL-04 and WOL-05) respectively during this survey (Table 5). Southern Myotis are known to use tree hollows as roosting and breeding sites but are more commonly known to roost in subterranean or cave like environments such as beneath bridges, in culverts, tunnels, mines, caves and buildings (Churchill 2008). Southern Myotis are generally closely associated with rivers, creeks, estuaries and permanent waterbodies owing to their unique foraging strategy of trawling for insects, small crustaceans and fish on, and just above the surface of the water (Churchill 2008). Southern Myotis are known from this region of the Sydney basin and mainly roost near to, and are generally more active over water. The Subject site is approximately 400 m from the Nepean River, separated from the river by residential areas and does not contain any waterbodies over which Southern Myotis would forage. It is unlikely that Southern Myotis will roost in trees within the Subject site because it is too far from permanent water and likely that better quality roosting habitat is available in the riparian zone along the Nepean River.

Loss of potential microbat roost habitat

It is our understanding that no Hollow Bearing Trees (HBTs) or underground structures such as culverts and bridges or any buildings are to be removed or impacted upon during the proposed development.

Table 5: Microbat species diversity recorded ultrasonically within the Subject site

Scientific Name	Common Name	WOL-01
<i>Austronomus australis</i>	White-Striped Free-tailed Bat	D
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	D
<i>Chalinolobus morio</i>	Chocolate Wattled Bat	D
<i>Falsistrellus tasmaniensis</i> *	Eastern False Pipistrelle	P
<i>Micronomus norfolkensis</i> *	Eastern Coastal Free-tailed Bat	D
<i>Miniopterus orianae oceanensis</i> *	Large Bent-winged Bat	D
<i>Myotis macropus</i> *	Southern Myotis	D
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	P
<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	P
<i>Ozimops ridei</i>	Ride's Free-tailed Bat	D
<i>Scoteanax rueppellii</i> *	Greater Broad-nosed Bat	P
<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	P
<i>Vespadelus pumilus</i>	Eastern Forest Bat	P
<i>Vespadelus troughtoni</i> *	Eastern Cave Bat	P
<i>Vespadelus vulturnus</i>	Little Forest Bat	D

D = Definitely recorded, P = Potentially recorded. *listed as threatened under the BC Act

Table 6: Microbat species diversity recorded ultrasonically at each survey site at the Subject site between the 25 and 29 of January 2021.

Scientific Name	Common Name	WOL-01	WOL-04	WOL-05	WOL-07
<i>Austronomus australis</i>	White-Striped Free-tailed Bat	-	-	D	-
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	D	D	D	D
<i>Chalinolobus morio</i>	Chocolate Wattled Bat	-	D	D	-
<i>Falsistrellus tasmaniensis</i> *	Eastern False Pipistrelle		P	-	-
<i>Micronomus norfolkensis</i> *	Eastern Coastal Free-tailed Bat	P	-	D	-
<i>Miniopterus orianae oceanensis</i> *	Large Bent-winged Bat	-	D	-	-
<i>Myotis macropus</i> *	Southern Myotis	P	D	P	-
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	P	-	P	-
<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	P	-	P	-
<i>Ozimops ridei</i>	Ride's Free-tailed Bat	D	D	D	P
<i>Scoteanax rueppellii</i> *	Greater Broad-nosed Bat		P	-	-
<i>Scotorepens orion</i>	Eastern Broad-nosed Bat		P	-	-
<i>Vespadelus pumilus</i>	Eastern Forest Bat		P	-	-
<i>Vespadelus troughtoni</i> *	Eastern Cave Bat		P	-	-
<i>Vespadelus vulturnus</i>	Little Forest Bat		D	-	-

D = Definitely recorded, P = Potentially recorded. *listed as threatened under the BC Act

SURVEY LIMITATIONS

Calls were only positively identified when the defining characteristics were present and there was no chance of confusion between species with overlapping and/or similar calls. In this survey, there were some call sequences that could not be positively identified to species level. Further, some species recorded in this survey can have call profiles that overlap with other species.

When overlap occurs, species with similar call profiles are assigned to multi species groups of two or three potential species depending on the characteristics displayed in the recorded call sequences. Calls with intermediate characteristics were assigned mixed species labels.

The species recorded in this survey with overlapping call profiles are described below.

Gould's Wattled Bat, Ride's Free-tailed Bat and the threatened Eastern Coastal Free-tailed Bat have calls that overlap in the range 28.5 kHz to 32 kHz. Calls were identified as Ride's Free-tailed Bat if the call shape was flat (initial slope S1 of less than 100 octaves per second) and the frequency was between 28 – 32 kHz. Gould's Wattled Bat was distinguished by a frequency of 27.5 – 32.5 kHz and alternation in call frequency between pulses. Eastern Coastal Free-tailed Bat was identified by flat pulses (initial slope S1 of less than 100 OPS), alternation in call frequency between pulses and a frequency range of 31 kHz to 36 kHz. Calls with intermediate characteristics were assigned mixed species labels.

The calls of Eastern False Pipistrelle, Greater Broad-nosed Bat, and Eastern Broad-nosed Bat can be difficult to separate as their call frequencies and some other call characteristics overlap.

- Greater Broad-nosed Bats can be distinguished by a frequency of 32 – 36 kHz, lack of a tail or short down-sweeping tail, frequency of the knee greater than 37 kHz, and drop of more than 3 kHz from the knee to the characteristic section.
- Eastern False Pipistrelle bat calls have a characteristic frequency between 35 and 39 kHz, display curved, often steep pulses without up-sweeping tails and sometimes with down-sweeping tails. The pre-characteristic section is often long (greater than 3 kHz). This species can only be separated from Eastern Broad-nosed Bat when the characteristic frequency is above 37 kHz.
- Eastern Broad-nosed Bat calls fall between 34 and 37 kHz but can only be separated from Eastern False Pipistrelle when calls are between 34 and 35 kHz, and the frequency of the knee is above 38 kHz.

There were several calls recorded that fell in the range of overlap between these species with characteristics intermediate between all species. In most cases calls could not be assigned to any of the three possible species and were labelled as Eastern False Pipistrelle / Greater Broad-nosed Bat / Eastern Broad-nosed Bat or combinations of two of the three where call frequency was too high or too low for Greater Broad-nosed Bat or Eastern False Pipistrelle.

The calls of *Chalinolobus morio* (Chocolate Wattled Bat) (46.5 – 53 kHz), *Vespadelus pumilus* (Eastern Forest Bat) (50 – 58 kHz), the threatened Eastern Cave Bat (49 – 52 kHz) and *Vespadelus vulturnus* (Little Forest Bat) (48.5 – 53 kHz) overlap in the range 49 kHz to 52 kHz. Chocolate Wattled Bats display a curved call with a down-sweeping tail whereas Eastern Forest Bat, Eastern Cave Bat and Little Forest Bats display curved calls with up-sweeping tails. Call profiles above 54 kHz with upward facing tails can be attributed to the Eastern Forest Bat. Call profiles below 49 kHz with upward facing tails can be attributed to the Little Forest Bat. Eastern Cave Bats cannot be distinguished from Little Forest Bats

where call frequencies overlap. When there are no tails the calls are assigned mixed species labels of Chocolate Wattled Bat / Eastern Forest Bat, Eastern Cave Bat and Little Forest Bat complex.

The calls of Southern Myotis are very similar to all *Nyctophilus* (Long-eared Bat) species and it is often difficult to separate these species on call characteristics alone. Calls can be identified as *Nyctophilus spp.* when the time between calls (TBC) is higher than 95ms and the initial slope S1 is lower than 300 octaves per second (OPS). Calls can be identified as Myotis when the time between calls (TBC) is lower than 75ms and the initial slope S1 is greater than 400 (OPS). Where the TBC is between 75 and 95ms and the OPS is between 300 and 400 calls are assigned a mixed species label of Myotis / Long-eared Bats (Pennay, Law and Reinhold 2004).

Furthermore, calls produced by different bat species differ in fundamental ways related to the foraging mode / activity of each species. Calls of different species and the different types of calls produced by each species (cruise, search, social, approach, attack) are not equally recorded by ultrasonic detectors. Weather and climatic conditions affect the quality and quantity of recorded data as well as the availability of insect prey and therefore the suitability of each site at a given time as foraging habitat. The survey was conducted in January during a period of warm to hot temperatures (minimum of 17.4 degrees to maximum of 40.7 degrees) and 0.8 mm of rainfall.

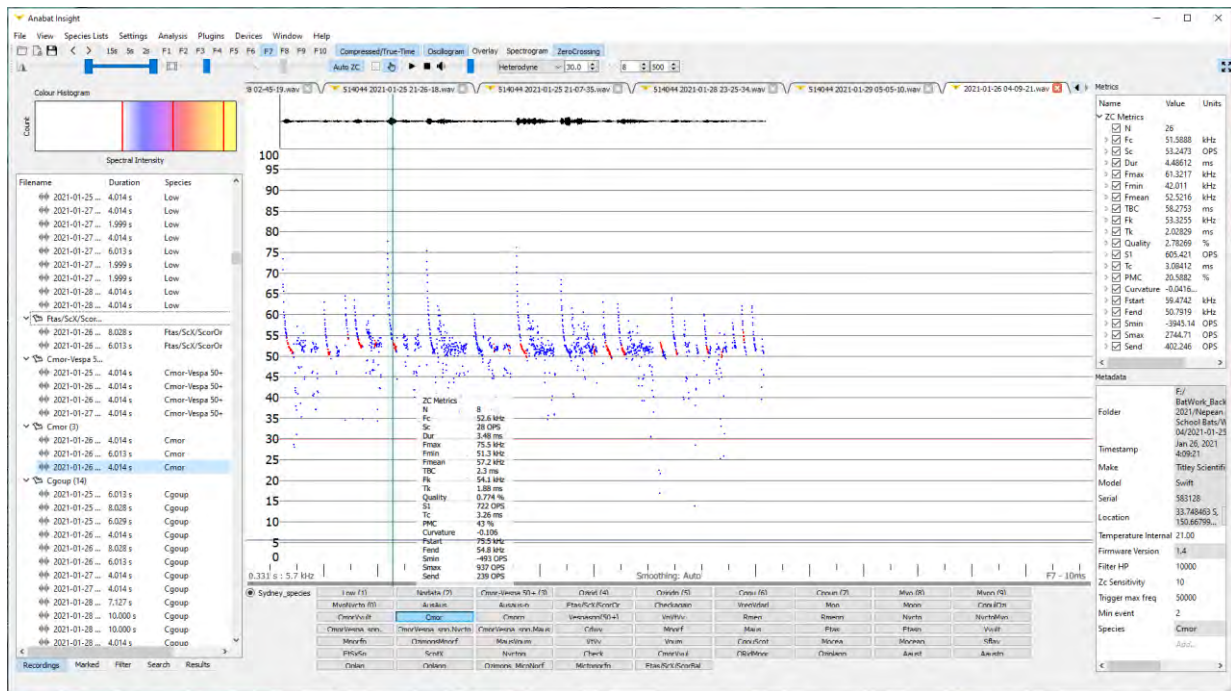


Figure 9. Call profile for *Chalinoborus morio* (Chocolate Wattled Bat) recorded on WOL-04 at 0409 (4.09 a.m.) on 26 January 2021.

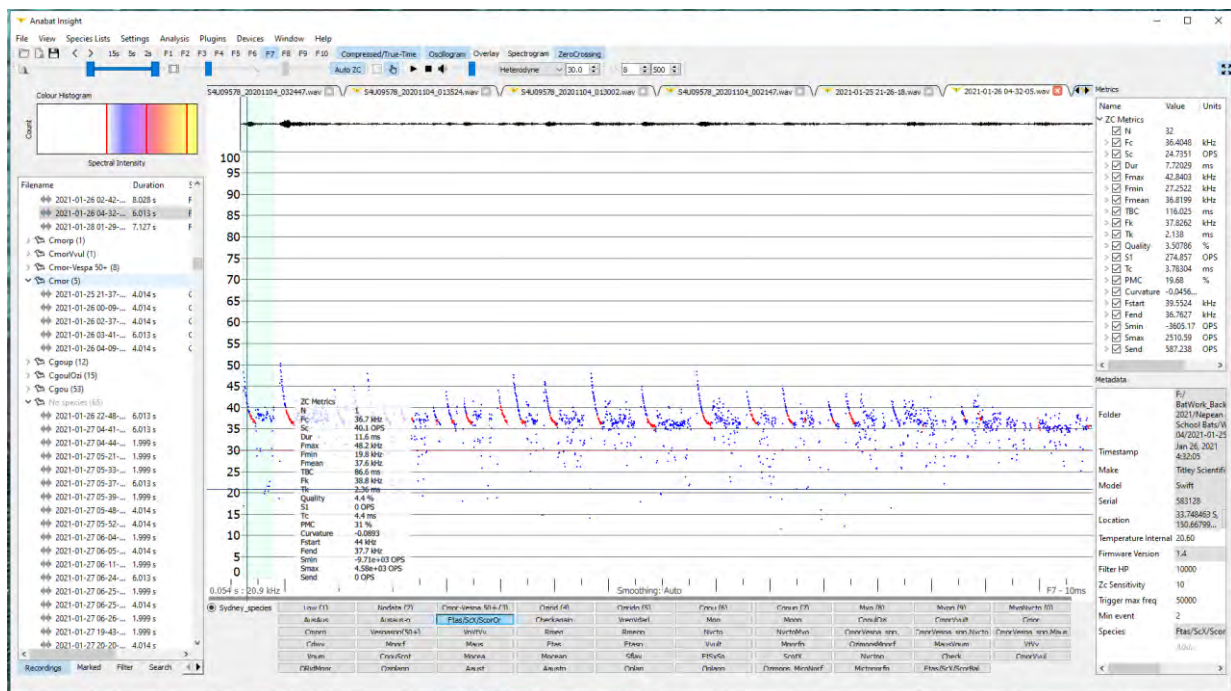


Figure 10. Potential call profile for *Falsistrellus tasmaniensis* (Eastern False Pipistrelle), *Scotenax rueppellii* (Greater Broad-nosed Bat), *Scotorepens orion* (Eastern Broad-nosed Bat) recorded on WOL-04 at 0432 (4:32 a.m.) on 26 January 2021.

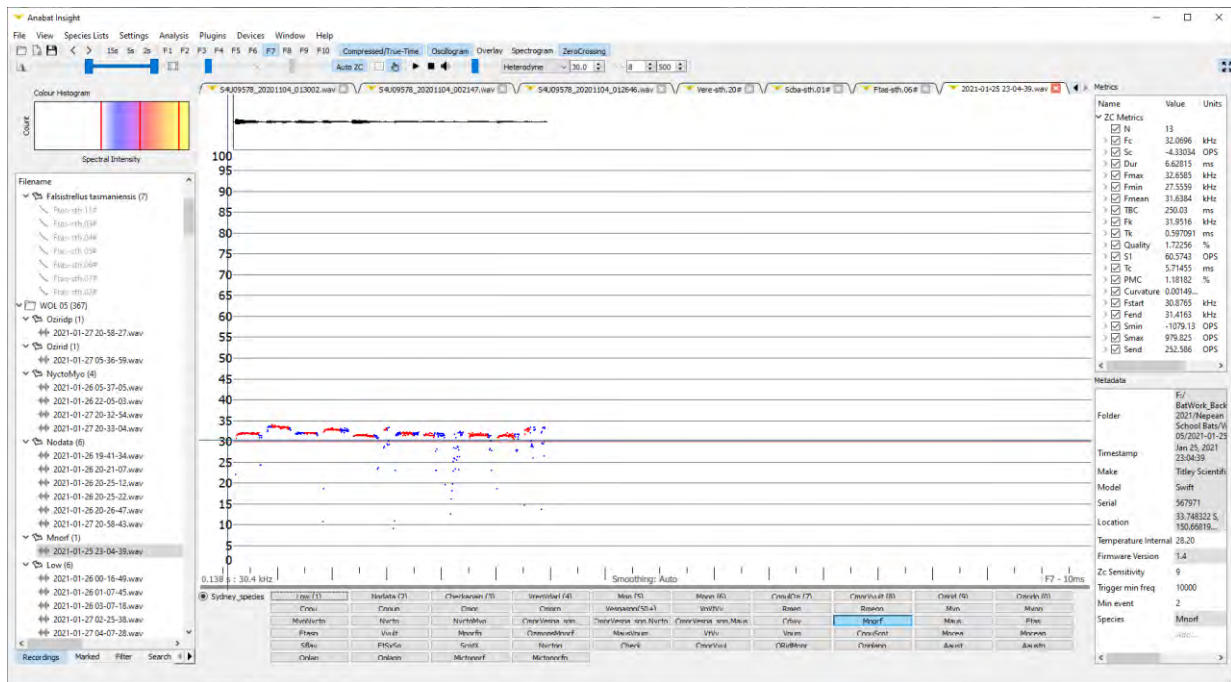


Figure 11. Call profile for *Micronomus norfolkensis* (Eastern Coastal Fee-tailed Bat) recorded on WOL07 at 2304 (11:04 p.m.) on 25 January 2021.

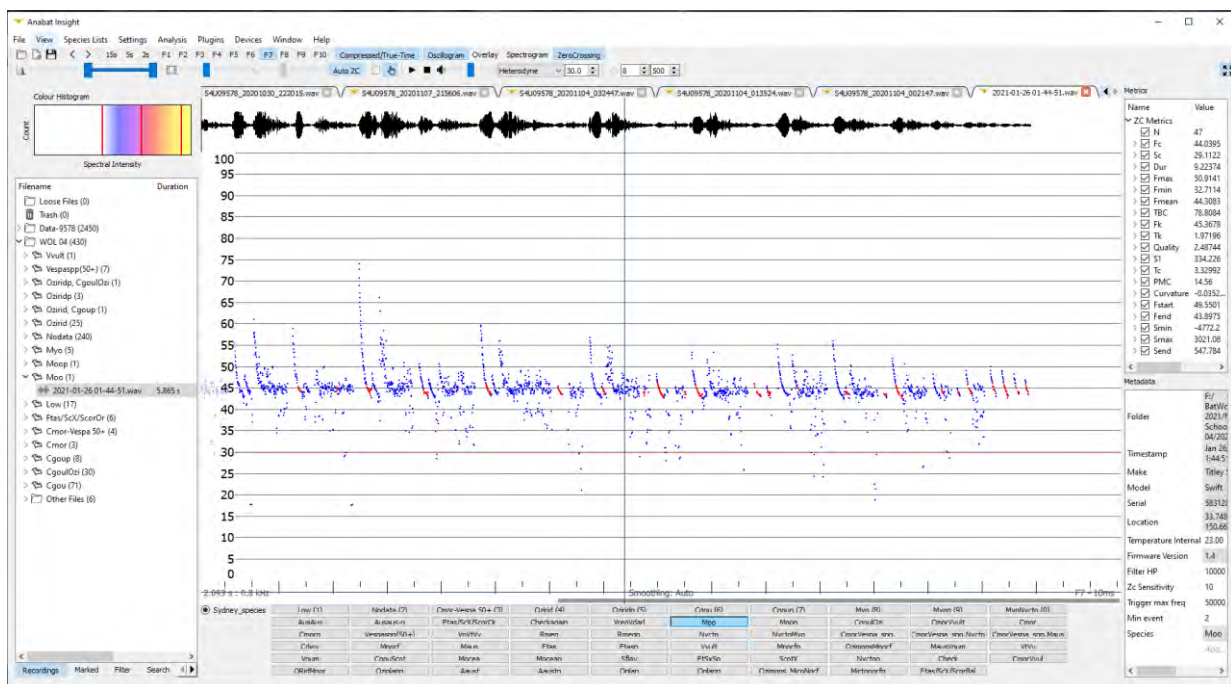


Figure 12. Call profile for *Miniopterus orianae oceanensis* (Large Bent-winged Bat) recorded on WOL-04 at 0144 (1:44 a.m.) on 26 January 2021.

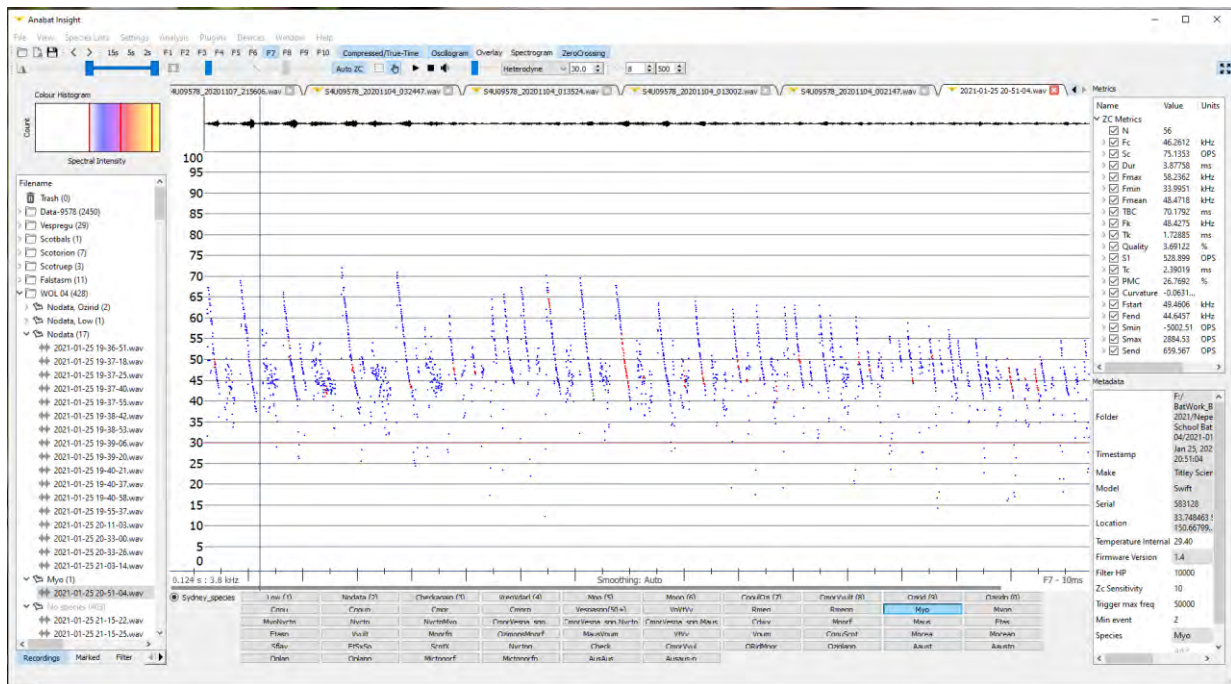


Figure 13. Potential call profile for *Myotis macropus* (Southern Myotis) recorded on WOL-04 at 2051 (8:51 p.m.) on 25 January 2021.

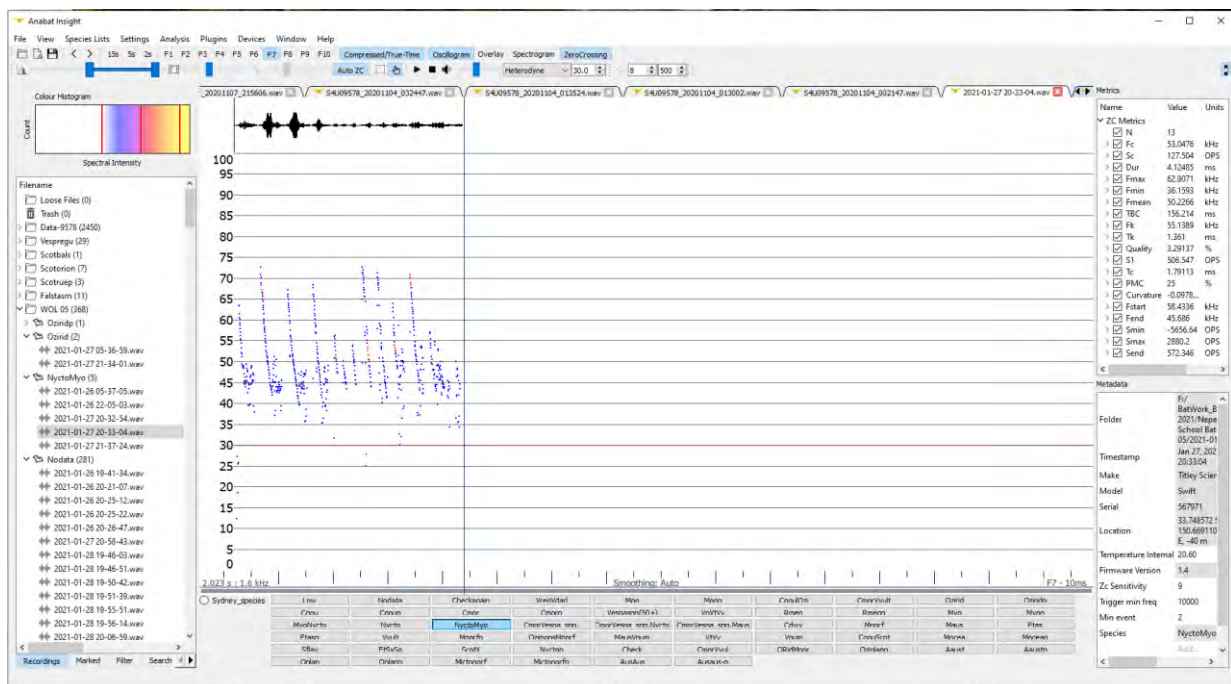


Figure 14. Potential call profile for *Myotis macropus* (Southern Myotis) / *Nyctophilus gouldi* (Gould's Long-eared Bat) / *Nyctophilus geoffroyi* (Lesser Long-eared Bat) recorded on WOL05 at 2033 (8:33 p.m.) on 27 January 2021.

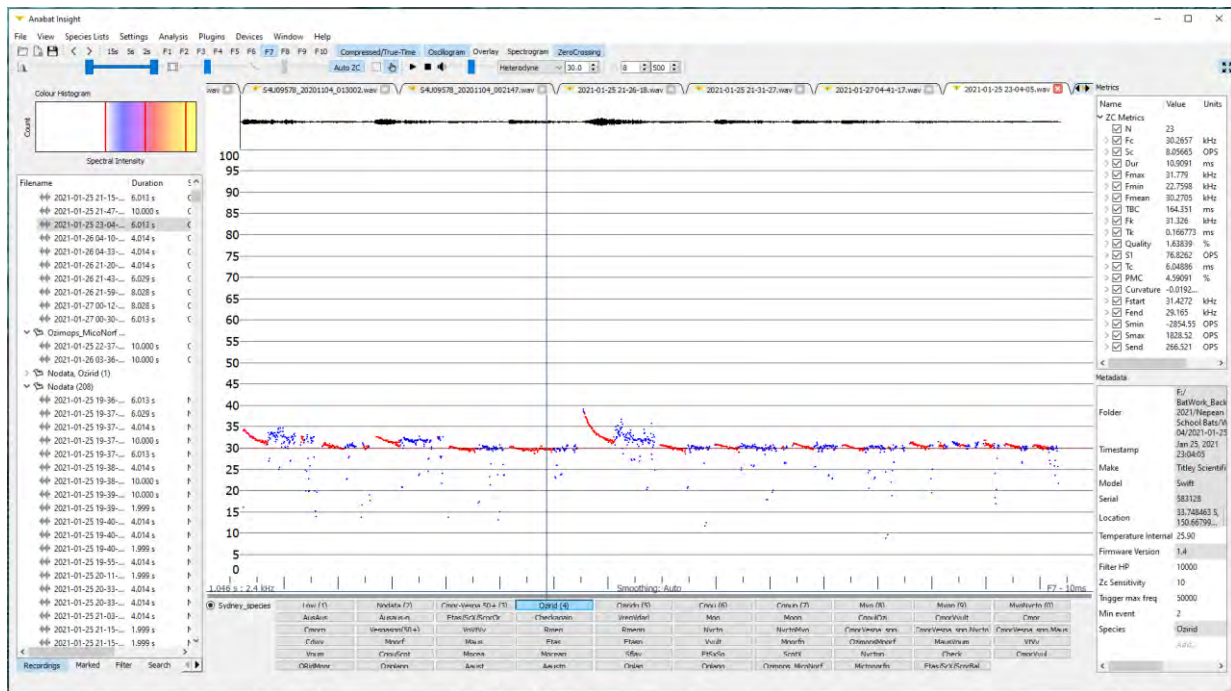


Figure 15. Call profile *Ozimops ridei* (Ride's Free-tailed Bat) recorded on WOL-04 at 2304 (11:04 p.m.) on 25 January 2021.

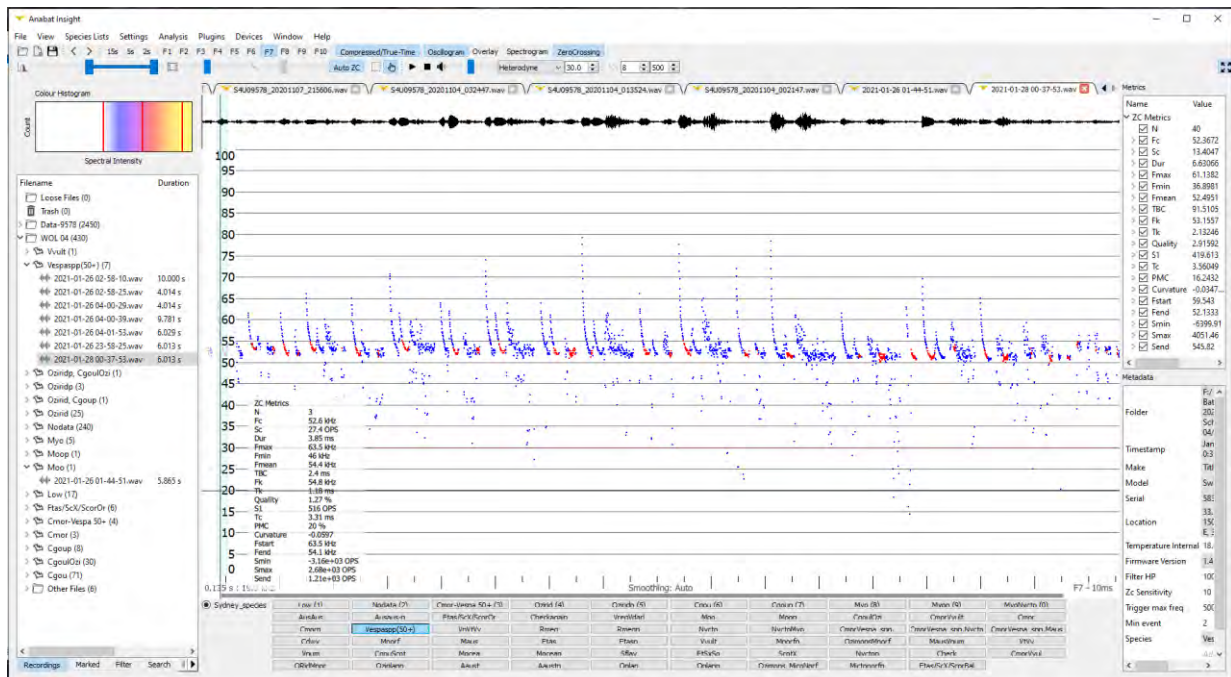


Figure 16. Potential call profile for *Vespadelus pumilus* (Eastern Forest Bat) / *Vespadelus troungtoni* (Eastern Cave Bat) / *Vespadelus vulturnus* (Little Forest Bat) recorded on WOL-04 at 0037 (12:37 a.m.) on 28 January 2021.

REFERENCES

- Churchill, S. (2008). *Australian Bats*. Second Edition. Allens and Unwin. New Holland Publishers. Sydney.
- Jackson, C. and Groves, S. (2015). *Taxonomy of Australian Mammals*. CSIRO Publishing.
- Law, B. S., Anderson, J., and Chidel, M. (1999). Bat communities in a fragmented forest landscape on the south-west slopes of New South Wales, Australia. *Biological Conservation* 88, 333-345.
- Lloyd, A.M., Law, B.S., and Goldingay, R. (2006) Bat activity on riparian zones and upper slopes in Australian timber production forests and the effectiveness of riparian buffers. *Biological Conservation* 129, 207-220.
- McKenzie, N. L., Start, A. N., and Bullen, R. D. (2002). Foraging ecology and organisation of a desert bat fauna. *Australian Journal of Zoology* 50, 529-548.
- Mills, D. J., Norton, T. W., Parnaby, H. E., Cunningham, R. B., and Nix, H. A. (1996). *Designing surveys for Microchiropteran bats in complex forest landscapes - a pilot study from south-east Australia*. Special issue: Conservation of biological diversity in temperate and boreal forest ecosystems 85, 149-161.
- Pennay, M., Law, B., and Reinhold, L. (2004). *Bat calls of New South Wales: Region based guide to echolocation calls of Microchiropteran bats*. NSW Department of Environment and Conservation, Hurstville.
- Pennay, M., Law, Bradley., Lunney, D., et al. (2011), Review of the distribution and status of the bat fauna of New South Wales and the Australia Capital Territory. In *Biology and Conservation of Australasian Bats*. Edited by Brad Law, Peggy Eby, Daniel Lunney and Lindy Lumsden. Royal Zoological Society, NSW, Mosman, NSW. Australia.
- Reardon, T.B., McKenzie, N.L., Cooper, S.J.B., Appleton, B., Carthew, S. and Adams, M. (2014). A molecular and morphological investigation of species boundaries and phylogenetic relationships in Australian free-tailed bats *Mormopterus* (Chiroptera: Molossidae). *Australian Journal of Zoology* 62: 109 – 136.
- Reinhold, L., Law, B., Ford, G., and Pennay, M. (2001). *Key to the bat calls of south-east Queensland and north-east New South Wales*. 2001. Queensland, DNR.
- Van Dyck, s., and Strahan. R. (2008). *Mammals of Australia*. Third Edition. Reed New Holland. Sydney.
- Van Dyck, s., Gynther. I., and Baker. A. (2013). *Field Companion to the Mammals of Australia*. New Reed New Holland. Sydney.

Appendix E Species Planting List

A list of local provenance species has been provided below based on the likelihood that previous vegetation within the area would have consisted of Forest Red Gum – Rough Barked Apple Grassy woodland on alluvial flats of the Cumberland Plan, Sydney Basin bioregion. The following species would be suitable for landscaping works:

Tree Species (>6m)

- *Eucalyptus amplifolia* (Cabbage Gum)
- *Eucalyptus crebra* – (Narrow-leaved Ironbark)
- *Eucalyptus eugenioides* – (Thin-leaved Stringybark)
- *Eucalyptus moluccana* – (Grey Box)
- *Eucalyptus tereticornis* – (Forest Red Gum)
- *Acacia decurrens* – (Sydney Green Wattle)

Small Trees / Shrub Species (1.5 – 6m)

- *Acacia falcata* (Sickle Wattle)
- *Acacia implexa* (Hickory Wattle)
- *Acacia parramattensis* (Parramatta Wattle)
- *Bursaria spinosa* (Blackthorn)
- *Daviesia ulicifolia* (Gorse Bitter Pea)
- *Dillwynia sieberi*
- *Dodonaea viscosa subsp. Cuneate* – (Wedge-leaf Hop-bush)
- *Exocarpos cupressiformis* – (Native Cherry)
- *Indigofera australis* – (Australian Indigo)

Groundcover Species

- *Asperula conferta*
- *Brunoniella australis* – (Blue Trumpet)
- *Centella asiatica* – (Indian Pennywort)
- *Cheilanthes sieberi subsp. sieberi* – (Poison Rock Fern)
- *Clematis glycinoides* – (Old Man's Beard)
- *Commelina cyanea* – (Creeping Christian)
- *Desmodium varians* – (Slender Tick-trefoil)
- *Dianella longifolia* – (Blueberry Lily)
- *Dichondra repens* – (Kidney Weed)
- *Geranium solanderi* – (Native Geranium)
- *Glycine clandestine* – (Twining Glycine)

- *Glycine microphylla* – (Small-leaf Glycine)
- *Glycine tabacina*
- *Hardenbergia violacea* – (Purple Coral Pea)
- *Plectranthus parviflorus* - (Cockspur Flower)
- *Pultenaea microphylla*
- *Solanum prinophyllum* – (Forest Nightshade)



Appendix F

Civil Engineering Flood Statement

NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

CIVIL ENGINEERING FLOOD STATEMENT



Prepared for: SINSW
By: **enstruct** group pty ltd
Revision: B

NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

CIVIL ENGINEERING FLOOD STATEMENT



ISSUE AUTHORISATION

PROJECT: NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

Project No: 6260

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorise by
A	18/01/21	DRAFT	NKK	KEH	KEH
B	21/01/21	APPROVAL	NKK	KEH	KEH

COPYRIGHT ©

This report is the property of enstruct group pty ltd and is licensed to the Client for use on this project. Reproduction of this document for this project shall only be undertaken in full. Reproduction for other purposes without the permission of enstruct group pty ltd is prohibited.

Contents



1 Introduction..... 4

1.1 Site Location.....4

1.2 Hall Location.....4

2 Flood Risk 5

3 Flood Planning Requirements 5

4 Student Capacity 6

5 Conclusion 6

1 Introduction

enstruct have been engaged by School Infrastructure NSW to provide civil engineering consultancy regarding flooding at Nepean Creative and Performing Arts High School. The site is located at 115-119 Great Western Hwy, Emu Plains.

Flood information has been extracted from the Penrith Development Control Plan 2014, the Penrith Stormwater Drainage Policy, and the Flood Level Enquiry Letter (Elias Ishak correspondence dated 24 November 2020).

Flooding risks will be discussed in terms of the sites susceptibility to inundation by:

- Overland Flow Paths
- 1% Annual Exceedance Probability (AEP) storm event flood extents and depths
- Probable Maximum Flood storm event flood extents and depths

Schools Infrastructure NSW (SINSW) is seeking to develop the existing school campus of Nepean Creative and Performing Arts High School with the addition of a multi-purpose, single storey building, and an upgrade of associated surrounding pavement and landscaping features. This will provide a school Hall and Gymnasium to strengthen the curriculum offering at the High School, and enhance the relationships that the school has with community groups and adjacent schools.

1.1 Site Location

Nepean Creative and Performing Arts High School is located at 115-119 Great Western Highway (Figure 1), Emu Plains, within the Penrith City Council Local Government Area. The development site has an area of approximately 0.85ha. Site levels fall gently from south to north towards the train line, from 26m AHD at the southern boundary, to 24.5m AHD along the northern boundary (Figure 2). The site is bounded by a railway track to the north, Old Bathurst Road to the north east, the Great Western Highway on the south east, and residential buildings along Gardenia Avenue on the south western boundary.

1.2 Hall Location

The proposed school hall location on the site, as per the Penrith City Council Nepean River Flood Study and as shown in Figure 3, is free from 1% AEP flooding impacts.



Figure 1: Site Location (Source: Google Maps)



Figure 2: Site Contours (Source: Penrith Council)

2 Flood Risk

Penrith City Council provides a Nepean River Flood Study which indicates that the Nepean Creative and Performing Arts High School is impacted by 1% AEP and PMF storm event flood depths and extents. **Figure 3** and **Figure 4** indicate the susceptibility of the site to flood hazards in the 1% Annual Exceedance Probability (AEP) and Probable Maximum Flood (PMF) storm events respectively, due to its proximity to the Nepean River. The proposed hall location is not located within the 1% AEP flood extents, but is within the PMF flood extents.



Figure 3: Penrith City Council 1% AEP storm event flood depths and extents (Source: Nepean River Flood Study Volume 2 Flood Maps)

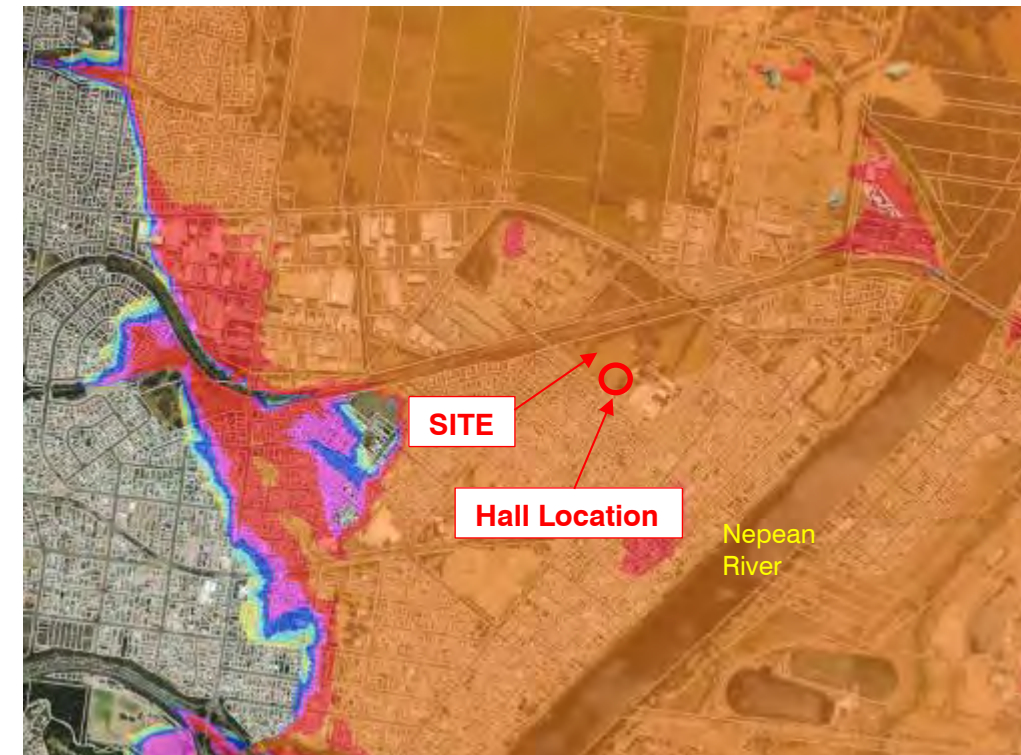


Figure 4: Penrith City Council PMF storm event flood depths and extents (Source: Nepean River Flood Study Volume 2 Flood Maps)

3 Flood Planning Requirements

A minimum freeboard of 500mm over the 1% AEP water surface level shall be provided for habitable floor levels, 100mm freeboard for garages and non-habitable floor levels, and 300mm for crest of driveway ramps, as per the Penrith Stormwater Drainage Policy requirements (Section 3.1.2 Table 4).

Table 4 Minimum Freeboard Requirements

Description	Minimum Freeboard (mm)	
	Overland Flow Flooding: ⁽¹⁾	OSD Systems:
Residential, Industrial or Commercial floor levels	500	300
Garages and non-habitable floor levels	100	100 ⁽²⁾
Crest of driveway ramps, pedestrian entry points and any openings to the basement (e.g. vents)	300	300

Notes:

⁽¹⁾ Properties affected by mainstream flooding must meet the requirements of Penrith City Council's Development Control Plan Section C3.5.

⁽²⁾ This minimum freeboard requirement also applies to the enclosed basement garages adjacent to the pump-out system.

Figure 5: Minimum Freeboard Requirements (Source: Penrith Stormwater Drainage Policy)

A Flood Planning Certificate issued by Elias Ishak (Penrith Council) indicates a Flood Planning Level of RL26.50m AHD (Appendix A) is to be applied to the site.

4 Student Capacity

Advice from Council indicates that the site is located in a Low Flood Island which causes the evacuation routes to be obstructed for storms at and above the 1% AEP. The proposed development does not increase the student population and only facilitates the existing number of students. The high school has an approximate enrolment of 1,175 students as of 2019. A school of this enrolment size is required to provide a gymnasium or hall no less than 620m² in size on the school campus as per Educational Facilities Standards and Guidelines (ESFG). The proposed hall caters for the current student population with the development meeting 'Stream 9' facility requirements (schools up to 1,500 students) and is not seeking to address additional growth.

Penrith City Council will not support additional users on the site due to risk from flooding and limited evacuation routes. As the hall is not increasing classroom space or student numbers, coupled with controls on hall usage after hours, there will be no increase in people on the campus. Therefore, there is no increase in flooding risk or risk to school users.

5 Conclusion

The proposed hall location at the Nepean Creative and Performing Arts High School is not susceptible to flooding impacts in the 1% AEP storm event, but is within the PMF storm event extents. The site is located approximately 500m from the Nepean River and thus is impacted by this waterway.

Penrith City Council requires a freeboard of 500mm above the 1% AEP water surface level for habitable floor levels. However, a Flood Planning Level of RL26.50m AHD is to be adopted for the site as per the Flood Planning Certificate (refer Appendix A).

As the hall does not increase classroom space and after hours use will cap numbers, there is no increase in people on the campus. Therefore, there is no increase in flooding risk.

APPENDIX A

COUNCIL FLOOD LEVEL ENQUIRY

Appendix G

Flood Risk Management Plan

NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

FLOOD RISK MANAGEMENT PLAN



Prepared for: Schools Infrastructure NSW
(SINSW)

By: **enstruct** group pty ltd
Revision: B

NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

FLOOD RISK MANAGEMENT PLAN

ISSUE AUTHORISATION

PROJECT: NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

Project No: 6260

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorise by
A	28/01/21	DRAFT	NKK	KEH	
B	12/02/21	ISSUE FOR APPROVAL	NKK	KEH	PAL

COPYRIGHT ©

This report is the property of enstruct group pty ltd and is licensed to the Client for use on this project. Reproduction of this document for this project shall only be undertaken in full. Reproduction for other purposes without the permission of enstruct group pty ltd is prohibited.

Executive Summary

enstruct Group have been engaged by Schools Infrastructure NSW (SINSW) to provide a Flood Risk Management Plan (FRMP) for the development of Nepean Creative and Performing Arts High School at 115-119 Great Western Highway, Emu Plains.

The aim of the FRMP is to assess the impact of a 1% Annual Exceedance Probability (AEP) storm and larger events up to and including the Probable Maximum Flood (PMF), and recommend appropriate procedures to maximise safety and reduce risk of death and injury due to flooding and flood water. This report will raise awareness of the risk of flooding and will include flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans.

The FRMP will also discuss the flooding conditions in the vicinity of the site, proposed methods of detecting flooding, proposed routes for refuge, and details of management of all personnel on site during a flooding event.

Nepean River flooding is monitored by gauges and informs emergency services hours prior to flood water rising. Flood bulletins and weather warnings will inform flood threat level.

The site is located within a Low Flood Island as categorised by Penrith City Council and it is recommended that all site occupants are to leave the site following Nepean River flood warnings being issued, whilst evacuation routes are safe to utilise.

Contents

Executive Summary 3

I. Definitions 5

II. Abbreviations..... 5

1 Introduction..... 6

1.1 Site Location.....6

1.2 Hall Location.....6

2 Flood Risk 7

3 Flood Planning Requirements 7

4 Flood and Evacuation Warnings 7

5 Flood Response Preparation..... 8

5.1 Evacuation Drills.....8

5.2 Flood Emergency Kit.....8

6 Flood Response Personnel 9

7 Emergency Contact..... 9

8 Assembly Point (AP) and Evacuation Routes 9

9 Flood Response Actions..... 10

9.1 Evacuation during Work Hours and After hours..... 10

10 Revision of Flood Emergency Response Plan 10

11 Conclusion 10

I. Definitions

For the purpose of this Plan, the definitions below apply:

Assembly area(s)

The designated place or places where people assemble during the course of an evacuation.

Emergency

An event that arises internally, or from external sources, which may adversely affect the occupants or visitors in a facility, and which requires an immediate response.

Emergency plan

The written documentation of the emergency arrangements for a facility, generally made during the planning process. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements.

Emergency Planning Committee (EPC)

Elected persons from the school community who are responsible for the documentation and maintenance of the flood risk management plan and strategy at Nepean Creative and Performing Arts High School.

Emergency Control Organiser (ECO)

A person or persons appointed by the emergency planning committee to direct and control the implementation of the facility's emergency response procedures.

Evacuation

The orderly movement of people from a place of danger.

Refuge

An area that is specifically designed to protect people from flood and provides direct access to an exit (SES).

Notes:

1. An area of refuge is intended to facilitate a safe delay in egress from the floor or area, thus constituting a space for people to await assistance for their evacuation.
2. Refuges are normally nominated by the relevant warden.

Warden intercommunication point (WIP)

The location on a floor or evacuation zone that includes a handset provided through which instructions can be received from the intercommunication panel via the emergency intercom system.

II. Abbreviations

The following abbreviations are used in this Emergency Plan document:

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
AP	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organization
EPC	Emergency Planning Committee
FERP	Flood Emergency Response Plan
FRMP	Flood Risk Management Plan
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

The site is located within the Penrith City Council Local Government Area (LGA). This report is based on flood information obtained from:

- Penrith City Council Nepean River Flood Study;
- Penrith City Council Stormwater Drainage Policy;
- Flood Planning Certificate issued by Elias Ishak (Penrith City Council) dated 24 November 2020; and
- enstruct prepared Flood Statement dated 21 January 2021.

1.1 Site Location

Nepean Creative and Performing Arts High School is located at 115-119 Great Western Highway (Figure 1), Emu Plains, within the Penrith City Council Local Government Area (LGA). The school site has an area of approximately 12.30ha. Site levels fall gently from south to north towards the train line, from RL 26m AHD at the southern boundary, to RL 24.5m AHD along the northern boundary (Figure 2). The site is bounded by a railway track to the north, Old Bathurst Road to the north east, the Great Western Highway on the south east, and residential buildings along Gardenia Avenue on the south western boundary.

1.2 Hall Location

The school site, as per the Penrith City Council Nepean River Flood Study and as shown in Figure 3, is free from 1% AEP flooding impacts, but is impacted by the 0.5% AEP event.



Figure 1: Site Location (Source: Google Maps)



Figure 2: Site Contours (Source: Penrith Council)

2 Flood Risk

Penrith City Council provides a Nepean River Flood Study which indicates that the Nepean Creative and Performing Arts High School as a whole is impacted by 1% AEP and larger storm events. **Figure 3** and **Figure 4** indicate the susceptibility of the site to flood hazards in the 1% AEP and PMF storm events respectively, due to its proximity to the Nepean River.

Advice from Council indicates that the site is located in a Low Flood Island which causes the evacuation routes to be obstructed for storms at and above the 1% AEP.



Figure 3: Penrith City Council 1% AEP storm event flood depths and extents (Source: Nepean River Flood Study Volume 2 Flood Maps)

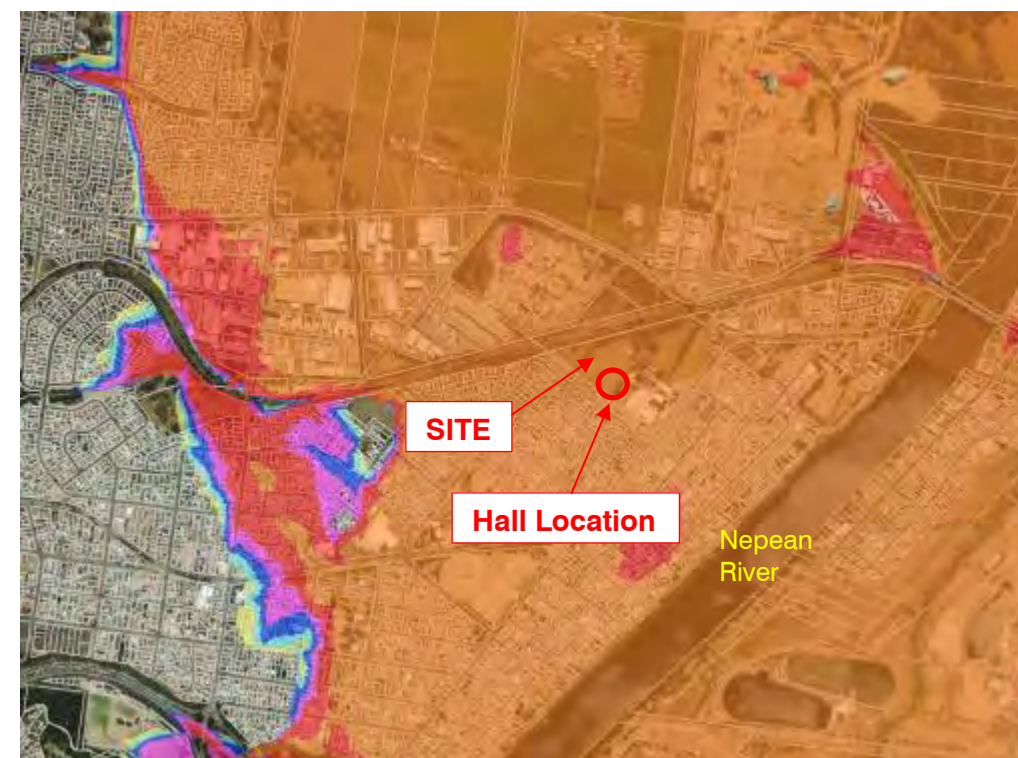


Figure 4: Penrith City Council PMF storm event flood depths and extents (Source: Nepean River Flood Study Volume 2 Flood Maps)

3 Flood Planning Requirements

A minimum freeboard of 500mm over the 1% AEP water surface level shall be provided for habitable floor levels, 100mm freeboard for garages and non-habitable flood levels, and 300mm for crest of driveway ramps, as per the Penrith Stormwater Drainage Policy requirements (Section 3.1.2 Table 4).

A Flood Planning Certificate issued by Elias Ishak (Penrith Council) indicates a Flood Planning Level of RL 26.50m AHD (**Appendix A**) is to be applied to the proposed hall.

4 Flood and Evacuation Warnings

There are a number of official flood warnings issued by the Bureau of Meteorology, State Emergency Service (SES) and NSW Police which can assist in the preparation of a potential flood. The warning types are:

Severe Weather Warnings (Bureau of Meteorology):

Severe Weather Warnings are provided for potentially hazardous or dangerous weather that is not directly related to severe thunderstorms, tropical cyclones or bushfires. They are issued for sustained winds of gale force; wind gusts of 90km/h or more; very heavy rain that may lead to flash flooding and abnormally high tides.

Severe Thunderstorm Warnings (Bureau of Meteorology):

A Severe Thunderstorm Warning is issued if the severe phenomena are directly caused by the thunderstorm and include wind gusts of 90km/h or more; gale force winds; tornados; blizzards\ heavy rainfall that is conducive to flash flooding; hail with a diameter of at least 2cm; abnormally high tides and unusually large surf waves expected to cause dangerous conditions on the coast.

Flood Watch (Bureau of Meteorology):

A Flood Watch is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain. You should be prepared to act should flooding occur.

Flood Warning (Bureau of Meteorology):

A Flood Warning is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.

The address below can be visited to check flood warnings for the Nepean River.

<http://www.bom.gov.au/nsw/warnings/flood/nepean-hawkesburyrivers.shtml>

NSW SES Flood Bulletins (SES):

NSW SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property.

Evacuation Warning (SES):

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues an Evacuation Warning to indicate that you should get prepared to evacuate. Being prepared will allow you to respond quickly if an Evacuation Order is issued.

The Hawkesbury Nepean River Valley flood sensors will issue an evacuation warning to the Hawkesbury-Nepean catchment area for water heights above 8.9m in the Nepean River, 6-8 hours prior to the flood risk occurring (SES Provision of and Requirements for Flood Warning Report dated February 2018).

In the unlikely event that Warragamba Dam breaks, the SES will not be able to give prior warning. Once the evacuation warning is issued, staff and students are to leave the site as soon as possible.

Other warnings will be:

Monitor the flood situation:

In addition to receiving an official warning, monitoring the situation before flooding begins to impact the site is important. Monitoring the situation can be undertaken by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people in the building and local and government radio stations to receive and share updates on the flood situation.

The likelihood of flash flooding:

Severe Weather Warnings and Severe Thunderstorm Warnings issued by the Bureau of Meteorology warn of the possibility of flash flooding.

When flash flooding is likely, leaving low-lying businesses (evacuation) well before flash flooding begins is the best action to take, but only if it is safe to do so. If you are trapped by rising floodwater, seek refuge in the nearest building within the school site. Stay there and call '000' (triple zero) if you need rescue.

All warnings will be issued through the Bureau of Meteorology website, television and local radio stations for weather warnings such as 702 ABC SYDNEY 702 AM, 2CH 1170 AM, 2DAY FM 104.1 FM, 2GB 873 AM, 2ME 1638 AM, 2SM/GORILLA 1269 AM, 2UE 954 AM, C91.3 FM 91.3 FM, MIX 106.5 106.5 FM, NOVA 96.9 FM, RADIO 2MORO 1620 AM, RADIO 2RDJ 88.1 FM, SBS RADIO 97.7 FM, SYDNEY'S 95.3 95.3 FM, TRIPLE M 104.9 FM and WFSM 101.7 FM.

5 Flood Response Preparation

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

The Emergency Planning Committee is also to organise evacuation drills and flood emergency kits to prepare all site personnel for flood risks.

5.1 Evacuation Drills

Evacuation drills run through the flood management procedure onsite and are designed to increase flood awareness for all students, staff, and visitors of the campus. These drills are to be undertaken annually to familiarise all personnel of the procedures when responding to a flood event.

5.2 Flood Emergency Kit

Potential items for a flood emergency kit are outlined at www.floodsafe.com.au and reproduced below:

- A copy of the building Emergency Management Plan;
- A torch with spare batteries;
- A first aid kit;
- Waterproof bag for valuables;
- A copy of emergency numbers; and
- Battery operated radio with AM and FM frequency access (with spare batteries).

The kit should be kept in each classroom or office area for efficient deployment in the event of an emergency. The contents of the kit and management during a flood event will be the responsibility of the Chief Warden. This storage area should also be used for protecting hazardous materials and valuable goods from flood water.

6 Flood Response Personnel

Summarised below are the personnel involved in the management of the flood response at the site, and corresponding responsibilities.

Table 1: Personnel and Responsibilities

Personnel	Responsibility
Emergency Control Organisation	• Coordinate flood evacuation drills
Chief Warden	• Monitor weather daily for upcoming extreme rainfall events; • Decide when evacuation is required; • Liaise with SES or Emergency Services personnel if they attend site; and • Manage the evacuation process in consultation with Emergency Services.

7 Emergency Contact

The Chief Warden is to be contactable via the WIP phone at all times to ensure they are ready to assist any students or staff.

- For emergency assistance during flood events, please call the SES on 132 500.
- If you are in a life-threatening situation please call Police, Fire or Ambulance on “000” (triple zero).
- Local Penrith Police Station on 4721 9444.

8 Assembly Point (AP) and Evacuation Routes

As per **Section 2**, the school site is located in a Low Flood Island. This requires a unique evacuation plan in the event of a flooding emergency as the nature of the site causes the evacuation routes to be obstructed for storms at and above the 1% AEP.

Since the official SES flood warnings will be issued to the LGA 6-8 hours prior to a flood emergency in the Nepean River catchment area, it is recommended that the school campus is shut to prevent people from entering the site if the warning is issued overnight, or students are to assemble with a teacher to register that they are present before organising to leave the site into suitable care or to travel home. This warning buffer allows sufficient time for site occupants to leave the site through provided evacuation routes before they are obstructed as the water level rises in large storm events. If occupants delay leaving the site they may become isolated by the flood water as the site is in a Low Flood Island which may prevent safe exit from the site until the storm event subsides.

As the site is bounded by a railway track and the Great Western Highway, the staff and students are to remain in classrooms and evacuate under the guidance of emergency services and teachers. All people are to use the site entry/exit shown in **Figure 5**.

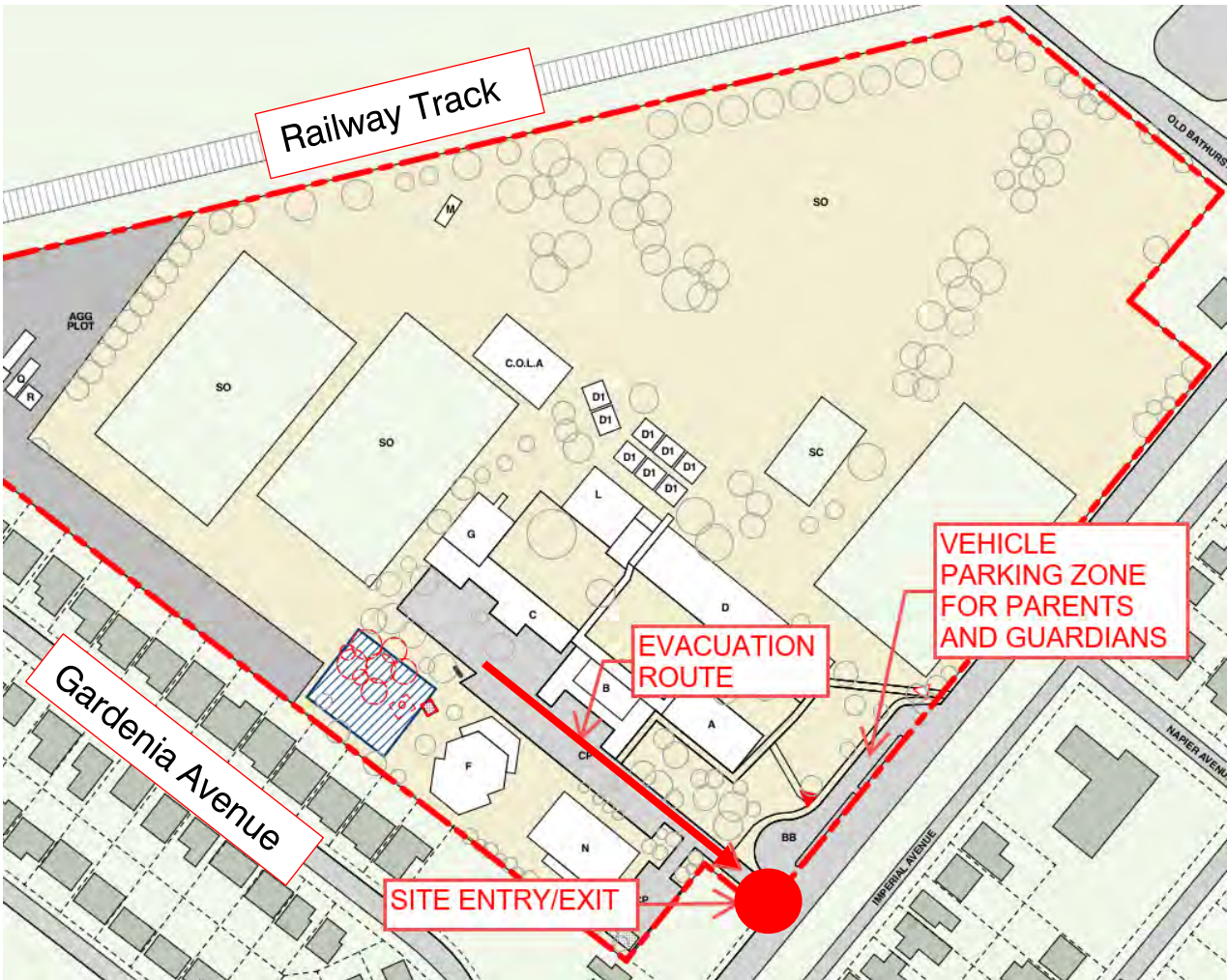


Figure 5: Evacuation Route and Site Entry/Exit

9 Flood Response Actions

9.1 Evacuation during Work Hours and After hours

This section relates to flood notifications of the Nepean River and not a dam break. Once a Flood Warning or Flood Bulletin for the Emu Plains area or Penrith City Council LGA has been issued;

- Sound evacuation tone;
- Chief Flood Warden to be on hand if staff call or require guidance;
- Leave signage at site entrance that evacuation has occurred;
- Chief Flood Warden to make contact with emergency services to request assistance;
- Staff to supervise all students in their care and take a roll of attendance;
- Staff to assist students in their care to organise a suitable relocation to a safe refuge;
- Students and teachers to move towards the site entrance in an orderly fashion when transport arrives;
- Chief Flood Warden to maintain regular communication with students, staff and visitors, providing updates on the situation;
- Site to be shut down, where possible of all, but essential power; and
- Staff to leave the site following student evacuation.

9.2 Dam Break

In the unlikely event of a dam break or a catastrophic failure at Warragamba Dam, the time staff and students have to safely evacuate the school campus is reduced as these events will cause a more sudden volume and velocity of water to flow over the banks of the river. Students and staff should follow the same procedure as identified in **Section 9.1** but must exit the school premises as soon as possible.

10 Revision of Flood Emergency Response Plan

This plan should be reviewed if the Penrith City Council requirements or Penrith City Council Nepean River Flood Study, Plans and Maps are revised, and if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Risk Management Plan is reviewed annually and updated as required. As part of the review, the Emergency Planning Committee shall contact Council annually to confirm if any new street drainage upgrades are planned or have been constructed.

11 Conclusion

Since the official flood warnings will be issued to the Hawkesbury-Nepean catchment area 6-8 hours prior to a flood emergency in the Nepean River, it is recommended that the campus occupants leave the site at the time of warning. This allows for sufficient time to leave the site through provided evacuation routes before they are obstructed as the water level rises in large storm events. If occupants delay leaving the site they may become isolated by the flood water as the site is in a Low Flood Island which may prevent safe exit from the site until the storm subsides.

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

This FRMP is to be reviewed if Penrith City Council Nepean River Flood Study, Plans and Maps are revised, and if the street drainage surrounding the site is upgraded.

Yearly review of this plan required to ensure procedures and contacts are current.

Appendix H Acoustic Report



Nepean Creative and Performing Arts High School Hall – Acoustic Report

BJA Architecture
Suite 104/77 Dunning Avenue
Rosebery NSW 2018

Report number: 210006
Date: 10 February 2021
Version: For Information

DOCUMENT CONTROL

Project Name	Nepean Creative and Performing Arts High School Hall – Acoustic Report
Project Number	210006
Report Reference	[Keywords]
Client:	BKA Architecture

Revision	Description	Reference	Date	Prepared	Checked	Authorised
1	For Information	[Keywords]	10 February 2021	Peter Gangemi	Ben White	Ben White

PREPARED BY:

Pulse White Noise Acoustics Pty Ltd
ABN 95 642 886 306
Level 5, 73 Walker Street, North Sydney, 2060
1800 4 PULSE

This report has been prepared by Pulse White Noise Acoustics Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of BKA Architecture
No warranties or guarantees are expressed or should be inferred by any third parties.
This report may not be relied upon by other parties without written consent from Pulse White Noise Acoustics.
This report remains the property of Pulse White Noise Acoustics Pty Ltd until paid for in full by the client, BKA Architecture.

Pulse White Noise Acoustics disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

TABLE OF CONTENTS

1	INTRODUCTION	5
2	PROJECT DETAILS.....	6
2.1	Site Location	6
2.2	Project Description	7
3	NEAREST SENSITIVE RECEPTORS	10
4	EXISTING ACOUSTIC ENVIRONMENT	11
4.1	Noise Descriptors and Terminology	11
4.2	Unattended Acoustic Monitoring	11
4.2.1	Monitoring Details	11
4.2.2	Monitoring Instrumentation	12
5	APPLICABLE GUIDELINES AND RECOMMENDED CRITERIA	14
5.1	Penrith Council DCP.....	14
5.2	NSW Noise Policy for Industry	14
5.2.1	Intrusive Noise Impacts (Residential Receivers).....	15
5.2.2	Protecting Noise Amenity (All Receivers).....	15
5.2.3	Area Classification	15
5.2.4	Project Trigger Noise Levels	16
5.2.5	Sleep Disturbance.....	16
5.3	Interim Construction Noise Guideline.....	17
5.3.1	Quantitative Noise Assessment Criteria.....	17
5.4	Vibration Criteria	19
5.4.1	Vibration Criteria – Human Comfort.....	19
5.4.2	Vibration Criteria – Building Contents and Structure.....	20
6	OPERATIONAL ACOUSTIC ASSESSMENT.....	22
6.1	Noise Generating Scenario	22
6.2	Modelling Assumptions.....	23
6.3	Predicted Noise Levels	23
6.4	Noise Control Measures.....	24
7	CONSTRUCTION NOISE AND VIBRATION	25
8	CONCLUSIONS	26
	APPENDIX A: ACOUSTIC TERMINOLOGY	27
	APPENDIX B: UNATTENDED NOISE LOGGING	29

TABLES

Table 3-1	Nearest Potentially Affected Receivers	10
Table 4-1	Measured ambient noise levels in accordance with the NSW NPI	13
Table 5-1	NSW NPI – Recommended LAeq Noise Levels from Industrial Noise Sources	16
Table 5-2	External noise level criteria in accordance with the NSW NPI	16
Table 5-3	Noise at Residents Using Quantitative Assessment	17
Table 5-4	NMLs as basis for the acoustic assessment.....	18
Table 5-5	Continuous Vibration Acceleration Criteria (m/s ²) 1-80Hz	19
Table 5-6	Impulsive Vibration Acceleration Criteria (m/s ²) 1-80Hz	19
Table 5-7	Intermittent Vibration Impacts Criteria (m/s ^{1.75}) 1-80Hz	20
Table 5-8	Transient vibration criteria as per standard BS 7385 Part 2 - 1993.....	20
Table 6-1	Modelled internal noise levels within spaces	22
Table 6-2	Predicted Noise Levels, Operational Scenario, LAeq (15 minute)	23

FIGURES

Figure 2-1	Site location	6
Figure 2-2	Proposed Site Analysis Plan	7
Figure 2-3	Proposed Ground Floor Plan.....	8
Figure 2-4	Proposed Roof Plan.....	8
Figure 2-5	Proposed SE and NE Elevations.....	9
Figure 2-6	Proposed NW and SW Elevations.....	9
Figure 3-1	Location of Considered Receivers	10
Figure 4-1	Position of Unattended Noise Logger	12
Figure 5-1	BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage	21
Figure 6-1	Operational Scenario.....	22
Figure 6-2	Predicted Noise Contours – Operational Activities	24

1 INTRODUCTION

Pulse White Noise Acoustics Consultancy Pty Ltd (Pulse White Noise Acoustics) has been engaged by BKA Architecture to undertake an Acoustic for the proposed Hall at the Nepean Creative and Performing Arts High School, 115-119 Great Western Highway Emu Plains. The hall is proposed to be include a basketball court, change rooms, equipment storage and a foyer.

This document assesses the potential operational noise impacts of the hall on the nearby residential receivers. In particular, operational impacts of the use of the hall as well as mechanical equipment are assessed at the nearest receptors.

Noise criteria in this report are taken from the Noise Policy for Industry and Interim Construction Noise Guideline, Assessing Vibration: A Technical Guideline, BS 7385-2 and BS 6472. Noise modelling of the potential operational impacts is conducted in iNoise 2021.

Relevant noise recommendations are given in this report. A list of acoustic terminology used in this report is included in Appendix A.

2 PROJECT DETAILS

2.1 Site Location

The hall is proposed to be located at the Nepean Creative and Performing Arts High School, 115-119 Great Western Highway, Emu Plains, formally known as Lot 12 in DP 1056135. The site is zoned R2 Low Density Residential and is located in the Penrith City Council local government area. The closest residential receptors are located along Gardenia Avenue to the south.

The proposed site is located 3km west of the Penrith CBD, on the western side of the Nepean River. The north side of the site borders the Western Railway line, the eastern edge of the site fronts the Great Western Highway with the southern edge of the site backing onto residential receivers off Gardenia Avenue. The site location is shown in Figure 2-1.

Figure 2-1 Site location



2.2 Project Description

The proposed hall is to be located at the Nepean Creative and Performing Arts High School, 115-119 Great Western Highway, Emu Plains. We understand the summary of works to be as follows

- New multipurpose performance hall to meet Stream 9 EFSG Standards and to be used for performances, events, indoor sports and as community resource.
- Large storage requirements to house performing arts apparatus and equipment as well as sporting equipment.
- Existing storage shed, gas tanks and garbage collection zone and stormwater services to be relocated.
- New hardscape and landscaping works between existing hall and new building.
- New hardscape and landscaping works between new building and block G.

The Hall is proposed to be available for use from 7am to 10pm, seven days a week (including use on the weekends). The site analysis plan is shown below in Figure 2-2. The proposed ground floor and first floor plans are shown in Figure 2-3 and Figure 2-4. The proposed elevations are shown in Figure 2-5 and Figure 2-6.

Figure 2-2 Proposed Site Analysis Plan



Figure 2-3 Proposed Ground Floor Plan

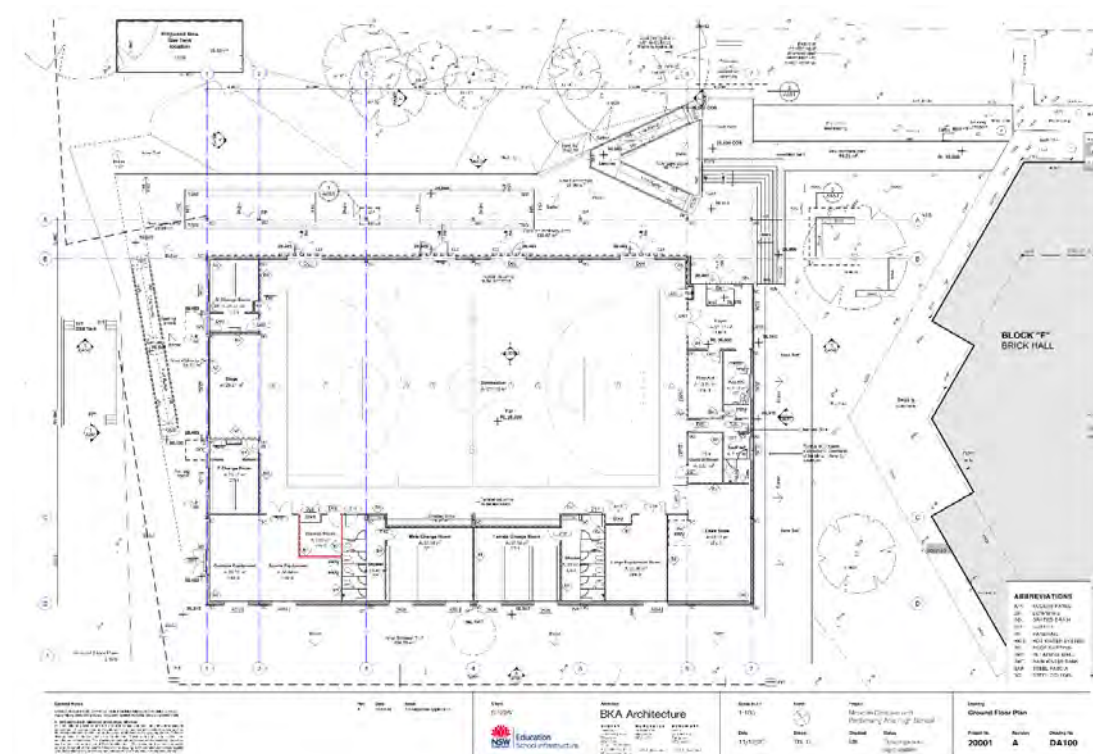


Figure 2-4 Proposed Roof Plan

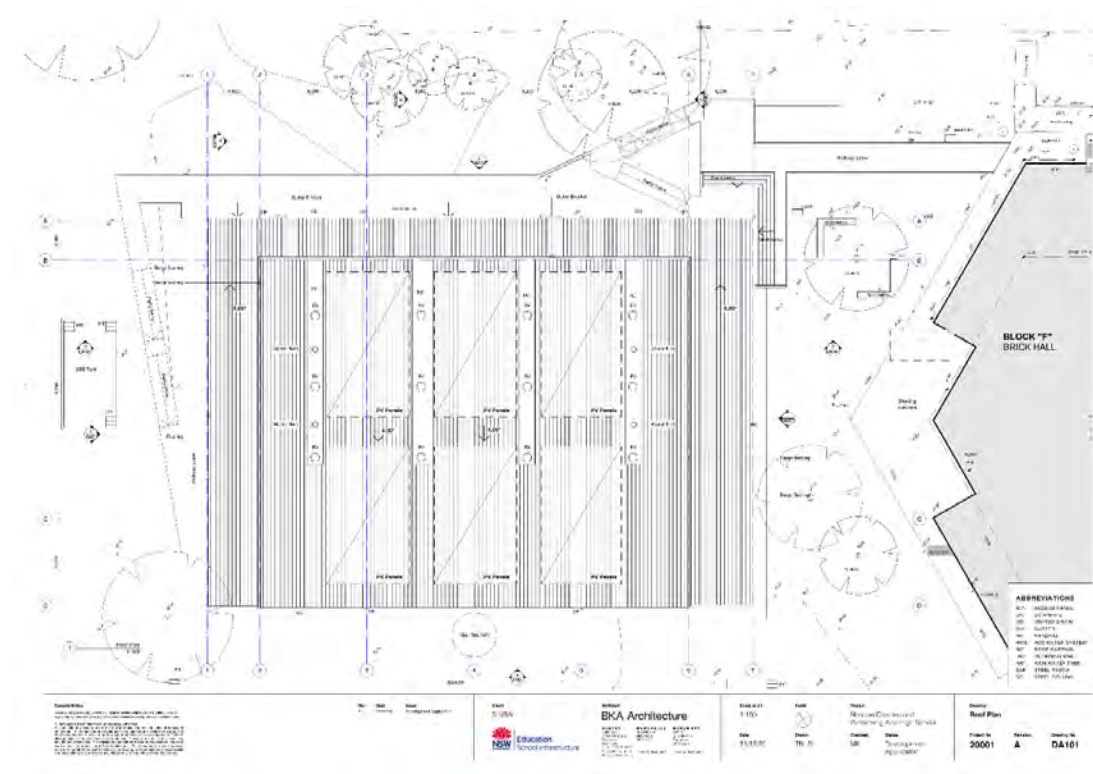


Figure 2-5 Proposed SE and NE Elevations

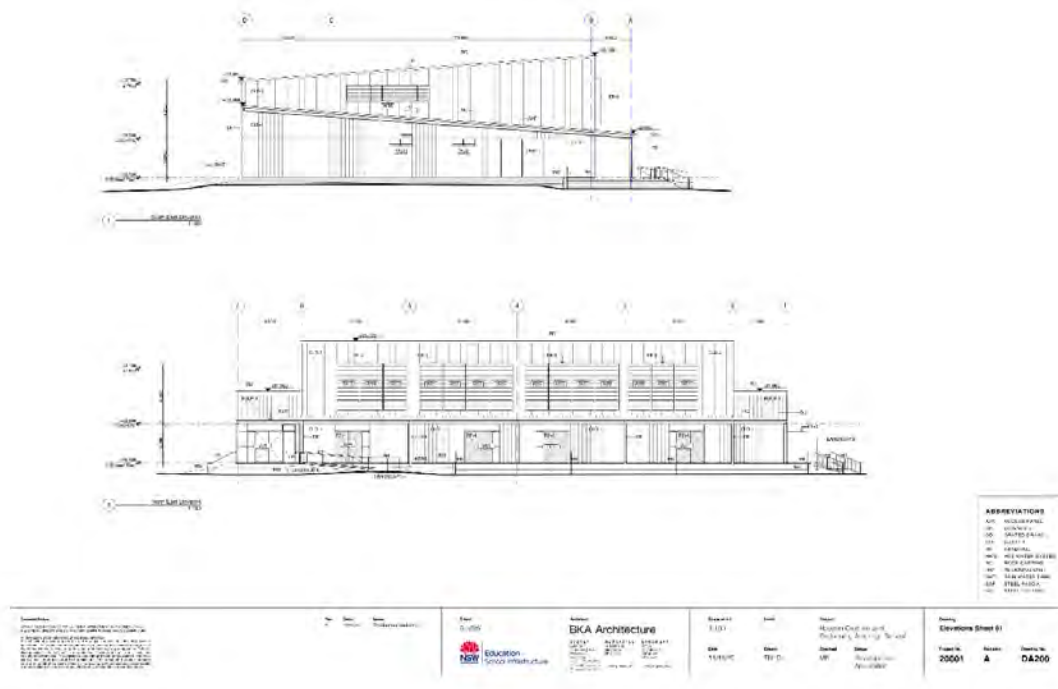
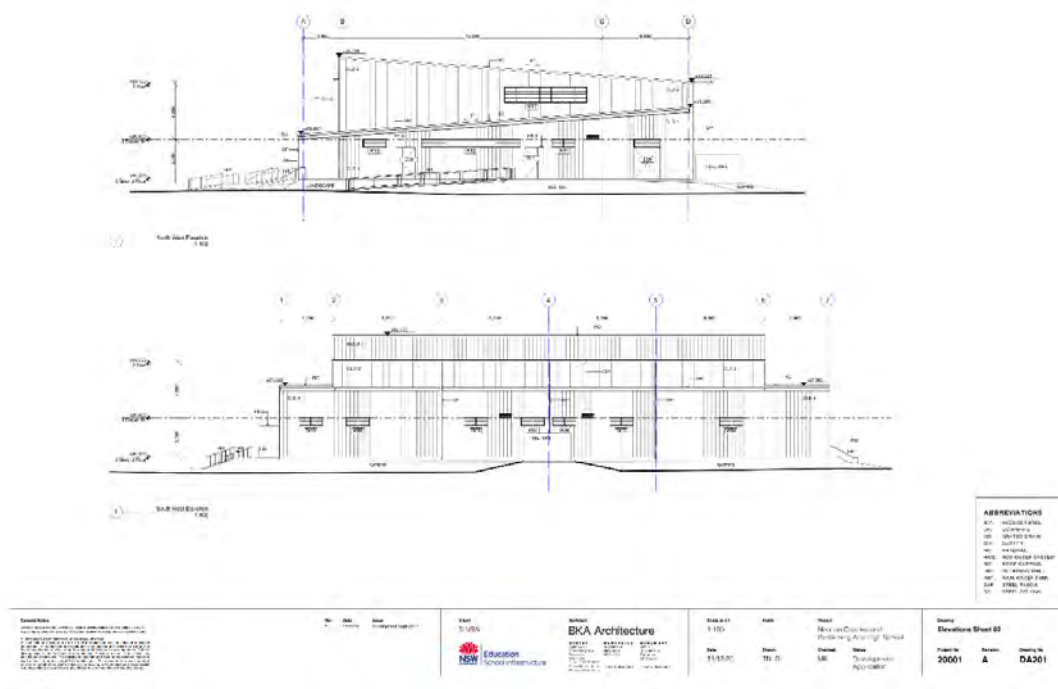


Figure 2-6 Proposed NW and SW Elevations



3 NEAREST SENSITIVE RECEPTORS

A number of sensitive receivers are located in the vicinity of the proposed hall. As shown in Figure 3-1, residential receivers are located to the south, along Gardenia Parade. The receptors utilised for noise predictions in this report are listed in Table 3-1 and presented in Figure 3-1.

Figure 3-1 Location of Considered Receivers



Table 3-1 Nearest Potentially Affected Receivers

Receptor ID	Address	Lot and DP	Type of Receiver
R1	1 Gardenia Avenue, Emu Plains	Lot 1 DP 242300	Residential
R2	3 Gardenia Avenue, Emu Plains	Lot 2 DP 242300	Residential
R3	5 Gardenia Avenue, Emu Plains	Lot 3 DP 242300	Residential
R4	7 Gardenia Avenue, Emu Plains	Lot 4 DP 242300	Residential
R5	9 Gardenia Avenue, Emu Plains	Lot 5 DP 242300	Residential
R6	11 Gardenia Avenue, Emu Plains	Lot 6 DP 242300	Residential
R7	13 Gardenia Avenue, Emu Plains	Lot 7 DP 242300	Residential
R8	15 Gardenia Avenue, Emu Plains	Lot 8 DP 242300	Residential

4 EXISTING ACOUSTIC ENVIRONMENT

4.1 Noise Descriptors and Terminology

Environmental noise constantly varies in level with time. Therefore, it is necessary to measure noise in terms of quantifiable time periods with statistical descriptors. Typically environmental noise is measured over 15 minute periods and relevant statistical descriptors of the fluctuating noise are determined to quantify the measured level.

Noise (or sound) consists of minute fluctuations in atmospheric pressure capable of detection by human hearing. Noise levels are expressed in terms of decibels, abbreviated as dB or dBA, the "A" indicating that the noise levels have been frequency weighted to approximate the characteristics of normal human hearing. Because noise is measured using a logarithmic scale, 'normal' linear arithmetic does not apply, e.g. adding two sound sources of equal values result in an increase of 3 dB (i.e. 60 dBA plus 60 dBA results in 63 dBA). A change of 1 dB or 2 dB in the sound level is difficult for most people to detect, whilst a 3 dB – 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change roughly corresponds to a doubling or halving in loudness.

The most relevant environmental noise descriptors are the LAeq, LA1, LA10 and LA90 noise levels. The LAeq noise level represents the "equivalent energy average noise level". This parameter is derived by integrating the noise level measured over the measurement period. It represents the level that the fluctuating noise with the same acoustic energy would be if it were constant over the measured time period.

The LA1, LA10 and LA90 levels are the levels exceeded for 1%, 10% and 90% of the sample period. These levels can be considered as the maximum noise level, the average repeatable maximum and average repeatable minimum noise levels, respectively.

Specific acoustic terminology is used in this assessment report. An explanation of common acoustic terms is included in Appendix A.

4.2 Unattended Acoustic Monitoring

4.2.1 Monitoring Details

To determine the background noise levels at nearby receivers, long term unattended noise monitoring was conducted at the boundary of the school and 7 Gardenia Avenue Emu Plains. As per Table A1 of the Noise Policy for Industry, the noise logger was placed in the vicinity of the reasonably most or potentially most affected residence. The location of the noise is shown in Figure 3-1 and Figure 4-1. The logging was also conducted during school holidays, so that any local noise sources from the school would not be present to add to the existing local background noise levels.

Figure 4-1 Position of Unattended Noise Logger



4.2.2 Monitoring Instrumentation

Instrumentation used for the noise survey comprised a Rion NL-42 sound level meter / analysers (serial number 00409024 fitted with a microphone windshield. Calibration of the logger was checked prior to and following the measurements. Drift in calibration did not exceed ± 0.5 dBA. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates.

Charts presenting summaries of the measured daily noise data are attached in Appendix B. These charts, representing each 24 hour period, show the LA1, LA10, LAeq and LA90 noise levels measured over 15 minute time periods.

Logging was conducted from Thursday 14 January 2021 to Thursday 21 January 2021. The measurement results have been filtered to remove data affected by adverse weather conditions, such as excessively windy or rainy time periods, as recorded by the nearest Bureau of Meteorology weather station at Penrith Lakes (AWS 067113). Detailed noise logging results are shown in Appendix B.

The measured background noise data of the logger was processed in accordance with the recommendations contained in the NSW Environment Protection Authority's (EPA) *Noise Policy for Industry* (NPI).



The Rating Background Noise Level (RBL) is the background noise level used for assessment purposes at the nearest potentially affected receiver. It is the 90th percentile of the daily background noise levels during each assessment period, being day, evening and the night. The RBL LA90 (15minute) and LAeq noise levels are presented in Table 4-1 for the unattended logging. The measured noise levels are considered to be representative of the levels to be expected at the nearest and most affected residence to the proposed development.

Table 4-1 Measured ambient noise levels in accordance with the NSW NPI

Measurement Location	Daytime ¹ 7:00 am to 6:00 pm		Evening ¹ 6:00 pm to 10:00 pm		Night-time ¹ 10:00 pm to 7:00 am	
	LA90 ²	LAeq ³	LA90 ²	LAeq ³	LA90 ²	LAeq ³
Logger Location	39	58	37	53	31	46
<i>Note 1: For Monday to Saturday, Daytime 7:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 7:00 am. On Sundays and Public Holidays, Daytime 8:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 8:00 am</i>						
<i>Note 2: The LA90 noise level is representative of the "average minimum background sound level" (in the absence of the source under consideration), or simply the background level.</i>						
<i>Note 3: The LAeq is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.</i>						

5 APPLICABLE GUIDELINES AND RECOMMENDED CRITERIA

This section contains noise criteria on the operational criteria, construction criteria and vibration criteria.

The following criteria are relevant for the assessment of noise and vibration emissions from the proposed training centre:

- For the assessment of the predicted operational noise emissions by the training facility: The criteria have been derived in accordance with the *Noise Policy for Industry* (EPA, 2017). Refer to Section 5.2.
- The assessment of the noise impacts of the construction noise on the sensitive receivers: The criteria have been derived in accordance with the *Interim Construction Noise Guideline* (DECC, 2009). See Section 5.3.
- For the assessment of vibration impacts from the development: The criteria have been derived in accordance with *Assessing Vibration: A Technical Guideline* (DEC, 2006), BS 7385-2: 1993 and BS 6472: 1992. Refer to Section 5.4.

5.1 Penrith Council DCP

Penrith DCP Part C – City Wide Controls contains the following advice under section C12 Noise and Vibration.

12.4. Industrial and Commercial Development

C. Controls

1) General

a) Council will not grant consent to any noise generating industrial development, commercial development or licensed premises unless it can be demonstrated that:

i) The development complies with the relevant State Government authority or agency standards and guidelines for noise, as well as any relevant Australian Standards;

ii) The development is not intrusive (as defined in the EPA's Industrial Noise Policy);

Penrith DCP Part D – Land Use Controls contains the following advice under section D5 Other Land Uses.

5.4 Educational Establishments

A. Background

Given their scale, form and potential impact, there is a need to ensure educational establishments are located and designed in such a way as to minimise their impacts, particularly on surrounding areas. It is also important to ensure that nearby land uses do not have an adverse impact on children's health and learning.

B. Objectives

a) To ensure that the design and location of educational establishments does not adversely impact on the amenity of the area or neighbouring properties, including properties used for agriculture;

By complying with the criteria derived from the Noise Policy for Industry (section 5.2), compliance with the acoustic requirements within the Penrith DCP will also be met.

5.2 NSW Noise Policy for Industry

In NSW, the control of noise emissions is the responsibility of Local Government and the NSW Environment Protection Authority (NSW EPA). In October 2017, the NSW EPA released the *Noise Policy for Industry* (NSW NPI). The purpose of the policy is to ensure that noise impacts associated with particular industrial developments are evaluated and managed in a consistent and transparent manner. The policy aims to ensure that noise is kept to acceptable levels in balance with the social and economic value of industry in NSW.

The NSW NPI criteria for industrial noise sources have two components:

- Controlling the intrusive noise impacts for residential receivers in the short-term; and
- Maintaining noise level amenity of particular land uses for residents and sensitive receivers in other land uses.

The project noise trigger level is derived from the more stringent value out of the project intrusiveness noise level and the project amenity noise level.

5.2.1 Intrusive Noise Impacts (Residential Receivers)

The NSW NPI states that the noise from any single source should not intrude greatly above the prevailing background noise level. Industrial noises are generally considered acceptable if the equivalent continuous (energy-average) A-weighted level of noise from the source (L_{Aeq}), measured over a 15 minute period, does not exceed the background noise level measured in the absence of the source by more than 5 dB(A). This is often termed the Intrusiveness Criterion.

The 'Rating Background Level' (RBL) is the background noise level to be used for assessment purposes and is determined by the methods given in the NSW NPI. Using the rating background noise level approach results in the intrusiveness criterion being met for 90% of the time. Adjustments are to be applied to the level of noise produced by the source that is received at the assessment point where the noise source contains annoying characteristics such as tonality or impulsiveness.

5.2.2 Protecting Noise Amenity (All Receivers)

To limit continuing increases in noise levels, the maximum ambient noise level within an area from industrial noise sources should not normally exceed the acceptable noise levels specified in Table 2.2 of the NSW NPI. That is, the ambient L_{Aeq} noise level should not exceed the level appropriate for the particular locality and land use. This is often termed the 'Background Creep' or Amenity Criterion.

The amenity assessment is based on noise criteria specified for a particular land use and corresponding sensitivity to noise. The cumulative effect of noise from industrial sources needs to be considered in assessing the impact. These criteria relate only to other continuous industrial-type noise and do not include road, rail or community noise. If the existing (measured) industrial-type noise level approaches the criterion value, then the NSW NPI sets maximum noise emission levels from new sources with the objective of ensuring that the cumulative levels do not significantly exceed the criterion.

5.2.3 Area Classification

The NSW NPI characterises the "Suburban Residential" as an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.

For the considered receptors in the rural area, the recommended amenity noise level is shown in Table 5-1 below. When the existing noise level from industrial noise sources is close to the recommended "Amenity Noise Level" (ANL) given above, noise from the new source must be controlled to preserve the amenity of the area in line with the requirements of the NSW NPI.

Table 5-1 NSW NPI – Recommended LAeq Noise Levels from Industrial Noise Sources

Type of Receiver	Indicative Noise Amenity Area	Time of Day ¹	Recommended Amenity Noise Level (L _{Aeq} , period) ²
Residence	Suburban	Day	55
		Evening	45
		Night	40
Note 1: For Monday to Saturday, Daytime 7:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 7:00 am. On Sundays and Public Holidays, Daytime 8:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 8:00 am			
Note 2: The L _{Aeq} is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.			

5.2.4 Project Trigger Noise Levels

The intrusive and amenity criteria for industrial noise emissions derived from the measured data are presented in Table 5-2. The amenity and intrusive criterion are nominated for the purpose of determining the operational noise limits for noise sources associated with the development which can potentially affect noise sensitive receivers.

For each assessment period, the project trigger noise levels are the lower (i.e. the more stringent) of the amenity or intrusive criteria. The project trigger noise levels are shown in bold text in Table 5-2.

Table 5-2 External noise level criteria in accordance with the NSW NPI

Location	Time of Day	Project Amenity Noise Level, LAeq, period ¹ (dBA)	Measured LA90, 15 min (RBL) ² (dBA)	Measured LAeq, period Noise Level (dBA)	Intrusive LAeq, 15 min Criterion for New Sources (dBA) ³	Amenity LAeq, 15 min Criterion for New Sources (dBA) ^{3, 4}
Residence (Suburban)	Day	50	39	58	44	53
	Evening	40	37	53	42	43
	Night	35	31	46	36	38
<i>Note 1: Project Amenity Noise Levels corresponding to "suburban" areas, equivalent to the Recommended Amenity Noise Levels minus 5 dBA</i>						
<i>Note 2: LA90 Background Noise or Rating Background Level</i>						
<i>Note 3: Project Noise Trigger Levels are shown in bold</i>						
<i>Note 4: According to Section 2.2 of the NSW NPI, the LAeq, 15 minutes is equal to the LAeq, period + 3 dB</i>						

5.2.5 Sleep Disturbance

As the facility is not proposed to operate during the night time period, sleep disturbance is not assessed in this report.

5.3 Interim Construction Noise Guideline

The DECC *Interim Construction Noise Guideline* (ICNG, July 2009) provides guidelines for the assessment and management of construction noise. The NSW EPAs Road Noise Policy (RNP) refers to the use of the ICNG for the assessment of construction noise impacts.

The ICNG focuses on applying a range of work practices and management strategies to minimise construction noise impacts rather than focusing on achieving numeric noise levels which is not always practical on large infrastructure projects.

The main objectives of the ICNG are to:

- Identify and minimise noise from construction works
- Focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts
- Encourage construction during the recommended standard hours only, unless approval is given for works that cannot be undertaken during these hours
- Reduce time spent dealing with complaints at the project implementation stage
- Provide flexibility in selecting site-specific feasible and reasonable work practices to minimise noise impacts

5.3.1 Quantitative Noise Assessment Criteria

Construction noise assessment goals presented in the ICNG are referenced to Noise Management Levels (NMLs) for residential, sensitive land uses and commercial/industrial premises.

Residential premises

Table 5-3 sets out NMLs for noise at residences and how they are to be applied.

In Table 5-3 the rating background level (RBL) is used when determining the management level. The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the NSW *Noise Policy for Industry* (EPA, 2017).

As a guide, the difference between the internal noise level and the external noise level is typically 10 dB with windows open for adequate ventilation.

Table 5-3 Noise at Residents Using Quantitative Assessment

Time of day	Management Level $L_{Aeq}(15\text{ min})^1$	How to apply
Recommended standard hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or public holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. - Where the predicted or measured $L_{Aeq}(15\text{ min})$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. - The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

Time of day	Management Level $L_{Aeq} (15 \text{ min})^1$	How to apply
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. - Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: ▪ times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences) ▪ if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	- A strong justification would typically be required for works outside the recommended standard hours. - The proponent should apply all feasible and reasonable work practices to meet the noise affected level. - Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.
<i>Note 1: Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5m above ground level. If the property boundary is more than 30m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.</i>		

Construction hours are understood to be as follows:

- Monday to Friday 7 am to 6 pm
- Saturday 8 am to 1 pm

Proposed construction hours only fall under the recommended standard hours outlined in the ICNG

Table 5-4 NMLs as basis for the acoustic assessment

Receiver Types	Noise management level ($L_{Aeq,15min}$) dB(A) <u>Standard Hours</u> Monday to Friday: 7 am to 6 pm Saturday: 8 am to 1 pm
Residences	49

As no construction is expected to occur outside of standard hours, a sleep disturbance assessment for construction noise is not required.

5.4 Vibration Criteria

Effects of ground borne vibration on buildings may be segregated into the following three categories:

- Human comfort – vibration in which the occupants or users of the building are inconvenienced or possibly disturbed
- Effects on building contents – where vibration can cause damage to fixtures, fittings and other non-building related objects
- Effects on building structures – where vibration can compromise the integrity of the building or structure itself

5.4.1 Vibration Criteria – Human Comfort

The first of these vibration effects relating specifically to the human comfort aspects of the project are taken from the *Assessing Vibration – A Technical Guideline*. This type of impact can be further categorised and assessed using the appropriate criterion as follows:

- Continuous vibration – from uninterrupted sources (see Table 5-5)
- Impulsive vibration – up to three instances of sudden impact e.g. dropping heavy items, per monitoring period (see Table 5-6)
- Intermittent vibration – such as from drilling, compacting or activities that would result in continuous vibration if operated continuously (see Table 5-7)

Table 5-5 Continuous Vibration Acceleration Criteria (m/s²) 1-80Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
		0.04	0.029	0.080	0.058
Workshops	Day or night-time	0.04	0.029	0.080	0.058
Note 1: From Assessing Vibration – A Technical Guideline DEC (2006)					

Table 5-6 Impulsive Vibration Acceleration Criteria (m/s²) 1-80Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92
Note 1: From Assessing Vibration – A Technical Guideline DEC (2006)					

Table 5-7 Intermittent Vibration Impacts Criteria (m/s1.75) 1-80Hz

Location	Daytime		Night-time	
	Preferred Values	Maximum Values	Preferred Values	Maximum Values
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60
Note 1: From Assessing Vibration – A Technical Guideline DEC (2006)				

5.4.2 Vibration Criteria – Building Contents and Structure

The vibration effects on the building itself are assessed against international standards as follows:

- For transient vibration: British Standard BS 7385: Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration" (BSI 1993); and
- For continuous or repetitive vibration: German DIN 4150: Part 3 – 1999 "Effects of Vibration on Structure" (DIN 1999).

5.4.2.1 Standard BS 7385 Part 2 - 1993

For transient vibration, as discussed in standard BS 7385 Part 2-1993, the criteria are based on peak particle velocity (mm/s) which is to be measured at the base of the building. These are summarised in Figure 5-1 and illustrated in Figure 5-1.

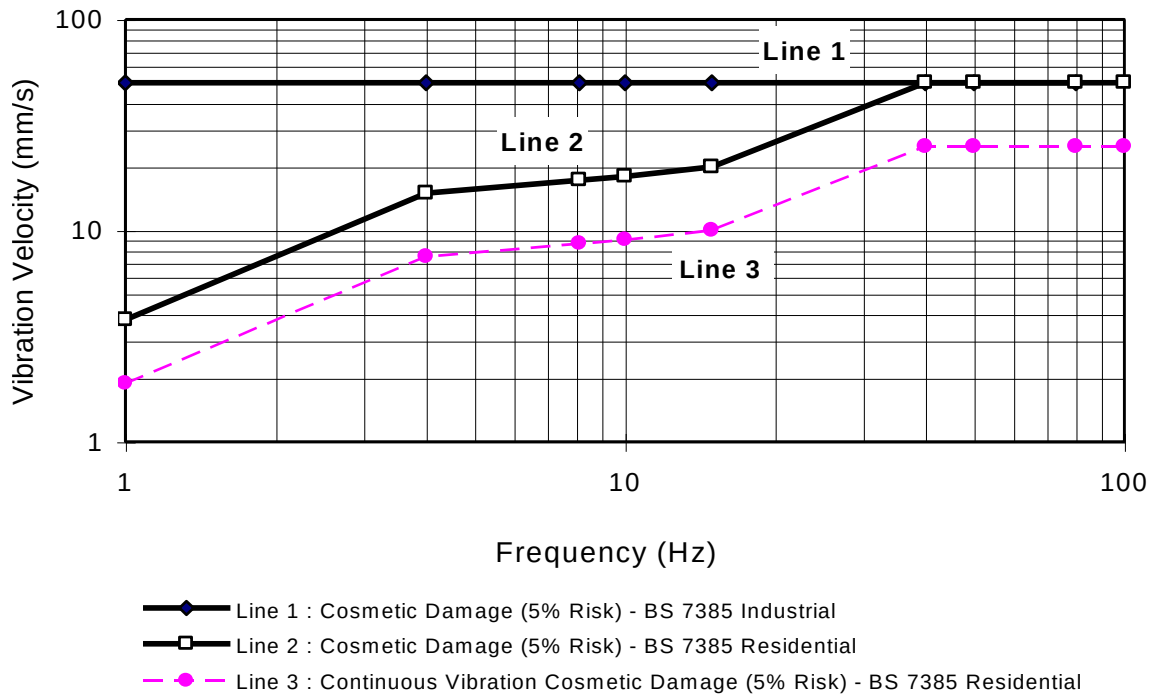
Table 5-8 Transient vibration criteria as per standard BS 7385 Part 2 - 1993

Line in Figure 9	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Standard BS 7385 Part 2 – 1993 states that the values in Table 5-8 relate to transient vibration which does not cause resonant responses in buildings.

Where the dynamic loading caused by continuous vibration events is such as that results in dynamic magnification due to resonance (especially at the lower frequencies where lower guide values apply), then the values in Table 5-8 need to be reduced by up to 50% (refer to Line 3 in Figure 5-1).

Figure 5-1 BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage



In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the recommended values corresponding to Line 2 are reduced. Below a frequency of 4 Hz where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz.

The standard also states that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 5-8. Major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the standard and it is concluded that unless calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the values in Table 5-8 should not be reduced for fatigue considerations.

6 OPERATIONAL ACOUSTIC ASSESSMENT

Predictive noise modelling was carried out using the ISO 9613 algorithm within iNoise 2021. The iNoise software package allows a 3D computational model of the site and surrounding area to be created. Inputs into the noise model included terrain, ground absorption, surrounding buildings, fences, receiver locations and noise sources.

6.1 Noise Generating Scenario

This Noise Assessment includes assessment of the potential uses within the hall and mechanical plant. One noise generating scenario is presented with the gymnasium, change rooms and all rooms in the building occupied. The modelled internal noise levels within various spaces of the hall are listed in Table 6-1 below.

Table 6-1 Modelled internal noise levels within spaces

Room	63	125	250	500	1000	2000	4000	8000	Overall
Gymnasium	53	56	65	74	71	67	58	50	75
Change rooms, foyer	39	42	52	56	49	44	40	35	55
Storage rooms, stage, bathrooms	29	32	42	46	39	34	30	25	45

Noise sources are modelled as emitting facades and an emitting roof in the locations shown in Figure 6-1.

Figure 6-1 Operational Scenario



6.2 Modelling Assumptions

The following modelling assumptions are utilised in this noise impact assessment:

- The noise generating scenario is modelled for a worst case 15 minute period;
- Off site terrain has been sourced from the NSW Land and Property Information database Sixmaps;
- On site terrain has been taken from the architectural drawings;
- Ground Absorption has been included in the model with the site and surrounding grass areas having an absorption factor of 0.5;
- All receptors are modelled 1.5m above the ground;
- Off-site structures such as buildings and fences have been included in the model where relevant;
- Noise sources have been modelled as emitting façades or an emitting roof on the exterior of the hall building as per Figure 6-1;
- The noise sources and sound power levels have been modelled with respect to the information presented in Table 6-1;
- Noise transmission through windows is assumed to be 3mm glass;
- Noise transmission through the roof is assumed to be 0.4mm colorbond or similar material;
- Noise transmission through the weather louvres has no transmission loss ($R_w = 0$); and
- Internal spaces of the hall are assumed to be operational from 7am to 10pm.

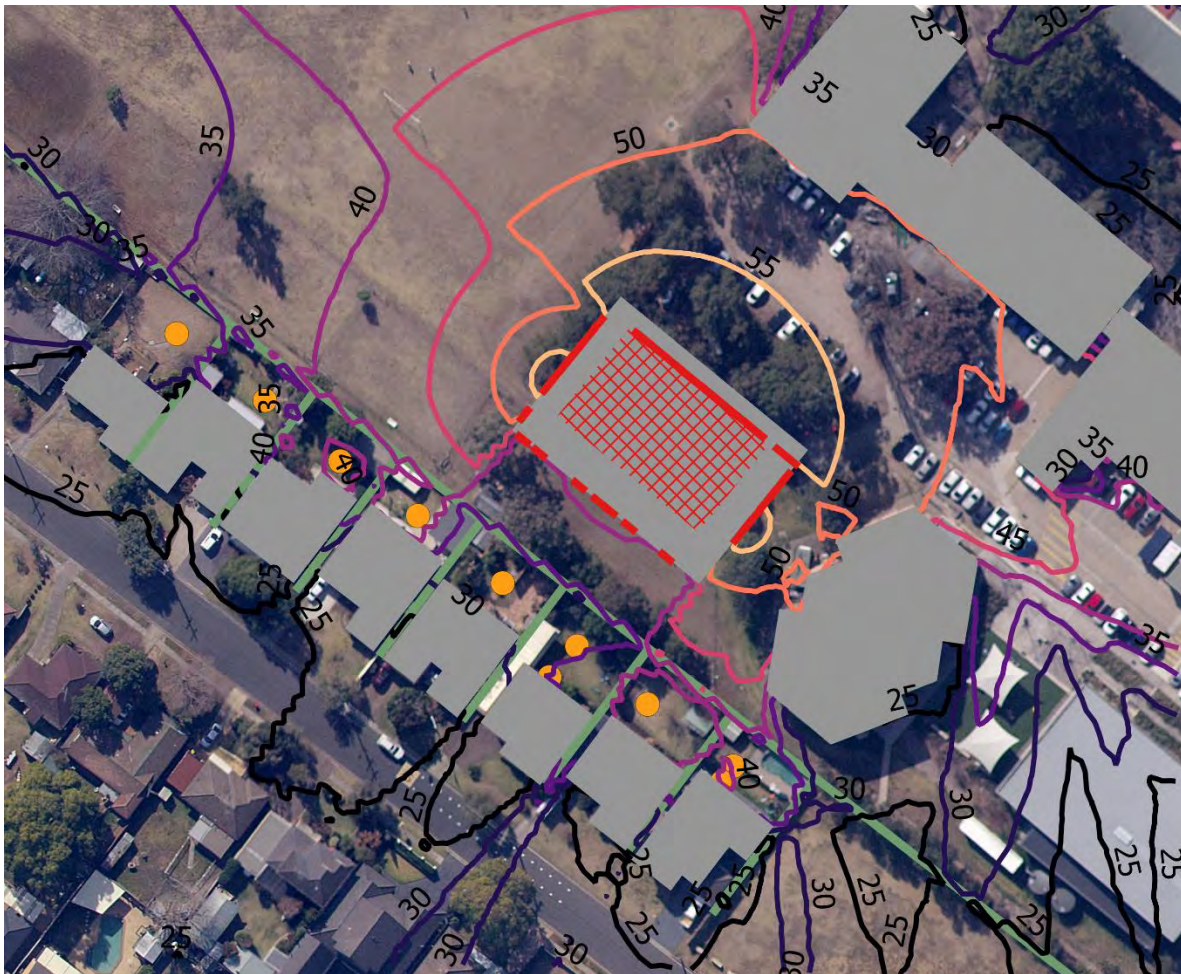
6.3 Predicted Noise Levels

The predicted L_{Aeq} results of the modelled operational scenario are presented below in Table 6-2. All receivers are located in the backyards, with additional receivers placed at 4.5m height at the façades of the two double storey buildings. Noise contours of the modelled operational scenario are shown in Figure 6-2. It is shown that noise levels are predicted to comply with the criteria at the considered receivers.

Table 6-2 Predicted Noise Levels, Operational Scenario, L_{Aeq} (15 minute)

Receiver	Criteria		Predicted Noise Levels Operational Scenario
	Day	Evening	
R1 Backyard	44	42	38
R1 Upper Storey	44	42	39
R2 Backyard	44	42	42
R3 Backyard	44	42	35
R3 Upper Storey	44	42	35
R4 Backyard	44	42	34
R5 Backyard	44	42	40
R6 Backyard	44	42	39
R7 Backyard	44	42	36
R8 Backyard	44	42	32

Figure 6-2 Predicted Noise Contours – Operational Activities



6.4 Noise Control Measures

As this assessment is for the DA stage of the development, final selection of mechanical equipment has not occurred. Final selection of equipment is expected before at the Construction Certificate (CC) stage. It is therefore recommended that following the final selection of equipment, noise levels from mechanical equipment be predicted at the nearest receivers. Noise emissions from mechanical equipment are to be acoustically treated to achieve compliance with the external noise level criteria discussed in Section 5.2.

The following noise control measures are therefore recommended for the Nepean High School Hall

- The hall is recommended to be utilised from 7am to 10pm on any day of the week, including use on the weekends.
- Sound pressure levels within the hall from a PA system, music or likewise are recommended not to exceed 75 dBA
- Façade openings such as for the weather louvres, glass windows and doors are recommended to be constructed in the locations shown in these plans
- Noise emissions from mechanical equipment are to be predicted at the CC stage to achieve compliance with the external noise level criteria discussed in Section 5.2

7 CONSTRUCTION NOISE AND VIBRATION

This Acoustic Report is to be submitted for the DA stage of the proposed development. As such, details on the methods of construction are not yet available. A Construction Noise and Vibration Management Plan (CNVMP) is recommended to be carried out during the Construction Certificate stage of the development.

As part of this CNVMP, construction noise impacts are recommended to meet the criteria outlined in section 5.3, while construction vibration impacts are recommended to meet the criteria presented in section 5.4.

8 CONCLUSIONS

Pulse White Noise Acoustics Consultancy Pty Ltd (Pulse White Noise Acoustics) has been engaged by BKA Architecture to undertake an Acoustic for the proposed Hall at the Nepean Creative and Performing Arts High School, 115-119 Great Western Highway Emu Plains. The hall is proposed to be include a basketball court, change rooms, equipment storage and a foyer.

This document assesses the potential operational noise impacts of the proposed hall on the neighbouring receptors. In particular, operational impacts of the use of the hall as well as mechanical equipment are assessed at the nearest receptors.

This document assesses the potential operational noise impacts of the hall on the nearby residential receivers. The following noise control recommendations are contained within this report.

The following noise control measures are therefore recommended for the Nepean High School Hall

- The hall is recommended to be utilised from 7am to 10pm on any day of the week including use on the weekends.
- Sound pressure levels within the hall from a PA system, music or likewise are recommended not to exceed 75 dBA.
- Façade openings such as for the weather louvres, glass windows and doors are recommended to be constructed in the locations shown in these plans.
- Following the final selection of equipment at the Construction Certificate stage, noise levels from mechanical equipment are recommended to be predicted at the nearest receivers. Noise emissions from mechanical equipment are to be acoustically treated to achieve compliance with the external noise level criteria discussed in Section 5.2.
- A Construction Noise and Vibration Management Plan (CNVMP) is recommended to be carried out during the Construction Certificate stage of the development. As part of this CNVMP, construction noise impacts are recommended to meet the criteria outlined in section 5.3, while construction vibration impacts are recommended to meet the criteria presented in section 5.4.

Based on the findings from this Noise Impact Assessment, should the assumptions in this report be carried out, the proposed hall is predicted to comply with the recommended noise criteria at the surrounding receivers.

APPENDIX A: ACOUSTIC TERMINOLOGY

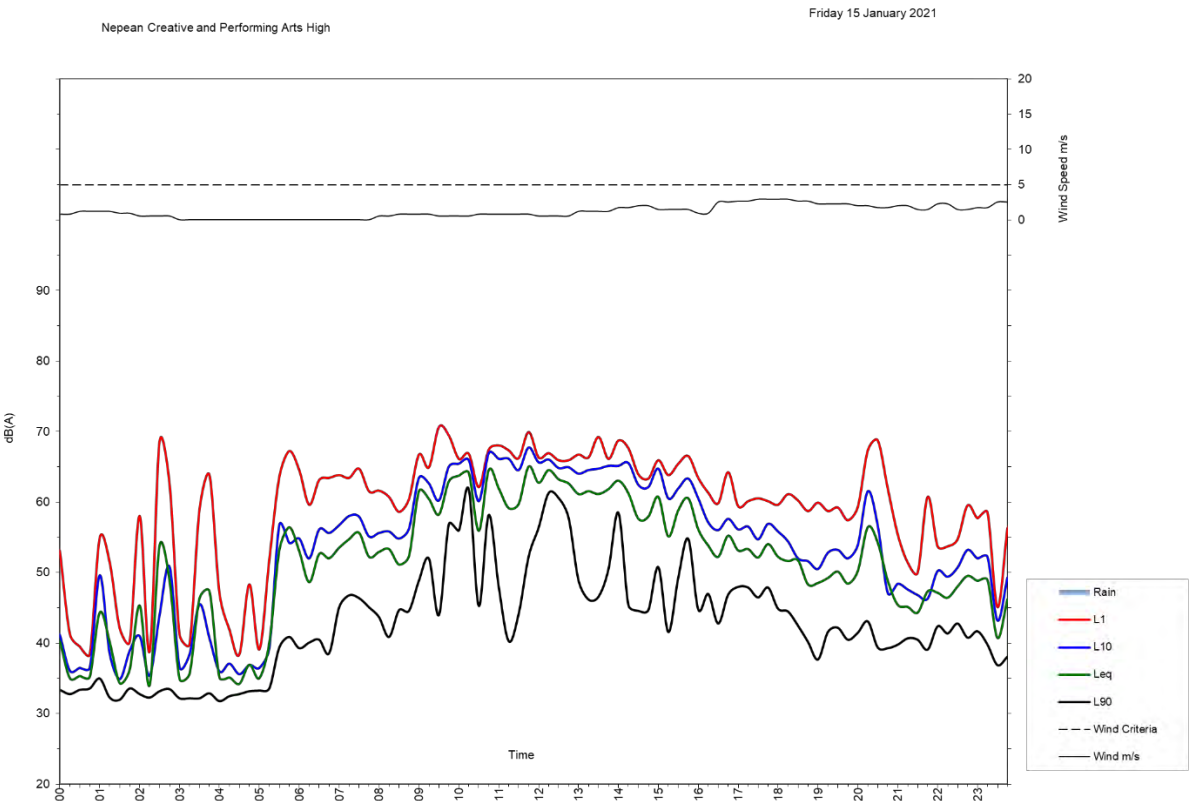
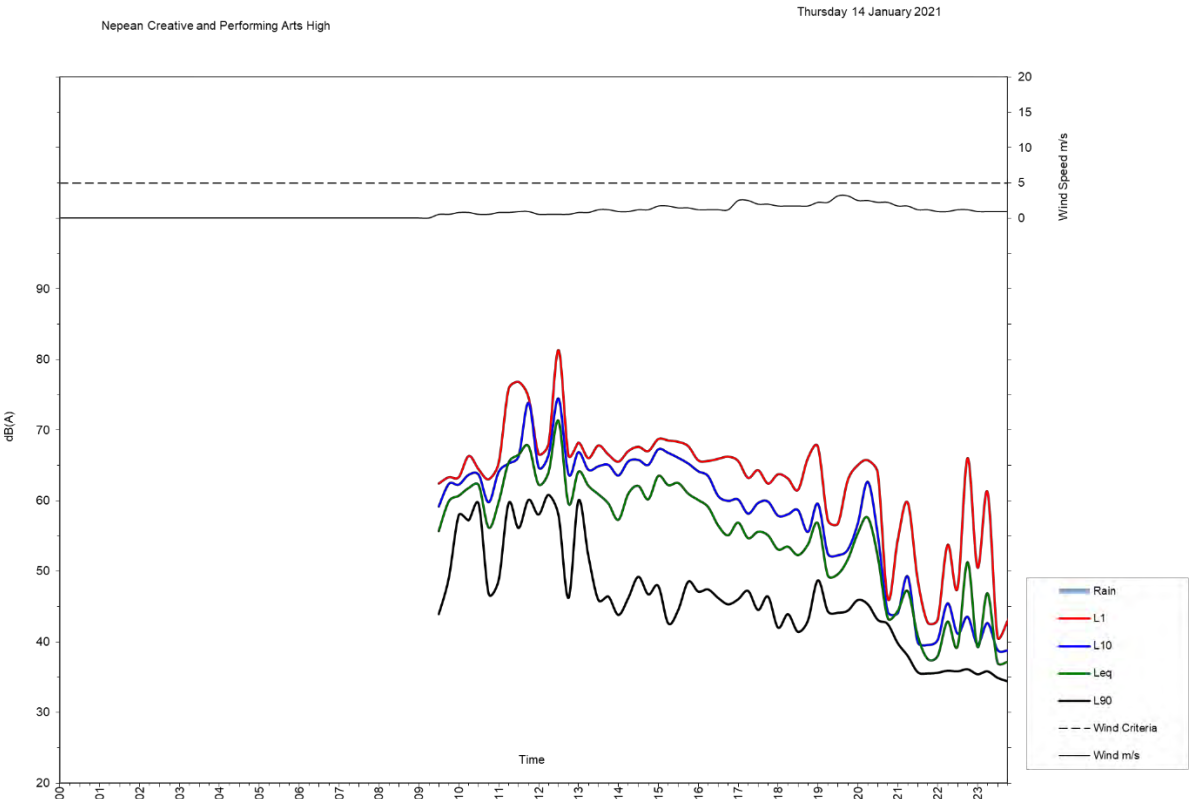
The following is a brief description of the acoustic terminology used in this report.

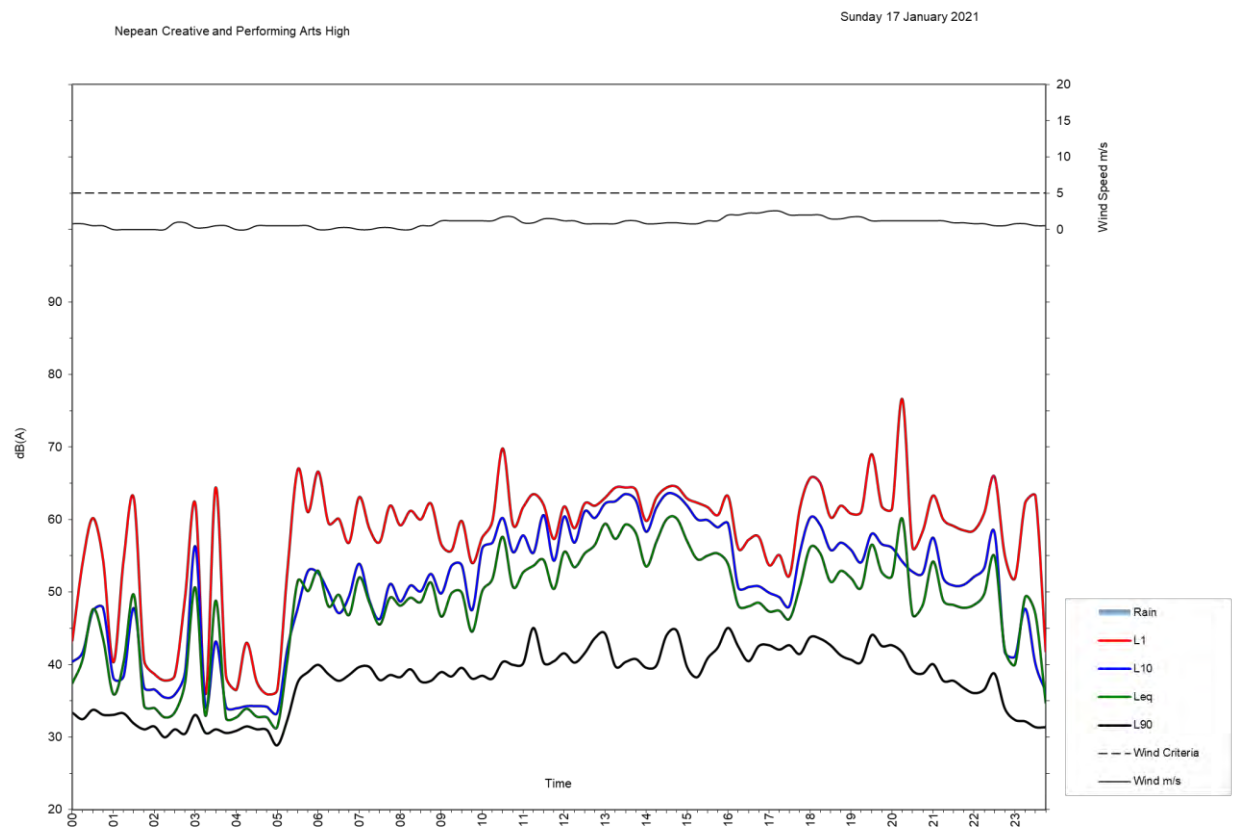
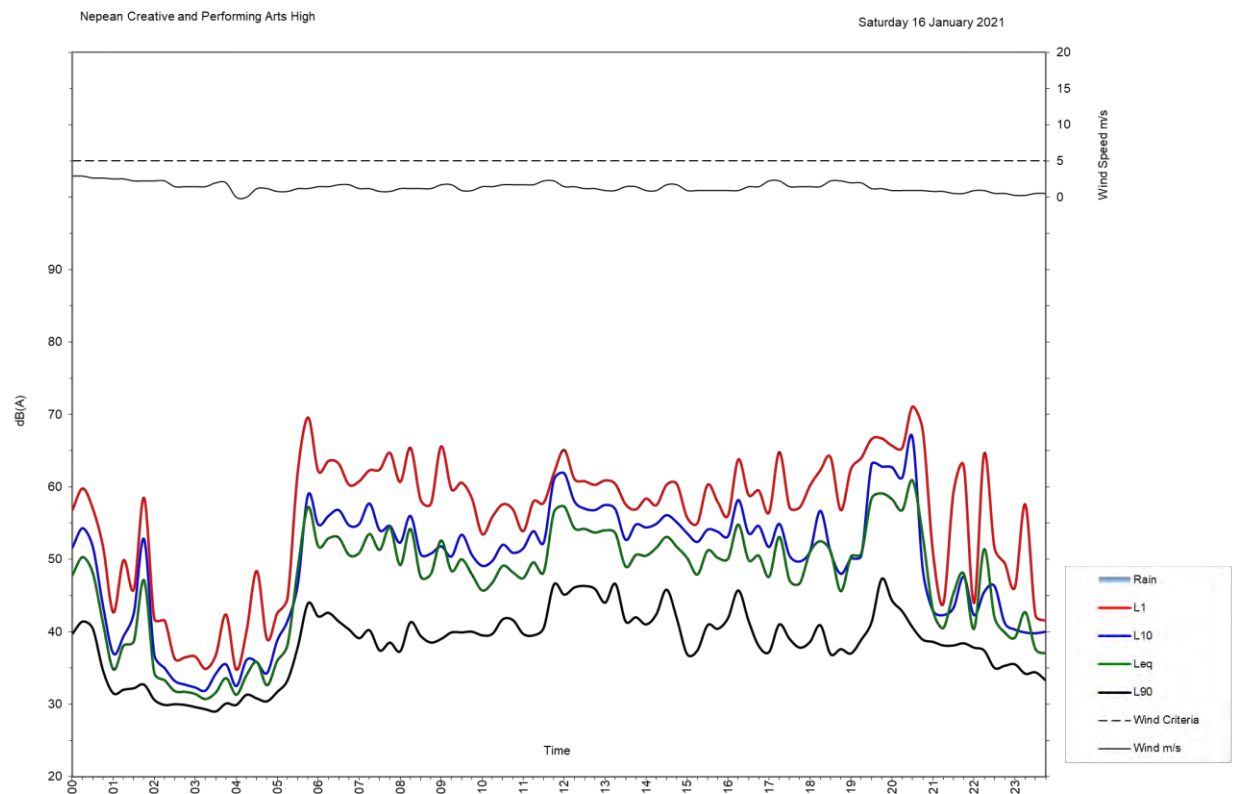
<i>Sound power level</i>	The total sound emitted by a source																						
<i>Sound pressure level</i>	The amount of sound at a specified point																						
<i>Decibel [dB]</i>	The measurement unit of sound																						
<i>A Weighted decibels [dB(A)]</i>	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to, and places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).																						
<i>Decibel scale</i>	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows: <table> <tr><td>0dB(A)</td><td>Threshold of human hearing</td></tr> <tr><td>30dB(A)</td><td>A quiet country park</td></tr> <tr><td>40dB(A)</td><td>Whisper in a library</td></tr> <tr><td>50dB(A)</td><td>Open office space</td></tr> <tr><td>70dB(A)</td><td>Inside a car on a freeway</td></tr> <tr><td>80dB(A)</td><td>Outboard motor</td></tr> <tr><td>90dB(A)</td><td>Heavy truck pass-by</td></tr> <tr><td>100dB(A)</td><td>Jackhammer/Subway train</td></tr> <tr><td>110 dB(A)</td><td>Rock Concert</td></tr> <tr><td>115dB(A)</td><td>Limit of sound permitted in industry</td></tr> <tr><td>120dB(A)</td><td>747 take off at 250 metres</td></tr> </table>	0dB(A)	Threshold of human hearing	30dB(A)	A quiet country park	40dB(A)	Whisper in a library	50dB(A)	Open office space	70dB(A)	Inside a car on a freeway	80dB(A)	Outboard motor	90dB(A)	Heavy truck pass-by	100dB(A)	Jackhammer/Subway train	110 dB(A)	Rock Concert	115dB(A)	Limit of sound permitted in industry	120dB(A)	747 take off at 250 metres
0dB(A)	Threshold of human hearing																						
30dB(A)	A quiet country park																						
40dB(A)	Whisper in a library																						
50dB(A)	Open office space																						
70dB(A)	Inside a car on a freeway																						
80dB(A)	Outboard motor																						
90dB(A)	Heavy truck pass-by																						
100dB(A)	Jackhammer/Subway train																						
110 dB(A)	Rock Concert																						
115dB(A)	Limit of sound permitted in industry																						
120dB(A)	747 take off at 250 metres																						
<i>Frequency [f]</i>	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.																						
<i>Ambient sound</i>	The all-encompassing sound at a point composed of sound from all sources near and far.																						
<i>Equivalent continuous sound level [L_{eq}]</i>	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.																						
<i>Reverberation</i>	The persistence of sound in a space after the source of that sound has been stopped (the reverberation time is the time taken for a reverberant sound field to decrease by 60 dB)																						
<i>Air-borne sound</i>	The sound emitted directly from a source into the surrounding air, such as speech, television or music																						
<i>Impact sound</i>	The sound emitted from force of one object hitting another such as footfalls and slamming cupboards.																						
<i>Air-borne sound isolation</i>	The reduction of airborne sound between two rooms.																						
<i>Sound Reduction Index [R] (Sound Transmission Loss)</i>	The ratio the sound incident on a partition to the sound transmitted by the partition.																						
<i>Weighted sound reduction index [R_w]</i>	A single figure representation of the air-borne sound insulation of a partition based upon the R values for each frequency measured in a laboratory environment.																						
<i>Level difference [D]</i>	The difference in sound pressure level between two rooms.																						

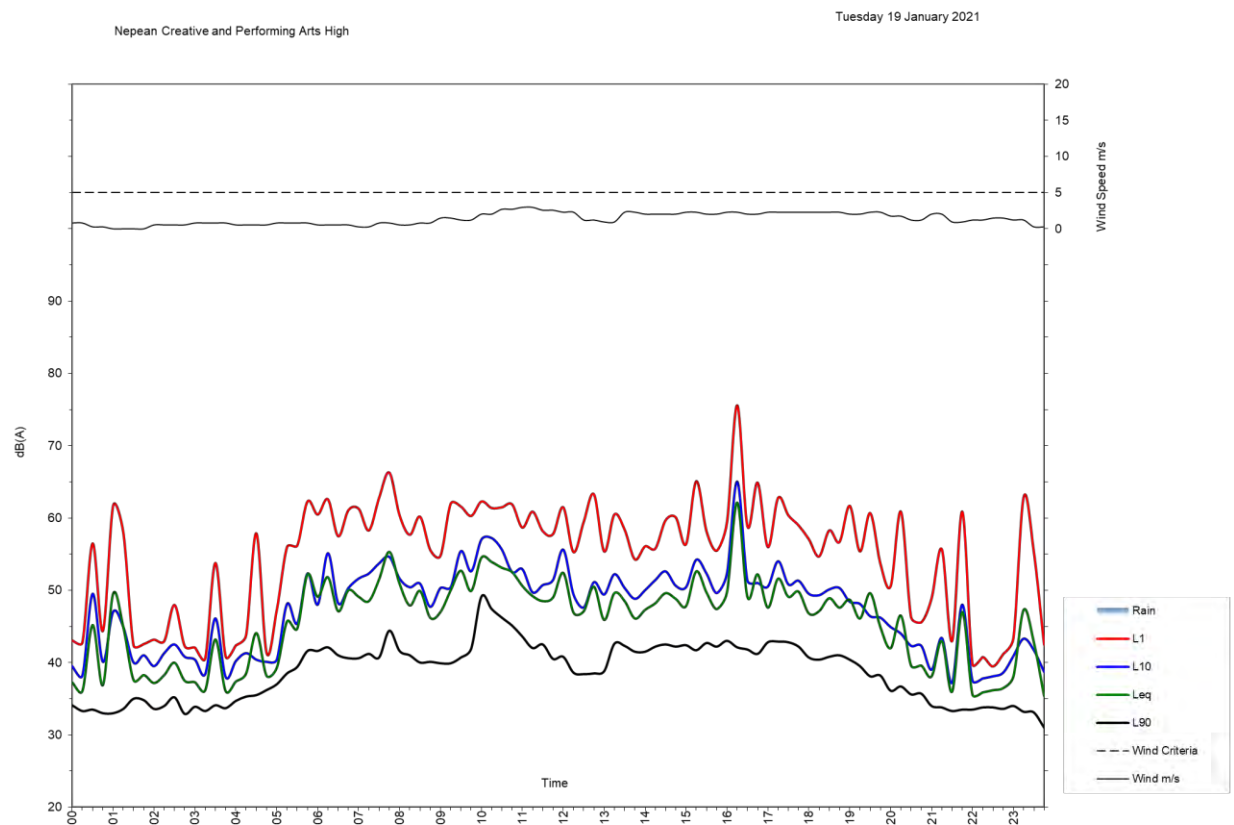
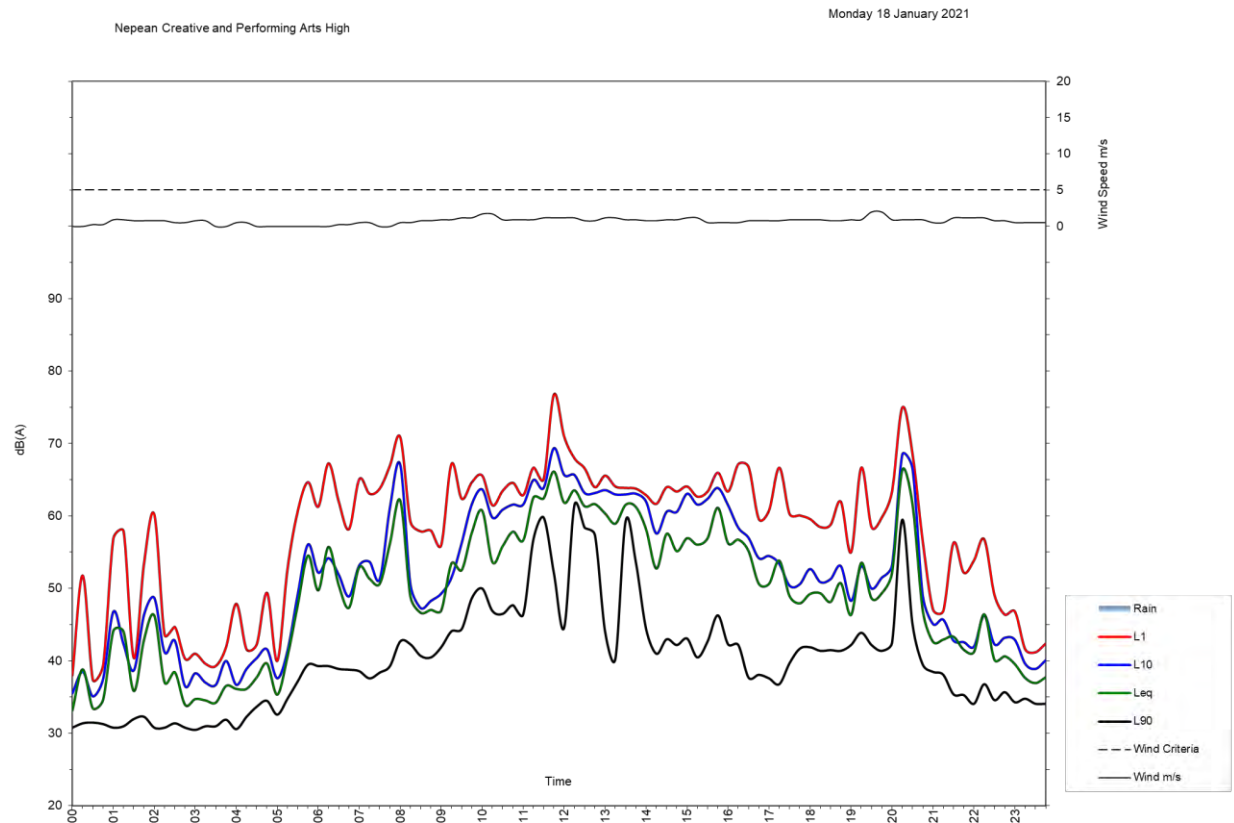
<i>Normalised level difference $[D_n]$</i>	The difference in sound pressure level between two rooms normalised for the absorption area of the receiving room.
<i>Standardised level difference $[D_{nT}]$</i>	The difference in sound pressure level between two rooms normalised for the reverberation time of the receiving room.
<i>Weighted standardised level difference $[D_{nT,w}]$</i>	A single figure representation of the air-borne sound insulation of a partition based upon the level difference. Generally used to present the performance of a partition when measured in situ on site.
C_{tr}	A value added to an R_w or $D_{nT,w}$ value to account for variations in the spectrum.
<i>Impact sound isolation</i>	The resistance of a floor or wall to transmit impact sound.
<i>Impact sound pressure level $[L_i]$</i>	The sound pressure level in the receiving room produced by impacts subjected to the adjacent floor or wall by a tapping machine.
<i>Normalised impact sound pressure level $[L_n]$</i>	The impact sound pressure level normalised for the absorption area of the receiving room.
<i>Weighted normalised impact sound pressure level $[L_{n,w}]$</i>	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in a laboratory.
<i>Weighted standardised impact sound pressure level $[L'_{nT,w}]$</i>	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in situ on site.
C_i	A value added to an L_{nW} or $L'_{nT,w}$ value to account for variations in the spectrum.
<i>Energy Equivalent Sound Pressure Level $[L_{A,eq,T}]$</i>	'A' weighted, energy averaged sound pressure level over the measurement period T.
<i>Percentile Sound Pressure Level $[L_{Ax,T}]$</i>	'A' weighted, sound pressure that is exceeded for percentile x of the measurement period T.

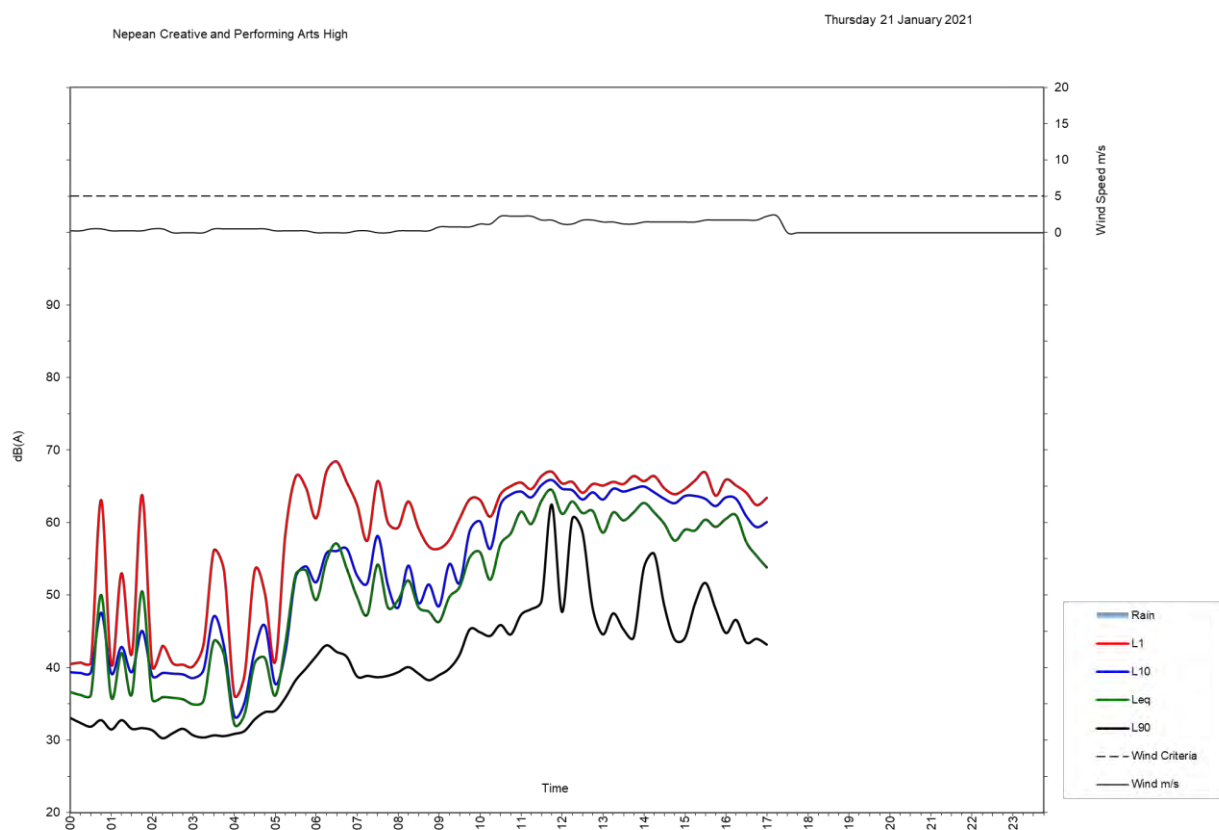
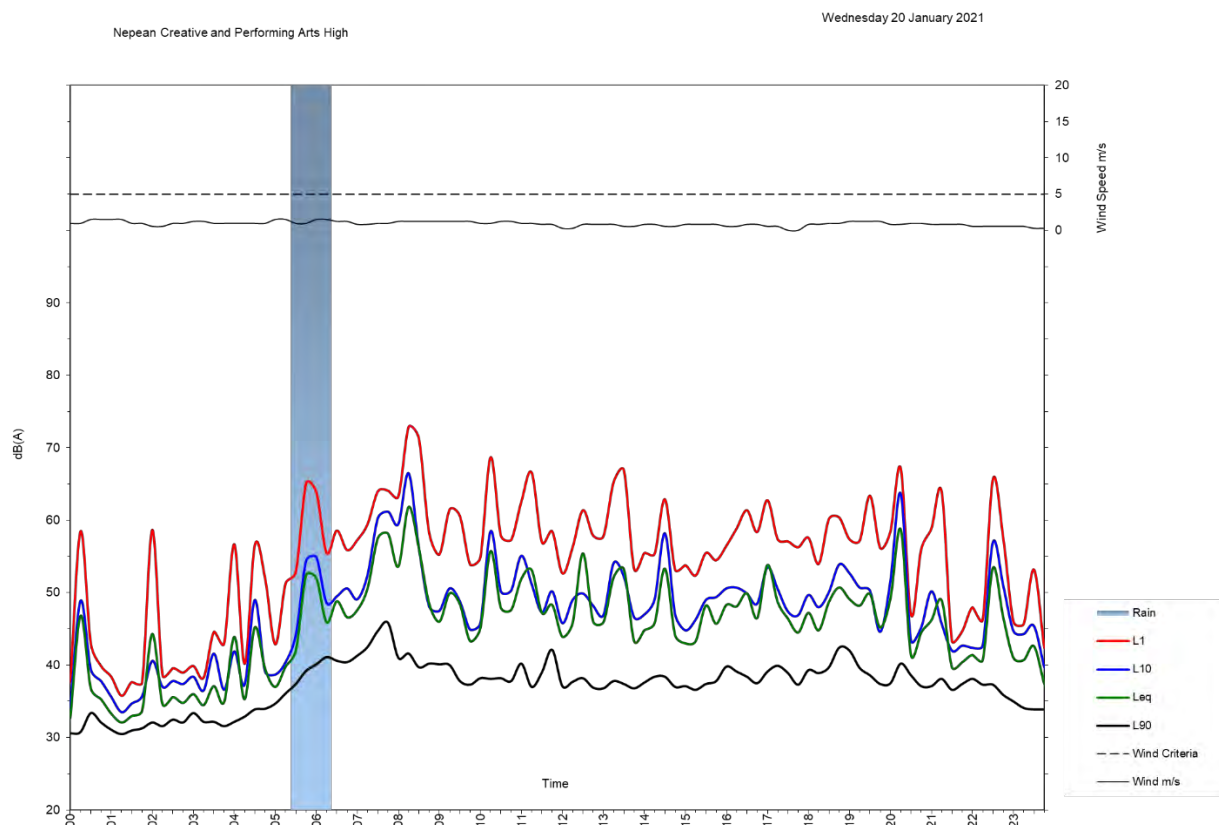
*Definitions of a number of terms have been adapted from Australian Standard AS1633:1985 "Acoustics – Glossary of terms and related symbols"

APPENDIX B: UNATTENDED NOISE LOGGING









Appendix I

Civil Engineering Works Plans

NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL

enstruct

CIVIL ENGINEERING WORKS

BOUNDARY AND EASEMENT NOTE

The property boundary and easement locations shown on enstruct drawing's have been based from information received from:
YSCO GEOMATICS
Land Resource Consultants
enstruct makes no guarantees that the boundary or easement information shown is correct. enstruct will accept no liabilities for boundary inaccuracies. The contractor/builder is advised to check/confirm all boundaries in relation to all proposed work prior to the commencement of construction. Boundary inaccuracies found are to be reported to the superintendent prior to construction starting.

CONCRETE FINISHING NOTES

1. All exposed concrete pavements are to be broomed finished.
2. All edges of the concrete pavement including keyed and dowelled joints are to be finished with an edging tool.
3. Concrete pavements with grades greater than 10 % shall be heavily broomed finished.
4. Carborundum to be added to all stair treads and ramped crossings U.N.O.

CIVIL SAFETY IN DESIGN

enstruct (NSW) Pty Ltd operates under Safe Work Australia's code of Conduct for the Safe Design of Structures.
These drawings shall be read in conjunction with the enstruct Transfer of Information Letter and Civil risk and Solutions Register. Under the Code of Conduct it is the Client's responsibility to provide a copy of the Civil Risk and Solutions Register to the Principal Contractor.
It is the Principal Contractor's responsibility to review the hazards and risks identified during the design process to ensure a safe workplace is maintained for the construction, maintenance and eventual demolition of the civil infrastructure.

DBYD SERVICES NOTE

"Public Service Utility information shown on plan has been compiled from information received from Dial Before You Dig inquiry, reference Number 20286159, which was obtained on 21/09/20.
Unless specifically shown otherwise, this location and depth of services shown on this plan have not been verified.

The location of services shown on this drawing have been plotted as accurately as possible from diagrams provided by service authorities and should be confirmed by site inspection."

KERBING NOTES

Includes all kerbs, gutters, dish drains, crossings and edges.

1. All kerbs, gutters, dish drains and crossings to be constructed on minimum 75mm granular basecourse compacted to minimum 98% modified maximum dry density in accordance with AS 1289 5.2.1.
2. Expansion joints (EJ) to be formed from 10mm compressible cork filler board for the full depth of the section and cut to profile. Expansion joints to be located at drainage pits, on tangent points of curves and elsewhere at 12m centres except for integral kerbs where the expansion joints are to match the joint locations in slabs.
3. Weakened plane joints to be min 3mm wide and located at 3m centres except for integral kerbs where weakened plane joints are to match the joint locations in slabs.
4. Broomed finished to all ramped and vehicular crossings, all other kerbing or dish drains to be steel float finished.
5. In the replacement of kerbs -
Existing road pavement is to be sawcut 900mm from lip of gutter. Upon completion of new kerbs, new basecourse and surface is to be laid 900mm wide to match existing materials and thicknesses.
Existing allotment drainage pipes are to be built into the new kerb with a 100mm dia hole.
Existing kerbs are to be completely removed where new kerbs are shown.

GENERAL NOTES

1. Contractor must verify all dimensions and existing levels on site prior to commencement of works. Any discrepancies to be reported to the Engineer
2. Strip all topsoil from the construction area. All stripped topsoil shall be disposed of off-site unless directed otherwise.
3. Make smooth connection with all existing works.
4. Compact subgrade under buildings and pavements to minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1. Compaction under buildings to extend 2m minimum beyond building footprint.
5. All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority; the Contractor is to ensure that the drawings used for construction have been approved by all relevant authorities prior to commencement site.
6. All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority is to be carried out in accordance with the requirements of the relevant Authority. The Contractor shall obtain these requirements from the Authority. Where the requirements of the Authority are different to the drawings and specifications, the requirements of the Authority shall be applicable.
7. For all temporary batters refer to geotechnical recommendations.

REFERENCE DRAWINGS

1. These drawings have been based from, and to be read in conjunction with the following Consultants drawings. Any conflict to the drawings must be notified immediately to the Engineer.

Consultant	Dwg Title	Dwg No	Rev	Date
BKA Architecture	Site Plan			
	Demolition Plan			
	Floor Plan			
	Section			

REINFORCEMENT NOTES

1. Fix reinforcement as shown on drawings. The type and grade is indicated by a symbol as shown below. On the drawings this is followed by a numeral which indicates the size in millimetres of the reinforcement.
N. Hot rolled ribbed bar grade D500N
R. Plain round bar grade R250N
SL. Square mesh grade 500L
RL. Rectangular mesh grade 500L.
2. Provide bar supports or spacers to give the following concrete cover to all reinforcement unless otherwise noted on drawings.
Footings - 50 top, 50 bottom, 50 sides.
Walls - 30 generally.
- 30 when cast in forms but later exposed to weather or ground.
- 50 when cast directly in contact with ground.
3. Cover to reinforcement ends to be 50 mm u.n.o.
4. Provide N12-450 support bars to top reinforcement as required, Lap 500 U.N.O.
5. Maintain cover to all pipes, conduits, reglets, drip grooves etc.
6. All cogs to be standard cogs unless noted otherwise.
7. Fabric end and side laps are to be placed strictly in accordance with the manufacturers requirements to achieve a full tensile lap. Fabric shall be laid so that there is a maximum of 3 layers at any location.

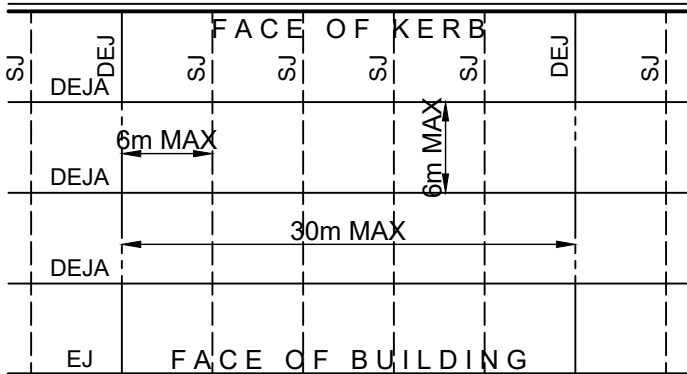


8. Laps in reinforcement shall be made only where shown on the drawings unless otherwise approved. Lap lengths as per table below.

JOINTING NOTES

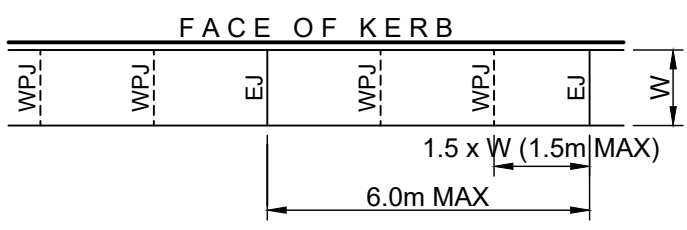
Vehicular Pavement Jointing

1. All vehicular pavements to be jointed as shown on drawings.
2. Keyed construction joints should generally be located at a maximum of 6m centres.
3. Sawn joints should generally be located at a maximum of 6m centres or 1.5 x the spacing of keyed joints, where key joint spacing is less than 4m, with dowelled expansion joints at maximum of 30m centres.
4. Provide 10mm wide full depth expansion joints between buildings and all concrete or unit pavers.
5. The timing of the saw cut is to be confirmed by the contractor on site. Site conditions will determine how many hours after the concrete pour before the saw cuts are commenced. Refer to the specification for weather conditions and temperatures required.
6. Vehicular pavement jointing as follows.



Pedestrian Footpath Jointing

1. Expansion joints are to be located where possible at tangent points of curves and elsewhere at max 6.0m centres.
2. Weakened plane joints are to be located at a max 1.5 x width of the pavement.
3. Where possible joints should be located to match kerbing and / or adjacent pavement joints.
4. All pedestrian footpath jointings as follows (uno).



RETAINING WALLS

1. Drainage shall be provided as shown on the drainage drawings.
2. Backfilling shall be carried out after grout or concrete has reached a minimum strength of 0.85 f.c. Backfilling shall be approved granular material compacted in layers not exceeding 200mm to 95% Standard compaction unless noted otherwise.
3. Provide waterproofing to back of walls as specified or noted.
4. Where retaining walls rely on connecting structural elements for stability, do not backfill against the wall unless it is adequately propped or the elements have been constructed and have sufficient strength to withstand the loads.
5. For all temporary batters obtain geotechnical engineers recommendations.

PIT SCHEDULE

Note: Grate size does not necessarily reflect pit size, refer pit type details, shown on detail sheets - C212
Final internal pit dimensions are to comply with AS3500

Type	Description	Size	Class	Size	Number
B	Surface inlet pit	900 x 900	D	Galvanised mild steel grate hinged to frame	4,8,9,10 11
	Surface inlet pit	600 x 600	D	Galvanised mild steel grate hinged to frame	12
A	OSD Access	900 x 900	D	Galvanised mild steel grate hinged to frame	5,6,7
E	Existing pit to remain				1,2,3

SURVEY AND SERVICES INFORMATION

SURVEY

Origin of levels :
Datum of levels : A.H.D. AUSTRALIAN HEIGHT DATUM
Coordinate system : MGA
Survey prepared by : YSCO GEOTECHNICS
Setout Points : CONTACT THE SURVEYOR

enstruct does not guarantee that the survey information shown on these drawings is accurate and will accept no liability for any inaccuracies in the survey information provided to us from any cause whatsoever.

UNDERGROUND SERVICES - WARNING

The locations of underground services shown on enstruct drawings have been plotted from diagrams provided by service authorities. This information has been prepared solely for the authorities own use and may not necessarily be updated or accurate.

The position of services as recorded by the authority at the time of installation may not reflect changes in the physical environment subsequent to installation.

enstruct does not guarantee that the services information shown on these drawings shows more than the presence or absence of services, and will accept no liability for inaccuracies in the services information shown from any cause whatsoever.

The Contractor must confirm the exact location and extent of services prior to construction and notify any conflict with the drawings immediately to the Engineer/Superintendent.

The contractor is to get approval from the relevant state survey department, to remove/adjust any survey mark. This includes but is not limited to: State Survey Marks (SSM), Permanent Marks (PM), cadastral reference marks or any other survey mark which is to be removed or adjusted in any way.

enstruct plans do not indicate the presence of any survey mark. The contractor is to undertake their own search.

STORMWATER DRAINAGE NOTES

- 1 Stormwater Design Criteria :
(A) Average exceedance probability -
1% AEP for roof drainage to first external pit
5% AEP for paved and landscaped areas
(B) Rainfall intensities -
Time of concentration: 5 minutes
1% AEP = 240mm/hr
5% AEP = 176mm/hr
(C) Rainfall losses -
Impervious areas: IL= 1.5 mm , CL= 0 mm/hr
Pervious areas: IL= 1.0mm , CL= 1.36 mm/hr
2. Pipes 300 dia and larger to be reinforced concrete Class "2" approved spigot and socket with rubber ring joints U.N.O.
3. Pipes up to 300 dia may be sewer grade uPVC with solvent welded joints, subject to approval by the engineer
4. Equivalent strength FRP pipes may be used subject to approval
5. Precast pits may be used external to the building subject to approval by engineer
6. Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
7. Where subsoil drains pass under floor slabs and vehicular pavements, unslotted uPVC sewer grade pipe is to be used.
8. Grates and covers shall conform with AS 3996-2006, and AS 1428.1 for access requirements.
9. Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
10. Care is to be taken with invert levels of stormwater lines. Grades shown are not to be reduced without approval
11. All stormwater pipes to be 150 dia at 1.0% min fall U.N.O.
12. Subsoil drains to be slotted flexible uPVC U.N.O.
13. Adopt invert levels for pipe installation (grades shown are only nominal).

MASONRY NOTES

1. Temporary bracing shall be provided by the contractor to keep the masonry stable at all times.
2. Masonry to be in accordance with AS 3700
3. Masonry units shall comply with AS/NZS 4455 and as follows:

Type of masonry unit	Characteristic unconfined compressive strength (f _{cu})	Characteristic lateral modulus of rupture (f _{ut})
Clay & Calcium silicate	15 MPa	0.8 MPa
Concrete (used in non-loadbearing internal walls)	4.5 MPa (hollow units) 3.0 MPa (solid or cored units)	0.8 MPa
Concrete (used in unreinforced loadbearing walls, reinforced masonry and non-loadbearing external walls)	15 MPa (hollow units) 10 MPa (solid or cored units)	0.8 MPa

4. Mortar shall consist of the following:

M3 for general applications

1 part Type GP cement: 5 parts sand plus water thickener

M4 for elements in interior environments subject to saline wetting and drying; below a damp-proof course or in contact with ground in aggressive soils; in severe marine environments; in saline or contaminated water including tidal splash zones; and within 1km of an industry producing chemical pollutants.
1 part Type GP cement: 4 parts sand plus water thickener

5. Other than what is allowed in the specification no chasing or rebates may be made in masonry walls without written approval.
6. The contractor shall provide records that demonstrate all masonry bed joint reinforcement, masonry ties and masonry wall stiffeners have been installed in accordance with the drawings and specification.
7. All load bearing concrete masonry walls shall have all cores filled with grout UNO. Core filling grout shall be thoroughly compacted. Grout to be in accordance with AS3700 and as follows:

Location	f _{cu} MPa	Specified Slump	Maximum Agg. Size
Grout	20	230	10

8. All core filled blockwalls shall be constructed with "Double U" blocks
9. In core filled blockwalls cleanout openings shall be provided at the bottom of each core and shall be cleaned of mortar protrusions before grouting.
10. All core filled block walls shall have all cores filled with grout UNO. Core filling grout to be in accordance with note 9.
11. Cover to reinforcement to be 50mm to face of block UNO.
12. Provide bed joint reinforcement as follows
M.E.T. galvanized masonry reo where M3 mortar is used (supplied by DUNSTONE MAZE in NSW)
Ancon CCL stainless steel where M4 mortar is used and locate as follows
- in 2 bed joints below and above head and sill flashings to openings
- in 2 bed joints below and above openings
- in third bed joint above bottom of wall
- in second bed joint below top of wall

B	06/11/20	100% SD		BEJ	KEH
A	13/10/20	[ISSUE FOR REVIEW]		BEJ	KEH
rev	date	description	dm	ch/k	

rev	date	description	dm	ch/k	



enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2081
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au

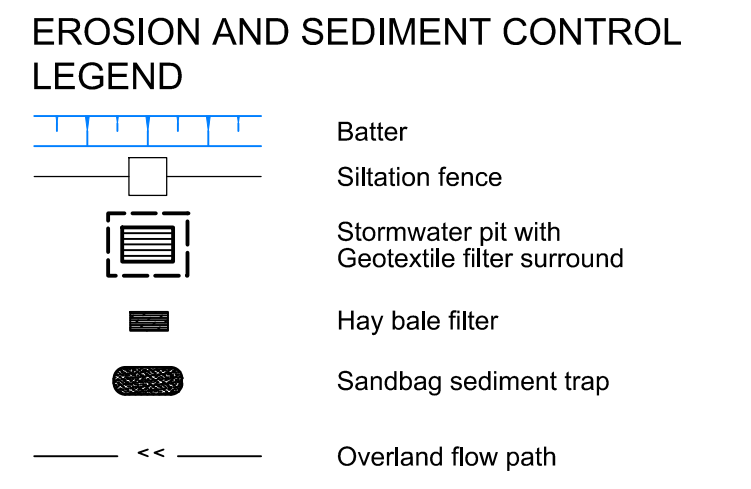
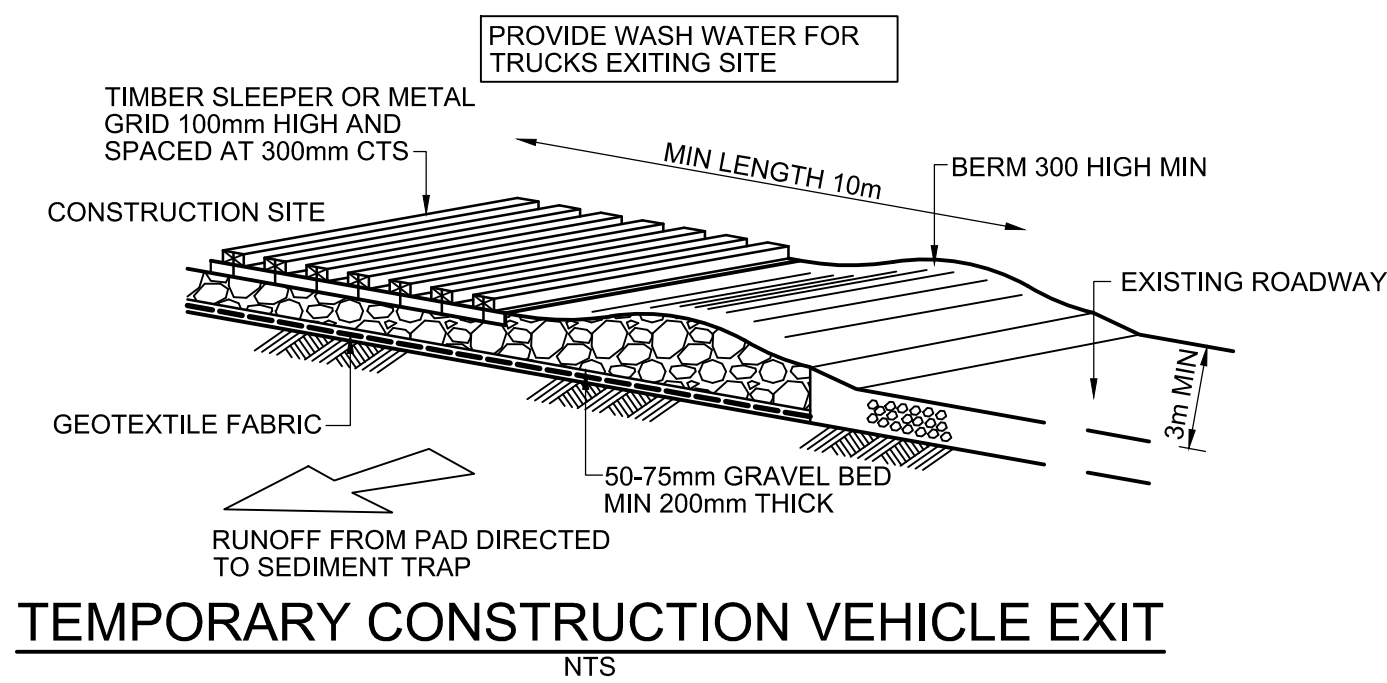
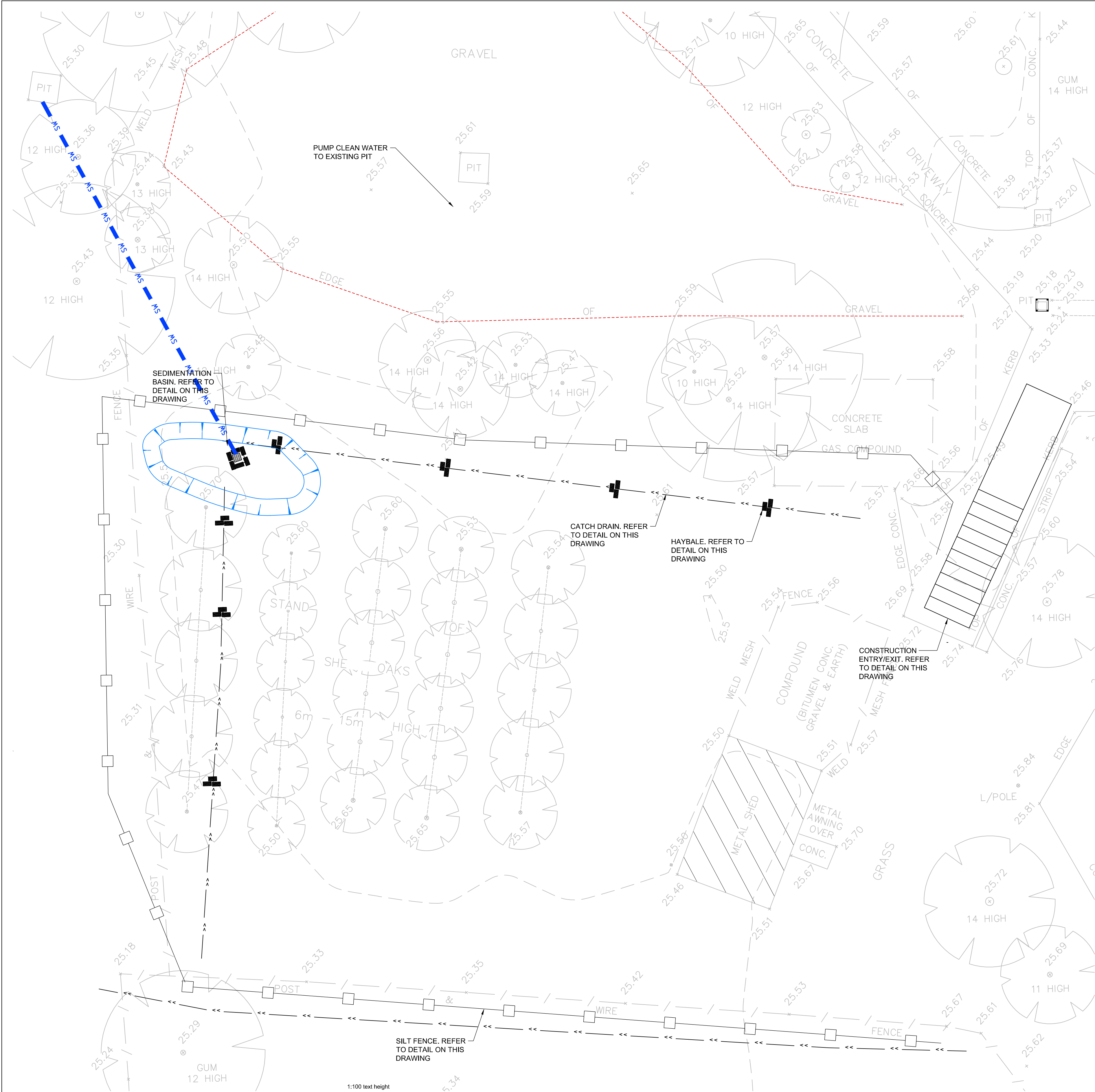
enstruct

project	Nepean Creative and Performing Arts High School
---------	---

drawing title	COVER, NOTES, AND LEGENDS SHEET
---------------	---------------------------------

status			
scale at A1	drawn by BEJ	checked KEH	
project no. 6260	drawing no. NHS - C100	rev. B	

Date generated: 20/10/2020 12:22:47 PM P:\4-20\6260\00 - ENSTRUCT DOCUMENTS\01 - CAD\CIVIL\DRAWINGS\NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOL\UNGS - C101



EROSION AND SEDIMENT CONTROL NOTES

- All work shall be generally carried out in accordance with (A) Local authority requirements, (B) EPA - Pollution control manual for urban stormwater, and (C) LANDCOM NSW - Managing Urban Stormwater: Soils and Construction ("Blue Book").
- Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities. The erosion and sediment control plan shall be implemented and adapted to meet the varying situations as work on site progresses.
- Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
- When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
- Minimise the area of site being disturbed at any one time.
- Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
- All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
- Control water from upstream of the site such that it does not enter the disturbed site.
- All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
- All vehicles leaving the site shall be cleaned and inspected before leaving.
- Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
- Clean out all erosion and sediment control devices after each storm event.

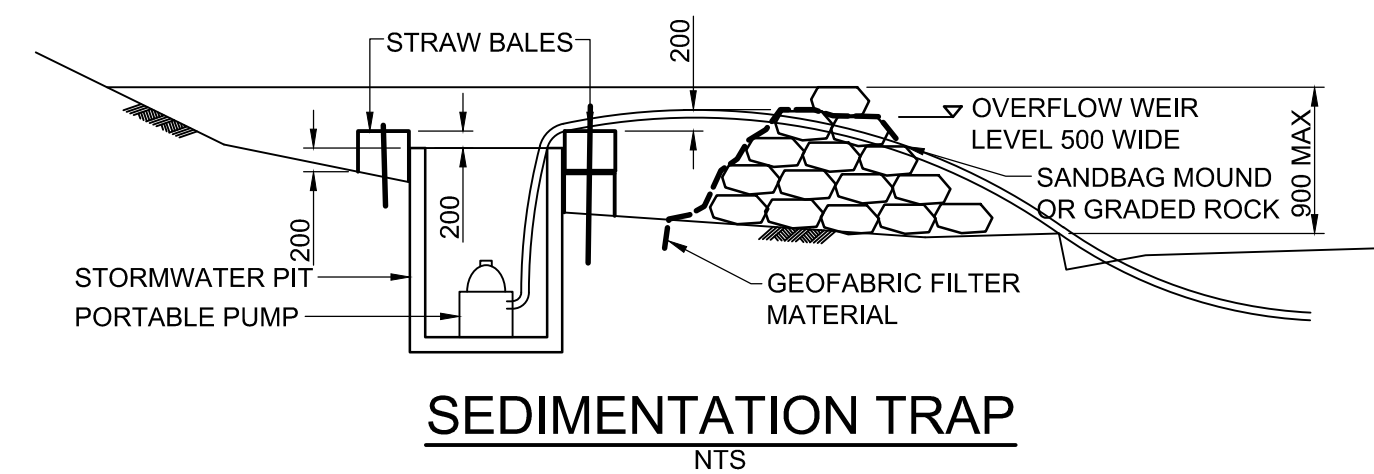
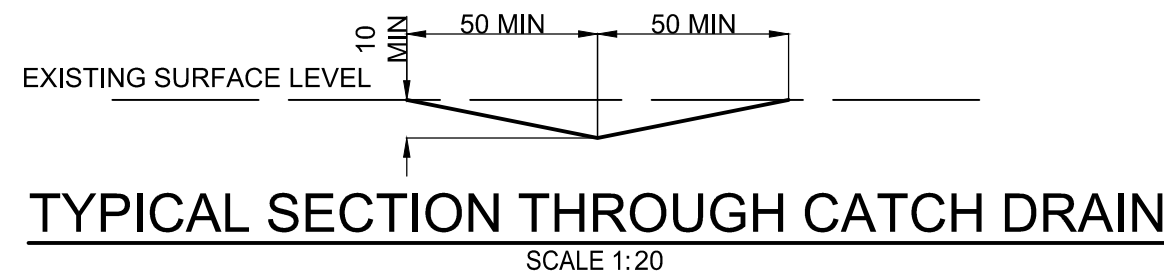
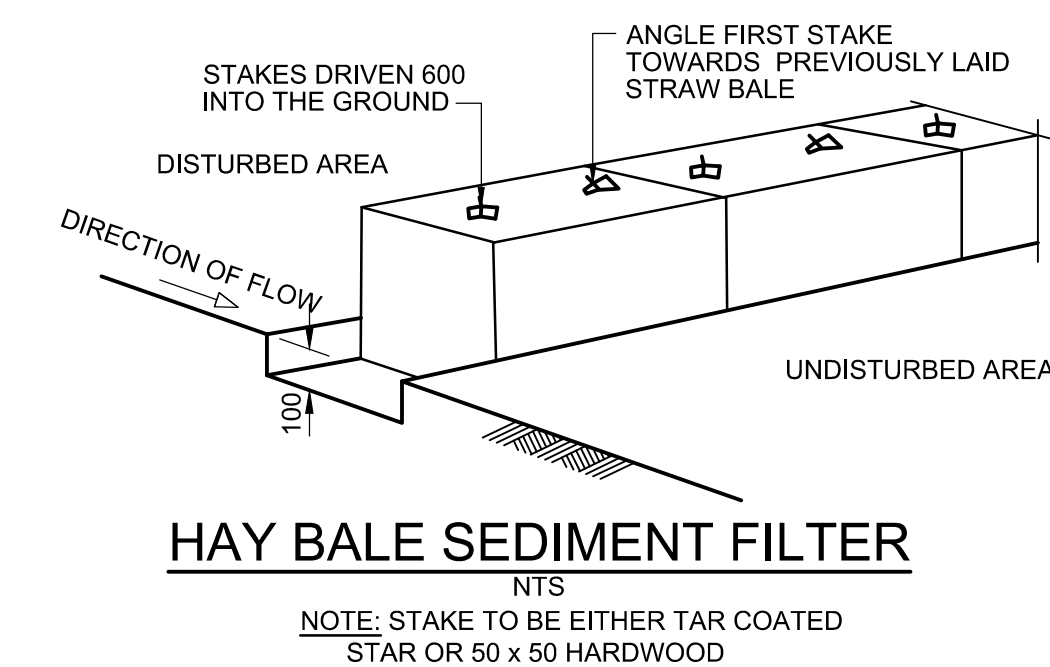
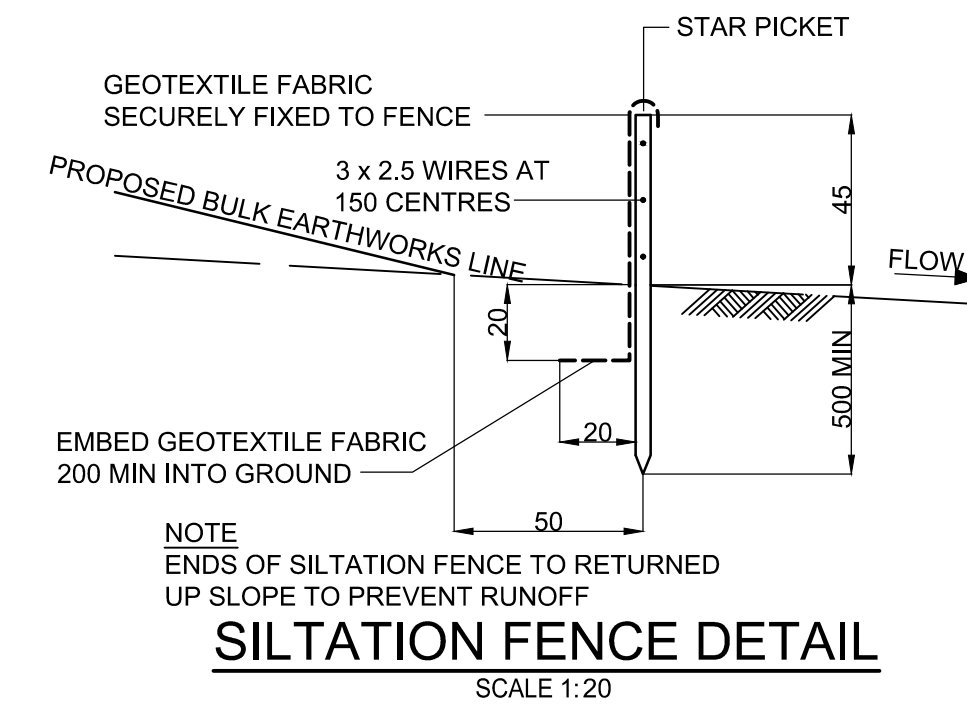
Sequence Of Works

- Prior to commencement of excavation the following soil management devices must be installed.
- Construct silt fences below the site and across all potential runoff sites.
- Construct temporary construction entry/exit and divert runoff to suitable control systems.
- Construct measures to divert upstream flows into existing stormwater system.
- Construct sedimentation traps/basin including outlet control and overflow.
- Provide sandbag sediment traps upstream of existing pits.
- Construct geotextile filter pit surround around all proposed pits as they are constructed.
- On completion of pavement provide sand bag kerb inlet sediment traps around pits.
- Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environment consultant outlining the following:

- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system. This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.



rev	date	description	dm	ch/k
B	06/11/20	100% SD	BEJ	KEH
A	13/10/20	ISSUE FOR REVIEW	BEJ	KEH

rev	date	description	dm	ch/k



Education
School Infrastructure

enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2061
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au



project

Nepean Creative and
Performing Arts High School

drawing title

EROSION AND SEDIMENT
CONTROL PLAN

status

scale at A1
1:150

drawn by
KEH

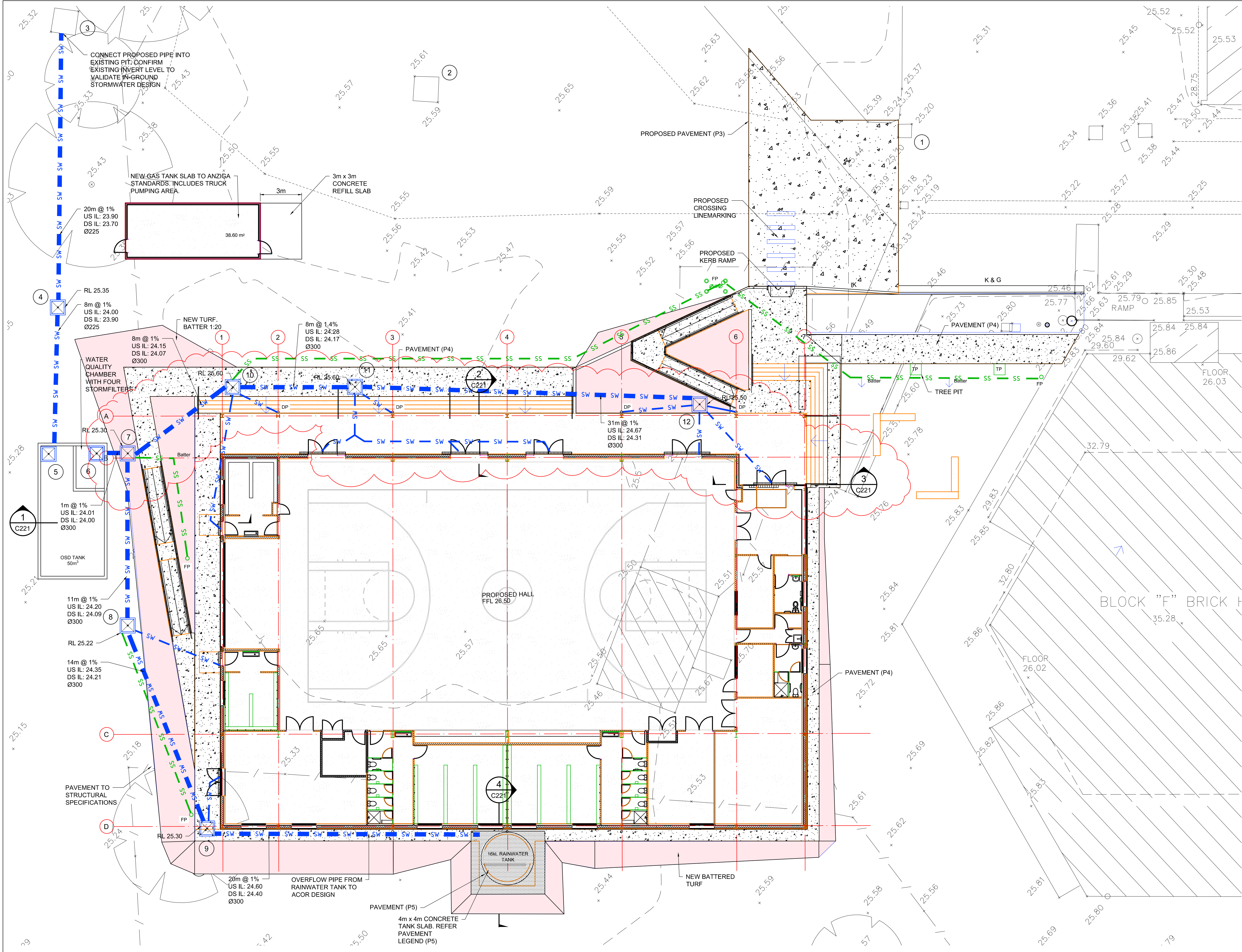
checked
BEJ

project no.
6260

drawing no.
NHS - C101

rev.
B

Date generated: 22/01/2021 3:13:46 PM P:\14200\62600 - ENSTRUCT DOCUMENTS\1 - CAD\CIVILDRAWINGS\NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOLS - C201



SITEWORKS LEGEND

● F22.20	Finished surface level
--- F22.00 ---	Finished contour
K&G	Kerb and gutter
KO	Kerb only
FK	Flush kerb
DD	Dish drain
SW	Stormwater pit, flow direction and line with
IL10.00 600 Ø 2' 1.25% Q=345 L/s IL9.65	Invert level upstream Pipe size and class Pipe grade Flow (Litres per second) Invert level downstream
GD	Grated drain
SS	Intermediate riser with subsoil drainage line (100 dia)
SS	Flushing point with subsoil drainage line (100 dia)
SW	Down pipe
SW	Rodding point
SW	Concrete encased stormwater line
RW#	Blockwork retaining wall
SJ	Sawn joint
WPJ	Weakened plane joint
EJ	Expansion joint
←	Grass catch drain
←	Overland flow path

PAVEMENT DETAIL

NOTES
1. Asphaltic concrete shall conform to AS2150 and the specification
2. Pavement based on geotechnical report by:
Douglas Partners May 2020

PAVEMENT TYPE 1 ASPHALTIC ROAD (P1)	40m Thickness asphaltic concrete (AC10) 100mm Compacted thickness fine crushed rock (DGB20) 300mm Compacted thickness fine crushed rock (DGS40)
PAVEMENT TYPE 2 ASPHALTIC ROAD (P2)	5mm Thickness asphaltic concrete (AC5) 5mm Thickness asphaltic concrete (AC5) 100mm Compacted thickness fine crushed rock (DGB20) 200mm Compacted thickness fine crushed rock (DGS40)
PAVEMENT TYPE 3 CONCRETE ROAD (P3)	150mm Thickness concrete (f _c =32MPa) with SL92 fabric (40 top cover) 100mm Compacted thickness fine crushed rock (DGB20)
PAVEMENT TYPE 4 PEDESTRIAN FOOTPATH (P4)	100mm SL72 Thickness concrete (f _c =25MPa) with expansion joints at max 6.0m centres and weakened plane joints at max 1.5m centres 100mm DGB20
PAVEMENT TYPE 5 RAIN WATER TANK (P5)	180mm Thickness concrete (f _c =32MPa) with SL92 fabric top and bottom (40 top cover) 100mm Compacted thickness fine crushed rock (DGB20)

F	25/01/21	S/W MOVE OUT OF STRUCTURAL SLAB	NKK	KEH
E	10/12/20	BUILDING FFL RAISED	NKK	KEH
D	19/11/20	ISSUE FOR SD	NKK	KEH
C	06/11/20	100% SD	NKK	KEH
B	20/10/20	ISSUE FOR REVIEW	BEJ	KEH
A	13/10/20	ISSUE FOR REVIEW	BEJ	KEH
rev	date	description	dm	ch/k

rev	date	description	dm	ch/k
-----	------	-------------	----	------



enstruct group pty ltd

Level 4, 2 Glen Street
Milsoms Point NSW 2081
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au

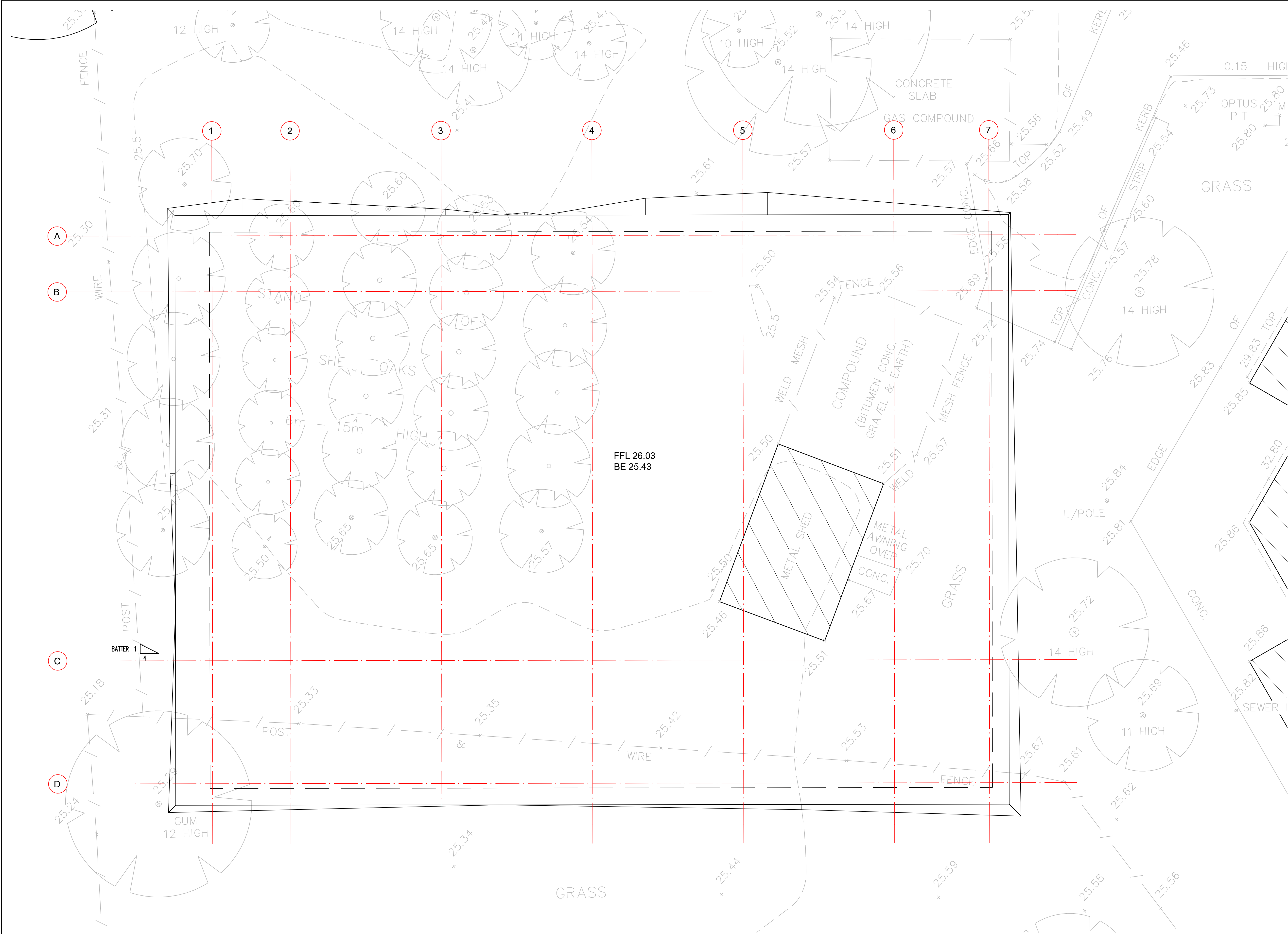
enstruct

project
Nepean Creative and
Performing Arts High School

drawing title
SITE WORKS PLAN

status
FOR INFORMATION ONLY

scale at A1 1:150	drawn by NKK	checked KEH	
project no. 6260	drawing no. NHS - C201	rev. F	



BULK EARTHWORKS NOTES

- All bulk earthworks setout from grid lines U.N.O.
 - All temporary batters at a slope of 1(H):1(V) U.N.O.
 - All permanent batters at a slope of 4(H):1(V) U.N.O.
 - Excavated material may be used as structural fill provided,
(i) it complies with the specification requirements for fill material,
(ii) the placement moisture content complies with the Geotechnical Consultants requirements, and allows filling to be placed and proofrolled in accordance with the specification. Where necessary the Contractor must moisture condition the excavated material to meet these requirements.
 - Compact fill areas and subgrade to not less than:

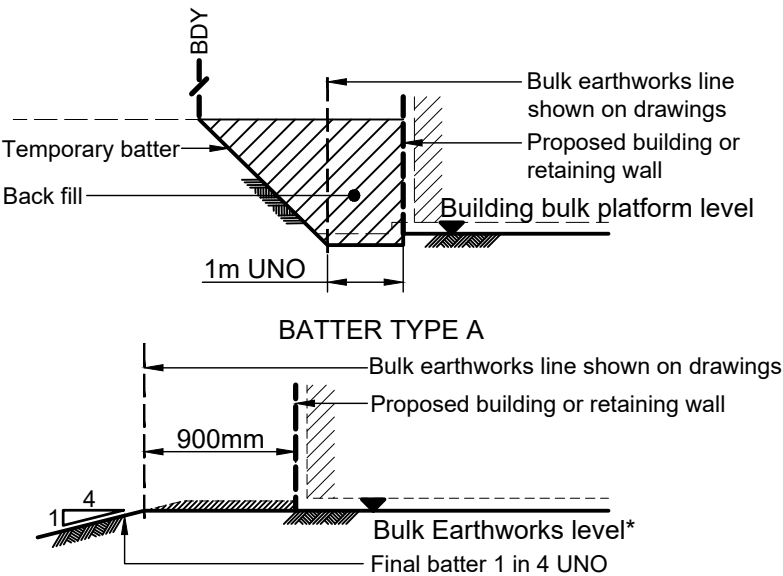
Location	Standard dry density (AS 1289 5.1.1.)	Moisture (OMC)
Under building slabs on ground:	98%	±2%
Under roads and carparks:	98%	±2%
Landscaped areas:	95%	±2%
 - Before placing fill, proof roll exposed subgrade with a 10 tonne minimum roller to test subgrade and then remove soft spots (areas with more than 3mm movement under roller). Soft spots to be replaced with select fill U.N.O.
 - Contractor shall place safety barriers around excavations in accordance with relevant safety regulations.
 - For interpretation of bulk earthworks foot print line shown on the bulk earthworks drawings refer to the bulk earthworks construction legend.
 - Bulk earthwork drawings are not to be used for detailed excavation.
 - Refer to Geotechnical Report prepared by - Douglas Partners
- October 2020

BULK EARTHWORKS LEGEND

Legend symbols and descriptions:

- Batter
- Bulk Earthworks Step (Step from low side to high side)
- Bulk earthworks spot level
- Bulk earthworks contour level
- Bulk earthworks platform level
- Flat platforms shown with dots

BULK EARTHWORKS CONSTRUCTION LEGEND



- NOTE
- * Bulk Earthworks level = Finish surface - (Slab thickness + base course)
 - Refer architects drawings for building setout
 - Bulk Earthwork drawings are for bulk excavation only. They are not to be used for detailed excavation such as: lift shafts, footings, pits etc.
 - Bulk Earthwork setout refers to bulk excavation only. They are not to be used for building, kerb or any other setout.

NOTE
BULK LEVEL BASED ON A 600mm DEEP RAFT SLAB

PRELIMINARY
BULK VOLUMES 55m³ FILL
240m³ CUT
SITE STRIPPING AND
TRENCHING ARE NOT
INCLUDED IN BULK VOLUMES

rev	date	description	dm	ch/k
B	06/11/20	100% SD	BEJ	KEH
A	13/10/20	ISSUE FOR REVIEW	BEJ	KEH

rev	date	description	dm	ch/k



enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2061
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au

enstruct

project
Nepean Creative and Performing Arts High School

drawing title
BULK EARTHWORKS PLAN

status

scale at A1
1:100

drawn by
KEH

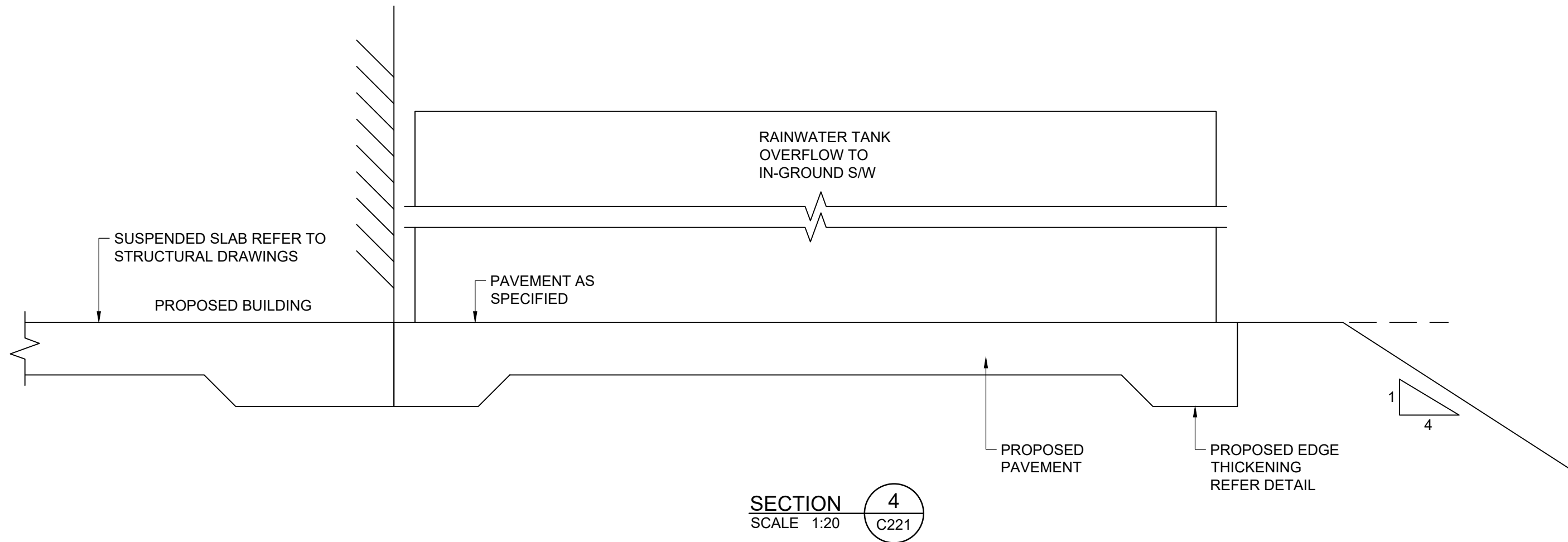
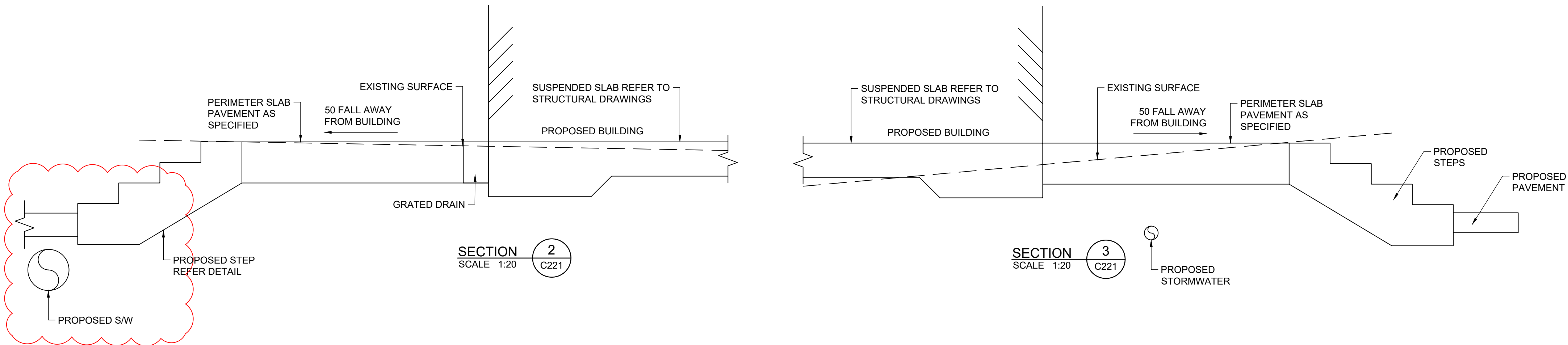
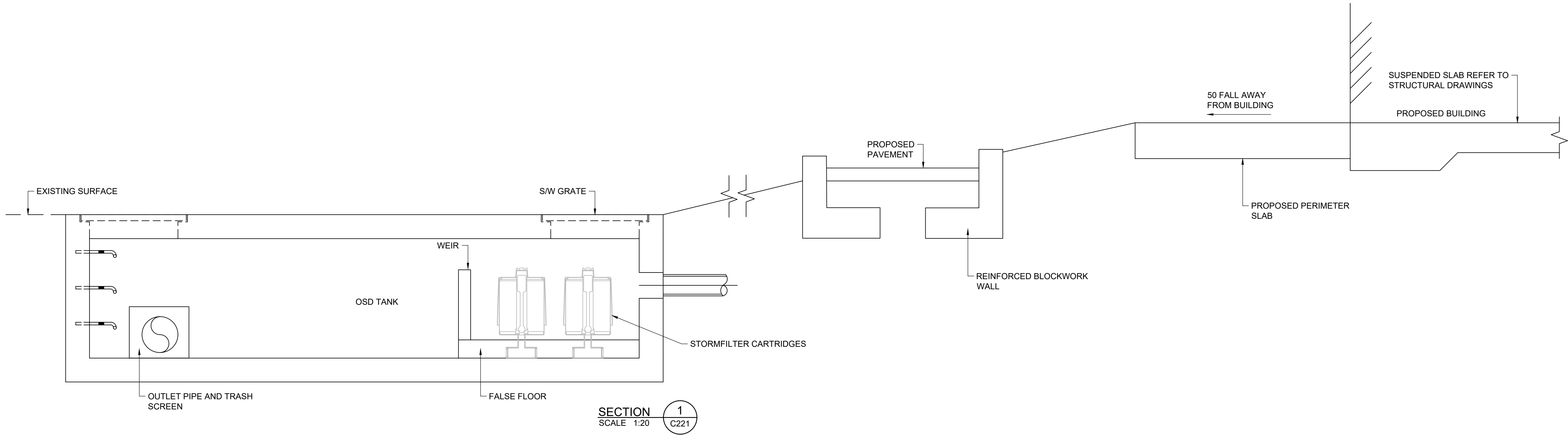
checked
BEJ

project no.
6260

drawing no.
NHS - C111

rev.
B

Date generated: 10/12/2020 11:55:25 AM P:\1\4200\62600 - ENSTRUCT DOCUMENTS\1 - CAD\CIVILDRAWINGS\NEPEAN CREATIVE AND PERFORMING ARTS HIGH SCHOOLS - C221



rev	date	description	dm	ch/k
D	25/01/21	STORMWATER MOVED	NKK	KEH
C	10/12/20	BUILDING FFL RAISED	NKK	KEH
B	06/11/20	100% SD	BEJ	KEH
A	13/10/20	ISSUE FOR REVIEW	BEJ	KEH

rev	date	description	dm	ch/k



enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2061
Australia

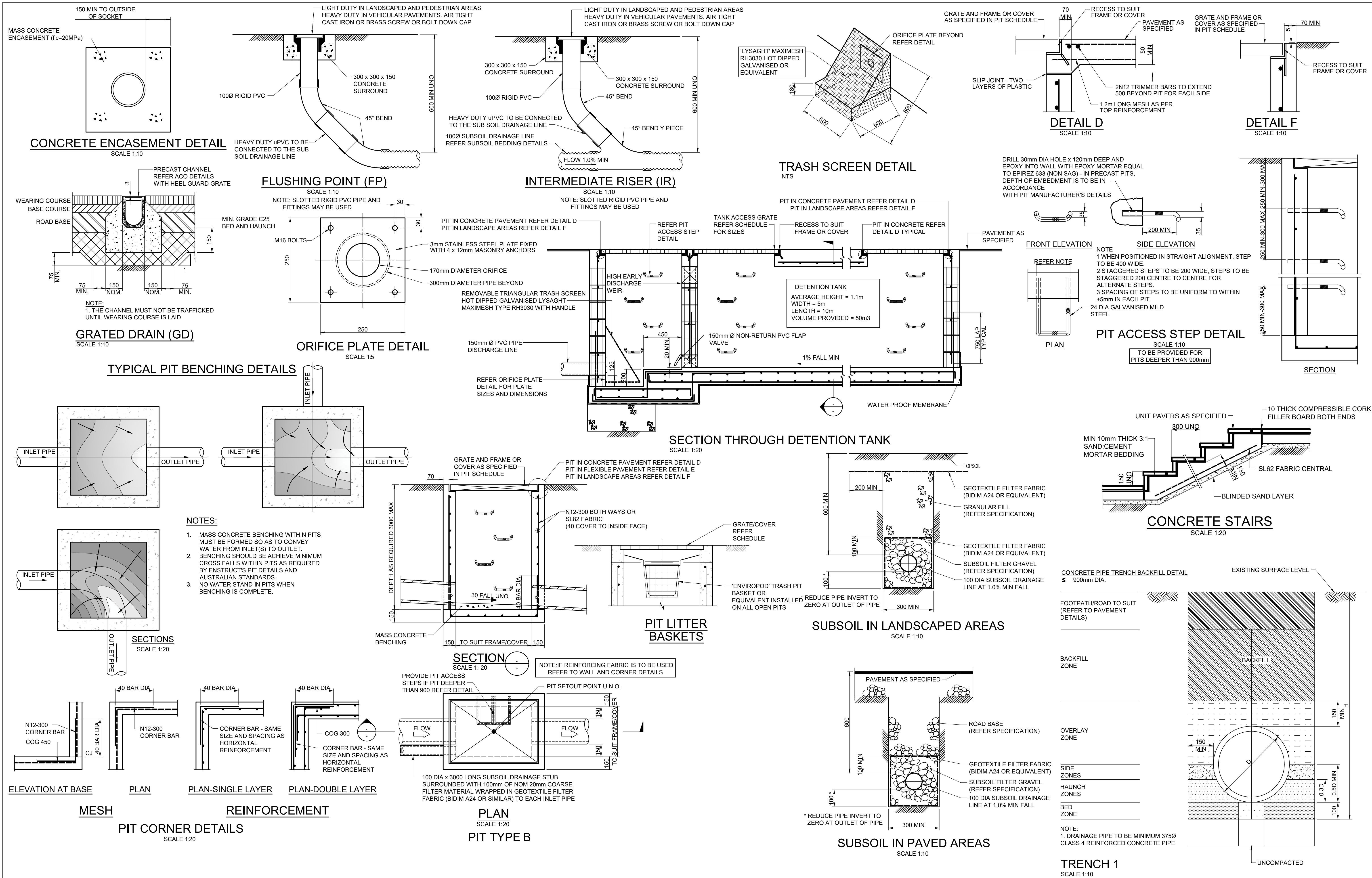
Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au



project
Nepean Creative and
Performing Arts High School

drawing title
SECTIONS SHEET 1

FOR INFORMATION ONLY			
scale at A1 AS SHOWN	drawn by NKK	checked KEH	
project no. 6260	drawing no. NHS - C221	rev. D	



C	10/12/20	BUILDING FFL RAISED	NKK	KEH	
B	06/11/20	100% SD	BEJ	KEH	
A	13/10/20	ISSUE FOR REVIEW	BEJ	KEH	
rev	date	description	dm	ch/k	

rev	date	description	dm	ch/k	



enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2061
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
www.enstruct.com.au

enstruct

project	Nepean Creative and Performing Arts High School
---------	---

drawing title	DETAILS SHEET 2
---------------	-----------------

status	FOR INFORMATION ONLY
scale at A1	AS SHOWN
drawn by	NKK
checked	KEH
project no.	6260
drawing no.	NHS - C212
rev.	C

Appendix J

Waste management plan

SITE WASTE MINISATION AND MANAGEMENT PLAN

New Multi-Purpose Hall at Nepean Creative and Performing Arts High School



PR147922-3
2
15 February 2021

rpsgroup.com

SITE WASTE MINIMISATION AND MANAGEMENT PLAN

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
1	Submission with SEE and DA	Shaun Smith	Rob Dwyer	Rob Dwyer	29-01-21
2	Post client review for submission with DA	Shaun Smith	Rob Dwyer	Rob Dwyer	15-02-21

Approval for issue

Rob Dwyer



15 February 2021

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by:

RPS

Rob Dwyer
Planning Manager - Newcastle

Unit 2A, 45 Fitzroy Street
Carrington NSW 2294

T +61 2 4940 4200
E rob.dwyer@rpsgroup.com.au

Prepared for:

NSW Department of Education (SI NSW)

Thu Thanapalasuntheram
Project Officer – Infrastructure Delivery

GPO Box 33
SYDNEY NSW 2001

T
E

Contents

1	INTRODUCTION	1
1.1	Location and current use.....	1
1.2	Project description.....	1
2	PURPOSE AND OBJECTIVES	3
3	ENVIRONMENTAL REQUIREMENTS.....	4
3.1	Legislation	4
3.2	Guidelines and standards	4
4	ENVIRONMENTAL ASPECTS AND IMPACTS.....	5
4.1	Waste streams	5
4.1.1	Demolition	5
4.1.2	Construction.....	5
4.2	Impacts.....	5
4.2.1	Demolition	5
4.2.2	Construction.....	6
5	WASTE MANAGEMENT ASSESSMENT	7
5.1	Classification of waste streams.....	7
5.2	Classification of potential waste streams	8
5.3	Preliminary waste management plan.....	9
5.4	Reuse and recycling.....	9
5.5	Waste handling and storage	9
5.6	Waste disposal	9
6	ENVIRONMENTAL MITIGATION MEASURES	10
7	MONITORING AND REVIEW	11
7.1	Monitoring, inspection and reporting program	11
7.2	Waste register	11
7.3	Waste tracking	11
8	RESPONSIBILITIES	12

Tables

Table 1	Potential Waste Streams - Demolition	8
Table 2	Potential Waste Streams - Construction	8

Figures

Figure 1 – Site Location.....	1
Figure 2 – Site Layout Plan	2

Appendices

- Appendix A Waste Management Plan
- Appendix B Waste Tracking Register

1 INTRODUCTION

This management plan supports a Development Application (DA) submitted to Penrith City Council pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the construction and operation of a new multi-purpose hall at the Nepean Creative and Performing Arts (CAPA) High School at 115-119 Great Western Highway, Emu Plains, NSW.

1.1 Location and current use

The site is located at 115-119 Great Western Highway, Emu Plains, within the Penrith City local government area (LGA). The site is located on Lot 12 DP 1056135 and has an area of approximately 12 hectares (ha).

The site is owned by the NSW Department of Education and the Nepean CAPA High School is a large, co-educational community school experiencing significant growth that will see the demand for its educational services increase in the coming years. The school currently services a student population of 1,175 students. Current infrastructure has not been designed to service ~1,200 students or to facilitate the complex site requirements of a performing arts specialty stream. The site is identified on the location plan provided as **Figure 1**.

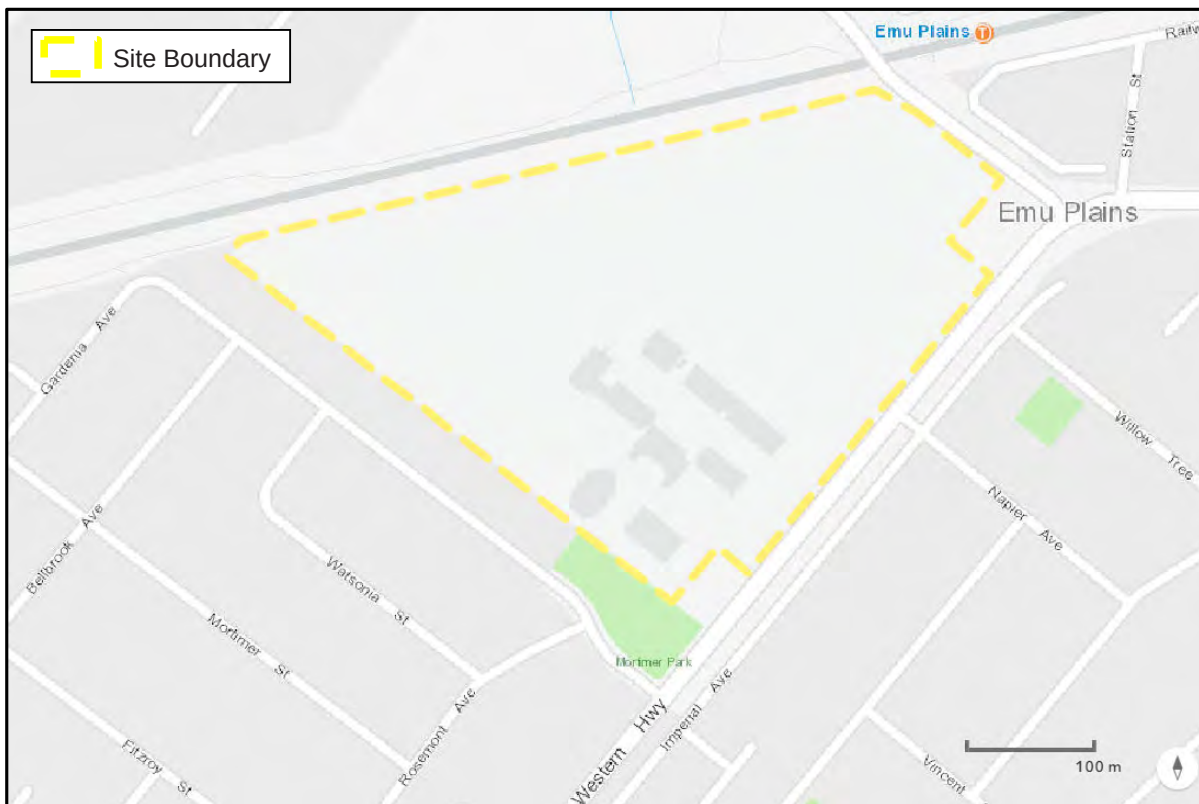


Figure 1 – Site Location

1.2 Project description

The proposed development is the construction and usage of a new multi-purpose hall within the confines of the existing Nepean CAPA High School. The new multi-purpose hall will be located midway and approximately 18 metres from the southern boundary of the site immediately north-west of the existing multi-purpose facility.

SITE WASTE MINIMISATION AND MANAGEMENT PLAN

The new facility will function as a multipurpose hall to achieve curriculum requirements (Stream 9 EFSG Standards) and be used for performances, events, indoor sports and as a community resource during school hours. A site plan, extracted from the Architectural Plans, is provided as **Figure 2**.

Specifically, the proposed development includes the following works:

- Installation of temporary site-specific erosion and sediment control measures prior to construction works commencing and maintenance throughout construction.
- Removal of 0.10 ha of planted native vegetation.
- Demolition / removal of two existing sheds, removal of two existing gas tanks and concrete slab, removal of concrete slab west of the existing hall, and removal of internal fencing.
- Minor earthworks and levelling of the site.
- Construction of the new multi-purpose hall. The facility will be variable in height to approximately 10.2 metres above natural ground level high and occupy an area of approximately 1,105m². It will contain a gymnasium with capacity for functions seating around 570 persons, equipment and storage rooms, change / shower facilities, foyer and other areas required for its' operation.
- New entry landscaping around the building.
- Adjustment to utilities as required including new concrete slab and LPG tanks north of the new building.
- New metal sheds at the rear of the new building.
- Operation of the new multi-purpose hall.

Once constructed the new multi-purpose hall will strengthen current relationships with wider community groups and schools.

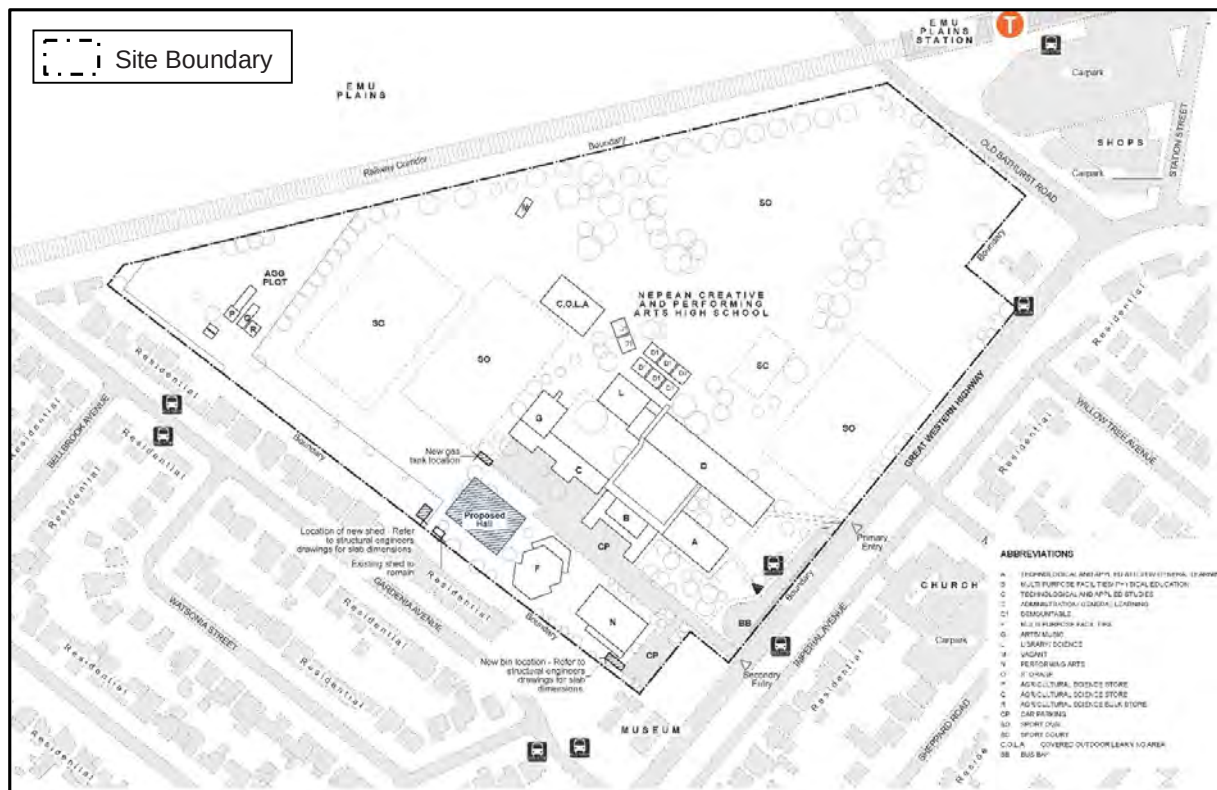


Figure 2 – Site Layout Plan

2 PURPOSE AND OBJECTIVES

The main purpose of this Site Waste Minimisation and Management Plan (SWMMP) is to satisfy the requirements of *Appendix F3 Section 4.7 Waste Management* of the Penrith DCP 2014, and to maximise resource recovery and minimise residual waste from demolition and construction activities, including:

- Minimisation of waste generation;
- Maximisation of recycling and reuse of waste materials;
- Appropriate handling and storage of waste materials whilst present on the site during demolition activities;
- Disposal of wastes to appropriately licenced facilities;
- Minimise the environmental impacts associated with waste management; and
- Meet regulatory requirements for waste recycling and disposal.

3 ENVIRONMENTAL REQUIREMENTS

3.1 Legislation

Legislation relevant to waste management includes:

- EP&A Act
- *Protection of the Environment Operations Act 1997 (POEO Act)*
- *Protection of the Environment Operations (General) Regulation 2009*
- *Protection of the Environment Operations (Waste) Regulation 2005*
- *Waste Avoidance and Resource Recovery Act 2001 (WARR Act)*
- *Contaminated Land Management Act 1997*
- *National Greenhouse and Energy Reporting Act 2007 (Cth)*
- *Noxious Weeds Act 1993*, and
- *Environmentally Hazardous Chemicals Act 1985*.

3.2 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this Plan include:

- *Waste Classification Guidelines Part 1: Classifying waste* (NSW EPA, 2014)
- *Waste Classification Guidelines Part 2: Immobilisation of waste* (NSW EPA, 2014)
- *Waste Classification Guidelines Part 4: Acid sulfate soils* (NSW EPA, 2014)
- *Waste Reduction and Purchasing Policy 2011-2014 (WRAPP)*, NSW Government
- *Guidelines on Resource Recovery Exemptions - Land Application of Waste Materials as Fill* (2011, DECCW)
- *Storing and Handling Liquids, Environmental Protection: Participants Manual* (NSW DECC, 2007)
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council, April 2013), and
- *Penrith Development Control Plan 2014 – Appendix F3 Section 4.7 – Waste Management*.

4 ENVIRONMENTAL ASPECTS AND IMPACTS

4.1 Waste streams

The following waste streams have been identified and categorised for the demolition and construction activities.

4.1.1 Demolition

- Metal, including waste reinforcing steel, steel beams, purlins, steel roofing iron and sheeting, and aluminium.
- Waste concrete.
- Timber beams.
- Glass.
- Electrical wiring.
- Green waste from tree removal.
- General wastes including site office wastes, scrap materials and biodegradable wastes.

4.1.2 Construction

- Excavated soil material (ENM).
- Timber.
- Waste concrete.
- Metal.
- Plasterboard / fibre cement sheeting.
- Fixtures and fittings.
- Waste electrical wiring.
- Floor coverings.
- Packaging (used pallets, pallet wrap).
- Green waste from site preparation.
- Containers (cans, plastic, glass).
- Paper/cardboard.
- Wastewater from excavations (dependant on weather).

4.2 Impacts

4.2.1 Demolition

Potential environmental impacts associated with demolition waste handling activities are described below.

- Generation of dust and noise resulting from demolition works and movement of trucks and equipment.
- Traffic delays resulting from trucks entering and leaving the demolition site.
- Inappropriate disposal of hazardous waste if discovered.
- Generation or spread of contaminated waste/soils (eg. groundwater, used or expired chemicals).
- Water pollution due to surface water runoff from exposed areas.

4.2.2 Construction

Potential environmental impacts associated with construction waste handling activities are described below.

- Excessive dust and noise from the sorting and removal of waste materials from the site.
- Traffic delays resulting from waste trucks entering and leaving the construction site.
- Water pollution due to surface water runoff from waste storage areas.
- Incorrect sorting and segregation of waste by construction contractors.
- Spilt residual chemicals, paints, and solvents.

5 WASTE MANAGEMENT ASSESSMENT

5.1 Classification of waste streams

Where waste cannot be avoided, reused or recycled it will be classified and appropriate disposal will then occur. The classification of waste is undertaken in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (2014). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible) and describes a six step process to classifying waste. That process is described below:

Step 1: Is it 'special waste'?

Establish if the waste should be classified as special waste. Special wastes are: clinical and related, asbestos, waste tyres. Definitions are provided in the guidelines.

Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Clauses 42 and 43 of the *Protection of the Environment Operations (Waste) Regulation 2005*.

Step 2: If not special, is it 'liquid waste'?

If it is established that the waste is not special waste it must be decided whether it is 'liquid waste'. Liquid waste means any waste that: has an angle of repose of less than 5° above horizontal becomes free-flowing at or below 60° Celsius or when it is transported is generally not capable of being picked up by a spade or shovel.

Liquid wastes are sub-classified into:

- Sewer and stormwater effluent;
- Trackable liquid waste according to Protection of the Environment Operations (Waste) Regulation 2005 Schedule 1 Waste to which waste tracking requirements apply; and
- Non-trackable liquid waste.

Step 3: If not liquid, has the waste already been pre-classified by the NSW EPA?

The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescibles) and general solid waste (non-putrescibles). If a waste is listed as 'pre-classified', no further assessment is required.

Step 4: If not pre-classified, is the waste hazardous?

If the waste is not special waste (other than asbestos waste), liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste.

Hazardous waste includes items such as explosives, flammable solids, substances liable to spontaneous combustion, oxidizing agents, toxic substances and corrosive substances.

Step 5: If the waste does not have hazardous characteristics, undertake chemical assessment to determine classification.

If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible and non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous.

Waste is assessed by comparing Specific Contaminant Concentrations (SCC) of each chemical contaminant, and where required the leachable concentration using the Toxicity Characteristics Leaching Procedure (TCLP), against Contaminant Thresholds (CT).

Step 6: Is the general solid waste putrescible or non-putrescible?

If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

5.2 Classification of potential waste streams

The types of wastes and their classifications that will be generated during demolition activities are provided below in **Table 1**, while the types of wastes and their classifications that will be generated during construction activities is detailed in **Table 2**.

Table 1 Potential Waste Streams - Demolition

Waste types	Classification	Reuse / Recycling / Disposal
Demolition		
Metals	General solid waste	Recyclable metal to be separated and collected for recycling by a recycling contractor.
Waste Concrete	General solid waste	Remove and crush offsite for use as recycled road base or as a blending material. Concrete waste and any metals to be separated and collected by concrete recycling contractor.
Timber	General solid waste (non-putrescible)	Recyclable timber to be separated and collected for recycling by a recycling contractor.
Glass	General solid waste (non-putrescible)	Separated and collected by recycling contractor
Containers (can, bottles, glass)	General solid waste (putrescible)	All waste streams to be separated and recycled. Collection by recycling contractor for recycling. Dispose non-recyclable material to licensed waste disposal facility.
Green Waste (trees)	General solid waste (non-putrescible)	Trees to be chipped or mulched onsite for re-use in landscaping or in existing school gardens.

Table 2 Potential Waste Streams - Construction

Waste types	Classification	Reuse / Recycling / Disposal
Construction		
Excavated material	General solid waste (non-putrescible)	Stockpile and re-use on site as fill once classified. Stockpiles to have suitable temporary erosion and sediment control measures installed. Any excess to be re-used off-site.
Metals	General solid waste	Recyclable metal to be separated and collected for recycling by a recycling contractor.
Waste Concrete	General solid waste	Remove and crush offsite for use as recycled road base or as a blending material. Concrete waste and any metals to be separated and collected by concrete recycling contractor.
Timber	General solid waste (non-putrescible)	Recyclable timber to be separated and collected for recycling by a recycling contractor.
Plasterboard / fibre cement sheet	General solid waste (non-putrescible)	To be separated and collected for recycling by a recycling contractor.
Green waste (from site preparation)	General solid waste (non-putrescible)	Topsoil and organic layer of vegetation to be scalped and stockpiled for re-use in landscaping works following the completion of construction activities.
Wastewater	Liquid Waste	To be removed by sucker truck and disposed of at a licenced liquid waste treatment facility.
Containers (cans, bottles, glass)	General solid waste (putrescible)	All waste streams to be separated and recycled. Collection by recycling contractor for recycling. Dispose non-recyclable material to licensed waste disposal facility.

5.3 Preliminary waste management plan

A separate waste management plan has been prepared for the demolition and construction activities and is provided as **Appendix A**. The waste management plan provides the following:

- Type of waste to be generated.
- Expected volumes / quantities.
- Treatment / re-use / recycling methods.
- Disposal methods.

5.4 Reuse and recycling

Waste separation and segregation will be promoted on-site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Waste segregation onsite – Waste materials, including spoil, will be separated onsite into dedicated bins/areas for collection by a waste contractor and transport to offsite recycling facilities / disposal sites.
- Waste separation offsite – Wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted offsite by a waste contractor.

Where materials cannot be reused and recycled, all waste would be handled and disposed in accordance with the *Protection of the Environment Operations Act 1997*.

5.5 Waste handling and storage

Where waste is required to be handled and temporarily stored onsite prior to offsite recycling/disposal, the following measures apply:

- Spoil and waste soils temporarily stockpiled onsite will be suitably managed to control dust and surface water runoff.
- Liquid wastes are to be removed directly by sucker trucks and transported offsite to a licenced liquid waste recycling facility.
- Any hazardous wastes are to be removed by appropriately qualified and licenced contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines.
- All other recyclable or non-recyclable wastes are to be stored in appropriate covered receptacles or bays (e.g. bins or skips) for removal offsite to approved disposal or recycling facilities.

5.6 Waste disposal

Waste (and spoil) disposal is to be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*.

Wastes will be removed off-site to a recycling facility or will be disposed of at a licenced waste facility. Those wastes that are unable to be reused or recycled will be disposed of offsite to an EPA approved waste management facility following classification.

Details of waste types, volumes and destinations are to be recorded in the Waste Tracking Register provided in **Appendix B**.

6 ENVIRONMENTAL MITIGATION MEASURES

Mitigation and management measures associated with waste handling on the site are outlined below and have been developed to ensure consistency with industry best practice:

- Ensure that all waste (liquid, air emissions and solid material) generated during construction are managed in accordance with waste hierarchy (avoid, reuse, recycle, dispose) to reduce adverse impact on the environment.
- Manage and reduce consumption and use of natural resources and promote the use of alternative environmentally friendly materials where practical.
- Licenced waste contractors will be used to collect, transport and dispose of materials at a licensed off-site facility in accordance with waste regulations.
- Waste will be appropriately contained in designated waste areas located away from drainage paths.
- No burning of waste is allowed under any circumstances.
- General and putrescible waste and recyclables such as metal, plastic, glass, paper, cardboard will be segregated and collected in suitable waste containers positioned in convenient locations within each work area.
- Concrete, steel, timber, and plasterboard will be temporarily stored in separate areas for removal.
- Waste soil will be temporarily stored in stockpiles away from drainage lines with appropriate run-off controls.
- All waste skip bins will have secure lids in place to prevent water ingress.
- Quantities of waste kept on-site will be kept to a minimum. Maximum volume of each waste stored will be consistent with EPA regulations and guidelines.
- Portable toilets used on site during demolition activities will be serviced as required, with effluent disposed of at a licenced off-site facility.
- Where excavated soil can't be re-used onsite it will be classified in accordance with waste classification guidelines and disposed of offsite.
- Waste concrete, timber, steel, cardboard, paper, recyclable plastics removed from site will be processed recycling facilities for reuse.
- Any Asbestos Containing Materials (ACM) identified will be disposed off-site at a licensed facility in accordance with waste classification guidelines.

In addition, a Waste Tracking Register template has been prepared to assist with the management and tracking of waste generated during demolition works. The Waste Tracking Register is attached as **Appendix B**.

7 MONITORING AND REVIEW

7.1 Monitoring, inspection and reporting program

Daily visual inspections of the site will be undertaken to identify actual or potential waste management issues. Any issues will be reported to the Site Supervisor or WHS&E Representative for mitigation and management.

7.2 Waste register

A waste register will be maintained by the WHS&E Representative to record waste disposal from the Project. All dockets and receipts will be retained for waste tracking to record the date of waste removal and identify the waste transport contractor and destination of the wastes.

7.3 Waste tracking

The following wastes are subject to special monitoring and reporting requirements by the EPA under the waste tracking system:

- Hazardous non-liquid waste (e.g. asbestos).
- Industrial non-liquid waste.
- Liquid wastes including non-recyclable oils, fuels, chemicals and paint.

It is the Site Supervisors obligation under the *NSW Protection of the Environment Operations (Waste) Regulation 2005* to identify and complete tracking information for all trackable wastes. The waste tracking register included in **Appendix B** will be used to track all materials entering and leaving the site.

8 RESPONSIBILITIES

It is the responsibility of the Site Supervisor to ensure that wastes on site are appropriately segregated, sorted, and disposed of in an environmentally sustainable and lawful manner. It is the responsibility of all workers and contractors on the development site to ensure that specific waste streams are stored in the designated containment areas for later collection by a licenced waste contractor.

Any non-conformance with this SWMMP should be reported immediately to the Site Supervisor or WHS&E Representative.

Appendix A

Waste Management Plan

Waste Management Plan

Demolition

Type of waste	Estimated Volume (m3) or Weight (t)			Method of reuse or disposal
	Reuse	Recycling	Disposable	
Metals		10m ³		Recyclable metal to be separated and collected for recycling by recycling contractor.
Waste Concrete		10m ³		Remove and crush offsite for use as recycled road base or as a blending material. Concrete waste and any metals to be separated and collected by concrete recycling contractor.
Timber		8m ³		Recyclable timber to be separated and collected for recycling by recycling contractor.
Glass		1m ³		Separated and collected by recycling contractor
Domestic waste generated by workers		1m ³	1m ³	Separated and collected by recycling contractor. Remainder sent to landfill.
Green waste (trees)	30m ³			Trees to be chipped or mulched onsite for re-use in landscaping or in existing school gardens.

Construction

Type of waste	Estimated Volume (m3) or Weight (t)			Method of reuse or disposal
	Reuse	Recycling	Disposable	
Spoil Material / Soil	10m ³		20m ³	Stockpile and re-use some material on site as fill once classified. Stockpiles to have suitable temporary erosion and sediment control measures installed. Any excess to be disposed off-site.
Metals		5m ³		Recyclable metal to be separated and collected for recycling by recycling contractor.
Waste Concrete		3m ³		Remove and crush offsite for use as recycled road base or as a blending material. Concrete waste and any metals to be separated and collected by concrete recycling contractor.
Timber		3m ³		Recyclable timber to be separated and collected for recycling by recycling contractor.
Plasterboard / fibre cement sheet		4m ³		To be separated and collected for recycling by a recycling contractor.
Green waste (from site preparation)	10m ³			Topsoil and organic layer of vegetation to be scalped and stockpiled for re-use in landscaping works following the completion of construction activities.

SITE WASTE MINIMISATION AND MANAGEMENT PLAN

Wastewater		4m ³	To be removed by sucker truck and disposed of at a licenced liquid waste treatment facility.
Domestic waste generated by workers	5m ³	5m ³	Separated and collected by recycling contractor. Remainder sent to landfill.

Appendix B

Waste Tracking Register

Waste Tracking Register

[illegible]

Appendix K

Detailed site investigation for contamination

Appendix L

AHIMS search results

RPS - Newcastle

Date: 21 October 2020

241 Denison Street

Broadmeadow New South Wales 2289

Attention: Rps Australia East Pty Ltd Carrington Team Administrator

Email: clh@rpsgroup.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 12, DP:DP1056135 with a Buffer of 200 meters, conducted by Rps Australia East Pty Ltd Carrington Team Administrator on 21 October 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

3	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 147922-1 Penrith

Client Service ID : 544130

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-3816	Emu Plains Rail Stabling Yards	GDA	56	284015	6263583	Open site	Destroyed	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Alan Williams,Doctor.Alan Williams							
45-5-3817	Emu Plains Rail Stabling Yards1	GDA	56	284138	6263601	Open site	Destroyed	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Alan Williams,Doctor.Alan Williams							
45-5-3904	EPRSY 3(PAD)	GDA	56	284000	6263615	Open site	Destroyed	Potential Archaeological Deposit (PAD) : -, Artefact : -		103762
	<u>Contact</u>	<u>Recorders</u>	Doctor.Alan Williams,Doctor.Alan Williams,Ms.Georgia Burnett							
								<u>Permits</u>	3485	
									3282	
								<u>Permits</u>	3485	

Report generated by AHIMS Web Service on 21/10/2020 for Rps Australia East Pty Ltd Carrington Team Administrator for the following area at Lot : 12, DP:DP1056135 with a Buffer of 200 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 3

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix M

Design Verification Statement

BJA Architecture

Nepean Creative and Performing Arts High School Proposed Multi-Purpose Hall

Design Verification Statement

*State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW] (Clause 35(6)(a)) Schedule 4
Schools—design quality principles*

Prepared For:

Department of Education NSW
Schools Infrastructure NSW (SINSW)

Prepared By:

BJA Architecture



BKA Architecture

Project Overview

Project Name: Proposed Multi-Purpose Hall

Project Address: Nepean Creative and Performing Arts High School - Address – 115-119 Great Western Highway Emu Plains NSW 2750

Architect's Name: Mark Khoury

Registration No. 9441

I confirm responsibility for designing the proposed development and have applied the SEPP (Educational Establishments and Child Care Facilities) 2017 NSW Design Quality Principles.

Signature of Architect:

Architect's Name: Mark Khoury

Description of the Project:

A new multi-purpose hall is proposed to be constructed within the school grounds. A project brief provided by SINSW accounted for a multi-purpose hall facility equivalent to stream 9 standards as per the Department of Education's Educational Facilities Standards and Guidelines (EFSG). The new hall will help facilitate Nepean Creative and Performing Arts High School's dual curriculum and is proposed to be used primarily for indoor sports as well as for performances and events. The facility can also be used as a community resource, with shared use opportunities.

The hall will facilitate indoor ball sports including Basketball, Netball, Badminton and Volleyball with large storage requirements to house performing arts apparatus and equipment as well as sporting equipment. The hall will strengthen current relationships with wider community groups and schools by allowing the community to access the facility after school hours.

The hall will enhance the sense of arrival and improve landscape works surrounding the building, particularly at the interface between the buildings and adjoining outdoor spaces. The new facility will have little to no impact on existing car parking numbers.

Design process undertaken:

The initial brief provided by SINSW accounted for a multi-purpose hall facility equivalent to EFSG stream 9 standards which required the preparation of a business case as per NSW Treasury business case requirements. BKA Architecture have been involved in developing a series of master planning options and concept designs for the proposed hall. Initial options were developed using the Education SEPP Design Quality Principles as a starting point, with BKA Architecture commencing concept design to further develop layouts responding to objectives outlined by the school's stakeholders. Regular design meetings were held with SINSW and the end users, which formed an integral part of the design process and the project in turn has been endorsed by the PRG and stakeholders.

Key design considerations:

The design approach is to create a special multi-purpose hall for the students of Nepean Creative and Performing Arts High School and within the local school network. The idea is to create an indoor sports centric building that enhances the 'events precinct' of the school set along the southern side of the campus and connecting directly to the existing carpark facility via walkways.

The objective is to deliver a legible education facility within budget which clearly states its presence whilst being sensitive to nearby facilities.

The design framework will ensure the building;

- Meets the objectives of the school.
- Responds well to functional requirements and site.
- Is aesthetically pleasing and a joy to use.
- Operates in support of school activities and embraces the immediate community.
- Activates external spaces

BKA Architecture

This Design Verification Statement has been prepared at the request of our client Schools infrastructure NSW and is in references to (Clause 35(6)(a)) Schedule 4 of the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW]. Below is an outline of how each design principle outlined in the schedule has been considered in the general design of the proposed multi-purpose hall.

As stated in the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW]:

The aim of this Policy is to facilitate the effective delivery of educational establishments and early education and care facilities across the State by:

- (a) improving regulatory certainty and efficiency through a consistent planning regime for educational establishments and early education and care facilities, and*
- (b) simplifying and standardising planning approval pathways for educational establishments and early education and care facilities (including identifying certain development of minimal environmental impact as exempt development), and*
- (c) establishing consistent State-wide assessment requirements and design considerations for educational establishments and early education and care facilities to improve the quality of infrastructure delivered and to minimise impacts on surrounding areas, and*
- (d) allowing for the efficient development, redevelopment or use of surplus government-owned land (including providing for consultation with communities regarding educational establishments in their local area), and*
- (e) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing, and*
- (f) aligning the NSW planning framework with the National Quality Framework that regulates early education and care services, and*
- (g) ensuring that proponents of new developments or modified premises meet the applicable requirements of the National Quality Framework for early education and care services, and of the corresponding regime for State regulated education and care services, as part of the planning approval and development process, and*
- (h) encouraging proponents of new developments or modified premises and consent authorities to facilitate the joint and shared use of the facilities of educational establishments with the community through appropriate design.*

The proposed multi-purpose hall will be located wholly on school campus, with its prime function being to support the school's curriculum by providing an indoor sporting facility that can function in multiple ways and can be shared by students and staff of Nepean Creative and Performing Arts High School as well as the local community.

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW] is therefore applicable to the application. Design principles listed under Schedule 4 of the SEPP have been considered in the assessment and general design of the multi-purpose hall. The following summarises how each design principle has been met.

(Clause 35(6)(a)) Schedule 4 Schools—design quality principles

Principle 1—context, built form and landscape

Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage, including Aboriginal cultural heritage. The design and spatial organisation of buildings and the spaces between them should be informed by site conditions such as topography, orientation and climate.

Landscape should be integrated into the design of school developments to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites.

School buildings and their grounds on land that is identified in or under a local environmental plan as a scenic protection area should be designed to recognise and protect the special visual qualities and natural environment of the area and located and designed to minimise the development's visual impact on those qualities and that natural environment.

The design approach is to create a building that enhances and adds to the events precinct of the school which is set along the southern side of the campus. Soft landscaping between pathways with some battering along the edges of paths and building is proposed to connect the building to the landscape.

The foyer space acts as a gathering space before entering the main court. Alternative entry / exit points along the northern end of the court leading to external areas. Change rooms are positioned at the southern and western end.

A new courtyard is created which is similar in size and proportion to the existing courtyard between existing Hall and Nepean Arts Centre. Access to the oval is maintained. The proposed building is located in close proximity to the existing hall and Nepean Arts Centre which enhances the school's events precinct.

The hall is oriented towards the north, with the northern edge of the building aligned with adjacent buildings.

Principle 2—sustainable, efficient and durable

Good design combines positive environmental, social and economic outcomes. Schools and school buildings should be designed to minimise the consumption of energy, water and natural resources and reduce waste and encourage recycling.

Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.

Passive design measures have been incorporated into the design to provide mixed-mode design outcomes with cooling and heating functions incorporated. Environmental factors such as natural light, ventilation, partial shading, full shading, material selection, orientation, water re-use along with energy use have been considered.

BKA Architecture

Robust, high-impact materials at low level for protection against wear and tear from pedestrian traffic have been incorporated.

The facility is able to be used in 2 'modes' i.e Sport Mode and Performance mode

When in Sports Mode the hall can accommodate the following sport court configurations:

- Netball 30.5 × 15.25m
- Basketball 28 × 15m
- Badminton 13.4 × 6.1m
- Volleyball 16 × 8m

The EFGS has a requirement for a 2000mm minimum margin free of obstructions from side lines.

When in Performance Mode the hall can accommodate loose seating of up to 572 seats

Principle 3—accessible and inclusive

School buildings and their grounds should provide good wayfinding and be welcoming, accessible and inclusive to people with differing needs and capabilities.

Note—

Wayfinding refers to information systems that guide people through a physical environment and enhance their understanding and experience of the space.

Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.

The building is positioned adjacent to existing halls, with accessibility achieved by providing a new 1:14 ramp. A safe pedestrian movement strategy is proposed between existing school buildings and the proposed hall via a crossing over the existing vehicle aisle to ensure risk to students is minimised.

The proposed hall forms part of the school's events precinct and is proposed to be available for use from 7am to 10pm, seven days per week (including use on the weekends).

Principle 4—health and safety

Good school development optimises health, safety and security within its boundaries and the surrounding public domain, and balances this with the need to create a welcoming and accessible environment.

As well as being a facility which supports the health and wellbeing of its students by promoting healthy activity, the hall is also located well within the school campus and away from front boundaries and surrounding public domain. The proposed school hall connects to the spine of the events precinct. Further security measures include security cameras and swipe card access to doors.

Principle 5—amenity

Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood.

Schools located near busy roads or near rail corridors should incorporate appropriate noise mitigation measures to ensure a high level of amenity for occupants.

Schools should include appropriate, efficient, stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas.

The school fronts Great Western Highway with one primary vehicular entry. The entry point is adjacent to traffic lights and leads to a carparking area primarily used by staff members. The school is located south of Emu Plains Train Station.

The school buildings are oriented perpendicular to the Street Frontage (short side facing the street). A covered walkway dissecting two of the rows of buildings creates a defining link for students to use. The relationship between building forms creates courtyard areas of varying spatial qualities.

Soft landscaping around the building is proposed with limited openings along the southern façade towards neighbouring properties to minimise noise impact.

Principle 6—whole of life, flexible and adaptive

School design should consider future needs and take a whole-of-life-cycle approach underpinned by site wide strategic and spatial planning.

Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

Steel frame construction is proposed which can assist in relocation and re-use of the main structure in future. The siting of the building preserves potential growth of the school towards the northern end of the campus. The facility can be used for multiple purposes by the school and by community users, providing a public benefit.

The proposed hall location is not located within the 1% AEP flood extents but is within the PMF flood extents. A Flood Planning Level of RL26.50m AHD has been adopted, with level differences between building levels and external areas made accessible via ramps and suitable landscaping.

The facility aims to build community and identity and create a culture of inclusion and belonging that reflects and respects diversity within the school's community.

BKA Architecture

The design includes cross ventilation with high-level openings complying with Section J of the National Construction Code. Shading is provided along external walkways which have large overhangs. Colours for the external facades have been chosen from mid to light tones to help the building thermally.

Large structural spans allow for flexible use and multiple activities. The building has adaptable configurations consisting of sports mode and performance mode. The hall includes multiple entries from the main foyer as well as a covered walkway to accommodate various group sizes, from smaller groups up to the full capacity of the hall.

Principle 7— aesthetics

School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements. Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood.

The built form should respond to the existing or desired future context, particularly, positive elements from the site and surrounding neighbourhood, and have a positive impact on the quality and sense of identity of the neighbourhood

The design approach is to create a special multi-purpose hall for both the students of Nepean Creative and Performing Arts High School and for other students from the local school network. The building enhances the events precinct of the school which is located along the southern side of the campus. The building is linked to the other buildings in the precinct via walkways.

The objective of the design is to deliver a building which is identifiable as an education facility, which clearly states its presence, whilst being sensitive to nearby facilities.

The creation of a landscaped courtyard space between this building and the adjacent hall allows for students and other users to enjoy an additional shaded external space. This courtyard has similar proportions to the existing courtyard further east between the Nepean Arts Centre and the existing school hall further linking this building with the precinct. The building's proportions are directly related to its function as well as being of a similar proportion to the other buildings in the precinct. A sense of identity is achieved through the combination of contrasting the scale of the building's elements, through material selection as well as building alignment.

The main court space requires a clear height of 7metres to comply with the national standards for indoor basketball courts. This generates a minimum springing point for the main roof and opens up towards the north east with highlight windows. All other ancillary spaces have lower-level roof elements to create a contrast in height and direction with that of the main roof as well as being of a more human scale along its walkways.

The building placement and building design is sensitive to nearby neighbouring dwellings, with the building entrance positioned along the north as well as being set back from the neighbouring properties to the south.

Conclusion

It is considered the proposal demonstrates compliance with the design principles of both State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW] (Clause 35(6)(a)) as well as and the Department of Education's Educational Facilities Standards and Guidelines (EFGS). It is an appropriate response to its context and will make a quality aesthetic contribution to the school's built environment.

I verify, as a Registered Architect - NSW Architects Registration Board (Registration No. 9441), I have directed / supervised the design. I certify that the design has been developed in accordance with the design quality principles outlined above.

In conclusion, I believe the proposal satisfies the matters under the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 [NSW] with particular reference to (Clause 35(6)(a)) Schedule 4 Schools—design quality principles.

Yours sincerely,

Mark Khoury
Director