Environmental Impact Statement

Grey House Precinct, Pymble Ladies College

20 Avon Road, Pymble (Lot 1 DP 69541)

Prepared by Willowtree Planning Pty Ltd on behalf of Pymble Ladies College

October 2021

A national town planning consultancy
www.willowtreeplanning.com.au

Document Control Table

Document Reference:	WTJ21-087_EIS		
Date	**Version**	**Author**	**Checked By**
24 June 2021	Draft 1	R. Streeter	C. Wilson
19 August 2021	Draft 2	R. Streeter	C. Wilson
27 September 2021	Draft 3	S.Prowd	C. Wilson

CLAUSE 4.12(8) CERTIFICATE

Declaration Form	**Submission of Environmental Impact Statement (EIS)** prepared under the *Environmental Planning and Assessment Act 1979* Clause 4.12(8)
EIS Prepared By	
Name	Sally Prowd
Qualifications	BA Urban and Regional Planning (Hon I)
Address	Suite 4, Level 7, 100 Walker St North Sydney NSW 2060
In Respect Of	State Significant Development – Development Application
Development Application	
Applicant Name	Pymble Ladies College
Address	Avon Road Pymble NSW 2073
Land to be Developed	20 Avon Road, Pymble ▪ Lot 1 in Deposited Plan 69541
EIS	An EIS is attached.
Certificate	I certify that I have prepared the contents of this EIS and to the best of my knowledge: ▪ it is in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*, ▪ contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and ▪ that the information contained in the statement is neither false nor misleading.
Signature	
Name	Sally Prowd
Qualification	BA Urban and Regional Planning (Hons I)
Date	23 September 2021

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Willowtree Planning Pty Ltd (Willowtree Planning) on behalf of Pymble Ladies College (the College) (the applicant). The EIS supports a Development Application (DA) for State Significant Development (SSD) (SSD-17424905) seeking built form approval for the Grey House Precinct within the boundaries of the existing College. This SSD has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) dated 17 May 2021.

This SSD is made in relation to the site of Pymble Ladies College located at 20 Avon Road, Pymble. Whilst the overall site comprises multiple lots, the proposal specifically relates to Lot 1 in Deposited Plan (DP) 69541.

The proposal includes the redevelopment of the Grey House Precinct within the grounds of the established College. The key objective of the proposal is to provide modern teaching and learning facilities to support the ongoing evolution of the College in accordance with the needs of students, staff and the broader community.

Pursuant to this SSD, the Grey House Precinct is proposed to incorporate Junior School classrooms (Years 5 and 6), Science, Technology Engineering and Mathematics (STEM) labs, health and wellbeing facilities (consulting rooms and wards), a dance academy, Out of School Hours Care (OSHC) facilities, an Early Learning Centre (ELC), and a range of outdoor learning spaces. The proposed development would replace existing temporary (demountable) teaching spaces, providing a better environment for both students and teachers.

It is noted that whilst there is a broader vision for the progressive renewal and expansion of the College to respond to needs as they evolve, this proposal has been designed as a standalone project. Separate applications would be subsequently submitted as needs emerge.

The proposal is classified as SSD pursuant to Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Clause 15 of Schedule 1 relates to Educational Establishments and subclause 15(2) provides that *development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing School* is SSD.

The likely impacts of the proposal have been examined in depth, and the assessments undertaken demonstrate that all potential environmental impacts may be suitably managed. The surrounding context has been accounted for in the analysis, and the amenity of neighbouring properties has been shown to be appropriately safeguarded.

The proposal is considered appropriate for the location and should warrant support by the Minister for the following reasons:

- The proposed development has been planned and designed having regard to the relevant Planning legislation and the proposed works are permissible with consent;
- Compliance with the objectives and provisions of *Ku-ring-gai Local Environmental Plan 2015* (KLEP2015) and *Ku-ring-gai Development Control Plan* (KDCP) is generally achieved;
- The proposal demonstrates consistency with the objectives and directions of relevant State and Regional Planning policies and strategies;
- The proposal is suitable for the site as evidenced by the site analysis and various site investigations;
- The proposal would not result in any unacceptable, long term, off-site impacts on adjoining or surrounding properties or the public domain;
- Community consultation has been completed in accordance with the Department of Planning, Industry and Environment (DPIE) Consultation Guidelines; and
- All relevant matters for consideration have been evaluated in accordance with Section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In summary, the development is supportable from a technical viewpoint and satisfies relevant Government policies. It provides significant benefits for a wide range of stakeholders and is in the general public interest. Further, the proposed development has addressed the individual matters listed in the SEARs and is supported and justified through accompanying technical studies.

As such, the development warrants the support of the Minister and we therefore recommend that approval be granted for the proposed Grey House Precinct within Pymble Ladies College.

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GLOSSARY OF TERMS

Glossary of Terms	
Term	**Meaning**
Applicant or Proponent	Pymble Ladies College
AUD or $	Australian Dollars
CIV	Capital Investment Value
Council	Ku-ring-gai Council
DA	Development Application
DCP	Development Control Plan
DPIE	Department of Planning, Industry and Environment
EES	Environment, Energy and Science Group
EIS	Environmental Impact Statement
EPA	Environment Protection Agency
EPI	Environmental Planning Instrument
EP&A Act	*Environmental Planning and Assessment Act 1979* (as amended)
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000* (as amended)
GANSW	Government Architect NSW
GSC	Greater Sydney Commission
KDCP	*Ku-ring-gai Development Control Plan*
KLEP2015	*Ku-ring-gai Local Environmental Plan 2015*
LEP	Local Environmental Plan
OEH	NSW Office of Environment and Heritage
RFS	NSW Rural Fire Service
RMS	Roads and Maritime Service
SEARs	Secretary's Environmental Assessment Requirements issued 17 May 2021
SEPP	State Environmental Planning Policy
Sqm or m^2	Square metres
SREP	Sydney Regional Environmental Plan
SSD	State Significant Development
SSDA	State Significant Development Application
The College	Pymble Ladies College
The site	20 Avon Road, Pymble (Lot 1 DP 69541)
TfNSW	Transport for NSW
Willowtree Planning	Willowtree Planning Pty Ltd

PART A PRELIMINARY

1.1 INTRODUCTION

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of a Development Application (DA) for State Significant Development (SSD). This EIS has been prepared by Willowtree Planning Pty Ltd (Willowtree Planning) on behalf of Pymble Ladies College (the College), in accordance with the Secretary's Environmental Assessment Requirements (SEARs) dated 17 May 2021 (**Appendix 1**).

Pursuant to this SSD, development consent is sought for the redevelopment of the Grey House Precinct within the boundaries of the existing College, located at 20 Avon Road, Pymble. Whilst the overall site comprises multiple lots, the proposal specifically relates to Lot 1 in Deposited Plan (DP) 69541.

The key objective of the proposal is to provide modern teaching and learning facilities to support the ongoing evolution of the College in accordance with the needs of students, staff and the broader community.

Specifically, the Grey House Precinct is proposed to incorporate Junior School classrooms (Years 5 and 6), Science, Technology Engineering and Mathematics (STEM) labs, health and wellbeing facilities (consulting rooms and wards), a dance academy, Out of School Hours Care (OSHC) facilities, an Early Learning Centre (ELC), and a range of outdoor learning spaces. The proposed development would replace existing temporary (demountable) teaching spaces, providing a better environment for both students and teachers.

It is noted that whilst there is a broader vision for the progressive renewal and expansion of the College to respond to needs as they evolve, this proposal has been designed as a standalone project. Separate applications would be subsequently submitted as needs emerge.

The proposal is classified as SSD pursuant to Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Clause 15 of Schedule 1 relates to Educational Establishments and subclause 15(2) provides that *development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing School* is SSD.

This EIS is in the form and provides the required content prescribed by Part 3 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). All relevant matters for consideration have been evaluated in accordance with Section 4.15 of the EP&A Act.

1.2 PROJECT TEAM

This SSD is supported by a comprehensive suite of documentation prepared by a project team comprising the qualified experts listed in **Table 1** below.

Table 1. Project Team

Discipline	Consultant	Technical Input	Date	Appendix
Planning	Willowtree Planning	Environmental Impact Statement	23/09/2021	-
Planning	Willowtree Planning	Compliance Table (DCP and Child Care Guideline)	23/09/2021	3
Planning	Willowtree Planning	Consultation Report	23/09/2021	4
Planning	Willowtree Planning	Environmental Risk Assessment	23/09/2021	5
Quantity Surveyor	Proclus Advisory	Quantity Surveyors	06 July 2021	6

Table 1. Project Team				
Discipline	**Consultant**	**Technical Input**	**Date**	**Appendix**
		Report		
Land Surveyor	LTS Lockley	Survey Plan	02 July 2019	7
Architect	BVN	Architectural Drawings	24 August 2021	8
Architect	BVN	Architectural Design Report	24 August 2021	9
Urban Designer	Geoscapes	Visual Impact Assessment	05 August 2021	10
Wind Consultant	Windtech	Wind Environment Study	26 August 2021	11
Landscape Architect	Oculus	Landscape Plans	13 August 2021	12
Traffic Engineer	Stantec	Transport Impact Assessment	26 August 2021	13
Traffic Engineer	Stantec	Green Travel Plan	26 August 2021	14
Traffic Engineer	Stantec	Construction Traffic Management Plan	26 August 2021	15
Civil Engineer	TTW	Civil Plans	30 August 2021	16
Civil Engineer	TTW	Civil Engineering Conceptual Report		17
Architect	BVN	Architectural Response to GANSW	24 September 2021	19
Geotechnical Engineer	JK Environments	Geotechnical Investigation	8 February 2021	20
Environmental Engineer	JK Environments	Preliminary Site Investigation	23 June 2021	21
Aboriginal Archaeological Heritage Consultant	Artefact	Aboriginal Cultural Heritage Assessment Report	August 2021	22
Heritage Consultant	Artefact	Non-Aboriginal (Historic) Archaeological Assessment	June 2021	23
Heritage Consultant	NBRS Architecture	Heritage Impact Statement	11 August 2021	39
Ecologist	Ecological Consultants Australia	Biodiversity Development Assessment Report	September 2021	24
Arborist	ArborSafe	Arboricultural Impact Assessment	17 June 2021	25
Acoustic Engineer	Pulse White Noise Consultants	Noise Impact Assessment	12 May 2021	26
ESD Consultant	Stantec	ESD Report	6 August 2021	27
BCA Consultant	Steve Watson and Partners	BCA Assessment Report	20 August 2021	28
Fire Engineer	Stantec	Fire Safety Statement	6 August 2021	29
Access Consultant	Morris Goding Access Consulting	Accessibility Report	19 July 2021	30
Social Planner	Hill PDA	Social Impact	August 2021	31

Table 1. Project Team				
Discipline	**Consultant**	**Technical Input**	**Date**	**Appendix**
		Statement		
Operations Management	Pymble Ladies College	Operational Plan of Management and Schedule of Uses	August 2021	32
Waste Consultant	Taylor	Waste Management Plan	17 June 2021	33
Environmental Engineer	JK Environments	Preliminary Waste Classification Assessment	03 February 2021	34
Construction Management	Taylor	Project Management Plan	23 May 2021	35
Structural Engineer	TTW	Structural Schematic Design Report	25 June 2021	36
Electrical Engineer	Stantec	Electrical Report	16 August 2021	37
Hydraulic Engineer	Stantec	Hydraulic Report	12 August 2021	38

1.3 THE PROPONENT

The proponent is Pymble Ladies College, and contact details are provided in **Table 2**.

Table 2. Proponent Details	
Proponent	Pymble Ladies College
Contact Name	Kate Bimson
Position	Project Director
Details	ABN 78 619 140 464
Contact Details	Avon Road Pymble NSW 2073

1.4 APPROVALS PATHWAY

Proposals involving activities that are listed in Schedule 1 of the SRD SEPP are identified as being SSD. Clause 15 of Schedule 1 relates to Educational Establishments and states as follows:

15 Educational establishments

(1) Development for the purpose of a new school (regardless of the capital investment value).
(2) ***Development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing school.***
(3) Development for the purpose of a tertiary institution (within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017), including associated research facilities, that has a capital investment value of more than $30 million.

The proposed development has a Capital Investment Value (CIV) of $46,665,813, as detailed in the Quantity Surveyors Report at **Appendix 6**.

Given the proposal is for alterations and additions to an existing school with a CIV of more than $20 million, it would constitute SSD in accordance with Schedule 1 Clause 15(2) of the SRD SEPP.

Accordingly, this EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the EP&A Regulation and the SEARs issued 17 May 2021.

The Minister for Planning will be the determining authority for the project.

1.5 CAPITAL INVESTMENT VALUE

The proposed development has a CIV of $46,665,813, as detailed in the Quantity Surveyors Report at **Appendix 6**.

1.6 JOBS CREATION

The proposed development is estimated to generate the following jobs:

- Approximately 200 full time equivalent employees (FTEs) in consultancy and construction activities to be created for an 18 month period; and
- Approximately 3 operational FTEs.

1.7 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

In accordance with Section 4.22 of the EP&A Act, SEARs were issued by the Secretary of DPIE on 17 May 2021 (**Appendix 1**).

Table 3 provides a detailed summary of the individual matters listed in the SEARs and identifies where each of these requirements has been addressed in this EIS and accompanying technical studies.

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
General Requirements			
The Environmental Impact Statement (EIS) must be prepared in accordance with and meet the minimum requirements of clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000 (the Regulation).	This EIS has been prepared in accordance with Schedule 2, Clauses 6 and 7 of the EP&A Regulation.		
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Part H	Appendix 5	Environmental Risk Assessment
In addition, the EIS must include: ▪ *an executive summary.* ▪ *a complete description of the development, including:* ▪ *the need for the development.* ▪ *justification for the development.* ▪ *suitability of the site.* ▪ *alternatives considered.* ▪ *likely interactions between the development and existing, approved and proposed operations in the vicinity of the site.* ▪ *a description of any proposed building works.* ▪ *a description of existing and proposed operations, including:* ▪ *staff and student numbers, hours of operation, and details of any proposed before/after school care services and/or community use of school facilities.* ▪ *details of how the school would continue to operate during construction activities, including proposed site management and mitigation measures to ensure the safety of users.* ▪ *site survey plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries.* ▪ *a detailed constraints map identifying the key environmental*	Executive Summary Parts A – J	Appendix 7 Appendix 8 Appendix 6	Survey Plan Architectural Drawings Quantity Surveyors Report

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
and other land use constraints that have informed the final design of the development. ▪ *plans, elevations and sections of the proposed development.* ▪ *cladding, window and floor details, including external materials.* ▪ *a site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process).* ▪ *plans and details of any advertising/business identification signs to be installed, including size, location and finishes.* ▪ *a description of any proposed construction or operational staging including relevant timing and dependencies.* ▪ *details of construction and decommissioning including timing.* ▪ *an estimate of the retained and new jobs that would be created during the construction and operational phases of the development along with details of the methodology to determine the figures provided.* ▪ *a detailed assessment of the key issues identified below, and any other significant issues identified in the risk assessment, including:* ▪ *a description of the existing environment, using sufficient baseline data and methodology to establish baseline conditions.* ▪ *an assessment of the potential impacts of all stages of the development on all potentially impacted environments, sensitive receivers, stakeholders and future developments. The assessment must consider any relevant legislation, policies and guidelines.* ▪ *consideration of the cumulative impacts due to other related development proposed or underway on the site, including development progressed under other assessment pathways and all other developments in the vicinity (completed, underway or proposed).*		

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *identification of all proposed monitoring or required changes to existing monitoring programs.* ▪ *measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment and triggers for each action.* ▪ *details of alternative measures considered.* ▪ *a consolidated summary of all the proposed environmental management and monitoring measures, identifying all commitments included in the EIS.* ▪ *the reasons why the development should be approved and a detailed evaluation of the merits of the development, including consequences of not carrying out the development.*		
The EIS must be accompanied by a report from a qualified quantity surveyor providing a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived.	Section 1.5	Appendix 6 Quantity Surveyors Report
Key Issues		
1. Statutory and Strategic Context		
Address the statutory provisions contained in all relevant legislated and draft environmental planning instruments, including but not limited to: ▪ *State Environmental Planning Policy (State and Regional Development) 2011.* ▪ *State Environmental Planning Policy (Infrastructure) 2007.* ▪ *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017.* ▪ *State Environmental Planning Policy No 64 – Advertising and Signage.* ▪ *State Environmental Planning Policy No 55 – Remediation of Land.* ▪ *State Environmental Planning Policy (Koala Habitat Protection) 2021.* ▪ *Sydney Regional environmental Plan (Sydney Harbour Catchment)*	Part D	-

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
2005. ▪ *Draft State Environmental Planning Policy (Remediation of Land).* ▪ *Draft State Environmental Planning Policy (Environment).* ▪ *Draft State Environmental Planning Policy (Educational Establishments and Child Care Facilities).* ▪ *Ku-ring-gai Local Environmental Plan (Local Centres) 2012.* ▪ *Ku-ring-gai Local Environmental Plan 2015.* ▪ *Draft Comprehensive Ku-ring-gai LEP.*		
Having regard to the relevant environmental planning instruments: ▪ *address the permissibility of the development, including the nature and extent of any prohibitions.* ▪ *identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.* ▪ *adequately demonstrate and document how each of the provisions in the listed instruments are addressed, including reference to necessary technical documents.*	Part D	-
Address the relevant planning provisions, goals and strategic planning objectives in all relevant planning policies including but not limited to the following: ▪ *NSW State Priorities.* ▪ *State Infrastructure Strategy 2018 – 2038 Building the Momentum.* ▪ *Future Transport Strategy 2056.* ▪ *Crime Prevention through Environmental Design (CPTED) Principles.* ▪ *Better Placed: An integrated design policy for the built environment of New South Wales (Government Architect NSW (GANSW), 2017).* ▪ *Healthy Urban Development Checklist (NSW Health, 2009).* ▪ *Draft Greener Places Design Guide (GANSW).* ▪ *Development Near Rail Corridors and Busy Roads – Interim Guideline*	Part E	-

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
(DoP, 2008) ▪ *The Greater Sydney Region Plan - A Metropolis of Three Cities.* ▪ *North District Plan.* ▪ *Ku-ring-gai Local Centres Development Control Plan 2012.* ▪ *Ku-ring-gai Development Control Plan 2015* ▪ *Ku-ring-gai Community Participation Plan.* ▪ *Ku-ring-gai Local Strategic Planning Statement (LSPS).* ▪ *Draft Ku-ring-gai Housing Strategy.* ▪ *Ku-ring-gai Community Strategic Plan 2038.*		
2. Built Form and Urban Design		
Address: ▪ *the height, density, bulk and scale, setbacks and interface of the development in relation to the surrounding development, topography, streetscape and any public open spaces.* ▪ *design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colour palette.* ▪ *how CPTED principles are to be integrated into development.* ▪ *how good environmental amenity would be provided, including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.* ▪ *how design quality will be achieved in accordance with Schedule 4 Schools – design quality principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools (GANSW, 2018).* ▪ *how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.*	Section 6.2 Section 6.3	Appendix 9 Architectural Design Report
Provide:	Section 2.1	Appendix 9 Architectural Design Report

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *a detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development.* ▪ *a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items, including Pymble Avenue Conservation Area (C11) which is located to the south-east of the proposed works.*	Section 2.2 Section 6.2 Section 6.3	Appendix 10 Visual Impact Assessment
3. Trees and Landscaping		

Provide:
 	
▪ *where relevant, an arboricultural impact assessment prepared by a Level 5 (Australian Qualifications Framework) Arborist, which details the number, location and condition of trees to be removed and retained, includes detailed justification for each tree to be removed and details the existing canopy coverage on-site.*
▪ *a detailed site-wide landscape strategy, that:*
  ▪ *details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage.*
  ▪ *provides evidence that opportunities to retain significant trees have been explored and/or informs the plan.*
  ▪ *considers equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation.*
  ▪ *demonstrates how the proposed development would:*
  ▪ *contribute to long term landscape setting in respect of the site and the streetscape.*
  ▪ *mitigate the urban heat island effect and ensure appropriate comfort levels on-site.*
  ▪ *contribute to objectives to increase urban tree canopy cover.*
	Section 6.2.8
	
	Section 6.4
		Appendix 25 Arboricultural Impact Assessment
		
		Appendix 12 Landscape Plans

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *a detailed landscape plan prepared by a suitably qualified person.* *Relevant Policies and Guidelines:* ▪ *Australian Standard 4970 Protection of trees on development sites.* ▪ *Draft Greener Places Design Guide (GANSW).* ▪ *Objective 30 of The Greater Sydney Region Plan – A Metropolis of Three Cities.*		
4. Environmental Amenity		
Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. *Provide:* ▪ *shadow diagrams.* ▪ *a view analysis, where relevant, of the site from key vantage points and streetscape locations and public domain including photomontages or perspectives showing the proposed and likely future development.* ▪ *an analysis of proposed lighting that identifies lighting on-site that will impact surrounding sensitive receivers and includes mitigation management measures to manage any impacts.* ▪ *details of the nature and extent of the intensification of use associated with the proposed development, particularly in relation to the proposed increase in staff and student numbers and detail measures to manage and mitigate the impacts.* ▪ *a wind impact assessment, including a wind tunnel study, prepared by a suitably qualified person that considers the impact of the proposed* ▪ *development having regard to the surrounding development and pedestrian amenity and comfort and includes mitigation management measures to manage any impacts.*	Section 6.3 Section 6.10	Appendix 8 Architectural Drawings Appendix 9 Architectural Design Report Appendix 10 Visual Impact Assessment Appendix 11 Wind Environment Study Appendix 26 Noise Impact Assessment

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
▪ *a view impact assessment that has been prepared in accordance with the established planning principles.*			
5. Transport and Accessibility			

Provide a transport and accessibility impact assessment, which includes, but is not limited to the following:
 	
▪ *analysis of the existing transport network to at least the existing or proposed enrolment boundary, including:*
  ▪ *road hierarchy.*
  ▪ *pedestrian, cycle and public transport infrastructure.*
  ▪ *details of current daily and peak hour vehicle movements based on traffic surveys and / or existing traffic studies relevant to the locality.*
  ▪ *existing transport operation for 1hr before and after (existing or proposed) bell times such as span of service, frequency for public transport and school buses, pedestrian phasing for signals.*
  ▪ *existing performance levels of nearby intersections utilising appropriate traffic modelling methods (such as SIDRA network modelling).*
▪ *details of the proposed development, including:*
  ▪ *a map of the proposed access which identifies public roads, bus routes, footpaths and cycleways.*
  ▪ *pedestrian site access and vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes.*
  ▪ *car and motorcycle parking, bicycle parking and end-of-trip facilities.*
  ▪ *drop-off / pick-zone(s) and arrival/departure bus bay(s).*
	Section 6.5	Appendix 13
		
		Appendix 14
		
		Appendix 15
			Transport Impact Assessment
			
			Green Travel Plan
			
			Construction Traffic Management Plan (CTMP)

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *pedestrian, public transport or road infrastructure improvements or safety measures.* ▪ *analysis of the impacts due to the operation of the proposed development, including:* ▪ *proposed modal split for all users of the development including vehicle, pedestrian, bicycle riders, public transport, school buses and other sustainable travel modes.* ▪ *estimated total daily and peak hour vehicular trip generation.* ▪ *a clear explanation and justification of the:* ▪ *assumed growth rate applied.* ▪ *volume and distribution of proposed trips to be generated.* ▪ *type and frequency of design vehicles accessing the site.* ▪ *an assessment of the forecast impacts on traffic volume generated on road safety and capacity of road network including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model as prescribed by TfNSW, The traffic modelling should consider the ultimate development year plus 10 year growth of at the least the following intersections (but not limited to): Pacific Highway/Livingstone Avenue; and Pacific Highway/Beechwood Road.* ▪ *details of performance of nearby intersections and / or level crossings with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling).* ▪ *cumulative traffic impacts from any surrounding approved development(s).* ▪ *adequacy of pedestrian, bicycle and public transport infrastructure and operations to accommodate the development.* ▪ *adequacy of car and motorcycle parking and bicycle parking*		

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
provisions when assessed against the relevant car / bicycle parking codes and standards. ▪ *adequacy of the drop-off / pick-up zone(s) and bus bay(s), including assessment of any related queuing during peak-hour access.* ▪ *adequacy of the existing / proposed pedestrian infrastructure to enable convenient and safe access to and from the site for all users.* ▪ *measures to ameliorate any adverse traffic and transport impacts due to the development based on the above analysis, including:* ▪ *travel demand management programs to increase sustainable transport (such as a Green Travel Plan / School Transport Plan).* ▪ *arrangements for the Travel Coordinator roles.* ▪ *governance arrangements or relationships with state and local government transport providers to update roads safety.* ▪ *infrastructure improvements or protection measures, including details of timing and method of delivery.* ▪ *a preliminary school transport plan detailing a operational traffic and access management plan for the site, pedestrian entries, the drop-off / pick-up zone(s) and bus bay(s).* ▪ *analysis of the impacts of the traffic generated during construction of the proposed development, including:* ▪ *construction vehicle routes, types and volumes.* ▪ *construction program (duration and milestones).* ▪ *on-site car parking and access arrangements for construction, emergency and construction worker vehicles.* ▪ *cumulative impacts associated with other construction activities in the locality (if any).* ▪ *road safety at identified intersections and level crossings near the site due to conflicts between construction vehicles and existing traffic in the locality.* ▪ *measures to mitigate impacts, including to ensure the safety*		

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
of pedestrian and cyclists during construction. ▪ *analysis of the impacts of construction works on the adjoining rail corridor prepared in consultation with the relevant rail infrastructure authority.* ▪ *a preliminary Construction Traffic and Pedestrian Management Plan.* *Relevant Policies and Guidelines:* ▪ *Guide to Traffic Generating Developments (Roads and Maritime Services, 2002).* ▪ *EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996).* ▪ *Cycling Aspects of Austroads Guides.* ▪ *NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004).* ▪ *Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments (Austroads, 2020).* ▪ *Australian Standard 2890.3 Parking facilities, Part 3: Bicycle parking (AS 2890.3).*		
6. Ecologically Sustainable Development (ESD)		
Identify: ▪ *how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) would be incorporated in the design and ongoing operation phases of the development.* ▪ *proposed measures to minimise consumption of resources, water (including water sensitive urban design) and energy.* ▪ *how the future development would be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon*	Section 6.6	Appendix 27 ESD Report

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy. ▪ *how environmental design will be achieved in accordance with the GANSW Environmental Design in Schools Manual (GANSW, 2018).* *Provide:* ▪ *an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level.* ▪ *a statement regarding how the design of the development is responsive to the NARCliM projected impacts of climate change.* ▪ *an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.* *Relevant Policies and Guidelines:* ▪ *NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.*			
7. Heritage			
▪ *Identify any archaeological potential or archaeological significance on and adjacent to the site and the impacts the development may have on this significance.* ▪ *Provide a statement of significance and an assessment of the impact on the heritage significance of the heritage items on and adjacent to the site in accordance with the guidelines in the NSW Heritage Manual (Heritage Office and DUAP, 1996) and Assessing Heritage Significance (OEH, 2015).* ▪ *Include an assessment of impacts upon the Pymble Avenue Conservation Area (C11) which is located to the south-east of the proposed works.*	Section 6.7	Appendix 23 Appendix 39	Non-Aboriginal (Historic) Archaeological Assessment Heritage Impact Statement

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
8. Aboriginal Cultural Heritage			
Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) that: ▪ *identifies and describes the Aboriginal cultural heritage values that exist across the site.* ▪ *includes surface surveys and test excavations where necessary.* ▪ *has been prepared in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010).* ▪ *incorporates consultation with Aboriginal people in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water, 2010).* ▪ *documents the significance of cultural heritage values of Aboriginal people who have a cultural association with the land.* ▪ *identifies, assesses and documents all impacts on the Aboriginal cultural heritage values.* ▪ *demonstrates attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts.* ▪ *demonstrates attempts to interpret the Aboriginal cultural heritage significance identified into the development.* *Any Aboriginal objects recorded as part of the Aboriginal Cultural Heritage Assessment Report must be documented and notified to the Aboriginal Heritage Information Management System (AHIMS) within Heritage NSW of the Department of Premier and Cabinet.*	Section 6.8	Appendix 22	Aboriginal Cultural Heritage Assessment Report (ACHAR)
9. Social Impacts			
Provide a Social Impact Assessment prepared in accordance with the draft Social Impact Assessment Guideline 2020.	Section 6.9	Appendix 31	Social Impact Statement

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
Relevant Policies and Guidelines: ▪ *Draft Social Impact Assessment Guideline 2020 (Department of Planning, Industry and Environment)*		
10. Noise and Vibration		
Provide a noise and vibration impact assessment that: ▪ *includes a quantitative assessment of the main noise and vibration* ▪ *generating sources during demolition, site preparation, bulk excavation and construction.* ▪ *details the proposed construction hours and provide details of, and* ▪ *justification for, instances where it is expected that works would be carried out outside standard construction hours.* ▪ *includes a quantitative assessment of the main sources of operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities.* ▪ *outlines measures to minimise and mitigate the potential noise impacts on nearby sensitive receivers.* ▪ *considers sources of external noise intrusion in proximity to the site (including, road rail and aviation operations) and identifies building performance requirements for the proposed development to achieve appropriate internal amenity standards.* ▪ *o demonstrates that the assessment has been prepared in accordance with polices and guidelines relevant to the context of the site and the nature of the proposed development.* *Relevant Policies and Guidelines:* ▪ *NSW Noise Policy for Industry 2017 (NSW Environment Protection Authority (EPA).*	Section 6.10	Appendix 26 Noise Impact Assessment

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009).* ▪ *Assessing Vibration: A Technical Guideline 2006 (Department of Environment and Conservation, 2006).*		
11. Biodiversity		
Provide a Biodiversity Development Assessment Report (BDAR), that assesses the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and Biodiversity Assessment Method, except where a BDAR waiver has been issued in relation to the development or the development is located on biodiversity certified land. *Where a BDAR is not required, because a BDAR waiver has been issued, in relation to the development, provide:* ▪ *a copy of the BDAR waiver and demonstrate that the proposed development is consistent with that covered in BDAR waiver.* ▪ *an assessment of flora and fauna impacts where significant vegetation or flora and fauna values would be affected by the proposed development.*	Section 6.11	Appendix 24 Biodiversity Development Assessment Report (BDAR)
12. Contributions		
Identify: ▪ *any Section 7.11/7.12 Contribution Plans, Voluntary Planning Agreements or Special Infrastructure Contribution Plans that affect land to which the application relates or the proposed development type.* ▪ *any contributions applicable to the proposed development under the identified plans and/or agreements. Justification is to be provided where it is considered that the proposed development is exempt from making a contribution.*	Section 4.25 Section 6.12	-

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
▪ *any actions required by a Voluntary Planning Agreement or draft Voluntary Planning Agreement affecting the site or amendments required to a Voluntary Planning Agreement affected by the proposed development.*		
13. Staging		
Assess impacts of staging where it is proposed and detail how construction works, and operations would be managed to ensure public safety and amenity on and surrounding the site.	Section 6.18	Appendix 35 Project Management Plan
14. Utilities		
In consultation with relevant service providers: ▪ *assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.* ▪ *identify any infrastructure upgrades required off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.* ▪ *provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.*	Section 6.13	Appendix 37 Electrical Report Appendix 38 Hydraulic Report
15. Stormwater Drainage		
Provide: ▪ *a preliminary stormwater management plan for the development that:* ▪ *is prepared by a suitably qualified person in consultation with Council and any other relevant drainage authority.* ▪ *details the proposed drainage design for the site including on-site detention facilities, water quality measures and the nominated discharge point.* ▪ *demonstrates compliance with Council or other drainage authority requirements.*	Section 6.14	Appendix 16 Civil Plans Appendix 17 Civil Engineering Conceptual Report

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
▪ *stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties.*			
Where drainage infrastructure works are required that would be handed over to Council, provide full hydraulic details and detailed plans and specifications of proposed works that have been prepared in consultation with Council and comply with Council's relevant standards.	Section 6.14	Appendix 16 Appendix 17	Civil Plans Civil Engineering Conceptual Report
16. Flooding			
Identify any flood risk on-site in consultation with Council and having regard to the most recent flood studies for the development area and the potential effects of climate change, sea level rise and an increase in rainfall intensity. *Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions to mitigate flood risk where required.* *Relevant Policies and Guidelines:* ▪ *NSW Floodplain Development Manual (DIPNR, 2005).*	Section 6.15	Appendix 17	Civil Engineering Conceptual Report
17. Soil and Water			
Provide: ▪ *an assessment of potential impacts on surface and groundwater (quality and quantity), soil, related infrastructure and watercourse(s) where relevant.* ▪ *details of measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles.* ▪ *an assessment of salinity and acid sulphate soil impacts, including a Salinity Management Plan and/or Acid Sulphate Soils Management Plan, where relevant.*	Section 6.14	Appendix 16 Appendix 17	Civil Plans Civil Engineering Conceptual Report

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
Relevant Policies and Guidelines: ▪ *Managing Urban Stormwater - Soils and Construction Volume 1 (Landcom, 2004).* ▪ *Acid Sulfate Soil Manual, (NSW Acid Sulfate Soil Management Advisory Committee, 1998).* ▪ *Acid Sulfate Soils Assessment Guidelines (DoP, 2008).* ▪ *Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008).*		
18. Waste		
▪ *Identify, quantify and classify the likely waste streams to be generated during construction and operation.* ▪ *Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.* ▪ *Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.* ▪ *Provide a hazardous materials survey of existing aboveground buildings that are proposed to be demolished or altered.* *Relevant Policies and Guidelines:* ▪ *Waste Classification Guidelines (EPA, 2014).*	Section 6.16	Appendix 33 Waste Management Plan Appendix 34 Preliminary Waste Classification Assessment
19. Contamination		
Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. This must include the following prepared by certified consultants recognised by the NSW Environment Protection Authority:	Section 6.17	Appendix 21 Preliminary Site Investigation

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
▪ *Preliminary Site Investigation (PSI).* ▪ *Detailed Site Investigation (DSI) where recommended in the PSI.* ▪ *Remediation Action Plan (RAP) where remediation is required. This must specify the proposed remediation strategy.* ▪ *Preliminary Long-term Environmental Management Plan (LEMP) where containment is proposed on-site.* *Relevant Policies and Guidelines:* ▪ *Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP, 1998).* ▪ *Sampling Design Guidelines (EPA, 1995).* ▪ *Consultants Reporting on Contaminated land – Contaminated Land Guidelines (EPA, 2020).* ▪ *National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, as amended 2013).*			
Plans and Documents			
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. Any plans and diagrams included in the EIS must include key dimensions, RLs, scale bar and north point. *In addition to the plans and documents required in the General Requirements and Key Issues sections above, the EIS must include the following:* ▪ *Section 10.7(2) and (5) Planning Certificates (previously Section 149(2) and (5) Planning Certificate).* ▪ *Design report to demonstrate how design quality would be achieved in accordance with the above Key Issues including:* ▪ *architectural design statement.*	Part G Section 6.14.4 Section 6.19	Appendix 2 Appendix 8 Appendix 9 Appendix 4 Appendix 20	Section 10.7(2) and (5) Planning Certificate Architectural Drawings Architectural Design Report Consultation Report Geotechnical

Table 3. Summary of, and Response to, SEARs			
SEARs Requirement	**Location of Response**		
	EIS	**Technical Report**	
▪ *diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal.* ▪ *detailed site and context analysis.* ▪ *analysis of options considered to justify the proposed site planning and design approach.* ▪ *summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice.* ▪ *summary report of consultation with the community and response to any feedback provided.* ▪ *Geotechnical and Structural Report.* ▪ *Accessibility Report.*		Investigation Appendix 36 Structural Schematic Design Report Appendix 30 Accessibility Report	
Consultation			
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, relevant special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: ▪ *Ku-ring-gai Council.* ▪ *Government Architect NSW (through the NSW SDRP process).* ▪ *Transport for NSW.* *Consultation should commence as soon as practicable to inform the scope of investigation and progression of the proposed development.* *The EIS must describe and include evidence of the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.*	Part G	Appendix 4	Consultation Report
Targeted consultation in accordance with the draft Social Impact Assessment Guideline 2020 (Department of Planning, Industry and Environment) must	Part G	Appendix 4	Consultation Report

Table 3. Summary of, and Response to, SEARs		
SEARs Requirement	**Location of Response**	
	EIS	**Technical Report**
also occur where there is a requirement to prepare and submit a Social Impact Assessment.		Appendix 31 Social Impact Statement

1.8 PREVIOUS STATE SIGNIFICANT DEVELOPMENT

The Minister for Planning and Infrastructure granted consent on 09 July 2013 to SSD 5314 for the Concept Master Plan and Stage 1 Built Form for Pymble Ladies College, including:

- A concept proposal for the redevelopment of school facilities over four (4) stages, including:
  - Demolition of existing swimming pool;
  - Construction of three (3) new buildings on site with a combined Gross Floor Area (GFA) of approximately 5,596m², including an Aquatic and Fitness Centre, a Dining and Function Centre, and a Healthcare Centre;
  - Use of Aquatic and Fitness Centre by school and community;
  - Use of Dining and Function Centre by school and community;
  - Minor upgrade of existing Jeanette Buckham PE Centre;
  - Relocation of existing Mollie Dive Field with car parking below for 232 vehicles and removal of 36 existing car parking spaces;
  - Landscaping and utilities; and
  - No additional staff or students.

- Stage 1 works, including:
  - Demolition of existing swimming pool;
  - Construction of an Aquatic and Fitness Centre;
  - Landscaping and utilities;
  - Relocation of existing Mollie Dive Field;
  - Use of new Aquatic and Fitness Centre by school and community; and
  - Minor upgrade of existing Jeanette Buckham PE Centre.

Consent to modify SSD 5314 was subsequently granted on 15 October 2013. The modification was limited to a height increase of 700mm for Mollie Dive Field (RL 119.10m increased to RL 119.80m) in order to incorporate a greater slope on the field and ensure adequate drainage while retaining the level of the car park below.

It is noted that SSD 5314 (including as modified) did *not* include the Grey House Precinct, being the subject of this EIS. Accordingly, the current proposal is distinct from the previously-approved Master Plan and associated stages.

Extracts from the Stamped Plans for SSD 5314 and MOD 1 are shown in **Figures 1** and **2**, and demonstrate the separation between the previously-approved Master Plan and the Grey House Precinct.

Further, it is noted that only part of the Master Plan was built, being the Aquatic and Fitness Centre, car park, and separation of the back entry. The Dining and Function Centre was *not* built and is now not required due to capacity in other areas of the College for functions and the conversion of part of the existing hall into a boarding dining room. The Healthcare Centre was *not* built and is now proposed to be incorporated as part of the Grey House Precinct (referred to as 'health and wellbeing facilities' within this EIS).

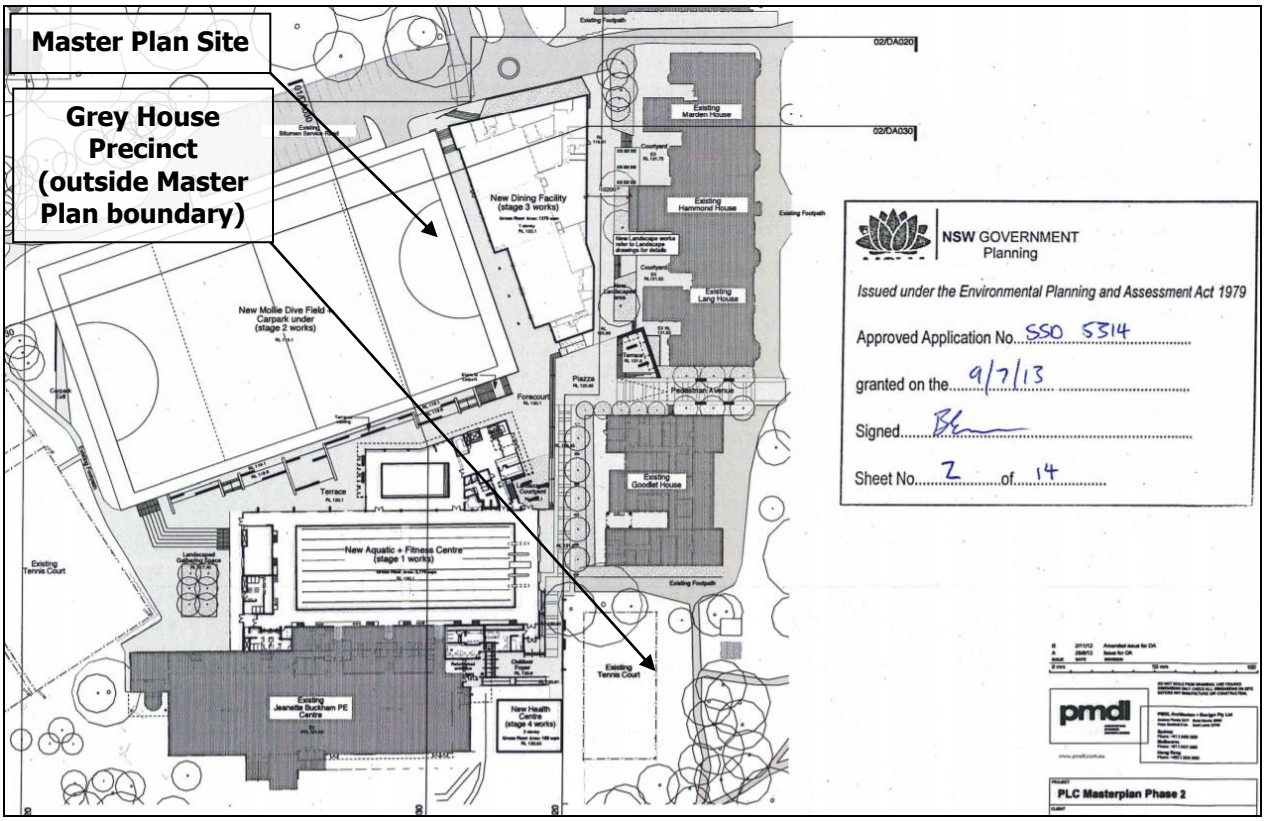

Figure 1. SSD 5314 Stamped Site Plan (PMDL 2012)

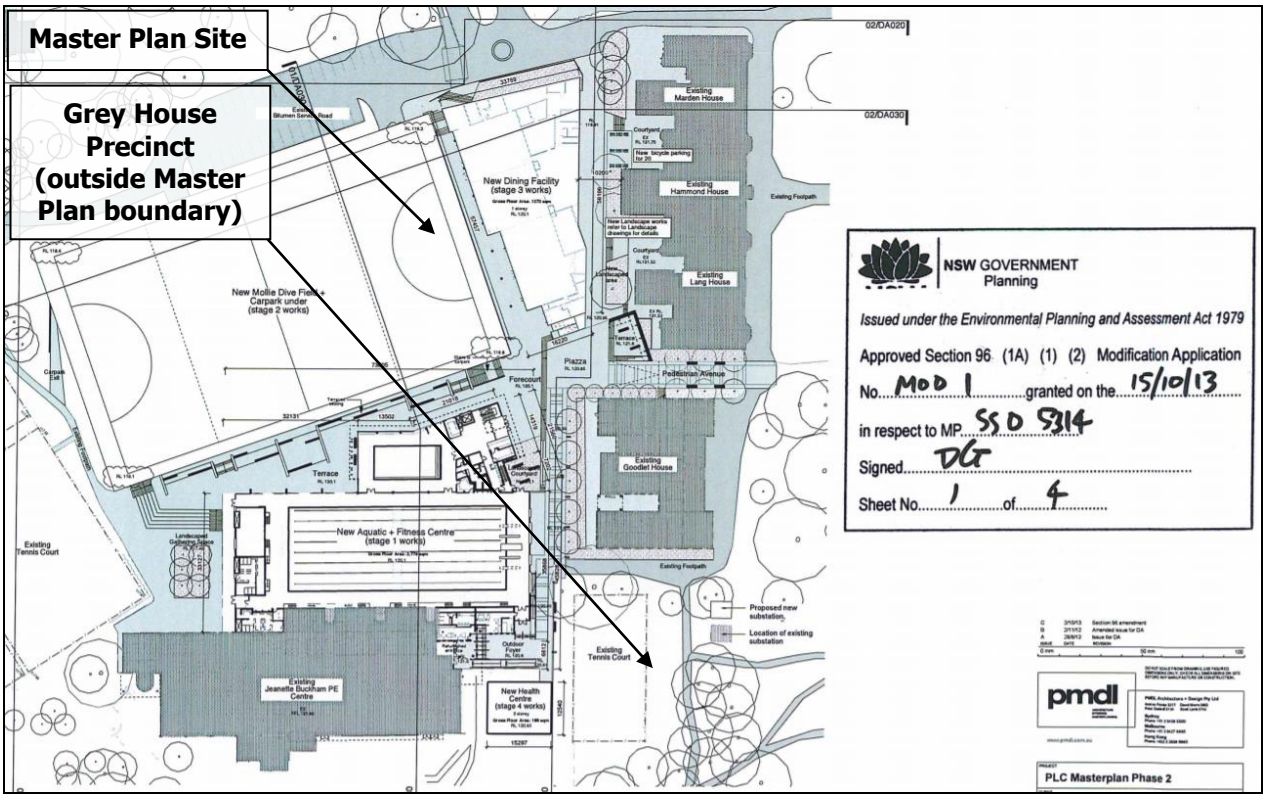

Figure 2. SSD 5314 MOD 1 Stamped Site Plan (PMDL 2012)

PART B SITE ANALYSIS

2.1 SITE LOCATION AND EXISTING SITE CHARACTERISTICS

The site of Pymble Ladies College is located at 20 Avon Road, Pymble. Whilst the overall site comprises multiple lots which are within the ownership of Pymble Ladies College, the proposed development works will be fully contained within Lot 1 DP 69541 and more specifically within the Grey House Precinct.

The College site occupies a total area of approximately 20 hectares (ha) and exhibits street frontages to Avon Road to the north and west. The eastern site boundary directly adjoins the rear gardens of the dwelling houses and residential flat buildings in Pymble Avenue, and the southern site boundary adjoins Avondale golf course.

In its existing state the site comprises multiple school buildings and sports facilities, set within landscaped gardens with some areas of densely vegetated bushland. Vehicular access to the College is facilitated via separate ingress and egress driveways on both the northern and western sectors of Avon Road, and pedestrian access is similarly available via multiple gates along the northern and western sectors of Avon Road.

The area of the site forming the specific focus of this EIS is known as the Grey House Precinct. The Grey House Precinct is situated in the central-southern portion of the College site, where it is adjoined by the main College to the north, the eastern site boundary, the Centenary Sports Precinct to the south, and the boarding precinct to the west. The Grey House Precinct currently incorporates temporary (demountable) teaching spaces, lawn area, pedestrian paths and some trees. The Grey House Precinct is approximately 0.3ha in area.

The site and existing development are shown in **Figures 3, 4** and **5** below.

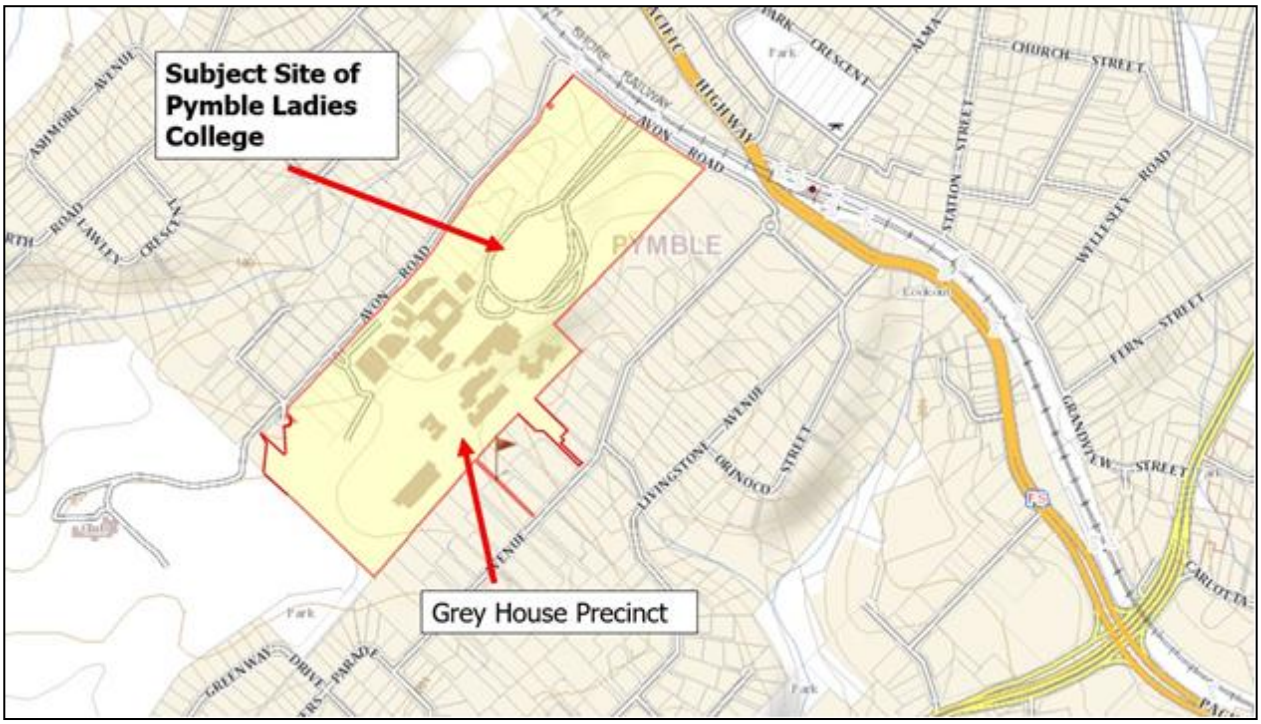

Figure 3. Cadastre Map (SIX Maps 2021)

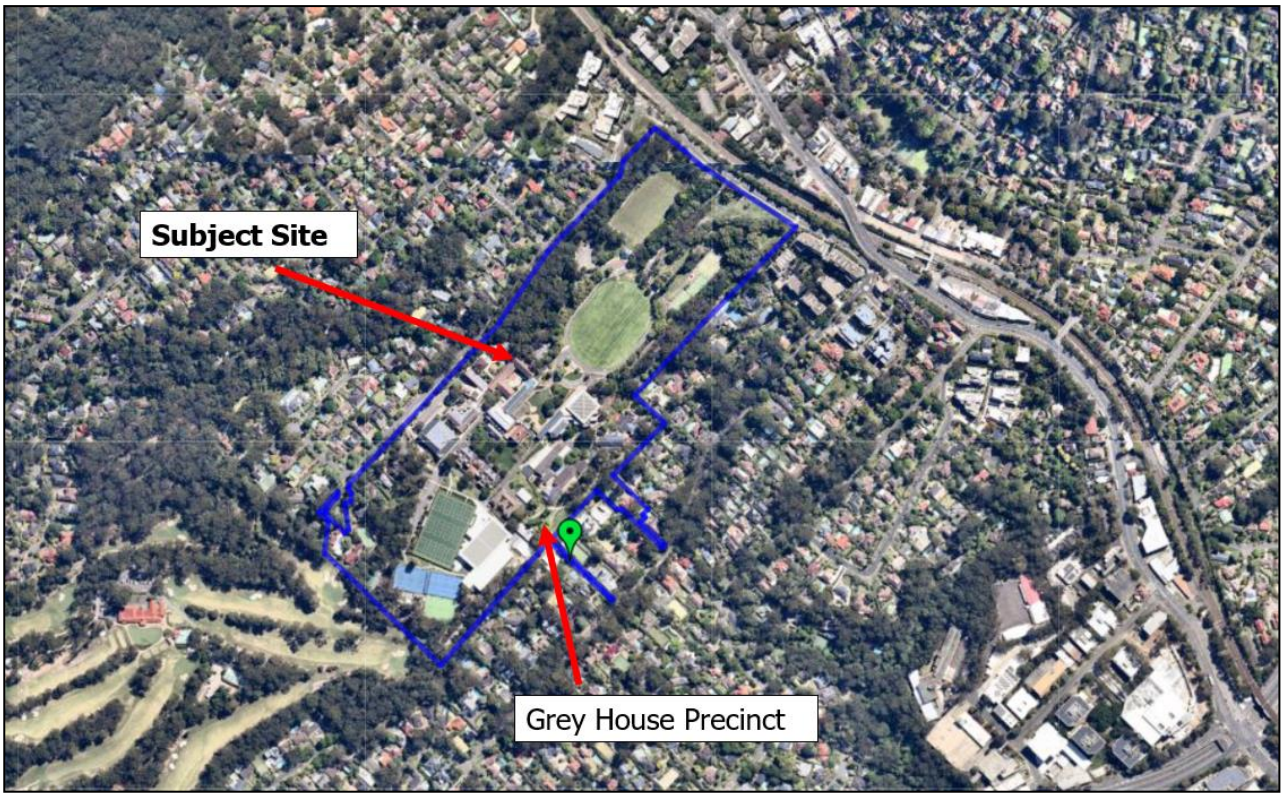

Figure 4. Aerial of the Site (Nearmap 2021)

Figure 5. Site Plan (BVN 2021)

2.2 LOCAL CONTEXT

The site is located in the suburb of Pymble, which forms part of the Ku-ring-gai Local Government Area (LGA) in the north of Greater Sydney.

The surrounding context exhibits a leafy suburban character, with surrounding development comprising primarily of detached dwelling houses set within generous gardens and along tree-lined streets. Moderately-scaled residential flat buildings of recent construction are generally concentrated along the railway line. Local shops, generally contained within two (2) storey attached buildings, are also situated in proximity to the train station along Pacific Highway and on the northern side of the railway.

There are multiple open spaces, bushland areas and riparian corridors throughout the surrounding area, including Avondale golf course adjoining the southern site boundary, Sheldon Forest and Avondale Dam to the west, and Robert Pymble Park to the north.

The site is highly accessible by public transport, being approximately 200m walk from Pymble train station. Bus stops along Pacific Highway provide bus connections to Macquarie University and Hornsby. The site is also accessible via the established road network, being in immediate proximity to the Pacific Highway and near to its intersection with Ryde Road/Mona Vale Road.

The local context is shown in **Figure 6**.

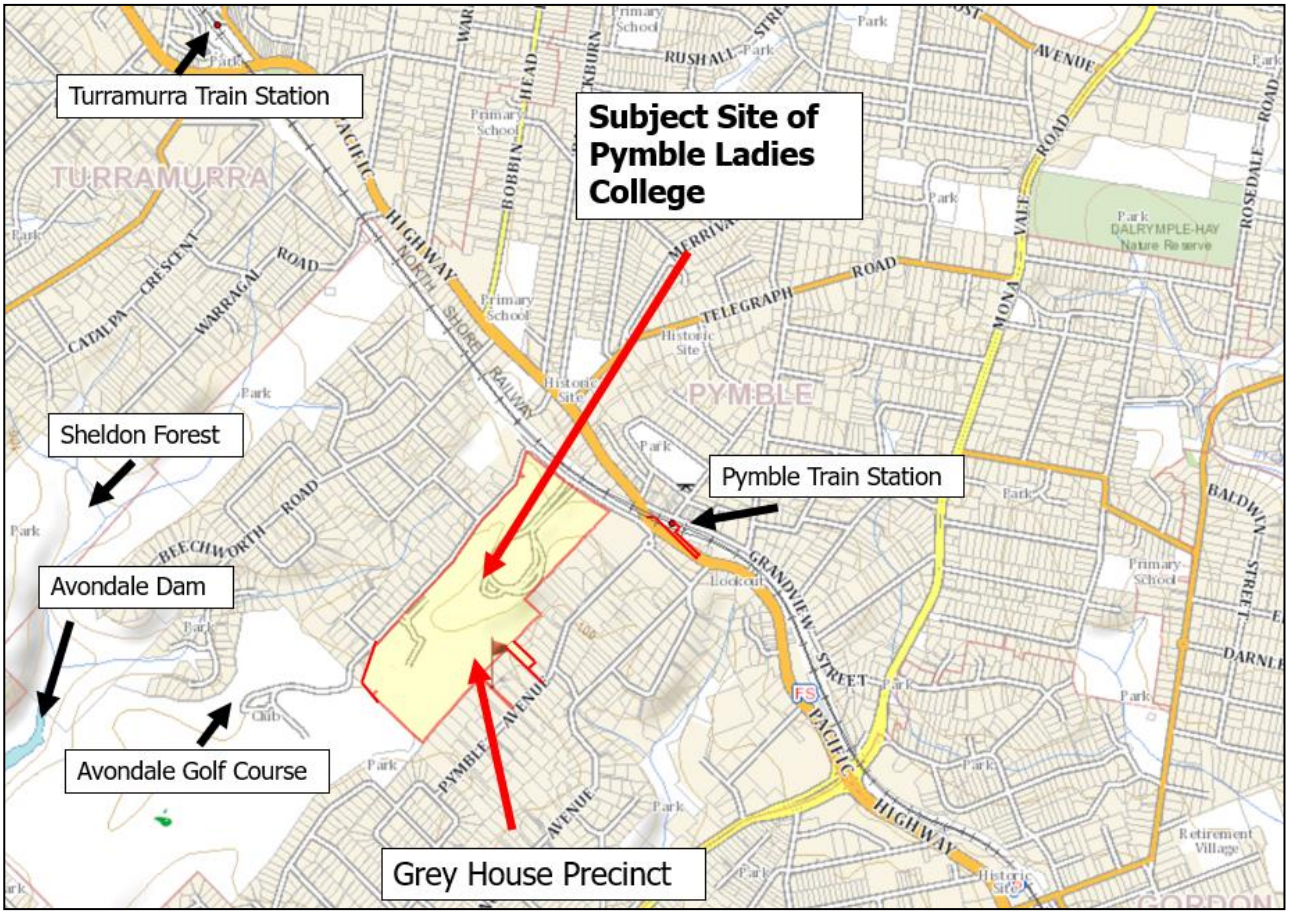

Figure 6. Local Context (SIX Maps 2021)

2.3 SERVICES AND UTILITIES

The site accommodates the existing College and therefore is serviced by all essential services and utilities.

As described in the Civil Engineering Conceptual Report (**Appendix 17**), this includes an existing stormwater pipe and pit network conveying stormwater from upstream and outside of the site area. Given it currently passes though the footprint of the proposed building, this line will require diversion as part of the early works.

The Electrical Report (**Appendix 37**) outlines that the electrical infrastructure assets surrounding the site form part of the local Ausgrid distribution network and mainly consists of HV feeders and distribution substations that supply power to the College as well as the local neighbourhood. The existing school has multiple supply points and is supplied via several substations along Avon Road and within the school grounds. The College has an existing private fibre LAN network which currently links all buildings together on site.

The Hydraulic Report (**Appendix 38**) describes that the local Water Authority and Sewer Network Authority for the site is Sydney Water. The College site is serviced by three (3) existing potable water connections, with these water mains forming part of the wider Pymble network. The site has one (1) existing sewer connection via a 225mm sewer main located at the base of the site. It is proposed to reuse the existing sewer connection adjacent to the Grey House Precinct.

There are no Jemena, gas network assets within the site and therefore no impact on the infrastructure.

2.4 LAND OWNERSHIP

The land is under ownership by Pymble Ladies College (ABN 78 619 140 464).

2.5 SCHOOL HISTORY

Pymble Ladies College was founded as Presbyterian Ladies' College Pymble in 1916, and on 31 July 1919 was dedicated as the property of the Presbyterian Church of NSW 'for the higher education of girls and their moral and religious upbringing'. After the establishment of the Uniting Church in Australia in 1977, the College became Pymble Ladies' College.

Over the decades since its foundation, the College has been significantly extended to provide a growing number of students and boarders with an expanded number and enhanced quality of academic and co-curricular facilities and programs.

2.6 EXISTING USE AND POPULATION

The College is a non-selective, independent school for girls from Kindergarten to Year 12, with Boarding available from Year 7.

The College currently accommodates a population of 2,259 students, 120 boarders and 400 staff.

It is noted that there is currently *no* ELC on the site.

The standard operating hours of the College are 7:30am to 5:30pm Monday to Friday, and standard teaching hours are 8:15am to 3:20pm Monday to Friday.

Co-curricular activities within the College grounds take place as follows:

- 6:30am to 8:00am and 3:00pm to 6:30pm Monday to Friday (5:30am to 8:00am for swim squads);
- 7:00am – 12:00pm Saturdays; and
- No activities on Sundays.

Examples of co-curricular activities include band, instrument lessons, choir, drama, art, robotics, dance, rowing, tennis, athletics, swimming, diving, gymnastics, and over 50 choices of activities in addition to seasonal sports including hockey, netball, basketball, rugby and soccer.

Boarding occurs on a 24/7 basis.

Further details of the operations and activities of the College are provided in the Operational Plan of Management and Schedule of Uses at **Appendix 32**.

2.7 COMMUNITY USES OF THE COLLEGE

As well as providing academic and co-curricular activities for students and boarders, the College includes facilities and services that are accessible to the broader community. These include the following:

- Swimming Centre, including swimming carnivals for other local schools, learn-to-swim for the broader community, and water polo competitions;
- Sports facilities for local sports groups, including the Gymnasium for indoor netball and basketball;
- Sports fields;
- Chapel, for special services;
- Theatre, extended to the local community for events; and
- The College also serves as a host venue for a number of interschool competitions such as debating.

The Operational Plan of Management and Schedule of Uses at **Appendix 32** provide further details of the community use of the College.

2.8 SITE SUITABILITY

The site is considered suitable for the proposed development for the following reasons:

- The site is zoned for the purpose of a school and has historically operated as a school since the early 1900s;
- The proposal would support the ongoing operations of the established College through the provision of new and upgraded facilities to enable the fostering of high quality educational and learning experiences;
- The proposed development would primarily support the existing student and staff population, noting that the only increase in student and staff numbers would relate to the ELC;
- The site benefits from existing access, parking, servicing and traffic management arrangements that would suitably accommodate the minor increase in trip generation (ELC attendees only);
- The site is serviced by existing services and infrastructure that are capable of supporting the proposed development;
- The proposal would not affect any item or area of heritage or archaeological significance;
- The proposal may be developed with appropriate visual amenity given its surrounding context;
- The design of the development has considered surrounding properties and would maintain a suitable level of amenity including with respect to solar access, visual privacy, acoustic privacy and views;
- All potential environmental impacts of the proposal would be suitably mitigated within the site; and
- The proposal would generate and maintain employment opportunities during both construction and operational phases.

The proposal is justified on the basis that it is compatible with the locality in which it is proposed and has no unacceptable economic, environmental or social impacts.

PART C PROPOSED DEVELOPMENT

3.1 PROPOSAL OVERVIEW

Pursuant to this SSD, detailed built form approval (development consent) is sought for the redevelopment of the Grey House Precinct within the boundaries of the existing College.

It is noted that whilst there is a broader vision for the progressive renewal and expansion of the College to respond to needs as they evolve, this proposal has been designed as a standalone project. Separate applications would be subsequently submitted as needs emerge.

3.2 AIMS AND OBJECTIVES OF THE PROPOSAL

The following objectives form the basis of the proposed development for new facilities within the grounds of the existing College:

- Create a high-quality teaching and learning environment for students and staff;
- Establish additional floor space and new facilities for indoor and outdoor learning;
- Introduce early learning opportunities for pre-Kindergarten aged children;
- Deliver enhanced public benefit by opening many of the new facilities for use by the broader community;
- Enhance the amenity and function of an underutilised area of land within the College grounds;
- Integrate with and complement the existing College facilities;
- Minimise environmental and amenity impacts; and
- Ensure development is compatible with surrounding development and the local context.

The site and proposed design are considered to meet the objectives of the project as it allows for the development of new and enhanced facilities for educational and co-curricular purposes, on land that forms part of the established College.

3.3 DESCRIPTION OF THE PROPOSAL

The proposal includes the redevelopment of the Grey House Precinct within the grounds of the established College. The Grey House Precinct is proposed to incorporate the following:

- Junior School classrooms (Years 5 and 6);
- Science, Technology Engineering and Mathematics (STEM) labs;
- Health and wellbeing facilities (consulting rooms and wards);
- Dance academy;
- Out of School Hours Care (OSHC) facilities;
- Early Learning Centre (ELC); and
- Outdoor learning spaces.

The proposed development would replace existing temporary (demountable) teaching spaces, providing a better environment for both students and teachers.

The proposal would provide facilities to support the *existing* student population of the College and would not provide for an increase in student or staff numbers for Kindergarten to Year 12. The proposed ELC would however accommodate a new pre-Kindergarten stream, with capacity for 90 children (it is noted there is currently *no* ELC on the site). It is anticipated that a significant proportion of the ELC places would be occupied by children of staff at the College.

The intention would be for the ELC, Dance Academy and OSHC holiday care program, to be available for use by the broader community.

The health and wellbeing facilities would exclusively serve students of the College (no use by the general public). The proposal would support the co-location of physical and mental health services, in recognition of the holistic nature of health and wellbeing.

The envisaged built form would comprise up to five (5) storeys, stepped down the slope in accordance with the natural topography of the land (noting that earthworks would be required to provide the lowest floor below existing natural ground level). Outdoor spaces would be provided at ground level and on upper-level courtyards/terraces in order to create transitionary indoor/outdoor learning environments.

The proposed development is shown in **Figures 7-10**, and further details are provided in the Architectural Drawings at **Appendix 8**.

Figure 7. Perspective (BVN 2021)

Figure 8. Perspective (BVN 2021)

Figure 9. Perspective (BVN 2021)

Figure 10. Perspective (BVN 2021)

3.4 NUMERIC PARTICULARS OF BUILT FORM AND OPEN SPACE

The numeric particulars of the proposed built form and open space are outlined in **Table 4**.

Table 4. Numeric Particulars of Proposed Development	
Development Particular	**Proposal**
Building Height	20.6m
Number of Storeys	5 storeys
Internal Areas	Ground level: ▪ OSHC, 710m²

Table 4. Numeric Particulars of Proposed Development	
Development Particular	**Proposal**
	▪ Shared amenities/services/ circulation, 130m²
	Level 1: ▪ Dance, 1,435m² ▪ Junior School, 330m² ▪ Shared amenities/services/ circulation, 190m²
	Level 2: ▪ ELC, 710m² ▪ Junior School, 330m² ▪ Shared amenities/services/ circulation, 85m²
	Level 3: ▪ Junior School, 855m² ▪ STEM, 125m² ▪ Staff, 85m² ▪ Shared amenities/services/ circulation, 115m²
	Level 4: ▪ Health and wellbeing, 720m² ▪ Shared amenities/services/ circulation, 85m²
	Total internal area: 6,050m²
Outdoor Learning Space (within building footprint)	Ground Level: ▪ 138.8m² Covered Outdoor Learning Area (COLA)
	Level 1: ▪ 255m²
	Level 2: ▪ 401.7m² (ELC) ▪ 203.2m² COLA (ELC) ▪ 14.8m² wintergarden (ELC) ▪ 120m² (Junior School)
	Level 3: ▪ Atrium, 149.2m²
	Level 4: ▪ Atrium, 42.8m² ▪ Courtyards, 72.7m²
	Total outdoor area: 1,398.2m²

Full details are provided in the Architectural Drawings and Landscape Plans at **Appendices 8** and **12**, respectively.

3.5 ARCHITECTURAL DESIGN

The proposal has been developed to emphasise the 'Outdoor Room' allowing flexible outdoor space, that indoor uses could spill out onto. Various massing and siting were considered throughout the design evolution and has responded to the local context, existing buildings and vegetation and minimising overshadowing to neighbouring properties.

The proposal is a five storey building, with the lower levels embedded into the ground. The form is articulated with a masonry finish to engage with the ground, with lighter glazed elements at the top levels. The building is legible as a five storey building to the east and three storey from the west. The façade of the building is articulated and further broken into terraces, with a break at the centre for the

Outdoor Room. Extensive green roofing and landscaping further assists in softening the building and providing visual interest. Overall the design aims to create various terraced levels, with additional landscaping, keeping ample access to the outdoors and connection to nature. The proposal also ensures the ground plane and building assists in keeping the wider college site legible and accessible.

3.6 LANDSCAPE DESIGN

As outlined in **Table 4** above, the proposal would incorporate outdoor learning areas on every level of the building in a variety of formats including ground level play space, COLAs, courtyards, terraces and within the atrium.

As shown in the Landscape Plans (**Appendix 12**), canopy trees would be planted adjacent to the site boundary, to compensate for the trees requiring removal and creating an effective landscape screen for the neighbouring properties. Similar planting of canopy trees adjacent to the building facades and outdoor learning areas, would support passive environmental design, create a high level of amenity for the internal and external spaces of the building, soften the appearance of the built form, contribute to the 'green' character of the College site, and increase the urban tree canopy.

Landscape design for the respective areas of the Grey House Precinct responds to the intended function and local environment of the spaces, in order to create useable, functional, stimulating and attractive outdoor areas for active and passive recreation and learning.

The proposed landscape design is shown in **Figures 11-12**, and further details are provided in the Landscape Plans at **Appendix 12**.

Figure 11. Landscape Design- Roof Plan (Oculus 2021)

Figure 12. Landscape Design- North Elevation (Oculus 2021)

3.7 SITE PREPARATION WORKS

The site exhibits a sloping topography, and the proposed built form has been stepped down the slope accordingly. Notwithstanding, bulk earthworks would be required to provide the lowest floor below existing natural ground level, in order to reduce the visual bulk and scale of the built form and prioritise the maintenance of neighbouring amenity. Excavation would be required of approzimately 8,400 cubic metres, and a total fill on site of 1,200 cubic metres, leaving an excess of 7,200 cubic metres to be removed off site, with an additional 800 cubic metres of topsoil to also be removed from site.

To enable the proposed development, the existing stormwater pipe and pit network will be diverted as part of the early works.

As detailed in the Arboricultural Impact Assessment (**Appendix 25**), 29 of the 30 trees within and adjacent to the development area, would require removal to facilitate the proposed development. Recommendations for offset planting for the trees requiring removal and tree protection for the tree to be retained, are provided in the Arboricultural Impact Assessment.

3.8 SITE INFRASTRUCTURE

The site accommodates the existing College and therefore is serviced by all essential services and utilities.

As detailed in the Services and Infrastructure Assessment (**Appendix 19**), the proposal will require a new substation of 1000kVA to be provided on site and an application for connection has been submitted to Ausgrid. A new Site Main Switchboard will also be provided with the works, as the existing supply configuration is non-compliant.

The existing water infrastructure serving the site is considered to have adequate capacity to allow for the proposal. An additional 5,000L bugger storage tank and dual pump booster set will be provided to ensure there is potable water for the entire site. The existing two fire hydrants on site are considered adequate.

The existing sewer system is proposed to be used, however the Section 73 process will determine whether the main has adequate capacity as to not affect downstream residents.

Stormwater

Noting that existing stormwater services would be diverted as part of the early works, a new in-ground stormwater system would be provided to support the Grey House Precinct and would be designed in

accordance with Australian Standards 3500.3 and *Ku-ring-gai Development Control Plan* (KDCP). Stormwater quantity would be controlled through an OSD tank sized using DRAINS modelling, and stormwater quality targets would be achieved through a treatment train approach which has been modeled in MUSIC. Details are provided in the Civil Engineering Conceptual Report (**Appendix 17**).

Electrical (General Power and Communications)

As detailed in the Electrical Report (**Appendix 37**), the existing Ausgrid kiosk type substation (asset #5340) will require relocation as part of the development. A preliminary max demand calculation for the new development has determined that the new substation shall be sized to 1000kVA, and the preferred configuration is a new kiosk substation. Various options for the location of the new kiosk substation have been assessed, and based on consideration of access and constructability, the preferred location has been identified behind Lang House adjacent to the existing substation. An Application for Connection has been submitted to Ausgrid and the Level 3 ASP design for the new substation is progressing on this basis. Due to non-compliances in the existing supply configuration, and as a method to introduce flexibility into the proposed supply configuration, a new Site Main Switchboard will be provided as part of the new works.

The proposed Grey House Precinct will connect into the existing College private fibre LAN network which currently links all buildings together on site. Existing fibre network infrastructure is located adjacent to the Grey House Precinct, and it is intended that the new development will simply plug into the existing network. Utility network infrastructure will not be affected by the new development.

Hydraulic (Potable Water, Fire Hydrants and Sewerage)

As detailed in the Hydraulic Report (**Appendix 38**), the proposed development of the Grey House Precinct would generate an approximate domestic potable cold-water of 19kL/day and a probable simultaneous demand (PSD) of 2 L/s. The water main infrastructure serving the site is of adequate capacity, however, the existing 32mm supply adjacent to the Grey House Precinct is insufficient to cater for the PSD allowance. As such, it is proposed to provide a 5,000L buffer storage tank and dual pump booster set for the development to be topped up by the 32mm existing service to suit the potable water demand for the building.

The fire hydrant demand for the site is 20L/s @ 700kPa at the two (2) most disadvantageous hydrant landing valves assisted by the existing on-site fire hydrant pump and on-site storage tank. Two (2) fire hydrants are to operate simultaneously to achieve this requirement. Pressure and flow enquiry confirms that on-site fire hydrant infrastructure is adequate to be employed.

It is proposed to reuse the existing sewer connection adjacent to the Grey House Precinct. The approximate sewer demand for the development is 15kL/day (80% of water usage). It is anticipated the sewer mains that are available for connection are capable of meeting this demand (to be confirmed through the Section 73 process).

3.9 TRAFFIC AND PARKING ARRANGEMENTS

The traffic, access, parking and servicing arrangements for the College, would suitably accommodate the proposed Grey House Precinct. Given the proposal would not increase the existing enrolment capacity for Kindergarten to Year 12, additional traffic generation and parking demand would be generated exclusively by the ELC. Although proposing 90 places, the ELC would largely accommodate children of staff whom would already be travelling to the College, together with siblings of students already attending the College. Therefore, and as further detailed in the Transport Impact Assessment (**Appendix 13**), it is anticipated that additional traffic and parking would be associated with approximately 42 children.

Accordingly, no upgrades to transport-related infrastructure within the College or on the external road network, would be required in conjunction with the development.

It is noted that dedicated car parking 38 spaces including one (1) accessible space) for the ELC would be provided within the existing Centenary Car Park. The exiting boom gate would be retained in order to reserve these spaces for exclusive ELC use. It is noted that allocated parking spaces also serve the swim school, however the swim school would not require the use of these spaces during the ELC drop-off and pick-up times (7-7:30am and 6-6:30pm, respectively).

3.10 OPERATIONAL DETAILS

The proposal has been designed to accommodate the *existing* population of the College, through the replacement of existing temporary (demountable) teaching spaces. There would be *no* increase in student or staff numbers for Kindergarten to Year 12, resulting from the proposal.

The proposed ELC would accommodate a new pre-Kindergarten stream, with capacity for 90 children (it is noted there is currently *no* ELC on the site). It is anticipated that a significant proportion of the ELC places would be occupied by children of staff at the College.

The intention would be for the ELC, Dance Academy and OSHC holiday care program, to be available for use by the broader community. Accordingly, the total capacity of these facilities (whether occupied by current students or members of the wider community), would be as follows:

- ELC: 90 places.
- Dance Studio: 750 places.
- OSHC centre: 150 places.

The health and wellbeing facilities would exclusively serve students of the College (no use by the general public).

The hours of operation for the proposed facilities would be consistent with the current College and co-curricular timetable, as summarised in the following table.

Table 5. Proposed Hours of Operation

Proposed Facility	Proposed Operating Hours
Junior School	Standard College operating hours: 7:30am-5:30pm, Monday to Friday
	Standard teaching hours: 8:15am-3:20pm, Monday to Friday
STEM	Standard College operating hours: 7:30am-5:30pm, Monday to Friday
	Standard teaching hours: 8:15am-3:20pm, Monday to Friday
Health and Wellbeing	Standard College operating hours: 7:30am-7:00pm, Monday to Friday
Dance Academy	Co-curricular College use: 6:30am-8:00am and 3:00pm-6:30pm Monday to Friday, and 7:00am-12:00pm Saturdays
	Standard College teaching hours: 8:15am-3:20pm, Monday to Friday
	Community use: 7:30am-12:00pm Saturday
OSHC	School term: 6:45am-8am and 3pm-7pm Monday to Friday
	Holiday program: 7:30am-6pm Monday to Friday
ELC	7:00am-6:30pm Monday to Friday

Further details of the operations of the proposed Grey House Precinct facilities, are provided in the Operational Plan of Management and Schedule of Uses at **Appendix 32**.

3.11 CONSTRUCTION DETAILS

Construction will be managed in accordance with the Project Management Plan at **Appendix 35** and CTMP at **Appendix 15**.

In summary, construction is proposed to be completed in three (3) stages; demolition and enabling works, construction works, and external works. An approximate 21 month period is programmed from commencement of construction stage 1 to project completion.

3.12 CONSIDERATION OF ALTERNATIVES

The site is considered suitable for the proposed development as it allows for modern teaching and learning facilities to be provided within the grounds of an existing educational establishment, to support the ongoing evolution of the College in accordance with the needs of students, staff and the broader community. The design and layout of the built form would integrate with the existing College and adequately respect neighbouring amenity.

The options considered, and subsequently dismissed, in arriving at the current proposal included:

(a) 'Do Nothing' Scenario

This option was dismissed as the objectives of the project would not be met. If the proposal was not to proceed, essential educational facilities would not be delivered. The College would have to continue relying on temporary premises, which fail to provide the modern teaching and learning facilities that are required to foster educational excellence and holistic learning opportunities.

(b) Development on an Alternative Site

Consideration to alternative sites was not given, as the College has been historically established on the site and the proposed facilities are required to support the *existing* population of the College. The site is considered suitable for the proposed development for the following reasons:

- The site is zoned for the purpose of a school and has historically operated as a school since the early 1900s;
- The proposal would support the ongoing operations of the established College on the site, through the provision of new and upgraded facilities to enable the fostering of high quality educational and learning experiences;
- The proposed development would primarily support the existing student and staff population on the site, noting that the only increase in student and staff numbers would relate to the ELC;
- The site benefits from existing access, parking, servicing and traffic management arrangements that would suitably accommodate the minor increase in trip generation (ELC attendees only);
- The site is serviced by existing services and infrastructure that are capable of supporting the proposed development;
- The region of the site proposed to be developed is suitably distanced from any item or area of heritage or archaeological significance;
- The proposal may be developed with appropriate visual amenity given its surrounding context;
- The design of the development has considered surrounding properties and would maintain a suitable level of amenity including with respect to solar access, visual privacy, acoustic privacy and views;
- All potential environmental impacts of the proposal would be suitably mitigated within the site; and
- The proposal would generate and maintain employment opportunities on the site, during both construction and operational phases.

The proposal is justified on the basis it is compatible with the locality in which it is proposed, having no unacceptable economic, environmental or social impact.

PART D LEGISLATIVE AND POLICY FRAMEWORK

4.1 OVERVIEW OF RELEVANT LEGISLATION AND POLICIES

This section of the EIS assesses and responds to the relevant current and draft Commonwealth, State and Local planning controls and policies, including:

Commonwealth Planning Context:

- *Environment Protection and Biodiversity Conservation Act 1999*

State Planning Context:

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2000*
- *Protection of Environmental Operations Act 1979*
- *Rural Fires Act 1997*
- *Biodiversity Conservation Act 2016*
- *Biodiversity Conservation Regulation 2017*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *State Environmental Planning Policy No 19 – Bushland in Urban Areas*
- *State Environmental Planning Policy (Koala Habitat Protection) 2021*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*
- *Draft State Environmental Planning Policy (Environment)*
- *State Environmental Planning Policy No. 55 – Remediation of Land*
- *Draft State Environmental Planning Policy (Remediation of Land)*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*
- *Draft State Environmental Planning Policy (Educational Establishments and Child Care Facilities)*
- *Education and Care Services National Regulations*
- *Child Care Planning Guideline*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy No. 64 – Advertising and Signage*

Local Planning Context:

- *Ku-ring-gai Local Environmental Plan 2015*
- *Ku-ring-gai Development Control Plan*
- *Ku-ring-gai Contributions Plan 2010*
- *Ku-ring-gai S94A Contributions Plan 2015*

Detailed consideration of this planning framework is provided in the following sections.

4.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, defined in the EPBC Act as Matters of National Environmental Significance (MNES).

Under the EPBC Act, a person must not, without an approval under the Act, take an action that has, will have or is likely to have, a significant impact on a MNES. These MNES are listed as:

- The world heritage values of a declared World Heritage property;
- The ecological character of a declared Ramsar wetland;
- A threatened species or endangered community listed under the Act;
- A migratory species listed under the Act;
- The environment in a Commonwealth marine area or on Commonwealth land.

The site is not identified as, or in proximity to any, World heritage properties, Ramsar wetlands, Commonwealth marine areas or Commonwealth land. As confirmed in the BDAR (**Appendix 24**), the proposal would not impact on any threatened species, endangered communities or migratory species that are listed under the EPBC Act. An assessment has been undertaken for the Koala and found that there was no evidence of Koala activity on the site, and as such the proposal is unlikely to have any impacts on the Koala or critical habitat.

Accordingly, the proposal would not significantly impact on any MNES. Therefore, further consideration to the EPBC Act and/or referral to the Commonwealth Department of Environment would not be required.

4.3 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The EP&A Act is the overarching governing legislation for all development in NSW. Pursuant to Section 4.36(2), the EP&A Act provides that:

> *A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

The proposed development has been identified as SSD pursuant to the SRD SEPP, as outlined in **Section 4.15** below.

Section 4.12(8) of the EP&A Act provides that:

> *A development application for State significant development or designated development is to be accompanied by an environmental impact statement prepared by or on behalf of the applicant in the form prescribed by the regulations.*

This EIS has been prepared in accordance with the form prescribed by the EP&A Regulation.

4.4 ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

The EP&A Regulation prescribes requirements for an EIS in Schedule 2. This EIS has been prepared in accordance with the form prescribed by the EP&A Regulation.

4.5 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1979

Schedule 1 of the *Protection of the Environment Operations Act 1979* (POEO Act) contains a core list of activities that require a licence before they may be undertaken or carried out. The definition of an 'activity' for the purposes of the POEO Act is:

> *an industrial, agricultural or commercial activity or an activity of any other nature whatever (including the keeping of a substance or an animal).*

The proposal will not involve any activity that would require the issue of an Environmental Protection Licence (EPL).

4.6 RURAL FIRES ACT 1997

The *Rural Fires Act 1997* (Rural Fires Act) aims to prevent, mitigate and suppress bushfires in order to protect people, infrastructure and the environment.

Pursuant to Section 100B, on bushfire prone land a Bush Fire Safety Authority is required for development for a Special Fire Protection Purpose, including a school. The site comprises designated bushfire prone land based on the Rural Fire Service (RFS) Bushfire Prone Land Map, but as shown in Council's mapping (refer extract at **Figure 13**), the Grey House Precinct (being the specific subject of this EIS) is not bushfire prone land and is considerably distanced from that portion of the site designated as such.

Additionally, the comments from the RFS referral (dated 06 May 2021) state that RFS have no concerns with the proposal relating to bushfire protection and that further consultation with the RFS is not required. Further consideration to bushfire is therefore not required in conjunction with this SSD.

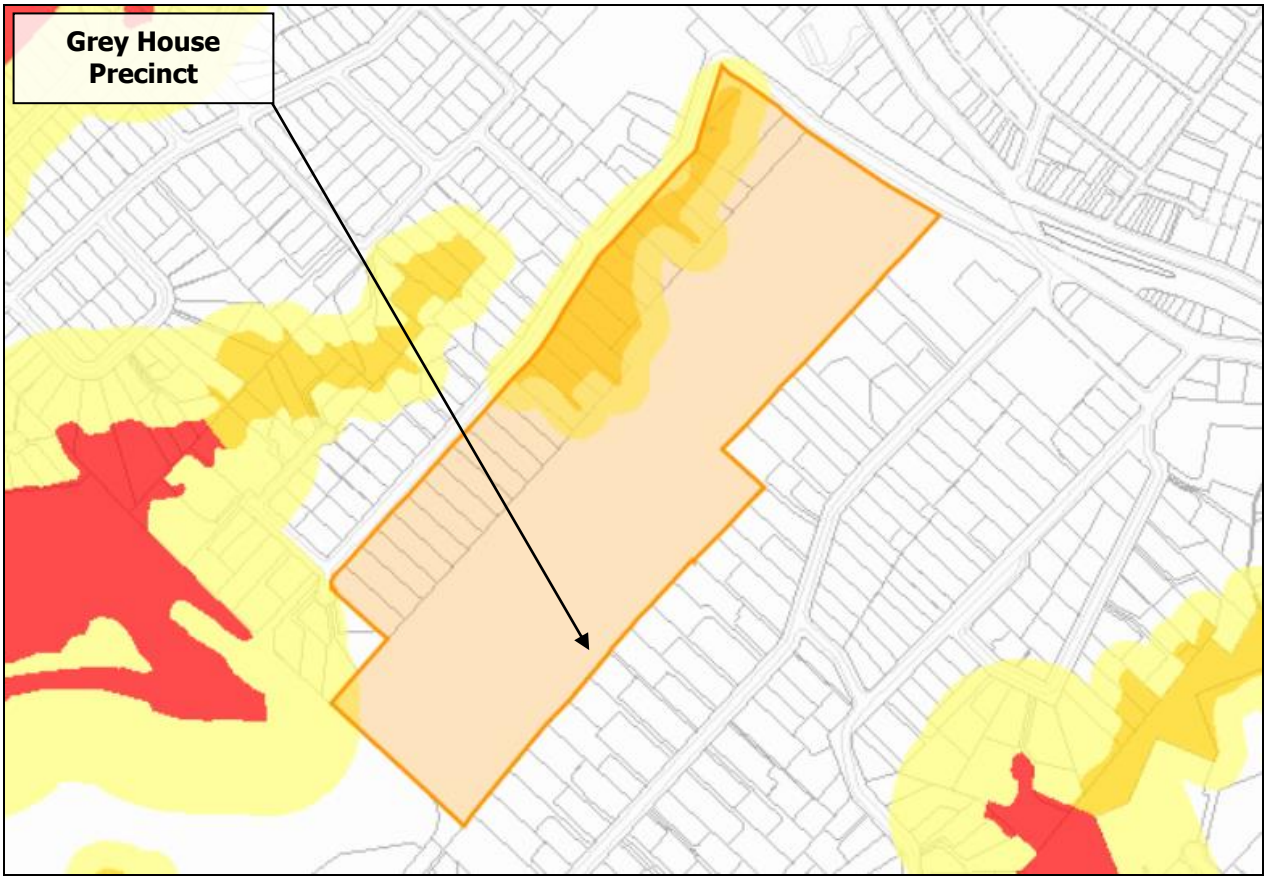

Figure 13. Bushfire Prone Land Map (Ku-ring-gai Council 2021)

4.7 BIODIVERSITY CONSERVATION ACT 2016 AND REGULATION 2017

The *Biodiversity Conservation Act 2016* (BC Act) and *Biodiversity Conservation Regulation 2017* (BC Regulation) aim *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*.

Part 7 of the BC Act and Regulation relate to biodiversity assessment and approvals under the Planning Act (meaning the EP&A Act). Pursuant to Section 7.2(1) of the BC Act, *development or an activity is likely to significantly affect threatened species if:*

(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or
(b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or
(c) it is carried out in a declared area of outstanding biodiversity value.

The proposal relates to an area of the College site that is primarily cleared, consisting of mown lawns and pedestrian paths. The site does also include some mature trees, and 29 trees would require removal to facilitate the proposed development. Addressing subclause (a), the BDAR (**Appendix 24**) confirms that the site does not contain any threatened species, ecological communities or habitats, that would be significantly affected by the proposal.

With respect to subclauses (b) and (c) under Section 7.2(1) of the BC Act, it is relevant to refer to the BC Regulation. Pursuant to Clause 7.1 of the BC Regulation, proposed development exceeds the biodiversity offsets scheme (BOS) threshold for the purposes of Part 7 of the BC Act if it involves:

(a) the clearing of native vegetation of an area declared by clause 7.2 as exceeding the threshold, or
(b) the clearing of native vegetation, or other action prescribed by clause 6.1, on land included on the Biodiversity Values Map published under clause 7.3.

The overall site of the College is identified as comprising 'biodiversity value' in the Biodiversity Values Map, with a small section of biodiversity value identified on the land within the Grey House Precinct for the access path (refer **Figure 14**). As such, the proposal would not involve any action on land included in the Biodiversity Values Map. It is proposed there is 0.06ha of vegetation to be cleared associated with the project. While the clearing does not trigger to the BOS threshold, the access path, mapped as containing biodiversity value, requires 0.02ha of vegetation to be cleared. And as such a BDAR is required.

It is noted that Section 7.9 of the BC Act requires a BDAR to accompany any SSD '*unless* the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values'. A BDAR has been prepared and there will be an approximate impact area of 0.02ha on Sydney Turpentine Ironbark Forest (STIF), which has already been altered and degraded from its natural state and does not reflect the natural structural attributes of STIF.

The proposed development generates 1 species credit for the Large-eared pied bat and 2 ecosystem credits for the Sydney Turpentine Ironbark Forest. The total cost to offset both ecosystem credits and species credits generated by this development is $24, 823.92 (including GST), payable to the Biodiversity Conservation Trust.

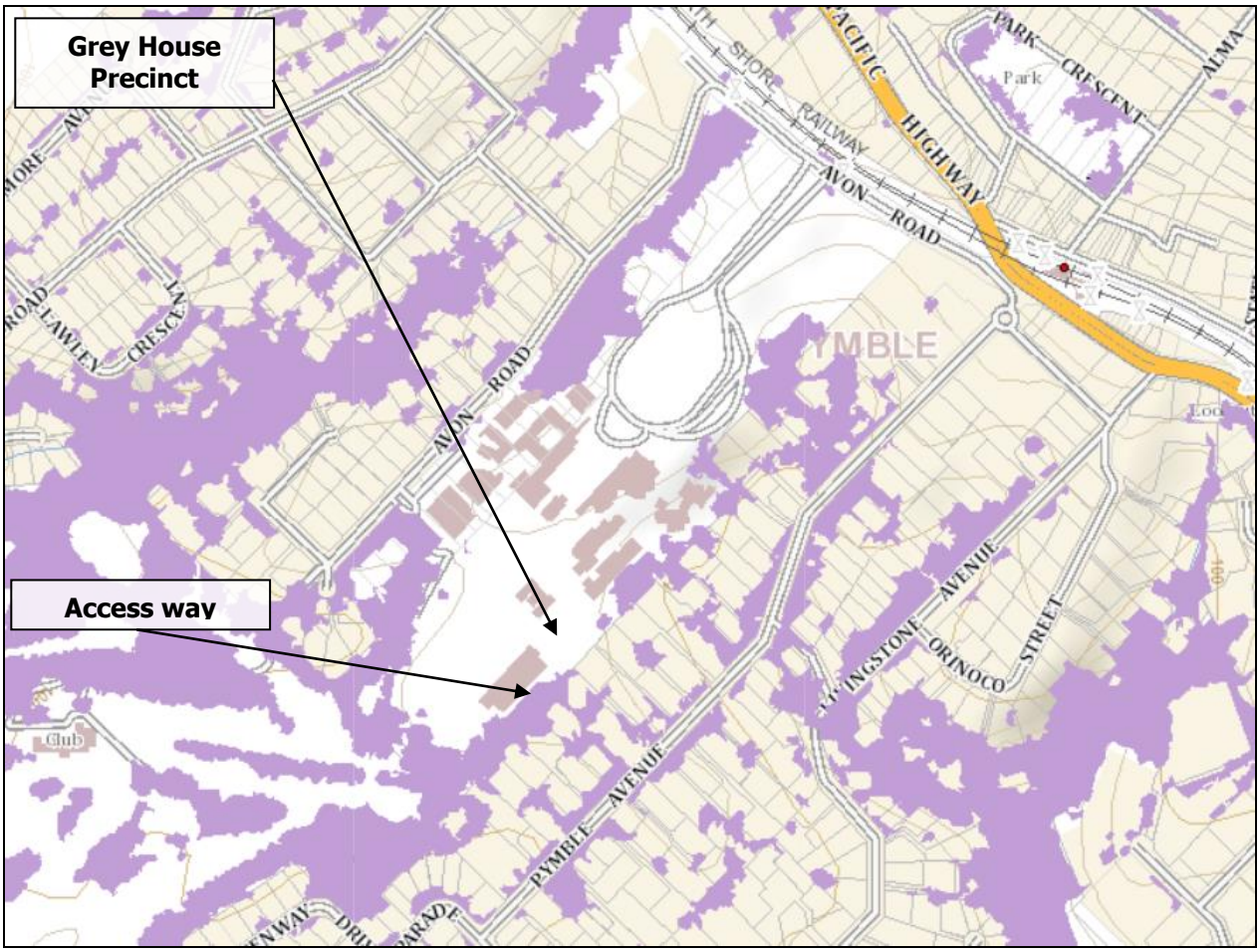

Figure 14. Biodiversity Values Map (NSW Government 2021)

4.8 STATE ENVIRONMENTAL PLANNING POLICY (VEGETATION IN NON-RURAL AREAS) 2017

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (Vegetation SEPP) aims to protect the biodiversity values of trees and other vegetation in non-rural areas, and to preserve the amenity of non-rural areas through the preservation of trees and other vegetation.

The Vegetation SEPP applies to non-rural areas, including the SP2 zone within the Ku-ring-gai LGA as referred to in Clause 5(1).

Clause 7(1) and Part 3 of the Vegetation SEPP provide that Council authority (in the form of a permit or development consent) is required prior to clearing vegetation of a type specified in a Development Control Plan (DCP).

If, however, the proposed vegetation clearing would exceed the BOS threshold (as defined in the BC Act), approval to clear this vegetation must be obtained from the Native Vegetation Panel in accordance with Clause 7(2) and Part 4 of the Vegetation SEPP.

As established in **Section 4.7** of this EIS above, which has been informed by the BDAR at **Appendix 24**, the proposal would *not* trigger the BOS threshold. Therefore, approval from the Native Vegetation Panel would not be required.

For those trees that do require removal, consent is sought pursuant to this SSD in conjunction with the balance of the proposed development. Details of the trees proposed for removal are provided in the Arboricultural Impact Assessment at **Appendix 25**.

4.9 STATE ENVIRONMENTAL PLANNING POLICY NO. 19 – BUSHLAND IN URBAN AREAS

State Environmental Planning Policy No 19 – Bushland in Urban Areas (SEPP 19) aims to protect and preserve bushland within urban areas owing to its community, aesthetic, recreational, educational and scientific values.

Given the proposal does not relate to land zoned/reserved for public open space or adjoin land zoned/reserved for such purposes, the provisions of SEPP 19 are not applicable.

4.10 STATE ENVIRONMENTAL PLANNING POLICY (KOALA HABITAT PROTECTION) 2021

State Environmental Planning Policy (Koala Habitat Protection) 2021 (Koala SEPP) aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.

The Ku-ring-gai LGA is listed in Schedule 1, and therefore the Koala SEPP applies. Specifically, Clause 11 is applicable to the site, given the lot exhibits an area greater than 1ha and is not subject to an approved Koala Plan of Management.

Pursuant to Clause 11, prior to granted development consent, Council must assess whether the development is likely to have any impact on koalas or koala habitat. If Council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, consent may be granted to the DA. If Council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, a Koala Assessment Report must be considered by Council. Despite these requirements, Council may grant consent to a DA if it is supported by information prepared by a suitably qualified and experienced person, that demonstrates that the land:

(i) does not include any trees belonging to the koala use tree species listed in Schedule 2 for the relevant koala management area, or
(ii) is not core koala habitat.

As detailed in the BDAR, there was no evidence of Koala activity on site, and as such it is considered the proposal would have no significant impact on the Koala or its habitat (**Appendix 24**).

4.11 SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR CATCHMENT) 2005

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Harbour REP) aims to ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected, enhanced and maintained.

The site is situated within the Sydney Harbour Catchment, however is not mapped as part of the Foreshores and Waterways Area, a strategic foreshore site, a heritage item, within the Sydney Opera House buffer zone, or a wetlands protection area.

Accordingly, it is only the general Planning Principles in Clause 13 that would apply to the site. In accordance with Planning Principles for the Sydney Harbour Catchment, the proposed development would have no unacceptable environmental impacts on the catchment. In particular, this would be ensured through the implementation of the management and mitigation measures documented in the Civil Engineering Conceptual Report at **Appendix 17** and the carrying out of works in accordance with the Erosion and Sediment Control Plans within **Appendix 16**.

4.12 DRAFT STATE ENVIRONMENTAL PLANNING POLICY (ENVIRONMENT)

The EIE for the new *State Environmental Planning Policy (Environment)* (Environment SEPP) was exhibited by DPIE in October 2017-January 2018. The Environment SEPP would consolidate the following seven (7) existing SEPPs:

- *State Environmental Planning Policy No. 19 – Bushland in Urban Areas*
- *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*
- *State Environmental Planning Policy No. 50 – Canal Estate Development*
- *Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment*
- *Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No.2-1997)*
- *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*
- *Willandra Lakes Regional Environmental Plan No. 1 – World Heritage Property*

It is noted that of those SEPPs proposed to be consolidated in the new Environment SEPP, only the Harbour REP is applicable to the site and proposed development. The Harbour REP has been addressed in **Section 4.11** of this EIS above.

Also of note, the site is not identified in any of the draft mapping supporting the draft Environment SEPP.

Accordingly, further consideration of the draft Environment SEPP is not considered relevant.

4.13 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND

State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55) provides a state-wide planning approach for the remediation of land and aims to promote the remediation of contaminated land to reduce the risk of harm.

Clause 7(1) of SEPP 55 requires the consent authority to consider whether land is contaminated prior to consent of a development.

Accordingly, a Preliminary Site Investigation (**Appendix 21**) has been prepared by JK Environments, to identify past or present potentially contaminating activities at the site, identify the potential for site contamination, and assess the need for further investigation.

The following potential contamination sources/Areas of Environmental Concern (AEC) were identified:

- Fill material;
- Historical agricultural use;
- Use of pesticides; and
- Hazardous building materials.

The Preliminary Waste Classification Assessment (**Appendix 34**) identified historically imported fill and this AEC has not been adequately characterised.

Based on the potential contamination sources/AEC identified, and the potential for contamination, further investigation of the contamination conditions is considered to be required. A Detailed Site Investigation will be required to characterise the contamination conditions.

Notwithstanding, the Preliminary Site Investigation states that the historical land uses and potential sources of contamination/AEC identified, would not preclude the proposed development.

4.14 DRAFT STATE ENVIRONMENTAL PLANNING POLICY (REMEDIATION OF LAND)

DPIE is undertaking a review of SEPP 55 and exhibited an EIE for a new *State Environmental Planning Policy (Remediation of Land)* (Land Remediation SEPP) in January-April 2018.

In summary, it is proposed that the new Land Remediation SEPP will:

- Provide a state-wide planning framework for the remediation of land;
- Maintain the objectives and reinforce those aspects of the existing framework that have worked well;
- Require planning authorities to consider the potential for land to be contaminated when determining DAs and rezoning land;
- Clearly list the remediation works that require development consent; and
- Introduce certification and operational requirements for remediation works that can be undertaken without development consent.

As outlined above, the Preliminary Site Investigation has identified potential contamination sources/AEC, and the potential for contamination. Therefore, further investigation of the contamination conditions is considered to be required. A Detailed Site Investigation will be required to characterise the contamination conditions.

Notwithstanding, the Preliminary Site Investigation states that the historical land uses and potential sources of contamination/AEC identified, would not preclude the proposed development.

4.15 STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

Proposals involving activities that are listed in Schedule 1 of the SRD SEPP are identified as being SSD. Clause 15 of Schedule 1 relates to Educational Establishments and states as follows:

15 Educational establishments

(1) Development for the purpose of a new school (regardless of the capital investment value).
(2) ***Development that has a capital investment value of more than $20 million for the purpose of alterations or additions to an existing school.***

(3) Development for the purpose of a tertiary institution (within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017), including associated research facilities, that has a capital investment value of more than $30 million.

The proposed development for alterations and additions to an existing school, has a CIV of more than $20 million (refer Quantity Surveyors Report at **Appendix 6**). The proposal would therefore constitute SSD in accordance with Schedule 1 Clause 15(2) of the SRD SEPP.

4.16 STATE ENVIRONMENTAL PLANNING POLICY (EDUCATIONAL ESTABLISHMENTS AND CHILD CARE FACILITIES) 2017

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (E-SEPP) aims to facilitate the effective delivery of educational establishments and early education and care facilities across the State.

Part 4 of the E-SEPP relates specifically to schools and identifies Prescribed Zones within which, pursuant to Clause 35(1), development for a school may be carried out by any person with development consent. Clause 35(3) also permits development for the purpose of a school within *any* zone if it is within the boundaries of an existing school. The SP2 zone (within which the site is located) is a Prescribed Zone for the purpose of Part 4 of the E-SEPP and the proposal would also be carried out within the boundaries of an existing school. Therefore the proposed development is permissible with consent.

Also of relevance, Clause 35(5) makes provision for the use of a school by the broader community, as follows:

(5) A school (including any part of its site and any of its facilities) may be used, with development consent, for the physical, social, cultural or intellectual development or welfare of the community, whether or not it is a commercial use of the establishment.

The intended use of the ELC, Dance Academy and OSHC holiday care program, by the broader community, would therefore be permitted with consent.

Pursuant to Clause 35(6), *before determining a development application for development of a kind referred to in subclause (1), (3) or (5), the consent authority must take into consideration:*

(a) the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4, and
(b) whether the development enables the use of school facilities (including recreational facilities) to be shared with the community.

The Design Quality Principles outlined in Schedule 4 relate to context, built form and landscape; sustainability, efficiency and durability; accessibility and inclusivity; health and safety; amenity; whole of life; flexibility and adaptivity; and aesthetics. The design quality principles have been considered in the design of the development and directly responded to in the Architectural Design Report at **Appendix 9**.

The proposed development would seek to satisfy Clause 35(6)(b) by allowing some of the school facilities, namely the ELC, Dance Academy and OSHC holiday care program, as referenced above, to be available for community use.

In addition, the E-SEPP makes provision for 'other' uses within a school. Of key relevance, Clause 35(10) provides that development for the purpose of a centre-based child care facility may be carried out by any person with development consent on land within the boundaries of an existing school. The proposed ELC, which forms a component of the Grey House Precinct, would therefore be permitted with consent.

4.17 DRAFT STATE ENVIRONMENTAL PLANNING POLICY (EDUCATIONAL ESTABLISHMENTS AND CHILD CARE FACILITIES)

DPIE is undertaking a review of the E-SEPP and exhibited an Explanation of Intended Effects (EIE) in November-December 2020.

In summary, the proposed amendments to the E-SEPP include:

- Increase the CIV thresholds to ensure planning assessment pathways are commensurate with the scale and impacts of the proposed project;
- Streamlined approval processes, making it easier for schools, TAFEs and universities to build new facilities and improve existing ones, including:
    - Measures to support two-storey buildings as development without consent, without changing car parking or student number limits;
    - Include hours of operation for the use of school-based child care as Exempt Development;
    - Clarify investigations, including geotechnical and other testing, surveying and sampling as Exempt Development;
    - Extend the timeframe for short-term portable classrooms under the Exempt Development pathway from 24 months to 48 months;
- Supporting the new student housing strategy proposed in the Housing Diversity SEPP for student housing within existing schools and tertiary institution campuses;
- Supporting the changing nature of tertiary institutions by making provision for innovation hub activities within existing tertiary institutions;
- Addressing concerns about impacts of child care centres within R2 Low Density Residential zones; and
- Housekeeping amendments and addressing existing policy anomalies in the E-SEPP.

The majority of the proposed E-SEPP amendments are not considered to be of direct relevance to the development proposed pursuant to this EIS.

The exception relates to the CIV threshold for SSD, which the EIE proposes to be increased from $20 million up to $50 million for alterations and additions to an existing school. Given the estimated CIV of $46,665,813 for the proposed alteration and additions subject of this EIS (refer Quantity Surveyors Report at **Appendix 6**), the proposed revised CIV threshold would preclude the proposal from achieving the criteria for SSD, with the proposal instead being Local Development requiring approval from Council. The EIE states that transitional arrangements will be provided where there are changes to assessment pathways. As such, the proposed E-SEPP amendments outlined in the EIE would not directly affect the current SSD.

4.18 EDUCATION AND CARE SERVICES NATIONAL REGULATIONS

The *Education and Care Services National Regulations* (National Regulations) prescribe additional requirements for child care centres.

Sections 107 and 108 establish minimum space requirements for indoor and outdoor space, summarized as follows:

- 3.25m² unencumbered indoor space per child; and
- 7m² unencumbered outdoor space per child.

The proposed ELC complies with the National Regulations as it provides 3.25m² unencumbered indoor space and 7m² unencumbered outdoor space per child.

4.19 CHILD CARE PLANNING GUIDELINE

The *Child Care Planning Guideline* (Child Care Guideline) establishes the assessment framework to deliver consistent planning outcomes and design quality for centre-based child care facilities in NSW, and would be applicable to the proposed ELC.

Part 2 of the Guideline establishes a series of Design Quality Principles relating to context, built form, adaptive learning spaces, sustainability, landscape, amenity and safety.
Part 3 outlines Matters for Consideration which support the Design Principles and must be considered by the consent authority as part of any DA. Matters for consideration include:

- Site selection and location
- Local character, streetscape and the public domain interface
- Building orientation, envelope and design
- Landscaping
- Visual and acoustic privacy
- Noise and air pollution
- Hours of operation
- Traffic, parking and pedestrian circulation

Part 4 of the Guideline relates to applying the National Regulations to development proposals, including with respect to the internal and external environment. A National Quality Framework Assessment Checklist is also included.

Detailed consideration to these matters is provided in the Assessment Table at **Appendix 3**.

4.20 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

State Environmental Planning Policies (Infrastructure) 2007 (ISEPP) provides the legislative planning framework for infrastructure and the provision of services across NSW.

Schedule 3 of the ISEPP nominates 'traffic generating development' which requires referral to Transport for NSW (TfNSW) (formerly Roads and Maritime Services (RMS)). Educational Establishments or Schools are not expressly considered in Schedule 3 and therefore the generic threshold applies. Development *for any other purpose* on a site with access to a non-classified road requires referral to TfNSW if it has capacity for 200 or more motor vehicles per hour.

The proposal would not provide for 200 or more motor vehicles per hour, as confirmed in the Transport Impact Assessment (**Appendix 13**). The referral threshold is therefore not triggered and referral to TfNSW is not required pursuant to Schedule 3 of the ISEPP.

4.21 STATE ENVIRONMENTAL PLANNING POLICY NO. 64 – ADVERTISING AND SIGNAGE

State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) aims to ensure that signage is of a high quality and compatible with the desired amenity and visual character of the area. SEPP 64 applies to all signage:

(a) that, under another environmental planning instrument that applies to the signage, can be displayed with or without development consent, and

(b) is visible from any public place or public reserve.

No signage to which SEPP 64 applies, is proposed.

4.22 KU-RING-GAI LOCAL ENVIRONMENTAL PLAN 2015

The site is subject to the provisions of *Ku-ring-gai Local Environmental Plan 2015* (KLEP2015). Relevant permissibility, development standards and provisions are summarised in the subsequent sections of this EIS.

4.22.1 ZONING AND PERMISSIBILITY

The site is zoned SP2 Infrastructure (Educational Establishment) pursuant to KLEP2015 (**Figure 15**).

The objectives of the SP2 zone are:

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*

Within the SP2 zone the following land uses are permitted *without* consent:

Nil

Within the SP2 zone the following land uses are permitted *with* consent:

Aquaculture; ***The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose****; Environmental protection works; Flood mitigation works; Recreation areas; Roads*

Within the SP2 zone the following land uses are prohibited:

Any development not specified in item 2 or 3

Accordingly, Educational Establishments (which by definition include Schools) are permitted with consent in the SP2 Zone.

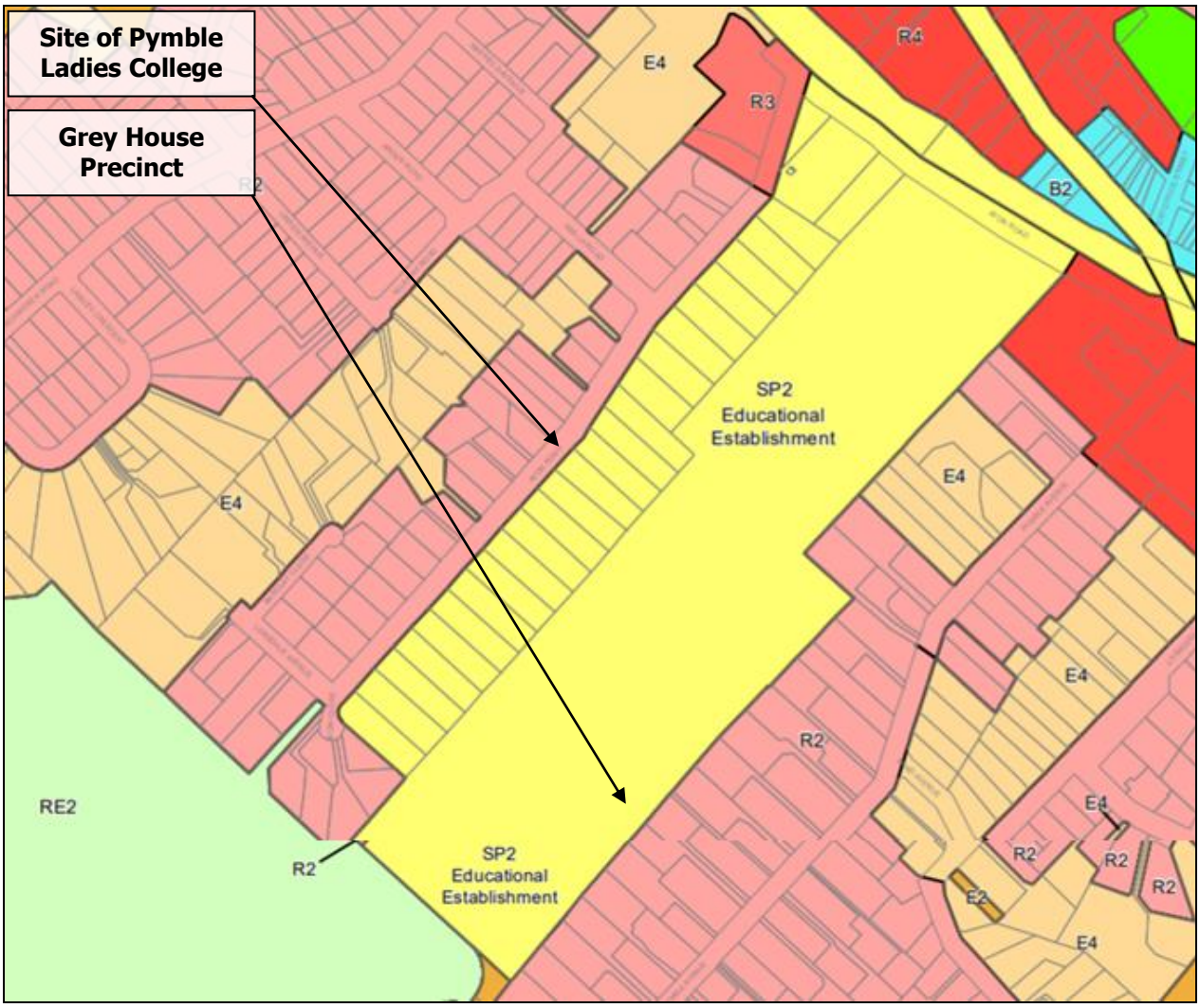

Figure 15. Zoning Map (NSW Legislation 2021)

4.22.2 DEVELOPMENT STANDARDS AND PROVISIONS

The development standards and other provisions applicable to the site pursuant to KLEP2015, are outlined in the following table.

Table 6. Development Standards and Provisions	
KLEP2015 Clause	**Details**
Clause 4.1 Minimum Lot Size	No minimum lot size. In any case, the proposal does not include subdivision.
Clause 4.3 Maximum Building Height	No maximum building height. The proposed development exhibits a maximum building height of 20.6m. Notwithstanding that compliance with a numeric building height standard is not applicable for the site, it is considered that the scale of the proposed built form is compatible with the site and surrounding context in accordance with the objectives of Clause 4.3. The five (5) storey built form has been stepped in accordance with the natural topography of the land and recessed into the slope, which has effectively reduced the visual scale of the development. As such, and as demonstrated in the Elevations and Cross-Sections within the Architectural

Table 6. Development Standards and Provisions	
KLEP2015 Clause	**Details**
	Drawings and Visual Impact Assessment (**Appendices 8** and **10**), the proposal would generally exhibit the appearance of a three (3) storey building from most vantage points, and would be consistent with the visual scale of established built form across the College site. Further according with the objectives of Clause 4.3, the scale of the proposed development, coupled with the proposed generous boundary setbacks and landscaping, would appropriately relate to the neighbouring residential area with respect to visual transition and amenity.
Clause 4.4 Maximum Floor Space Ratio (FSR)	No maximum FSR. Notwithstanding that compliance with a numeric FSR standard is not applicable for the site, it is considered that the density of the proposed building is commensurate with the capacity and character of the site. The proposed building mass would generally reflect other College buildings, and would allow for a significant proportion of the site to be maintained as open space and landscaped area. Further, the visual appearance of the bulk and scale of the development has been reduced through modulation of the building form, highly articulated facades, inclusion of 'plant-scapes' on all levels of the development, and the stepping and recessing of the building in response to topography.
Clause 5.1 Land Reservations	No land reservations.
Clause 5.10 Heritage	The site is not identified as a heritage item or conservation area. Notwithstanding, the SEARs established that the impact of the proposed development on the nearby conservation area must be assessed. Accordingly, a Non-Aboriginal (Historic) Archaeological Assessment has been prepared and is provided at **Appendix 23**. The Assessment concludes that no former structures were identified within the study area and there is nil potential that significant archaeological remains are present within the study area.
Clause 5.21 Flood Planning	The proposed area of works does not fall within the Flood Planning Area. Further detail is provided at **Appendix 17**.
Clause 6.1 Acid Sulfate Soils	Class 5 acid sulfate soils are identified across the site. The proposal would not however lower the watertable on any adjacent Class 1, 2, 3 or 4 land. Therefore, further consideration to acid sulfate soils would not be required pursuant to Clause 6.1 of KLEP2015.
Clause 6.2 Earthworks	The site exhibits a sloping topography, and the proposed built form has been stepped down the slope accordingly. Notwithstanding, bulk earthworks would be required to provide the lowest floor below existing natural ground level, in order to

Table 6. Development Standards and Provisions	
KLEP2015 Clause	**Details**
	reduce the visual bulk and scale of the built form and prioritise the maintenance of neighbouring amenity. There will be approximately 8,400 m^3 of cut, with 1,200m^3 of fill required for the proposal. This leaves an excess of 7,200m^3 of soil and 800m^3 of topsoil to be removed from site.
Clause 6.3 Biodiversity Protection	Areas of biodiversity significance are identified across the site, including within the Grey House Precinct. The BDAR (**Appendix 24**) confirms that the site does not contain any threatened species, ecological communities or habitats, that would be significantly affected by the proposal. The ongoing rehabilitation of Blue Gum High Forest in the Sydney Basin Bioregion (BGHF) and Sydney Turpentine-Ironbark Forest (STIF) in other appropriate locations across the site in accordance with the draft Vegetation Management Plan, would mitigate the tree removal (11 native canopy trees) required to enable the proposed development.
Clause 6.4 Riparian Land and Waterways	Riparian land is identified in the northern region of the site and on adjoining land adjacent to a section of the western site boundary. These riparian lands are however significantly distanced from the proposed Grey House Precinct. Accordingly, the proposal would not unacceptably impact on any riparian land or waterways, and further consideration to Clause 6.4 would not be required.
Clause 6.5 Stormwater and Water Sensitive Urban Design (WSUD)	Stormwater and WSUD have been addressed in the Civil Engineering Conceptual Report at **Appendix 17**. MUSIC Modelling of the proposed treatment train demonstrates that reduction targets would be achieved for the full range of pollutants. Stormwater quantity would be controlled through an OSD tank sized using DRAINS modelling.

4.23 KU-RING-GAI DEVELOPMENT CONTROL PLAN

Clause 11 of the SRD SEPP provides that:

> *Development control plans (whether made before or after the commencement of this Policy) do not apply to:*
> *(a) State significant development*

Additionally, Clause 35(9) of the E-SEPP, which relates to schools that are permitted with consent, provides that:

> *A provision of a development control plan that specifies a requirement, standard or control in relation to development of a kind referred to in subclause (1), (2), (3) or (5) is of no effect, regardless of when the development control plan was made.*

The proposed school additions within a Prescribed Zone and within the boundaries of an existing school, is development referred to in subclauses (1) and (3), and the community use of the school facilities is referred to in subclause (5). Therefore, the provisions of a DCP are not applicable to the proposal.

The SEARs however establish the requirement to consider KDCP and therefore an assessment of the proposal against the relevant provisions of KDCP has been carried out in the Compliance Table at **Appendix 3**.

The proposed works are generally compliant with the relevant controls, however, where the proposal departs from certain controls, the design satisfies the objectives of the control and will result in an improved environmental or amenity outcome, achieving the objectives of, and facilitating the development.

4.24 DEVELOPMENT CONTRIBUTIONS

Contributions will be calculated by Council in accordance with *Ku-ring-gai Contributions Plan 2010* or *Ku-ring-gai S94A Contributions Plan 2015.*

PART E STRATEGIC PLANNING FRAMEWORK

5.1 OVERVIEW OF RELEVANT STRATEGIC PLANS

The EIS has given consideration to relevant strategic plans and policies, including:

State Planning Context:
- *NSW State Priorities*
- *State Infrastructure Strategy 2018 – 2038: Building the Momentum*
- *Future Transport Strategy 2056*
- *Development Near Rail Corridors and Busy Roads – Interim Guideline*
- *The Greater Sydney Region Plan - A Metropolis of Three Cities*
- *North District Plan*
- *Crime Prevention through Environmental Design Principles*
- *Healthy Urban Development Checklist*
- *Better Placed: An Integrated Design Policy for the Built Environment of New South Wales*
- *Draft Greener Places Design Guide*

Local Planning Context:
- *Ku-ring-gai Community Participation Plan*
- *Ku-ring-gai Local Strategic Planning Statement*
- *Draft Ku-ring-gai Housing Strategy*
- *Ku-ring-gai Community Strategic Plan 2038*

Detailed consideration of this strategic planning framework is provided in the following sections.

5.2 NSW STATE PRIORITIES

Fourteen (14) *Premier's Priorities* have been established by the Premier of NSW, for the purpose of delivering on the NSW Government's key policy priorities, being:

- A strong economy;
- Highest quality education;
- Well connected communities with quality local environments;
- Putting customer at the centre of everything we do; and
- Breaking the cycle of disadvantage.

The proposal would promote the 'highest quality education' and also support 'well connected communities with quality local environments', through the delivery of high quality teaching and learning facilities within an established school, with benefits extending to students, staff and the wider community (as some facilities would be made available for community use).

5.3 STATE INFRASTRUCTURE STRATEGY 2018-2038

The *NSW State Infrastructure Strategy 2018–2038: Building Momentum* (SIS) seeks to grow the NSW economy by increasing productivity and participation, and generating significant additional employment. To achieve these overall objectives, the SIS make recommendations for each of NSW's key infrastructure sectors: transport, energy, water, health, education, justice, social housing, culture, sport and tourism. The SIS sets six (6) cross-sectoral strategic directions, relating to the following:

- Improved integration of land use and infrastructure;
- Infrastructure program that maximises value for money;
- Optimisation of asset management;
- Enhanced resilience of infrastructure;
- Improved digital connectivity; and
- Innovation of service delivery models.

In accordance with the strategic objectives of the SIS as they relate to education specifically, the proposal would deliver infrastructure to provide modern, digitally-enabled learning environments for students. The proposed new school facilities would support the unique requirements of the College's existing population, be conducive to best-practice teaching and learning models, integrate flexibility in design, achieve environmental efficiencies, and accommodate emerging, innovative techniques.

Also in accordance with the SIS recommendations, the proposal would offer community use of some of the College facilities, thereby extending the benefits of new infrastructure delivery beyond the immediate school population.

5.4 FUTURE TRANSPORT STRATEGY 2056

Future Transport 2056 presents an integrated 40 year vision and guide for transport investment in NSW, having been developed collaboratively with the Greater Sydney Commission (GSC), Infrastructure NSW and DPIE. The Strategy is underpinned by a suite of supporting plans.

The Strategy seeks to support a productive economy through the delivery of transport that enables businesses to reach new markets, attract new investment, while presenting more job and training opportunities. Transport is also recognised as important in the creation of liveable communities in association with its ability to transform the public domain, activate centres and unlock new commercial and housing developments, renewing existing neighbourhoods and spaces. Ensuring the efficiency of transport investments, both with respect to environmental performance and budget, is key to obtaining sustainability objectives. Productivity, liveability and sustainability are sought to be achieved by the Strategy through the mobilisation of emerging technologies and innovation.

Representing the efficient use of established infrastructure, the proposal would provide new school facilities within the grounds of the existing College, which already benefits from suitable access by road, public transport and active travel networks. It is noted that the proposal would only generate a minor increase in travel to and from the College, as the only increase in numbers would be associated with the 90 place ELC, with many places anticipated to be occupied by families who already travel to the site (for example, children of staff or siblings of students already attending the College). Nonetheless, measures to promote sustainable travel are incorporated in the Green Travel Plan at **Appendix 14**.

5.5 DEVELOPMENT NEAR RAIL CORRIDORS AND BUSY ROADS – INTERIM GUIDELINE

The site is serviced by the established road network and public transport, including trains and buses. Although in the general vicinity of the Pacific Highway, Pymble train station and the railway line, the Grey House Precinct is significantly setback from the road and rail corridors, and the existing areas of the College would serve as 'buffers' between the new development and external transport infrastructure.

Further, Sydney Trains were notified of the SEARs for the proposed development and stated that they had no comments.

As such, further consideration to *Development Near Rail Corridors and Busy Roads – Interim Guideline* is not considered necessary.

5.6 GREATER SYDNEY REGION PLAN – A METROPOLIS OF THREE CITIES

The *Greater Sydney Region Plan – A Metropolis of Three Cities* (Region Plan) outlines a vision for Sydney to 2056, defined by three (3) cities; the Western Parkland City, the Central River City and the Eastern Harbour City. The Region Plan seeks to foster productivity, liveability and sustainability, to be achieved through the '30 minute city' model by which a majority of people live within 30 minutes of jobs, education, health facilities and services. The creation of the 30 minute city is to be promoted through infrastructure investment and coordinated transport and land use planning.

The 10 directions underpinning the Region Plan emphasise infrastructure delivery, increasing housing choice, creating walkable neighbourhoods and 'great places to live', supporting economic growth, and promoting environmental sustainability. Overall, the Region Plan aims to accommodate an additional 725,000 dwellings and 817,000 new jobs.

Within the Region Plan, Ku-ring-gai and the subject site are identified within the established urban areas of the Eastern Harbour City (**Figure 16**). Within the Eastern Harbour City, the population is projected to grow from 2.4 million people in 2016 to 3.3 million people by 2036. The Eastern Harbour City comprises a mix of well-established communities, from traditional suburban neighbourhoods to highly urban areas. Growth will bring urban renewal with increased infrastructure and services, open spaces and public places. Sympathetic infill development will focus on improved local connections.

The proposed new school facilities would support the established community of the local area and wider region, through the provision of high quality teaching and learning facilities. The ELC would contribute to supporting population growth through the opening of new child care places, and the community use of some of the College facilities would extend the benefits of the development to the broader local community. The proposal therefore accords with the 'Infrastructure and Collaboration', 'Liveability' and 'productivity' directions of the Region Plan.

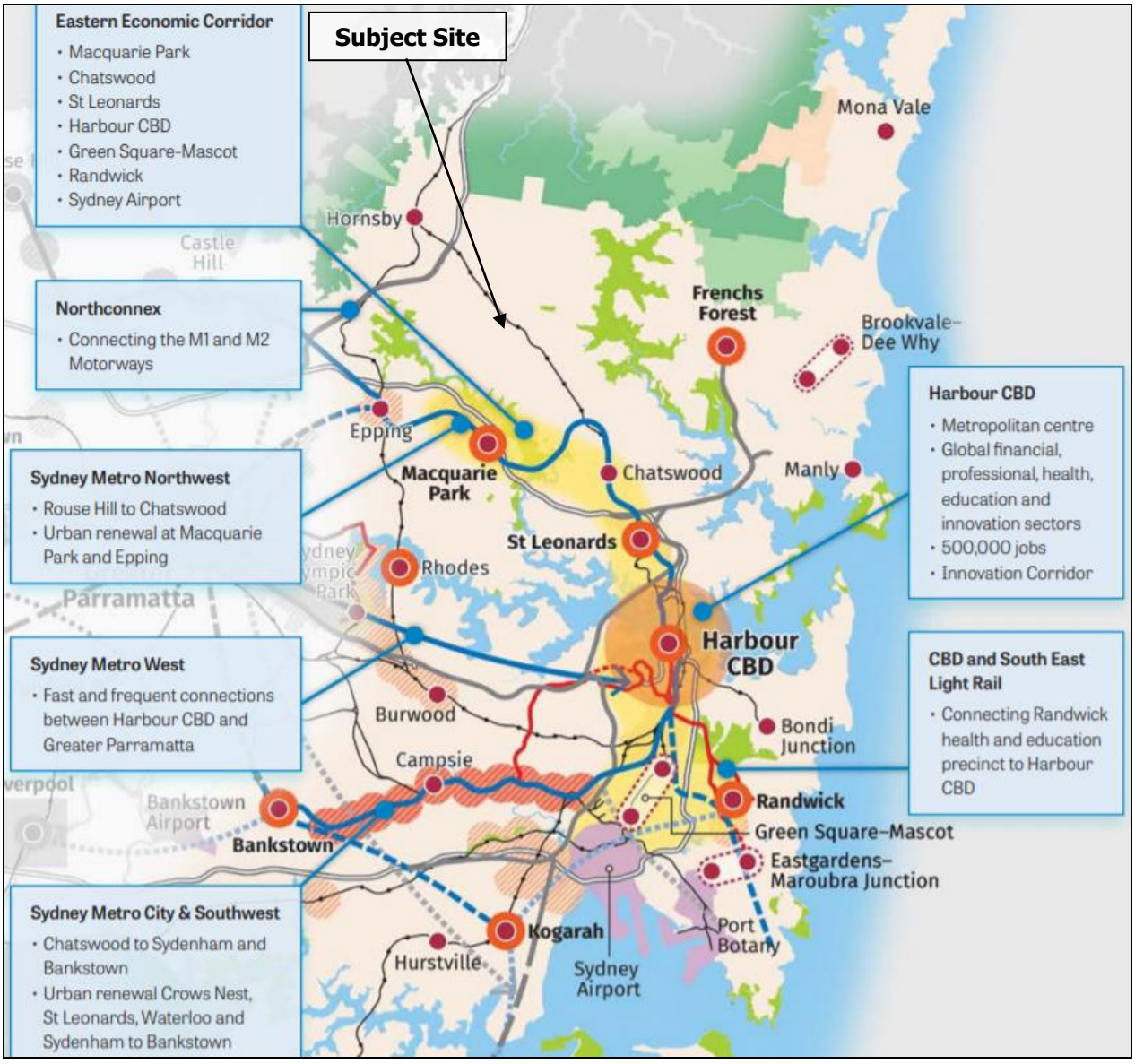

Figure 16. Greater Sydney Region Plan – Eastern Harbour City (GSC 2017)

5.7 NORTH DISTRICT PLAN

The *North City District Plan* (District Plan) forms a 20 year plan to manage growth in the context of economic, social and environmental matters. The District Plan has been designed to provide a 'bridge' between regional and local level planning, and assist in the implementation of strategic envisioning.

The site and Ku-ring-gai are situated in the North District, which is recognized as a growing district with thriving centres and outstanding natural assets. The District Plan acknowledges that growth and demographic change must be complemented by transport, hospital, schools, infrastructure, services, affordable housing and open spaces, whilst also prioritising culture, heritage, creativity, environmental sustainability and the natural environment.

Overall, 196,000 additional people, 21,900 additional school students (including 21,900 in Ku-ring-gai) and 92,000 dwellings are projected for the North District by 2036.

The District Plan establishes a number of priorities and actions to guide growth, development and change, relating to infrastructure and collaboration, liveability, productivity and sustainability. The priorities and actions relevant to the site, wider Ku-ring-gai LGA and proposed development, are discussed as follows.

Infrastructure and Collaboration

Additional infrastructure and services are required to support Sydney's growth, and in turn infrastructure investment will contribute to the shape and connectivity of Greater Sydney. Planning for infrastructure requires coordination across all levels of government, industry and the community. Infrastructure that is planned to support orderly growth, change and adaptability, must be delivered and used efficiently. Optimal use of infrastructure increases the capacity to better support communities.

The proposed redevelopment of the Grey House Precinct would optimize the use of existing school infrastructure (being the established College campus) and enable the College to adapt to population growth and changing technologies, learning and teaching methods, student needs and community demands. The proposal would therefore align with Planning Priorities N1 and N2, as they relate to collaboratively planning for infrastructure to support the city.

Liveability Priorities

Infrastructure (including social infrastructure) and services are required to be coordinated with place-based planning to create and renew great places, neighbourhoods and centres. The 30-minute city aspiration will guide locations for new jobs, housing, transport, health, schools and social infrastructure investments.

In accordance with the District Plan's priorities for liveability (including Priority N3), the proposed school facilities would provide renewed social infrastructure to meet the evolving needs of the established local community. The provision of contemporary and flexible learning spaces within the grounds of the established College represents the innovative and efficient use of land that is promoted by the District Plan. By opening some facilities for use by the wider community, the proposal would promote social connectivity and extended benefits to the surrounding neighbourhood, which is also promoted in Priority N3.

Productivity Priorities

In the North District, productivity is to be achieved through the delivery of integrated land use and transport planning and a 30 minute city (Priority N12). Priority N9 specifically promotes growth and investment in education and health.

Although not forming part of a health and education 'precinct', the proposal would support the investment in education within the North District, and would also generate employment during both construction and

operation. By assisting in the fostering of world class educations for pre, primary and secondary school students, the proposal would underpin long-term productivity potential.

Sustainability Priorities

A commitment to sustainability requires the incorporation of natural landscapes in urban areas, protecting natural systems, maintaining green infrastructure, efficiently managing use of energy, water and other resources, and building community resilience. In conjunction with growth, sustainability may be fostered through improved building and precinct design and planning, efficient delivery of energy and water infrastructure, and innovative approaches to waste management.

The proposed development has been designed in accordance with principles of ESD, incorporating both active and passive design features to maximise energy and water efficiency and create highly-amenable indoor and outdoor learning environments. The layout and multi-storey design of the school make efficient use of land, respond to topography, and maximise the open space and natural vegetation retained across the College site.

5.8 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN PRINCIPLES

The *Crime Prevention Through Environmental Design Guidelines* (CPTED) were prepared by the NSW Police in conjunction with DPIE. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods'. The main aims of CPTED are to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and encouraging the general public to become active guardians; and
- Increase the perceived risk involved in committing crime.

The CPTED Guidelines provide four (4) key principles to limit crime, being:

- Surveillance;
- Access Control;
- Territorial re-enforcement; and
- Space/activity management.

Principle 1 – Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The proposed development orientates indoor and outdoor areas and incorporates transparent materials and finishes where appropriate, so as to promote passive surveillance within the College but achieve appropriate privacy with respect to external receivers;
- Building openings and active areas have been designed and located to achieve an appropriate level of visibility from other areas of the College;
- The proposal utilises low-level landscaping in appropriate locations to ensure there is no obstruction of surveillance opportunities; and
- External security lighting will be appropriately located and controlled so as to enable the maintenance of sight-lines and surveillance after dark, whilst not causing light spill or glare for neighbouring properties.

Principle 2 – Access Control

Access control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- During and after school hours, access would be allowed via secure access points only (in accordance with the existing access control implemented by the College);
- Being situated wholly within the boundaries of the existing College site, the proposal would benefit from the existing fencing and gates, thereby avoiding the need for excessive fencing; and
- Directional signage and design features would facilitate legibility and direct all site-users to the appropriate access points and areas of the College.

Principle 3 – Territorial Reinforcement

- The provision of boundary treatments will emphasise the separation between the private and public realm; and
- Well maintained planters, gardens and pavers will indicate the development is well-used and cared for to reduce criminal activity.

Principle 4 – Space Management

- Space management strategies to be implemented include activity coordination, site cleanliness, rapid repair of vandalism, rapid removal of graffiti and the replacement of decayed physical elements;
- Landscaping and paved areas will be well maintained;
- Continued repairs and maintenance will discourage vandalism;
- High quality materials, varied façade treatments and landscaping along boundaries will assist in discouraging vandalism and graffiti.

Accordingly, through the integration of CPTED in design, the new school facilities within the established College, have been planned to deter crime.

5.9 HEALTHY URBAN DEVELOPMENT CHECKLIST

The *Healthy Urban Development Checklist* was published by NSW Health to promote a practical understanding of the ways in which a well-designed built environment can help reduce health risks and improve health outcomes. Creating built environments that encourage people to walk, cycle, take part in physical activity, use public transport and interact with community members, can contribute to lifelong health and wellbeing. In contrast, poorly designed built environments can have negative effects on the physiological, psychological and social wellbeing of communities.

The proposed development is considered to be consistent with the *Healthy Urban Development Checklist* as applicable to design and planning for schools, for the following reasons:

- The proposed Grey House Precinct incorporates multiple areas of useable outdoor space conducive to a variety of active and passive, structured and 'free' activities. Physical activity, incidental exercise and access to fresh air and the outdoors, would therefore be promoted for students during and outside of school hours.

- The sharing of the College facilities would extend these benefits to the wider community.

- The College forms part of an established urban area (being an established land use itself), and is highly accessible by active travel modes including walking, bus services and train. Active travel modes promote physical activity in the form of incidental exercise for students, and also have significant environmental benefits associated with reduced car use and reduced greenhouse gas emissions.

- The proposal would provide vital social infrastructure to support the sustainability, amenity and functionality of Sydney's growing communities.

- The community use of some of the College facilities would allow the College to function as a 'social connector' for the wider community, fostering social cohesion.

- The architectural and landscape design of the Grey House Precinct offer flexibility and adaptability, allowing indoor and outdoor spaces to be used for a variety of purposes by a variety of user-groups with diverse needs.

- Similarly, the design and layout of the school would create healthy environments in which to teach and learn with spaces benefitting from natural ventilation, excellent daylight, glare control, acoustic and thermal comfort.

- The overall health of the environment would be supported through the design of the development in accordance with principles of ESD, incorporating both active and passive design features to maximise energy and water efficiency.

- Landscape design and planting would promote access to nature for students, the health benefits of which are widely recognised.

Accordingly, the proposed school facilities would support the health of future students and teachers, the wider community and the environment.

5.10 BETTER PLACED – AN INTEGRATED DESIGN POLICY FOR THE BUILT ENVIRONMENT OF NSW

Better Placed is the NSWGA's integrated design policy for the built environment of NSW. It seeks to provide a clear approach to underpin good design in architecture, public places and environments, to realise positive outcomes for the places people live, work and play, both now and into the future. Good design is recognised as producing social, environmental and economic benefits.

The following seven (7) distinct objectives have been created to define the key considerations in the design of the built environment:

- Better fit – contextual, local and of its place
- Better performance – sustainable, adaptable and durable
- Better for community – inclusive, connected and diverse
- Better for people – safe, comfortable and liveable
- Better working – functional, efficient and fit for purpose
- Better value – creating and adding value
- Better look and feel – engaging, inviting and attractive

The design of the Grey House Precinct has responded to these objectives, as described in the following paragraphs.

Better Fit

Good design in the built environment is informed by and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, and communal aspirations. It also contributes to evolving character and setting.

The design of the Grey House Precinct has been informed by its context, considering both the established character of the College and the leafy residential area outside of the College boundary.

In particular, a contextual response to the existing character (natural and built) of the site, is the stepped design of the built form such that it follows the natural topography of the land and is partly recessed into the slope. As well as responding to the natural topography and allowing the building to remain below the tree canopy, this design response ensures that the visual scale of the development is similar to the

existing buildings on the site and appropriately transitions to the dwellings in the neighbouring residential area. Façade articulation and building modulation similarly break-down the visual scale of the development and respond to the local character.

Landscape design is also integral to enabling the Grey House Precinct to integrate with the leafy character of the area. Vegetation planting adjacent to the site boundaries coupled with planting on the building structure, will soften views toward the site and enhance the canopy cover in this region of the College.

Better Performance

Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.

The proposed development has been designed in accordance with principles of ESD, incorporating both active and passive design features to maximise energy and water efficiency and create highly-amenable indoor and outdoor learning environments.

The layout and multi-storey design of the building make efficient use of land, respond to topography, and maximise the open space and natural vegetation retained across the College site. Landscape design responds to local character and ecology. Extensive vegetation planting will improve the biodiversity and tree canopy of the site.

Further, the proposed new school facilities support social sustainability through the provision of essential educational facilities for the area's growing communities. The proposal would provide modern, technologically-equipped, energy-efficient and flexible facilities. Accordingly the proposal would support the unique requirements of the College's population, be conducive to creative and innovative teaching and learning models, and accommodate emerging, innovative techniques. Through providing opportunities for the shared use of some facilities by the wider community, the proposal would also multiply the social benefits offered by the investment.

Better for Community

The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.

Through architectural design, the College integrates flexibility and adaptability, allowing indoor and outdoor spaces to be used for a variety of purposes by a variety of user-groups with diverse needs. Accessible design would ensure the creation of an equitable environment.

The shared use of some facilities would allow the College to function as a 'social connector' for the wider community, fostering social cohesion and providing wide-ranging benefits beyond the immediate student-base.

Better for People

The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.

The proposal has been designed to provide a highly amenable environment of flexible indoor and outdoor spaces for students, staff and the wider community. The design and layout would create healthy environments in which to teach and learn with spaces benefitting from natural ventilation, solar access, glare control and thermal comfort. Significant areas of useable outdoor space and innovative landscape

design would support a variety of active and passive, structured and 'free' activities. The College would therefore support the holistic wellbeing of its users.

Accessible design would also ensure that all spaces are useable by all people, without discrimination owing to any unique physical needs. The incorporation of CPTED principles in design will similarly support the safety and security of all site-users, including those members of society whom may be considered more vulnerable.

Better Working

Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to changes over time. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.

The proposed school facilities would provide modern, technologically-equipped, energy-efficient and flexible facilities. Accordingly, the proposal would support the unique requirements of the College's population, be conducive to best-practice teaching and learning models, and accommodate emerging, innovative techniques.

The proposal would also present opportunities for shared use of its facilities by the wider community, thereby enhancing the efficiency and functionality of the investment.

Better Value

Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.

The value associated with the proposed development would be multiplied through planning and design such that the College provides needed social infrastructure that is also energy efficient and designed in accordance with principles of ESD. The social and economic benefits associated with the Grey House Precinct would be secured now and into the future through the incorporation of flexible and adaptive spaces suited to a variety of users (including the wider community through shared use of College infrastructure), innovative teaching models and emerging technologies.

Better Look and Feel

The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings. The visual environment should contribute to its surroundings and promote positive engagement.

The architectural design creates an aesthetically-pleasing environment defined by visual interest created through façade modulation, varied roof forms, design features and landscaping. The scale of various elements has considered end-users to ensure spaces 'feel' comfortable and are enjoyable to use.

Outside, landscape design has defined a number of active and passive recreational areas, and promotes the 'channelling' of movement through the site.

Overall, the design and planning of the Grey House Precinct have focused on the creation of a 'sense of place' with each of the spaces, though diverse, complementary and contributary to a cohesive College identity.

Whilst focusing on the College as a 'place', it has also been considered in light of the surrounding context. As described above with respect to 'better fit', the Grey House Precinct seeks to respond to local

character, past, current and future. Through attention to architectural and landscape design, the proposal will effectively integrate with its context.

Robust, long-lasting construction materials, low energy use, and water and waste recycling, will ensure the low maintenance and running cost of the College.

5.11 DRAFT GREENER PLACES DESIGN GUIDE

The draft *Greener Places Design Guide* was developed by the NSWGA and was placed on public exhibition from 25 June 2020 to 28 August 2020. The Guide framework provides information on how to design, plan, and implement green infrastructure in urban areas throughout NSW.

The major components that make up the green infrastructure network fall into three (3) categories:

- Open space for recreation: green infrastructure for people;
- Urban tree canopy: green infrastructure for climate adaptation and resilience; and
- Bushland and waterways: green infrastructure for habitat and ecological health.

In accordance with the strategies for recreational open space, the proposal incorporates a range of innovatively designed outdoor spaces on every level of the building in a variety of formats including ground level play space, COLAs, courtyards, terraces and within the atrium. The proposed outdoor spaces create opportunities for integrated learning and passive and active recreation, and promote physical activity, social interaction, engagement with the environment and access to fresh air, sunlight and the natural environment.

The proposal would also enhance the urban tree canopy, through high quality landscaping and new tree planting, with a focus on native species endemic to the area.

Given the proposal relates to an established school site, the land to be developed is not an existing bushland area or waterway. More densely vegetated 'bushland' areas of the site would remain unaffected by the proposal. During construction, mitigation measures would be implemented to prevent off-site impacts that may otherwise have potential to impact on any nearby bushland or waterways.

5.12 KU-RING-GAI COMMUNITY PARTICIPATION PLAN

The *Ku-ring-gai Community Participation Plan* (CPP) details how and when Council will engage with its community across the planning functions it performs. The objectives of the CPP are as follows:

- To provide transparency and accountability on planning projects and policies by undertaking consultation in an appropriate manner and timeframe;
- To deliver planning outcomes that reflect and cater for the long term needs of Ku-ring-gai's changing community;
- To enable public participation in the planning process that is appropriate to the type and form of development proposed;
- To ensure a consistent, transparent and efficient development assessment process;
- To meet statutory obligations regarding notification, exhibition and decisions of Council on relevant planning matters as they might change from time to time;
- To provide the community the opportunity to shape the future of Ku-ring-gai.

Given the proposal is SSD, it is acknowledged that consultation, including with government agencies and the community, will be undertaken by DPIE. Notwithstanding, initial consultation with the local community has been initiated by the College, as described in **Part G** of this EIS.

5.13 KU-RING-GAI LOCAL STRATEGIC PLANNING STATEMENT

Ku-ring-gai Local Strategic Planning Statement (LSPS) plans for the community's economic, social and environmental land use needs for the next 20 years. The LSPS identifies the special characteristics and community values that are to be maintained and enhanced, and outlines how growth and change will be managed into the future – such as where future housing, jobs and services will be located and what infrastructure, community facilities and open space, will be needed to support future growth.

In accordance with Priority K1, the proposed new school facilities would provide local infrastructure to support growth and change. The renewal of an underutilized area of the existing College represents a well-planned and sustainable approach to infrastructure provision, and would ensure the College is able to continue servicing its important role in the community as a provider of education (and associated sporting, recreational and other co-curricular) services.

In this, the proposal would also achieve Priorities K14 and K14, given that educational, sporting, recreational, open space, cultural and community facilities would be delivered in order to foster learning, creativity, health, culture and social connectedness, for the student and staff population of the College as well as for the wider community.

The delivery of new school facilities within the grounds of the existing College would also promote the conservation of local character, heritage, landscapes and biodiversity, in accordance with Priorities K12 and K13. As well as avoiding the need to develop additional land outside of the site boundaries, the architectural and landscape design of the development have sympathetically considered the natural and built environments, including the nearby heritage conservation area. Sustainability, with regard to biodiversity protection, an increased urban tree canopy, integrated water and landscape solutions, water resource recovery, energy conservation, reduced emissions, waste reduction, and design for climate change and hazard resilience, respond to Priorities K27 – K43.

Further, the proposal would support Productivity Priority K26 through the generation of employment during construction and the ongoing life of the project.

5.14 DRAFT KU-RING-GAI HOUSING STRATEGY

The draft *Ku-ring-gai Housing Strategy* (LHS) was initially exhibited until 08 May 2020, and was then presented to Council in July 2020 at which time Council voted to defer the LHS for two (2) months in order to seek advice from DPIE on proposed housing targets for Ku-ring-gai, and also to further consider community feedback.

At the 22 September 2020 meeting, Council initially voted to adopt the recommendations of a Mayoral Minute concerning the LHS, but this decision was overturned by a recission motion. The matter was again considered at the 22 October 2020 meeting, at which time Council voted not to proceed with increased heights or new zonings, and instead adopt a LHS that would provide new housing to the year 2036 from existing capacity within Ku-ring-gai's current planning controls.

The LHS was amended accordingly, and submitted to DPIE on 14 December 2020 for review and approval.

The LHS sets out a broad vision and makes recommendations for housing provision in the Ku-ring-gai LGA for the 20 year period from 2016 to 2036, in order to accommodate the projected growth of over 25,000 people and over 10,600 dwellings.

Whilst the proposal would not increase student and staff numbers associated with the existing Kindergarten to Year 12 streams of the College, the proposed new facilities would serve an important role in better accommodating the existing student and staff population, given the ongoing need for school places and job opportunities as the population grows.

The proposed ELC would more directly support the growth projected for Ku-ring-gai, through the opening of new child care places (noting that the College does not currently incorporate an ELC).

Further, the community use of some of the College facilities would extend the benefits of the development to the wider, growing local community.

The proposal would therefore assist in supporting the growth that the LHS seeks to accommodate.

5.15 KU-RING-GAI COMMUNITY STRATEGIC PLAN 2038

Ku-ring-gai Community Strategic Plan 2038 (CSP) establishes the vision of Ku-ring-gai as 'a creative, healthy and liveable place where people respect each other, conserve the magnificent environment and society for the children and grandchildren of the future'. The CSP includes six (6) themes, as follows:

- Community, People and Culture;
- Natural Environment;
- Places, Spaces and Infrastructure;
- Access, Traffic and Transport;
- Local Economy and Employment; and
- Leadership and Governance.

Responding to the CSP theme of 'places, spaces and infrastructure', the proposal would deliver vital educational infrastructure, reinforcing the identity and place of the College in the community, and solidifying the image of Ku-ring-gai as a highly liveable, amenable and well-serviced community. At the same time, by renewing an area within the existing College grounds, the proposal would respect surrounding heritage, natural environments and local character. Through high quality architecture, urban design and landscaping, the proposal would positively contribute to the visual character and quality of Ku-ring-gai's urban environment.

The proposal would also reconcile with the balance of the CSP themes, given that:

- Benefits would be extended to the wider community through the opening of some of the proposed facilities and the ELC for community use;
- The development would be designed in accordance with the principles of ESD and would incorporate high quality new landscaping to improve the natural environment of the site;
- The proposal would generate minimal additional traffic and would make use of the existing access arrangements and active transport networks servicing the site; and
- Jobs would be generated though construction and sustained through the operational life of the project.

Accordingly, the proposal would align with, and contribute to the realization of, the vision for Ku-ring-gai as established in the CSP.

PART F KEY ASSESSMENT ISSUES

6.1 OVERVIEW

The proposed built form has been designed with respect to the operational requirements of the College in order to provide modern, high standard, adaptable and sustainable educational facilities to meet the needs of the current and future student and staff population together with the wider community. The planning and design of the proposed Grey House Precinct within the established College grounds, have been closely informed by built and natural site characteristics, the character of the surrounding area, and the amenity of adjoining residences.

These key considerations, together with the requirements of the SEARs, have been incorporated into the built form, urban design and landscape scheme for the Grey House Precinct. Key assessment items are addressed in the following sections of this EIS.

6.2 BUILT FORM AND URBAN DESIGN

The proposal demonstrates good design including with respect to built form, architectural expression, urban design, landscaping and site layout. This 'good design' has been developed in conjunction with the NSW State Design Review Panel (SDRP) process (refer details of consultation in **Part G** of this EIS) and has been acknowledged by the Government Architect NSW (GANSW).

An assessment of the proposed development relative to the site context is provided below.

6.2.1 BUILDING ENVELOPE

The height, density, bulk, scale and setbacks of the proposal respond to the surrounding context, including in relation to the existing buildings and open spaces within the College, the topography of the land and location of significant trees within the site, adjoining residences, and the surrounding area.

The five (5) storey built form has been stepped in accordance with the natural topography of the land and recessed into the slope, which has effectively reduced the visual scale of the development. As such, and as demonstrated in the Elevations and Cross-Sections within the Architectural Drawings and Visual Impact Assessment (**Appendices 8** and **10**), the proposal would generally exhibit the appearance of a three (3) storey building from most vantage points, and would be consistent with the visual scale of established built form across the College site.

The overall appearance of the density, bulk and scale of the development has been managed through façade articulation, appropriate massing of different building elements, the equitable treatment of level changes to create appropriate transitions across the grounds, and landscaping to soften the appearance of built form. In particular, roof levels and the scale of building elements has considered the perspectives of future users (including small children) so as to create an environment that is 'friendly', relatable and unintimidating.

Further, the scale of the proposed development, coupled with the proposed boundary setbacks and landscaping, would appropriately relate to the neighbouring residential area with respect to visual transition and amenity.

The proposed building envelope, complemented by appropriate siting, architectural design and landscaping, thereby provides a positive contribution to the site and surrounding area. This is achieved whilst ensuring the Grey House Precinct is capable of meeting the operational brief and providing a functional, highly-amenable learning environment for students and teachers.

6.2.2 SITE LAYOUT

The site layout, including the positioning of entries/access points, buildings, play areas and site infrastructure, responds to the characteristics of the site and surrounding context as well as to the functional requirements for the College's operations.

Key considerations informing the proposed site layout include the existing College buildings and open spaces, local topography, mature trees, the character of the surrounding area, neighbouring amenity, and the amenity of the College for its students and staff.

6.2.3 ARCHITECTURAL EXPRESSION

The architectural expression of the built form creates visual interest, forms the impression of a 'welcoming' environment, simultaneously contributes to high levels of amenity and environmental performance for the College, and responds to local character.

Building articulation, which contributes to positive aesthetics and creates a 'human' scale to the development, has been achieved through the inclusion of a central atrium and two (2) distinct but unified building wings, appropriate massing of different building elements, courtyards and terraces, clearly defined building entries, glazing, and the use of a variety of materials and finishes.

The proposed materiality complements the existing buildings within the College and enables the development to integrate with its leafy surrounds. Further detail is provided within the Architectural Design Report at **Appendix 9**.

6.2.4 URBAN DESIGN

Further to the above, the proposed development delivers a high quality urban design outcome, achieved through architecture and landscaping that is attentive to the spaces between buildings and the relationship of individual elements with the site overall. Similarly, consideration of the adjoining properties, has contributed to the College providing a positive interface with its surrounds.

6.2.5 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

CPTED Guidelines were prepared by the NSW Police in conjunction with DPIE. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods'. The main aims of CPTED are to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and encouraging the general public to become active guardians; and
- Increase the perceived risk involved in committing crime.

The CPTED Guidelines provide four (4) key principles to limit crime, being:

- Surveillance;
- Access Control;
- Territorial re-enforcement; and
- Space/activity management.

Principle 1 – Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The proposed development orientates indoor and outdoor areas and incorporates transparent materials and finishes where appropriate, so as to promote passive surveillance within the College but achieve appropriate privacy with respect to external receivers;
- Building openings and active areas have been designed and located to achieve an appropriate level of visibility from other areas of the College;
- The proposal utilises low-level landscaping in appropriate locations to ensure there is no obstruction of surveillance opportunities; and
- External security lighting will be appropriately located and controlled so as to enable the maintenance of sight-lines and surveillance after dark, whilst not causing light spill or glare for neighbouring properties.

Principle 2 – Access Control

Access control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- During and after school hours, access would be allowed via secure access points only (in accordance with the existing access control implemented by the College);
- Being situated wholly within the boundaries of the existing College site, the proposal would benefit from the existing fencing and gates, thereby avoiding the need for excessive fencing; and
- Directional signage and design features would facilitate legibility and direct all site-users to the appropriate access points and areas of the College.

Principle 3 – Territorial Reinforcement

- The provision of boundary treatments will emphasise the separation between the private and public realm; and
- Well maintained planters, gardens and pavers will indicate the development is well-used and cared for to reduce criminal activity.

Principle 4 – Space Management

- Space management strategies to be implemented include activity coordination, site cleanliness, rapid repair of vandalism, rapid removal of graffiti and the replacement of decayed physical elements;
- Landscaping and paved areas will be well maintained;
- Continued repairs and maintenance will discourage vandalism;
- High quality materials, varied façade treatments and landscaping along boundaries will assist in discouraging vandalism and graffiti.

Accordingly, through the integration of CPTED in design, the new school facilities within the established College, have been planned to deter crime.

6.2.6 DESIGN QUALITY PRINCIPLES (E-SEPP)

The Design Quality Principles outlined in Schedule 4 of the E-SEPP relate to context, built form and landscape; sustainability, efficiency and durability; accessibility and inclusivity; health and safety; amenity; whole of life; flexibility and adaptivity; and aesthetics. The development has been designed in accordance with the design quality principles, as detailed in the Architectural Design Report at **Appendix 9**.

6.2.7 INTEGRATION OF SERVICES

Services have been integrated into the design of the development so as to contribute to the presentation of a cohesive development.

As detailed in the Services and Infrastructure Assessment (**Appendix 19**), the proposal will require a new substation of 1000kVA to be provided on site and an application for connection has been submitted to Ausgrid. A new Site Main Switchboard will also be provided with the works, as the existing supply configuration is non-compliant.

The delivery of the substation and associated works will be staged as follows:

- Stage 1 – extend existing HV cables to the new substation location and install new kiosk substation adjacent to the existing.
- Stage 2 – Supply new main switchboard and LV cabling from new substation to new Main Switchboard and extend the new submains from the new Main Switchboard to the existing Main Switchboard in the existing buildings.
- Stage 3 – Remove existing substation
- Stage 4 – Supply new LV cabling from new Main Switchboard to new Grey House Precinct building.

The existing water infrastructure serving the site is considered to have adequate capacity to allow for the proposal. An additional 5,000L bugger storage tank and dual pump booster set will be provided to ensure there is potable water for the entire site. The existing two fire hydrants on site are considered adequate.

The existing sewer system is proposed to be used, however the Section 73 process will determine whether the main has adequate capacity as to not affect downstream residents.

6.2.8 LANDSCAPE STRATEGY

The landscape strategy for the Grey House Precinct integrates with the landscape design of the established areas of the College and intertwines with the built form to create flexible indoor and outdoor environments that jointly contribute to the high standard and amenity of the educational establishment.

Landscaping will create useable outdoor spaces for active and passive recreation and learning activities, enable proximity to 'nature', provide access to fresh air and sunlight, and contribute to an attractive visual experience.

As shown in the Landscape Plans (**Appendix 12**) prepared by Oculus, canopy trees would be planted adjacent to the site boundary, to compensate for the trees requiring removal and creating an effective landscape screen for the neighbouring properties. Similar planting of canopy trees, with a focus on native endemic tree species, adjacent to the building facades and outdoor learning areas, would support passive environmental design, create a high level of amenity for the internal and external spaces of the building, soften the appearance of the built form, contribute to the 'green' character of the College site, and increase the urban tree canopy.

6.3 ENVIRONMENTAL AMENITY

The proposed development has been designed to minimise and mitigate potential impacts on the amenity of the surrounding environment. Key considerations include:

- Solar access and overshadowing;
- Acoustic impacts;
- Visual privacy;
- Views and visual impact;
- Wind impacts; and
- Amenity impacts associated with use out of school hours.

Overall, the proposed development secures a high level of amenity for the College whilst maintaining the amenity of surrounding residences. Detailed review of potential amenity impacts associated with the development is provided in the following sections.

6.3.1 SOLAR ACCESS AND CONTROL

The development has been sensitively designed to reduce the extent of overshadowing impacts for neighbouring residences. This has been achieved through stepping the building and recessing the built form into the slope to reduce the effective building height and bulk, significant setbacks from the common boundary to maximise the separation distance between the proposed development and neighbouring properties, and the inclusion of landscaping such that any shadow cast by the building would generally appear as the shade naturally created by trees in a leafy setting (being characteristic of this locality).

As shown in the Shadow Diagrams (**Appendix 8**), *no* additional overshadowing of the adjoining properties would be created prior to 12pm midday on the Winter solstice. As such, the proposal would effectively maintain three (3) hours of solar access between 9am-12pm on the Winter solstice, thereby complying with KDCP.

After 12pm on the Winter solstice, some overshadowing of the adjacent properties would be created, summarized as follows:

- No.59B would be the most affected property, experiencing overshadowing at 12:30pm and 1pm of a section of the backyard and section of the rear building façade. By 2pm, the whole backyard and rear façade would be in shadow, and by 3pm the whole building would be in shadow.
- No.57A would experience overshadowing at 12:30pm and 1pm of a section of the backyard and section of the rear building façade. The extent of shadow would increase at 2pm, and by 3pm most of the backyard and rear façade would be in shadow.
- No.59A would not experience any overshadowing prior to 3pm, at which time some sections of the backyard would be overshadowed. The dwelling would not incur overshadowing.

However, this overshadowing impact would be limited to less than six (6) months of the year. As shown in the Shadow Diagrams, no overshadowing would be created between 9am-3pm on the Summer solstice. On the Spring equinox there would be no shadow created at 12pm, but it is noted that by 3pm No.57A would experience overshadowing of the backyard and rear windows, and sections of the backyards for No.59B and No.53 would be in shadow.

Notwithstanding, as noted above, the limited shadow impact is considered acceptable given that no overshadowing would be created between 9am-12pm at any time of the year for any properties, and compliance with KDCP would be achieved as three (3) hours of solar access would be maintained for all properties.

With respect to the amenity of the College itself, buildings have been designed and orientated to benefit from natural light. To mitigate an excessive sun affect, integrated shading systems have also been incorporated in the design of building facades, roof forms and landscape elements. The architectural project has incorporated 'passive solar design principles' from the outset of the design process.

6.3.2 ACOUSTIC IMPACTS

A Noise Impact Assessment (**Appendix 26**) has been prepared by Pulse White Noise Acoustics, with consideration to the operational and construction phases of the development.

To establish the Rating Background Noise Level (RBL), unattended noise monitoring was undertaken and processed in accordance with Australian Standard 1055 and the NSW Environment Protection Authority (EPA) *Noise Policy for Industry* (NPI, 2017) at the receiver location shown in the following figure (being representative of the location of the nearest residential receivers).

Figure 17. Noise Receivers & Unattended Noise Monitor (Pulse White Noise Acoustics 2021)

A summary of the measured noise levels is provided in the following table.

Table 7. Measured Ambient Noise Levels (Pulse White Noise Acoustics 2021)		
Time of Day	**LA90 (dBA)**	**LAeq (dBA)**
Daytime (7am-6pm)	41	52
Evening (6pm-10pm)	37	49
Night-Time (10pm-7am)	30	46

External Noise Emission Criteria and Impact Assessment

The project-specific external noise emission criteria, in accordance with the NPI, is presented in the following table.

Table 8. External Noise Level Criteria (Pulse White Noise Acoustics 2021)					
Time of Day	**Project Amenity Noise Level LAeq, period (dBA)**	**Measured LA90, 15min (RBL) (dBA)**	**Measured LAeq, period Noise Level (dBA)**	**Intrusive LAeq 15min Criterion for New Sources (dBA)**	**Amenity LAeq 15min Criterion for New Sources (dBA)**
Daytime	50	41	52	46	53
Evening	45	37	49	42	48
Night-Time	40	30	46	35	43

In addition, for sleep disturbance, a maximum noise level criterion of 52dBA LAFmax during the night period at residential receivers, applies.

Based on the assessment of mechanical plant and expected equipment, to achieve compliance at neighbouring residential receivers, acoustic treatment to all equipment would be required. Consideration of the following acoustic treatments is recommended:

- Vibration isolation of the fan from the base building structure utilising a correctly sized isolation mount.
- Installation of Variable Speed Drives.
- In the event the final selection is an inline fan, internally line ductwork or attenuators are recommended; or
- In the case the fan is a roof mounted system, an acoustic screen may be required around the unit to shield noise to adjacent properties.

Based on the location of the dedicated roof plant and number of air conditioning condenser units proposed, recommended acoustic treatments are as follows:

- All plant is to be isolated from the base building structure with a rubber pad.
- Night operation mode must be in operation between 6pm-7am and provide a minimum of 4-5dBA.
- Internally lined ductwork/bends or silencers may be required for the discharge side of all equipment.
- Screening to equipment within the plantroom, including blanking off of inactive louver areas may be required.

For toilet exhaust fans, the following would be required:

- Ventilation plant are to be isolated from the base building structure with a rubber pad.
- Internally lined ductwork on the discharge side of the fan.

Details of acoustic treatment for plant and equipment would be provided during the normal detailed design of the project once plant selections have been finalised.

With respect to road noise, the *NSW Road Noise Policy* (RNP) states that any increase in the total traffic noise level should be limited to 2dB during both day and night-time periods. An increase of 2dB represents a minor impact that is considered barely perceptible to the average person.

It is noted that vehicle access to the College site would continue to be facilitated via the existing access arrangement utilizing Avon Road, with no vehicle movements accessing the Grey House Precinct (during operations). As such, there would not be any noise impact on surrounding receivers resulting from vehicle movements accessing the site.

Noise associated with school activities is not well addressed in NSW, as KLEP2015, KDCP and the NPI are not intended for the application of noise associated with these types of areas. School activity noise is also not listed under Schedule 1 of the POEO Act. In the absence of any applicable acoustic criteria related to the activity noise associated with schools, professional guidance should be sought from the Association of Australasian Acoustical Consultants (AAAC) document *Guideline for Child Care Centre Acoustic Assessment*, which recommends the following criteria for residential receivers:

- Up to 4 hours (total) per day – If outdoor play is limited to no more than 2 hours in the morning and 2 hours in the afternoon, the contributed Leq,15min noise level emitted from the outdoor play shall not exceed the background noise level by more than 10dB at the assessment location.
- The cumulative Leq,15min noise level emitted from the childcare centre shall not exceed 65dB(A), from all activities (including outdoor play), when assessed at the most affected point on any commercial property boundary.
- Where appropriate, assessment should include consideration of noise emission to other sensitive uses including schools, hospitals, places of worship and parks. The cumulative Leq,15min noise level emitted from the child care centre shall not exceed 65dB(A), from all activities (including outdoor play), when assessed at the most affected point on the sensitive property boundary, and shall not exceed 45dB(A) internally, with windows or doors of the sensitive receiver open.

Noise impacts associated with the operation of the Grey House Precinct have been categorized with respect to outdoor play areas, internal areas (classrooms and ELC), dance studios, hall and public address systems, as detailed below.

- Outdoor play areas:

The following table summarises noise levels of students playing in outdoor areas, based on noise measurements taken at other schools.

Table 9. Sound Power Levels for Outdoor Play Activities (Pulse White Noise Acoustics 2021)

Parameter	Octave Ban Centre Frequency, Hz								Overall dBA
	63	125	250	500	1000	2000	4000	8000	
Active Sports Play	85	95	100	104	107	104	98	96	110
Passive Play	79	89	94	98	101	98	92	90	104

Based on the assumptions outlined in the table above, predicted noise levels during the outdoor play times are presented below. The predicted noise levels include the assumption that the play areas are being used simultaneously and that the recommendations included in the Noise Impact Assessment have been adopted.

Table 10. Predicted Outdoor Play Noise Levels (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Max Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	54	Day: 51	No

In summary, predicted noise levels during periods of the day when the outdoor play areas are being used simultaneously, are likely to exceed the formulated noise objectives. This is however considered to be acceptable on the following bases:

- The play areas would only operate at maximum capacity during recess and lunch times. At all other times of the day, the spaces would be used at a very limited capacity.
- Noise from the use of the external play areas would be limited to short periods of daytime hours.
- The outdoor play areas are not proposed to be used by the wider community.
- To further mitigate noise, it is recommended to include a 1.5m high solid barrier to the perimeter of the level 2 external play area.
- In a NSW Land and Environment Court (LEC) proceeding on 22 October 2009, the Court noted *'all noise that emanates from the normal activities at a school is not offensive'.*

Accordingly, the noise impact resulting from the use of the proposed external play areas would not result in unacceptable or offensive noise levels on the residential receivers to the south of the site, and is therefore considered to be acceptable.

- Internal areas (classrooms and ELC):

The assessment of noise impacts from the use of internal areas such as classrooms and the ELC, has adopted a worst-case scenario based on a high noise activity with a sound pressure level within the internal rooms of up to 75dB(A), with windows open. Predicted noise levels at surrounding receivers are summarised in the following table.

Table 11. Predicted Noise Levels from Internal Areas (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to	37	Day: 46	Yes

the south of the site			

Accordingly, noise impacts from the internal areas (classrooms and ELC) would comply with the relevant noise criteria.

- Dance studios:

The assessment of noise emissions from the dance studios has included the recommended building treatments and management controls, including the following:

- Internal noise levels within the dance studios will include shouting and the playing of amplified music with an expected internal noise level of 100dB(A) LAeq Sound Pressure Level.
- External glass to the dance studios to include a minimum of 10.38mm laminated glass with a minimum acoustic performance of Rw 35.
- During periods when the dance studios are being used for high noise generating events such as the playing of amplified music, the external façade elements are to be closed.

The predicted noise levels at surrounding receivers are provided below.

Table 12. Predicted Noise Levels from Dance Studios (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	41	Day: 46	Yes

Accordingly, noise impacts from the dance studios would comply with the relevant noise criteria.

- Hall:

The assessment of noise emissions from the hall has included the recommended building treatments and management controls, including the following:

- The proposed hall is to be used for regular school activities during typical school hours as well as out of school hours activities.
- External glass to the hall to include a minimum of 6.38mm laminated glass with a minimum acoustic performance of Rw 30.
- Internal noise levels within the hall will include amplified speech and music with an expected internal noise levels of 90dB(A) LAeq Sound Pressure Level.
- During events which create these noise levels, all windows and doors will be required to remain closed.
- All external openings are to be closed when the hall is in use after 7pm.

The predicted noise levels at surrounding receivers are provided below.

Table 13. Predicted Noise Levels from Hall (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	37	Day: 46 Evening: 42	Yes

Accordingly, noise impacts from the hall would comply with the relevant noise criteria.

- Public address systems:

The location and design of any public address/bell system has not been finalised. As such the following acoustic design is recommended to be incorporated during the design phase:

- Noise levels at surrounding residents should not exceed the RBL + 10dBA criteria. This would equate to the following sound pressure level at 5m:
  - To the southern external areas are the building: 59 dB(A) at 5m.
  - To the eastern and western external areas are the building: 61 dB(A) at 5m.
  - Other areas of the building externally: 67 dB(A) at 5m.
- As a design principle, to minimise noise spill on surrounding receivers, more speakers operating a lower noise level is an effective way of controlling noise spill.
- Directional speakers located in the correct locations angled away from the residential residence to the south, will also reduce noise spill.

Noise Intrusion Criteria and Impact Assessment

Internal noise levels within the proposed building have been assessed in accordance with the recommended internal noise levels included within Table 1 of the AS/NZS 2107:2016 standard.

To achieve compliance with the noise intrusion criteria, the Noise Impact Assessment provides recommendations for façade acoustic treatments, glazing, external wall construction and external roof construction.

Further, the RNP recommends that a school playground should have traffic noise levels which are below 55dBALAeq (15hour) when in use.

Measured onsite noise levels indicate that compliance with the 55dBA objective would be achieved without the need for acoustic screens to control noise in external play areas.

Vibration Criteria

Vibration effects relating to human comfort, are taken from the *Assessing Vibration – A Technical Guideline* (AV-TG), which further classifies continuous vibration, impulsive vibration and intermittent vibration.

It is expected that the human comfort criteria would be more stringent than that corresponding to building damage. Therefore, compliance with the human comfort criteria would also achieve compliance with building damage criteria.

Construction Noise Criteria and Predicted Noise Emissions

Noise criteria for construction and demolition activities are discussed in the *Interim Construction Noise Guideline* (ICNG). The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses.

Noise Management Levels (NMLs) are outlined in the following table.

Table 14. Noise Management Levels (Pulse White Noise Acoustics 2021)

Receiver Type	**NML, dBA LAeq,15minute**
Residences (measured externally)	Standard hours (noise affected): 51
	Standard hours (highly noise affected): 75
	Outside standard hours: RBL + 5dB
Classrooms and other educational institutions (measured internally)	45
Offices and retail outlets (measured externally)	70

Predicted construction noise levels are presented below for the surrounding residential receivers to the south.

Table 15. Predicted Construction Noise Levels (Pulse White Noise Acoustics 2021)			
Phase	**Aggregate Sound Power Level dBA re 1pW**	**Predicted Combined Noise Level at Receiver dBA LAeq15min**	**Criteria**
Site establishment works	113	57-76	Standard hours (noise affected): 51 Standard hours (highly noise affected): 75
Ground works and demolition	119	62-81	
Structure	117	62-80	
Internal works	109	53-71	
Common and external works	117	61-79	

Works are predicted to have the potential to exceed the internal NML when working near a receiver. Management of construction noise including community engagement is required, as detailed in the Noise Impact Assessment.

Construction Vibration Criteria

Effects of ground borne vibration on buildings may be segregated into three (3) categories; human comfort (taken from AV-TG), effects on building contents (taken from BS 7385: Part 2-1993 and DIN 4150: Part 3-1999), and effects on building structures (also taken from BS 7385: Part 2-1993 and DIN 4150: Part 3-1999).

In order to maintain compliance with the human comfort vibration criteria, it is recommended that safe distances should be validated prior to the start of construction works by undertaking measurements of vibration levels generated by construction and demolition equipment to be used on site. A Construction Noise Vibration Management Plan should be developed by the building contractor.

6.3.3 VISUAL PRIVACY

The development has been designed to avoid any unacceptable overlooking of the neighbouring properties, achieved through the design and siting of building openings (doors, windows and balconies), setbacks and vegetation planting.

6.3.4 VIEWS

The proposed development would take place wholly within the grounds of the established College, and would of a similar scale to other College buildings which would continue to form a 'backdrop' in views towards the site from the neighbouring properties. New tree planting would ensure the site continues to exhibit a leafy character. Accordingly, the proposal would not cause any view loss and would retain the general visual character of the College site.

Visual impacts are further assessed in the Visual Impact Assessment (**Appendix 10**) prepared by Geoscapes. In particular, potential visual impacts have been assessed for a number of locations along Pymble Avenue and within the C11 conservation area, which are in closest proximity to the development and therefore the most sensitive.

The Visual Impact Assessment finds that the proposed development would create visual impacts to a small number of properties immediately adjacent along Pymble Avenue. Due to the screening created by existing vegetation and owing to their low elevation, many of the properties within the conservation area

would not be adversely visually affected. The conservation area is generally setback from the campus boundary and therefore does not contain the most visually affected properties.

In total, the Visual Impact Assessment judges that two (2) properties would receive high/moderate visual impacts, one (1) property would receive moderate visual impacts, two (2) properties would receive moderate/minor visual impacts, and all other receptors would receive negligible visual impacts. The one (1) property assessed that is located within the C11 conservation area, has been judged to receive only moderate/minor visual impacts, and these are not considered to be significant.

The proposal would provide a high quality new facility which has been designed to be sympathetic to the most sensitive visual receivers along Pymble Avenue. This includes the use of brick, glass and a light open structure to blend a modern design into the federation and inter-war architecture that is prevalent within the College.

Whilst there would be an initial loss of existing mature vegetation within the development footprint, this is proposed to be mitigated through compensatory semi-mature evergreen tree planting. In particular, landscape screen planting along the southern boundary, would play a crucial role in providing visual mitigation and privacy for the adjoining properties. The Visual Impact Assessment concludes that landscape mitigation would effectively filter and screen views of the development.

6.3.5 WIND IMPACTS

A Wind Environment Study (**Appendix 11**) has been prepared by Windtech, to determine wind speeds at selected critical outdoor trafficable areas within and around the proposed development. Test procedures were undertaken in accordance with the *Australasian Wind Engineering Social Quality Assurance Manual* (AWES-QAM-1-2019), ASCE 7-16 (Chapter C31), and CTBUH (2013).
Two (2) scenarios were modelled, as follows:

- Scenario 1: North-western and south-eastern facades Level 3 and 4 atrium space fully *open*.
- Scenario 2: North-western and south-eastern facades Level 3 and 4 atrium space fully *closed*.

The wind testing excluded the effect of any wind ameliorating devices not already shown in the Architectural Drawings, and also excluded the effect of vegetation.

Measured wind conditions were compared against two (2) sets of critiera, for pedestrian safety and pedestrian comfort, respectively. The safety criterion is applied to the annual maximum gust winds, and the comfort criterion is applied to Gust Equivelent Mean (GEM) winds in conjunction with the A.G. Davenport (1972) criteria. The criteria for pedestrian safety and comfort are summarised in the following table.

Table 16. Wind Criteria (Windtech 2021)		
Pedestrian Safety		
Classification	**Description**	**Annual Maximum Wind Gust Speed**
Safety	Safety criteriom applies to all trafficable areas.	23m/s
Pedestrian Comfort		
Classification	**Description**	**Maximum 5% Exceedance GEM Wind Speed**
Long exposure	Long duration stationary activities such as outdoor restaurants and theatres.	3.5m/s
Short exposure	Short duration stationary activities (less than one (1) hour) such as window shopping and waiting areas.	5.5m/s

Comfortable walking	Pedestrian thoroughfares, private swimming pools, communal areas, private balconies and terraces.	7.5m/s

The results of the wind modelling indicate that wind conditions for the majority of trafficable outdoor locations within and around the development, would be suitable for their intended uses. Select areas would however expereince strong winds which exceed the reelvant criteria for comfort.

Accordingly, for any areas exposed to strong winds, in-principle treatments have been recommended based on the worst-case scenario, as follows:

- Ground level:
  - Densely foliating trees capable of growing to 3-4m in height and 3-4m in width, in the south-east of the proposed vegetable garden.
- Level 1:
  - Densely foliating trees capable of growing to 3-4m in height and 3-4m in width, along the south-eastern boundary.
  - Densely folating shrubs capable of growing up to 1.5m in height, within the outdoor learning terrace planter box.
  - 1.5m high impermeable balustrade along the north-eastern and south-eastern boundaries of the outdoor learning terrace.
  - Impermeable awning structure extending out from the level 3 slab, along the south-eastern boundary of the atrium space.
- Level 2:
  - Densely foliating trees capable of growing to 3-4m in height and 3-4m in width, along the north and south of the development.
  - Densely folating shrubs capable of growing up to 1.5m in height, along the north-western and south-eastern boundaries of the development.
  - 1.5-1.8m high porous screens along the north-eastern and south-eastern boundaries.
- Level 4:
  - 1.2m high imperemable balustrade along the north-eastern boundary of the roof terrace.

Any vegetation provided for wind mitigation should be of an evergreen species with dense foliage, to achieve effectiveness throughout the year.

Further, loose glass-tops, lightweight sheets/covers and lightweight furniture, are not recommended for the terraces.

The Wind Environment Study concludes that, with the inclusion of the recommended treatments in the design, it is expected that wind conditions for all outdoor trafficable areas within and around the development, will be suitable for their intended uses.

6.3.6 OUT OF HOURS USE

The proposed development, through flexible and adaptive design, presents opportunities for the shared use of school facilities outside of school hours for co-curricular activities and by the wider community.

Specifically, the intention would be for the ELC, Dance Academy and OSHC holiday care program, to be available for use by the broader community.

Given these uses would be generally consistent with the standard operation of these facilities when used by College students during school hours, no significant or unacceptable amenity impacts are anticipated to arise. The physical design of the development together with the implementation of the Operational Plan of

Management (**Appendix 32**) would suitably safeguard neighbouring amenity including during external use of the proposed Grey House Precinct.

6.4 TREES AND LANDSCAPING

An Arboricultural Impact Assessment (**Appendix 25**) has been prepared by Arborsafe, with respect to the 30 trees located within or adjacent to the development area. The Assessment nominates trees for retention or removal, respectively, and seeks to identify and reduce potential conflicts between trees and the proposed development where possible. Recommendations for tree protection have been provided for trees to be retained.

Retention values were determined based on a modified version of the British Standard *BS 5837-2012: Trees in Relation to Design, Demolition and Construction*, considering a tree's quality (health and structure), life expectancy, physical dimensions, age class, location, and amenity, heritage and environmental significance.

All trees assessed were considered to be planted, not remnant, specimens. In total, 60% were classified as mature trees, with the remainder being juvenile to semi-mature in age. Fourteen (14) trees were native to Australia (including seven (7) endemic to the local area), and the balance were exotic species. All trees were considered common species in the local area and as such hold limited botanical significance. The development area is situated outside mapped areas of biodiversity significance.

Owing to a level of encroachment within the Tree Protection Zone (TPZ) that would detrimentally impact future health and/or stability, in total 29 trees would require removal to facilitate the proposed development, including two (2) high retention value trees, 13 moderate value retention trees and 15 low retention value trees.
One (1) tree would be suitable for retention with generic protection provided. Tree protection measures include the restriction of activities within the TPZ, protective fencing, trunk and ground protection, tree protection signage, involvement from the Project Arborist, project milestones and compliance reporting.

Offset planting is recommended, corresponding with the number of trees removed. Replacement tree species must be selected in consultation with the Project Arborist, to ensure replacement trees species suit their location on the site and are of an appropriate physical size and tolerance to the local environmental conditions. In general, replacement tree species must have the genetic potential to reach a mature size equivelent to those trees to be removed (guide of 10m in height and a spreading canopy).

As shown in the Landscape Plans (**Appendix 12**) prepared by Oculus, canopy trees would be planted adjacent to the site boundary, to compensate for the trees requiring removal and creating an effective landscape screen for the neighbouring properties. Similar planting of canopy trees adjacent to the building facades and outdoor learning areas, would support passive environmental design, create a high level of amenity for the internal and external spaces of the building, soften the appearance of the built form, contribute to the 'green' character of the College site, and increase the urban tree canopy.

6.5 TRANSPORT AND ACCESSIBILITY

6.5.1 OPERATIONAL TRAFFIC

A Transport Impact Assessment (**Appendix 13**) has been prepared by Stantec, and establishes the following primary objectives:

- Ensure the safety of students, parents and staff during the College's hours of operation;
- Ensure that surrounding road users are aware of any proposed changed traffic conditions and that risks are identified and mitigated; and
- Ensure that the impact on the local road network can be minimised through efficient and safe management.

Parking and Drop-Off/Pick-Up

The College currently provides a total of 548 on-site parking spaces, available to staff, visitors, contractors and visitors. The College does not allow students to park within the school grounds. The College also provides an additional four (4) parking spaces for its private buses.

The parking requirements for the Grey House Precinct have been determined based on the rates stipulated in KDCP. The ELC is the only component that would generate additional parking demand, and accordingly parking requirements for the ELC are summarized in the following table.

Table 17. ELC Parking Requirement (Stantec 2021)

Type	Rate	Minimum Requirement
Car parking	1 space per 4 children in care (rate includes staff parking)	23 spaces
Accessible parking (included in total car parking)	2-3% of total spaces	1 space (included in the 23 spaces)
Bicycle parking	No rates specified	NA
Motorcycle parking	No rates specified	NA
Service vehicle parking	No rates specified	No additional servicing bays are required given the servicing demand for the ELC is expected to be minnor and would be catered for by the multiple existing loading docks and service bays within the the College.
Bus parking	No rates specified	No additional bus bays are required given that children attending the ELC would not be expected to travel by bus.

It is proposed to utilize the 38 existing parking spaces (including one (1) accessible space) within the Centenary Car Park, for the ELC. The allocated parking spaces also serve the swim school, however the swim school would not require the use of these spaces during the ELC drop-off (7-7:30am) and pick-up (6-6:30pm) times. Therefore, the shared use of these spaces is considered appropriate and would meet the requirements of KDCP.

The Centenary Car Park is accessible via Gate 3, along Avon Road. A boom gate is currently installed to separate the 38 swim school spaces from the rest of the car park, and would continue to operate in order to reserve the 38 spaces for ELC use only.

Due to the direct connection between the proposed development and Grey House Walk, concerns have been raised from residents that parents may park their vehicles along Pymble Avenue and walk their children to the ELC using the Grey House Walk, rather than parking their vehicles in the Centenary Car Park. Although a valid concern, it is expected that the majority of parents dropping off and picking up their children from the ELC would opt to use the Centenary Car Park due to the following reasons:

- The shortest walking distance from the Centenary Car Park entrance to the ELC has been measured to be approximately 73.3m. This is considerably shorter than the 210m walking distance from Pymble Avenue to the ELC, via the Grey House Walk;
- The Grey House Walk is a narrow pathway which has sections with uneven surfaces and narrower widths due to overgrown vegetation. As such, it is not considered an ideal walking pathway for parents with young children or prams;
- Pymble Avenue, between Rand Avenue and Golfers Parade, is quite steep and will not be ideal for parents with prams;
- The Centenary Car Park provides all-weather parking spaces for ELC drop-off and pick-up;

- The ELC parking area will provide dedicated parking exclusively for ELC parents and staff, as ensured through boom gates;
- An accessible path is provided between the Centenary Car Park and the ELC. A lift is provided within the Centenary Car Park which will allow wheelchair/pram users to travel to/from the car park level and the Grey House Precinct level; and
- Parents will be informed of the Centenary Car Park location, through the orientation process, through information packages and the College website. The College will also encourage drop-off and pick-up to occur in the car park.

In light of the above, the ELC is not expected to have any adverse impact to the existing parking conditions along Pymble Avenue or other adjacent streets.

Traffic Generation

The SSDA does not to increase the existing enrolment capacity for Kindergarten to Year 12, and as such, the ELC is the only component that would generate additional traffic volumes.

Drop-off and pick-up for the ELC is anticipated to be between 7:00-7:30am and 6:00-6:30pm.

Based on the RMS Guide rates for long daycare centres, the proposed 90-place ELC would generate the following number of trips.

Table 18. ELC Traffic Generation (Stantec 2021)		
7-9am	**2-4pm**	**4-6pm**
72 trips	27 trips	63 trips

However, the number of children enrolled at the ELC who would contribute to additional traffic, is expected to be less than 90 children. This is due to the following reasons:

- The primary intention of the ELC is to provide an on-campus early learning/child care centre for staff and allow the College to retain valuable staff who would otherwise find it difficult to return to work after maternal/parental leave. Staff survey results (June 2021) indicated that approximately 32 staff would enrol their children in an on-campus ELC, whilst 42 staff would be interested in enrolling. Assuming that 32 staff enrol their children at the ELC, this portion is not expected to contribute to generating additional traffic;
- Many children who enrol in ELCs which are associated with private schools , typically have siblings attending the school. A survey result undertaken by the College in July 2021, found that approximately 18% of the parents who responded (total of 441 responses) had two or more children attending the College.

Based on the above, the total number of children who would contribute to generating additional traffic is estimated to be approximately 42 children. The resulting reduced traffic generation based on 42 children, is summarized in the following table.

Table 19. ELC Reduced Traffic Generation (Stantec 2021)		
7-9am	**2-4pm**	**4-6pm**
34 trips	13 trips	29 trips

The proposed ELC is expected to add 25 trips to the Pacific Highway/ Beechworth Road intersection and 63 trips to the Pacific Highway/ Livingstone Avenue intersection. This equates to approximately 1 trip every 2.5 minutes and 1 trip every minute for each intersection, which is considered a minor increase in overall traffic.

A 10 year growth scenario was not modelled, as the overall increase is minor, trips are generally spread throughout peak hours, and the SIDRA modelling demonstrates there will be no adverse impacts to existing conditions along Pacific Highway.

Green Travel Plan

A Green Travel Plan (**Appendix 14**) has also been prepared by Stantec and aims to assist the College to proactively manage the travel demand of its staff and students. Its primary aim is to inform delivery and promotion of a variety of transport choices for people who travel to and from the College, so that any negative effects of excess car use are mitigated. The actions within the Green Travel Plan also aim to provide options for students, parents and teachers to counter excessive congestion at the College gate, and to promote healthy, active transport choices such as walking and cycling. The objectives of the Green Travel Plan are:

- Promote actions to raise awareness of students, staff, parents and caregivers of their transport choices for travel to and from the College;
- Identify priority actions to maintain and increase the numbers of students travelling to the College on foot, bicycle, scooter, bus and train;
- Identify priority actions to encourage College staff to consider travelling to College by walking, bicycle, public transport or using these as a component of their journey to and from the College;
- To recommend methods for senior leaders from the College to engage with Council to improve safety and convenience of walking, cycling and public transport options; and
- To document recommended monitoring methods, to continue to promote transport choice among the College community in years to come.

The overall aim of the Green Travel Plan is to decrease the reliance on private motor vehicle movement by implementing and promoting initiatives to encourage alternative modes of travel such as walking, cycling and carpooling.

The Green Travel Plan establishes the following targets:

- Short term targets (first three (3) years):
  - Students:
    - Increase carpooling by 3% per year (ie. increase carpooling to approximately 10% of travel mode).
    - Increase use of private bus services by 1% per year (ie. increase private bus use to approximately 15% of travel mode).
    - Increase use of public and active transport by 1% per year (ie. increase public and active transport to approximately 30% of travel mode).
    - Reduce student driving by 2% per year (ie. reduce student driving to approximately 10% of travel mode).
  - Staff:
    - Increase carpooling by 3% per year (ie. increase carpooling to approximately 6% of travel mode).
    - Increase use of public transport by 1% per year (ie. increase public transport to approximately 10% of travel mode).
- Long term targets (beyond three (3) years):
  - Students:
    - Increase carpooling by 1% per year.
    - Increase use of private bus services by 2% per year.
    - Increase use of public and active transport by 2% per year.
    - Reduce student driving by 2% per year.
    - Reduce single child private vehicle use to less than 10% by 2030.
  - Staff:
    - Increase carpooling by 2% per year.
    - Increase use of public transport by 2% per year.
    - Reduce single staff private vehicle use to less than 50% by 2030.

Key initiatives of the Green Travel Plan relate to the appointment of a Travel Plan Committee and Coordinator, development of a Travel Access Guide for distribution to parents and staff, measuring and monitoring travel behaviour, identifying new private bus routes and staggering private bus services, raising and promoting awareness of active travel options, road safety education, updates to the College website, establishment of carpooling groups, provision of designated drop-off/pick-up for carpooling, and collaboration with the community and Council.

The Travel Plan Committee and Coordinator will be responsible for monitoring and reviewing the Green Travel Plan.

6.5.2 CONSTRUCTION TRAFFIC

A CTMP (**Appendix 15**) has been prepared by Stantec, to assess the impacts that the construction works will have on the existing traffic and transport conditions and describe how these impacts will be managed. The primary objective is to ensure that the construction impacts on the existing traffic and transport network are minimised. To achieve this objective, the CTPMP:

- Provides a summary of the size of construction vehicles to be used during the different stages of construction and estimate the volume of construction vehicle trips during the construction period;
- Identifies the safest and most efficient construction vehicle routes; and
- Identifies and outlines appropriate controls to minimise construction impact to the existing conditions of the road network and overall safety of all road users.

The construction site would be wholly contained within the south-eastern section of the College grounds. Entry and exit for construction and contractor vehicles would be via Gate 3 along Avon Road, with three (3) temporary internal gates (Gate A, B and C) proposed to control access to the site. On-site parking would be provided. The indicative work site, parking and access, are shown in the following figure.

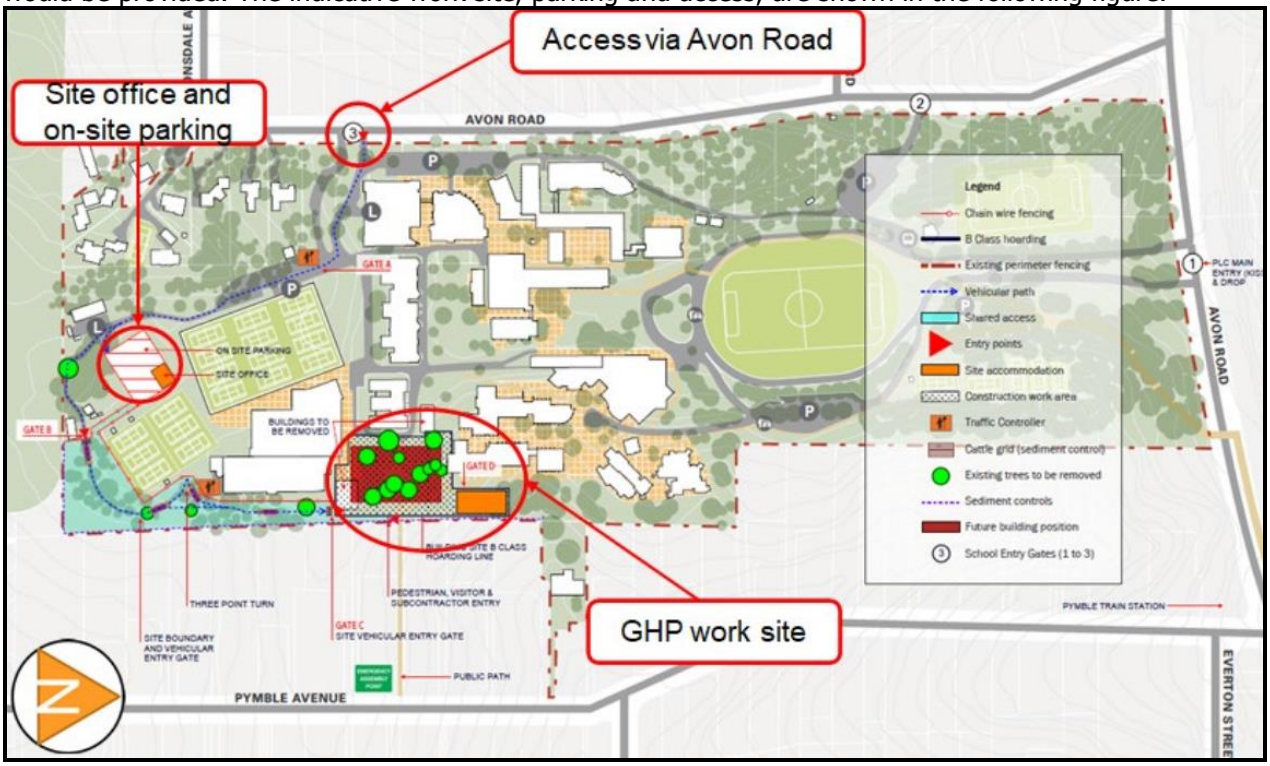

Figure 18. Indicative Work Site, Parking and Access (Stantec 2021)

During the construction works, pedestrian movements around the site would be maintained as much as possible. An accredited Traffic Controller would be on-site to assist in the safety of pedestrians crossing the driveway accesses at Gate 3, to avoid conflicts with entering/exiting trucks. It is anticipated that Grey House Walk would be closed to students, visitors and staff for the duration of the construction period.

This is to ensure safety and divert pedestrian activity away from the construction site. The Grey House Walk would be provided as site access for contractors, allowing the College to separate student/visitor/staff pedestrian movements and contractor movements.

Work zones are not expected to be required, however should a work zone be required then an application would be submitted to Council for approval before commencing any works.

Based on the existing access along Avon Road being suitable for vehicle ingress and egress as well as all works to be located on-site, it is not expected that a Road Occupancy License (ROL) would be required. However, should a ROL be required, a Notice of Intention to Commence (NOITC), Traffic Management Plan (TMP) and Traffic Control Plan (TCP) would be submitted to Council (the Roads Authority).

Overall, it is considered that the traffic generated by the construction, would have minor impacts to the surrounding road network due to the following:

- Contractors are expected to be ready to start work at 7am and thus the majority of worker and contractor movements would occur outside the morning peak;
- Contractors would be encouraged to schedule their shifts to avoid both the morning and afternoon drop-off and pick-up peaks;
- Contractors also tend to start and finish at various times throughout the day, depending on the construction works required, and thus contractor movements are likely to be spread throughout the day;
- Contractors would be encouraged to use public transport and would be informed of the limited parking spaces on-site;
- Heavy vehicle movements would be scheduled outside of College drop-off and pick-up hours to reduce potential conflicts and traffic volumes during these times; and
- Daily movements for heavy vehicles are expected to be spread across the day and thus any additional truck movements would be minor.

It is noted that the detailed CTMP and TCPs will be prepared by the Traffic Management Contractor and submitted separately or approval, prior to the commencement of construction works.

6.6 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

An ESD Report (**Appendix 27**) has been prepared by Stantec to provide an overview of the sustainability initiatives to be incorporated in design. The project would consider and implement appropriate sustainable design principles including initiatives to mitigate the environmental impact through the following:

- Energy & Carbon– including on-site renewable energy and improved energy efficiency across the building.
- Water Management– including water reuse, reduced potable water demand and improved stormwater quality.
- Health & Wellbeing– improving indoor air quality, maximising daylight, and providing comfortable amenities through improved indoor environmental quality features to enhance wellbeing among students and staff.
- Materials– Careful material selection to reduce embodied energy and focus on natural products with biophilic qualities.
- Future Resilience – 100% electric building services design, no fossil fuels burnt on-site within the building.

The design response for the proposed development would consider and implement (where feasible) the relevant ESD requirements and drivers as follows:

- The project would be designed to target an ESD performance level that is comparable to a 5 Star Green Star Design & As Built v1.3 Equivalent standard.

- NCC 2019, Volume 1, Amendment 1, Section J – energy efficiency provisions would likely apply to the design and construction of the development with the intent to ensure the building envelope and associated building services demonstrate a minimum level of energy efficiency performance.
- ESD opportunities and initiatives relate to energy and carbon, water management, health and wellbing, materials, and future resilience.
- The design of the development is responsive to the NARClim projected impacts of climate change, including with respect to temperature and heat projections, rainfall projections and fire projections.
- An Integrated Water Management Plan is incorporated in the ESD Report and outlines measures to reduce the building's overall potable water consumption including through rainwater collection and re-use and water sensitive design initiatives.

The ESD Report concludes that these ESD initiatives together with the benchmarking against Green Star, NARClim design response statement and the Integrated Water Management Plan, demonstrate the development's commitment to reducing its overall environmental impact and represent a holistic approach in relation to long-term sustainability.

6.7 HERITAGE

The site is not identified as a heritage item or conservation area.

Notwithstanding, the SEARs established that the impact of the proposed development on the nearby conservation area must be assessed. Accordingly, a Non-Aboriginal (Historic) Archaeological Assessment has been prepared by Artefact and is provided at **Appendix 23**.

The Assessment concludes that no former structures were identified within the study area and there is nil potential that significant archaeological remains are present within the study area.
The Assessment provides the following recommendations:

- An Unexpected Finds Policy is developed and implemented prior to commencement of ground disturbing works to guide management in the event that relics are identified during ground disturbing works. At minimum this Unexpected Finds Policy would consist of the following points:
    - In the event that archaeological relics are identified in the study area during proposed works, all works in the area must cease. The area must be cordoned off and contact made with a suitably qualified archaeologist so that the archaeological remains can be adequately reported, assessed and managed. If these remains are determined to be of archaeological significance, Heritage NSW must be advised and further investigation and reporting must be carried out in keeping with the *NSW Heritage Act 1977* (Heritage Act) and best practice as outlined in *The Burra Charter 2013*.
    - In the event that human remains are identified in the study area, all works in the area must cease. The area must be cordoned off and NSW police must be immediately contacted. If these remains are determined to be Aboriginal ancestral remains, Heritage NSW and the Metropolitan Local Aboriginal Land Council must be notified. A suitably qualified archaeologist must be engaged to provide management, mitigation and reporting relating to the site.
    - All relevant staff, contractors and subcontractors should be made aware of their statutory obligations for heritage under the Heritage Act and best practice as outlined in *The Burra Charter 2013*. This may be implemented as a heritage induction.

It is anticipated that these recommendations may be included as conditions of consent.

6.8 ABORIGINAL CULTURAL HERITAGE

An ACHAR (**Appendix 22**) has been prepared by Artefact in order to identify Aboriginal cultural heritage values within the study area, conduct consultation with Aboriginal stakeholder groups and to assess impacts to Aboriginal heritage that may result from the proposal.

The assessment found that:

- No previously unrecorded Aboriginal sites or objects were identified within the study area during the site inspection.
- After physical examination of the study area and examination of historical aerial photography, the study area has been assessed as having nil to low potential to retain intact archaeological deposits.
- Consultation with Registered Aboriginal Parties (RAPs) established that there were no social, cultural, historical or aesthetic values associated with the study area.

The ACHAR provides the following recommendations:

- As the study area was found to be disturbed and to have a nil-low potential for Aboriginal objects to be located within it, it is recommended that further archaeological assessment is not required.
- The result of the consultation supports the archaeological assessment of the study area as holding nil-low potential for the preservation of Aboriginal heritage. No further action is recommended.
- If changes are made to the proposal that may result in impacts to areas not assessed by this ACHAR further assessment would be required.
- Unexpected Aboriginal objects remain protected by the *National Parks and Wildlife Act 1974* (NPW Act). If any such objects, or potential objects, are uncovered in the course of the activity, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Metropolitan LALC must be notified.
- If human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity should cease, the site should be secured, and the NSW Police and Heritage NSW should be notified.

It is noted that consultation with the RAPs is ongoing, and consultation with Aboriginal parties will continue at completion of the ACHAR and according to the results of the consultation process.

A meeting was held with Local Elder – Laurie Bimson (Guringai Country) on the 6 September 2021. The meeting assisted in ensuring the design and landscaping appropriately responds to the Indigenous cultural heritage of the area.

6.9 SOCIAL IMPACTS

A Social Impact Statement (**Appendix 31**) has been prepared by Hill PDA, based on analysis of demographic data from the Australian Bureau of Statistics (ABS), Profile.id and DPIE.

Key demographic indicators demonstrate that the suburb of Pymble, compared to Greater Sydney, comprises a higher proportion of school-aged children, higher proportion of family households, higher proportion of employment in the knowledge intensive sectors, most employment is white collar, below average unemployment, and high labour force participation. Overall, the demographics are reflective of a strong school catchment.

With respect to potential sensitive receivers and infrastructure impacts that may arise from proposed development, the report assesses a primary 500m radius and secondary 1km radius. The social impacts to arise from the proposal would be influenced by the present state of the baseline environment, the eventual consequences of the proposed development and measures put in place to mitigate against any negative impacts and enhance positive impacts. Potential impacts arising from the construction and operation of the proposal have been scoped below:

- Way of life:
  - Potential disruption to daily lives during construction (noise and dust), more likely to affect nearby sensitive receivers including residents and on-site school operations. The routine utilisation of some nearby parks may vary due to the reduced amenity.

        - Improved amenity from new facilities, including the ELC, Dance Academy and OSHC holiday care program, for use by the broader community.
- Community:
    - Potential positive impacts to community cohesion through improved access to employment and economic activity.
    - Improved community cohesion through additional facilities located within the proposal, with the ELC, Dance Academy and OSHC holiday care program to be made available to the community.
- Access:
    - Improved access to facilities to be offered within the proposal when completed, including the ELC, Dance Academy and OSHC holiday care program.
    - There may be disruption to services and access during construction (increased vehicle movements, access changes within school, and temporary parking for construction operations). A desktop analysis of the existing College road network indicates current vehicular access to the site would likely be through the Avon Road entrance. There may be impacts to internal road usage, as such a traffic and access management plan is recommended to be prepared including impacts to campus parking and impacts from construction operations. Particular attention should be given to maintaining safe pedestrian connections for students, visitors and employees on site.
- Culture:
    - The site is not identified as a heritage item or heritage conservation area, consequently there are no known potential impacts to Non-Aboriginal heritage.
    - There are no known Aboriginal artefacts present, however a potential unknown artefact may be uncovered during construction. An indigenous heritage due diligence report is recommended.
    - Positive impacts to local culture through improved community access to cultural facilities, specifically the Dance Academy.
- Health and wellbeing:
    - Potential health and wellbeing impacts may result from construction, affecting campus students, particularly in boarding houses to the north and adjoining residential lots to the south, due to noise, air quality impacts, and access changes. It is recommended that a detailed air quality, acoustic and access impact assessment be conducted.
- Surroundings:
    - Preliminary concept designs indicate a proposed building of similar scale to existing surrounding built form, therefore the proposal is unlikely to impact surrounding character.
    - The proposed STEM building on the southern boundary is noticeably higher than the currently existing structures and may potentially cause overshadowing on adjoining southern residential lots as well as disrupt views from those lots. It is recommended that further investigation into overshadowing, privacy and view impacts is conducted.
- Livelihoods:
    - Positive impacts to livelihoods arising from economic activity and direct and indirect employment opportunities during construction and operation.
    - Additional employment opportunities available on site during operation.
- Decision-making systems:
    - Stakeholders affected by proposed works and activities (students, staff and parents; surrounding residents) may feel unable to influence the project and may come forward with queries or concerns about potential impacts. The effective management of community and stakeholder engagement should be considered as part of a construction management plan.

In summary, areas more susceptible to potential impacts are neighbouring buildings within the school campus (including boarding houses) and residential lots to the south. On-campus receivers would potentially experience amenity and access impacts during construction, arising from construction vehicle movement, dust and noise. Neighbouring residential properties are located further away and may be affected by amenity impacts during construction, but in a more limited way.

There are no sensitive receivers within 500m of the site. There are a number of childcare services, parks and places of worship just outside the 500m radius and one (1) community facility to the north, however the likelihood of impact to these services is low.

It is recommended that a Construction Management Plan, incorporating mitigation measures, be prepared to manage construction times, noise and amenity impacts during construction and impacts to surrounding campus activities.

A clear communications process should be established for stakeholder engagement and in relation to construction activities, which identifies the nature of activities requiring surrounding residents to be notified, nominates a point of contact for issues or complaints and establishes a resolution process.

Existing school policies should be updated to incorporate appropriate management procedures for proposed community access arrangements to the ELC, Dance Academy and OSHC holiday care program.

6.10 NOISE AND VIBRATION

A Noise Impact Assessment (**Appendix 26**) has been prepared by Pulse White Noise Acoustics, with consideration to the operational and construction phases of the development.

To establish the RBL, unattended noise monitoring was undertaken and processed in accordance with Australian Standard 1055 and the EPA's NPI, at the receiver location shown in the following figure (being representative of the location of the nearest residential receivers).

Figure 19. Noise Receivers & Unattended Noise Monitor (Pulse White Noise Acoustics 2021)

A summary of the measured noise levels is provided in the following table.

Table 20. Measured Ambient Noise Levels (Pulse White Noise Acoustics 2021)		
Time of Day	**LA90 (dBA)**	**LAeq (dBA)**
Daytime (7am-6pm)	41	52
Evening (6pm-10pm)	37	49

Table 20. Measured Ambient Noise Levels (Pulse White Noise Acoustics 2021)		
Time of Day	**LA90 (dBA)**	**LAeq (dBA)**
Night-Time (10pm-7am)	30	46

External Noise Emission Criteria and Impact Assessment

The project-specific external noise emission criteria, in accordance with the NPI, is presented in the following table.

Table 21. External Noise Level Criteria (Pulse White Noise Acoustics 2021)					
Time of Day	**Project Amenity Noise Level LAeq, period (dBA)**	**Measured LA90, 15min (RBL) (dBA)**	**Measured LAeq, period Noise Level (dBA)**	**Intrusive LAeq 15min Criterion for New Sources (dBA)**	**Amenity LAeq 15min Criterion for New Sources (dBA)**
Daytime	50	41	52	46	53
Evening	45	37	49	42	48
Night-Time	40	30	46	35	43

In addition, for sleep disturbance, a maximum noise level criterion of 52dBA LAFmax during the night period at residential receivers, applies.

Based on the assessment of mechanical plant and expected equipment, to achieve compliance at neighbouring residential receivers, acoustic treatment to all equipment would be required. Consideration of the following acoustic treatments is recommended:

- Vibration isolation of the fan from the base building structure utilising a correctly sized isolation mount.
- Installation of Variable Speed Drives.
- In the event the final selection is an inline fan, internally line ductwork or attenuators are recommended; or
- In the case the fan is a roof mounted system, an acoustic screen may be required around the unit to shield noise to adjacent properties.

Based on the location of the dedicated roof plant and number of air conditioning condenser units proposed, recommended acoustic treatments are as follows:

- All plant is to be isolated from the base building structure with a rubber pad.
- Night operation mode must be in operation between 6pm-7am and provide a minimum of 4-5dBA.
- Internally lined ductwork/bends or silencers may be required for the discharge side of all equipment.
- Screening to equipment within the plantroom, including blanking off of inactive louver areas may be required.

For toilet exhaust fans, the following would be required:

- Ventilation plant are to be isolated from the base building structure with a rubber pad.
- Internally lined ductwork on the discharge side of the fan.

Details of acoustic treatment for plant and equipment would be provided during the normal detailed design of the project once plant selections have been finalised.

With respect to road noise, the RNP states that any increase in the total traffic noise level should be limited to 2dB during both day and night-time periods. An increase of 2dB represents a minor impact that is considered barely perceptible to the average person.

It is noted that vehicle access to the College site would continue to be facilitated via the existing access arrangement utilizing Avon Road, with no vehicle movements accessing the Grey House Precinct (during operations). As such, there would not be any noise impact on surrounding receivers resulting from vehicle movements accessing the site.

Noise associated with school activities is not well addressed in NSW, as KLEP2015, KDCP and the NPI are not intended for the application of noise associated with these types of areas. School activity noise is also not listed under Schedule 1 of the POEO Act. In the absence of any applicable acoustic criteria related to the activity noise associated with schools, professional guidance should be sought from the AAAC document *Guideline for Child Care Centre Acoustic Assessment*, which recommends the following criteria for residential receivers:

- Up to 4 hours (total) per day – If outdoor play is limited to no more than 2 hours in the morning and 2 hours in the afternoon, the contributed Leq,15min noise level emitted from the outdoor play shall not exceed the background noise level by more than 10dB at the assessment location.
- The cumulative Leq,15min noise level emitted from the childcare centre shall not exceed 65dB(A), from all activities (including outdoor play), when assessed at the most affected point on any commercial property boundary.
- Where appropriate, assessment should include consideration of noise emission to other sensitive uses including schools, hospitals, places of worship and parks. The cumulative Leq,15min noise level emitted from the child care centre shall not exceed 65dB(A), from all activities (including outdoor play), when assessed at the most affected point on the sensitive property boundary, and shall not exceed 45dB(A) internally, with windows or doors of the sensitive receiver open.

Noise impacts associated with the operation of the Grey House Precinct have been categorized with respect to outdoor play areas, internal areas (classrooms and ELC), dance studios, hall and public address systems, as detailed below.

- <u>Outdoor play areas:</u>

The following table summarises noise levels of students playing in outdoor areas, based on noise measurements taken at other schools.

Table 22. Sound Power Levels for Outdoor Play Activities (Pulse White Noise Acoustics 2021)

Parameter	Octave Ban Centre Frequency, Hz								Overall dBA
	63	125	250	500	1000	2000	4000	8000	
Active Sports Play	85	95	100	104	107	104	98	96	110
Passive Play	79	89	94	98	101	98	92	90	104

Based on the assumptions outlined in the table above, predicted noise levels during the outdoor play times are presented below. The predicted noise levels include the assumption that the play areas are being used simultaneously and that the recommendations included in the Noise Impact Assessment have been adopted.

Table 23. Predicted Outdoor Play Noise Levels (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Max Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	54	Day: 51	No

In summary, predicted noise levels during periods of the day when the outdoor play areas are being used simultaneously, are likely to exceed the formulated noise objectives. This is however considered to be acceptable on the following bases:

- The play areas would only operate at maximum capacity during recess and lunch times. At all other times of the day, the spaces would be used at a very limited capacity.
- Noise from the use of the external play areas would be limited to short periods of daytime hours.
- The outdoor play areas are not proposed to be used by the wider community.
- To further mitigate noise, it is recommended to include a 1.5m high solid barrier to the perimeter of the level 2 external play area.
- In a NSW LEC proceeding on 22 October 2009, the Court noted *'all noise that emanates from the normal activities at a school is not offensive'.*

Accordingly, the noise impact resulting from the use of the proposed external play areas would not result in unacceptable or offensive noise levels on the residential receivers to the south of the site, and is therefore considered to be acceptable.

- Internal areas (classrooms and ELC):

The assessment of noise impacts from the use of internal areas such as classrooms and the ELC, has adopted a worst-case scenario based on a high noise activity with a sound pressure level within the internal rooms of up to 75dB(A), with windows open. Predicted noise levels at surrounding receivers are summarised in the following table.

Table 24. Predicted Noise Levels from Internal Areas (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	37	Day: 46	Yes

Accordingly, noise impacts from the internal areas (classrooms and ELC) would comply with the relevant noise criteria.

- Dance studios:

The assessment of noise emissions from the dance studios has included the recommended building treatments and management controls, including the following:

- Internal noise levels within the dance studios will include shouting and the playing of amplified music with an expected internal noise level of 100dB(A) LAeq Sound Pressure Level.
- External glass to the dance studios to include a minimum of 10.38mm laminated glass with a minimum acoustic performance of Rw 35.
- During periods when the dance studios are being used for high noise generating events such as the playing of amplified music, the external façade elements are to be closed.

The predicted noise levels at surrounding receivers are provided below.

Table 25. Predicted Noise Levels from Dance Studios (Pulse White Noise Acoustics 2021)

Receiver Location	Predicted Noise Level dBA LAeq15min	Criteria dBA LAeq15min	Compliance?
Residential receivers to the south of the site	41	Day: 46	Yes

Accordingly, noise impacts from the dance studios would comply with the relevant noise criteria.

- Hall:

The assessment of noise emissions from the hall has included the recommended building treatments and management controls, including the following:

- The proposed hall is to be used for regular school activities during typical school hours as well as out of school hours activities.
- External glass to the hall to include a minimum of 6.38mm laminated glass with a minimum acoustic performance of Rw 30.
- Internal noise levels within the hall will include amplified speech and music with an expected internal noise levels of 90dB(A) LAeq Sound Pressure Level.
- During events which create these noise levels, all windows and doors will be required to remain closed.
- All external openings are to be closed when the hall is in use after 7pm.

The predicted noise levels at surrounding receivers are provided below.

Table 26. Predicted Noise Levels from Hall (Pulse White Noise Acoustics 2021)			
Receiver Location	**Predicted Noise Level dBA LAeq15min**	**Criteria dBA LAeq15min**	**Compliance?**
Residential receivers to the south of the site	37	Day: 46 Evening: 42	Yes

Accordingly, noise impacts from the hall would comply with the relevant noise criteria.

- Public address systems:

The location and design of any public address/bell system has not been finalised. As such the following acoustic design is recommended to be incorporated during the design phase:

- Noise levels at surrounding residents should not exceed the RBL + 10dBA criteria. This would equate to the following sound pressure level at 5m:
  - To the southern external areas are the building: 59 dB(A) at 5m.
  - To the eastern and western external areas are the building: 61 dB(A) at 5m.
  - Other areas of the building externally: 67 dB(A) at 5m.
- As a design principle, to minimise noise spill on surrounding receivers, more speakers operating a lower noise level is an effective way of controlling noise spill.
- Directional speakers located in the correct locations angled away from the residential residence to the south, will also reduce noise spill.

Noise Intrusion Criteria and Impact Assessment

Internal noise levels within the proposed building have been assessed in accordance with the recommended internal noise levels included within Table 1 of the AS/NZS 2107:2016 standard.

To achieve compliance with the noise intrusion criteria, the Noise Impact Assessment provides recommendations for façade acoustic treatments, glazing, external wall construction and external roof construction.

Further, the RNP recommends that a school playground should have traffic noise levels which are below 55dBALAeq (15hour) when in use.

Measured onsite noise levels indicate that compliance with the 55dBA objective would be achieved without the need for acoustic screens to control noise in external play areas.

Vibration Criteria

Vibration effects relating to human comfort, are taken from the AV-TG, which further classifies continuous vibration, impulsive vibration and intermittent vibration.

It is expected that the human comfort criteria would be more stringent than that corresponding to building damage. Therefore, compliance with the human comfort criteria would also achieve compliance with building damage criteria.

Construction Noise Criteria and Predicted Noise Emissions

Noise criteria for construction and demolition activities are discussed in the ICNG. The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses.

NMLs are outlined in the following table.

Table 27. Noise Management Levels (Pulse White Noise Acoustics 2021)	
Receiver Type	**NML, dBA LAeq,15minute**
Residences (measured externally)	Standard hours (noise affected): 51
	Standard hours (highly noise affected): 75
	Outside standard hours: RBL + 5dB
Classrooms and other educational institutions (measured internally)	45
Offices and retail outlets (measured externally)	70

Predicted construction noise levels are presented below for the surrounding residential receivers to the south.

Table 28. Predicted Construction Noise Levels (Pulse White Noise Acoustics 2021)			
Phase	**Aggregate Sound Power Level dBA re 1pW**	**Predicted Combined Noise Level at Receiver dBA LAeq15min**	**Criteria**
Site establishment works	113	57-76	Standard hours (noise affected): 51 Standard hours (highly noise affected): 75
Ground works and demolition	119	62-81	
Structure	117	62-80	
Internal works	109	53-71	
Common and external works	117	61-79	

Works are predicted to have the potential to exceed the internal NML when working near a receiver. Management of construction noise including community engagement is required, as detailed in the Noise Impact Assessment.

Construction Vibration Criteria

Effects of ground borne vibration on buildings may be segregated into three (3) categories; human comfort (taken from AV-TG), effects on building contents (taken from BS 7385: Part 2-1993 and DIN 4150: Part 3-1999), and effects on building structures (also taken from BS 7385: Part 2-1993 and DIN 4150: Part 3-1999).

In order to maintain compliance with the human comfort vibration criteria, it is recommended that safe distances should be validated prior to the start of construction works by undertaking measurements of vibration levels generated by construction and demolition equipment to be used on site. A Construction Noise Vibration Management Plan should be developed by the building contractor.

6.11 BIODIVERSITY

A BDAR (**Appendix 24**) has been prepared by Ecological Consultants Australia.

The site comprises a mix of Plant Community Types (PCTs) including two (2) Endangered Ecological Communities (EECs); PCT 1281 - Sydney Turpentine-Ironbark Forest (STIF) and PCT 1237 - Blue Gum High Forest in the Sydney Basin Bioregion (BGHF). Remnant canopy trees of STIF and BGHF are present around the perimeters of the school grounds. The PCTs and EECs present on the site are shown in the following figure.

Figure 20. Endangered Ecological Communities (Ecological Consultants Australia 2021)

The proposed development area contains canopy species typical of STIF, and four (4) trees typical of STIF canopy will require removal as part of the development. Accordingly, a five (5)-part test has been undertaken for STIF. It is noted that no BGHF occurs within the development area.

The condition of vegetation on the site is shown in the following figure. It is noted that there are no native vegetation communities on the site in good or excellence condition.

Figure 21. Condition of Existing Vegetation (Ecological Consultants Australia 2021)

Threatened species with habitat that could be impacted by tree removal, are Micro-bats, Grey-headed Flying Foxes and Large Bent Wing Bat. Accordingly, the following assessment of habitat features is summarized:

- Karst, caves, crevices, cliffs and other geological features of significance - No features present onsite.
- Rocks - No features present onsite.
- Human-made structures – The existing buildings will be demolished although the structures are not expected to host threatened species (i.e. mircobats) as it is not critical habitat for the species.
- Tree hollows - If trees contain hollows or deep fissures these could be used by Microbats. Observation of trees from the ground didn't indicate hollows or deep fissures however these may still be present and an Ecologist is to be on-site during any tree removal works. Four (4) Micro-bat boxes are required in the trees being retained in this area.
- Non-native vegetation will be removed. The non-native vegetation primarily consists of grasses which would not be considered habitat (breeding/foraging) for native species.
- Grey Headed Flying Foxes will have ten (10) food trees removed, however this is not enough to put the local population at risk of extinction.

Further, the site of the proposed works does not support any listed critical habitat.

No threatened populations occur on the site. Those listed as in the vicinity, such as Gang Gang Cockatoos, wouldnot be impacted by the proposed works (noting that the She Oak proposed for removal is not a favoured food tree).

Figure 22. Bionet Species Sitings (Ecological Consultants Australia 2021)

Bush regeneration programs and management zones (refer **Figure 23**), have already been commenced by the College in the areas of BGHF and STIF (this does not include the Grey House Precinct as it is not bushland). The ongoing rehabilitation of BGHF and STIF in other appropriate locations across the site in accordance with the draft Vegetation Management Plan, would mitigate the tree removal (11 native canopy trees) required to enable the proposed development.

Figure 23. Management Zones (Ecological Consultants Australia 2021)

A Koala Assessment was undertaken as part of the BDAR (Appendix 24), and it demonstrates that there will be no significant impact on Koala or areas of critical habitat for the species. Importantly, it is noted there is no evidence of Koala activity within the site.

6.12 CONTRIBUTIONS

Contributions will be calculated by Council in accordance with *Ku-ring-gai Contributions Plan 2010* or *Ku-ring-gai S94A Contributions Plan 2015.*

6.13 UTILITIES

Electrical (General Power and Communications)

An Electrical Report (**Appendix 37**) has been prepared by Stantec, to assess the existing infrastructure and utilities servicing the site and identify any required upgrades to serve the proposed development.

The electrical infrastructure assets surrounding the site form part of the local Ausgrid distribution network and mainly consists of HV feeders and distribution substations that supply power to the College as well as the local neighbourhood. The existing school has multiple supply points and is supplied via several substations along Avon Road and within the school grounds.

The site of the Grey House Precinct currently accommodates an existing Ausgrid kiosk type substation (asset #5340), which will require relocation as part of the development. A preliminary max demand calculation for the new development has determined that the new substation shall be sized to 1000kVA, and the preferred configuration is a new kiosk substation. Various options for the location of the new kiosk substation have been assessed, and based on consideration of access and constructability, the preferred location has been identified behind Lang House adjacent to the existing substation. An Application for Connection has been submitted to Ausgrid and the Level 3 ASP design for the new substation is progressing on this basis. Due to non-compliances in the existing supply configuration, and as a method to introduce flexibility into the proposed supply configuration, a new Site Main Switchboard will be provided as part of the new works.

The proposed Grey House Precinct will connect into the existing College private fibre LAN network which currently links all buildings together on site. Existing fibre network infrastructure is located adjacent to the Grey House Precinct, and it is intended that the new development will simply plug into the existing network. Utility network infrastructure will not be affected by the new development.

Hydraulic (Potable Water, Fire Hydrants and Sewerage)

A Hydraulic Report (**Appendix 38**) has been prepared by Stantec, to assess the existing infrastructure and utilities servicing the site and identify any required upgrades to serve the proposed development.

The local Water Authority for the site is Sydney Water. The College site is serviced by three (3) existing potable water connections, with these water mains forming part of the wider Pymble network. The existing connection to the Grey House Precinct comes via 32mm cold water pipework.

The proposed development of the Grey House Precinct would generate an approximate domestic potable cold-water of 19kL/day and a probable simultaneous demand (PSD) of 2 L/s. The water main infrastructure serving the site is of adequate capacity, however, the existing 32mm supply adjacent to the Grey House Precinct is insufficient to cater for the PSD allowance. As such, it is proposed to provide a 5,000L buffer storage tank and dual pump booster set for the development to be topped up by the 32mm existing service to suit the potable water demand for the building.

The fire hydrant demand for the site is 20L/s @ 700kPa at the two (2) most disadvantageous hydrant landing valves assisted by the existing on-site fire hydrant pump and on-site storage tank. Two (2) fire hydrants are to operate simultaneously to achieve this requirement. Pressure and flow enquiry confirms that on-site fire hydrant infrastructure is adequate to be employed.

The Sewer Network Authority for the area is Sydney Water. The site has one (1) existing sewer connection via a 225mm sewer main located at the base of the site. It is proposed to reuse the existing sewer connection adjacent to the Grey House Precinct. The approximate sewer demand for the development is 15kL/day (80% of water usage). It is anticipated the sewer mains that are available for connection are capable of meeting this demand (to be confirmed through the Section 73 process).

Regarding the impact of construction on the existing hydraulic Services, the Hydraulic Report confirms that minimal impact would be incurred, as summarized below:

- Water Supply: there are no Sydney Water water supply assets within the site and therefore no impact on the infrastructure.
- Sewer: The proposed development has been designed with the locations of the existing sewer mains in mind. Building Plan Approvals have been lodged.

- Natural Gas: there are no Jemena, gas network assets within the site and therefore no impact on the infrastructure.

6.14 WATER AND SOILS

6.14.1 STORMWATER MANAGEMENT

A Civil Engineering Conceptual Report (**Appendix 17**) has been prepared by TTW.

Existing Stormwater Services

An existing stormwater pipe and pit network conveying stormwater from upstream and outside of the site area, currently passes though the footprint of the proposed building. This line will require diversion and will be implemented as early works.

Stormwater Quantity

Based on the approximate area (4,010m²) of the proposed development, the design OSD requirements are shown in the following table.

Table 29. Required OSD Parameters (TTW 2021)	
Parameter	**Requirement**
Permitted site discharge (PSD)	56L/s
Site storage requirement (SSR)	121m³

The rate of discharge is limited to the PSD of 56 L/s through the use of an orifice plate with a diameter of 133mm affixed to the OSD outlet which discharges to the existing Council stormwater network along the eastern boundary of the site.

The OSD tank is sized (based on the total impervious area of the site development at 100%) using DRAINS, with a calculated volume of 184m³ in order to achieve the PSD value as required by KDCP. This is above and compliant to the minimum volume dictated by the SSR rate.

Further, KDCP suggests an allowable maximum of 10% of the OSD storage volume can be offset for rainwater tanks over 10,000L in capacity. As the project proposes the inclusion of a 25,000L rainwater tank, the OSD storage volume is consequently adjusted to 166m³ minimum.

Stormwater Quality

The WSUD treatment train includes Ocean Guard by Ocean Protect to surface inlet pits, one (1) 25kL rainwater tank and a stormfilter chamber housing nine (9) 690 PSorb units.

The treatment train has been modelled in MUSIC to ensure stormwater quality targets are met, as summarized below.

Table 30. Water Quality Reduction (TTW 2021)		
Pollutant	**KDCP Pollutant Reduction Target**	**MUSIC Model Pollutant Reduction**
Total Suspended Solids	85%	85.4%
Total Phosphorus	65%	65%
Total Nitrogen	45%	45%
Gross Pollutants	70%	100%

Accordingly, the proposed treatment train will achieve the reduction targets for the full range of pollutants. Through the implementation of the proposed water quality measures, stormwater discharge

from the site can be effectively managed to ensure that there is no detrimental effect to the water quality downstream.

In-ground Drainage Network

The in-ground stormwater system shall be designed in accordance with Australian Standards 3500.3 and KDCP. Stormwater will be required to be conveyed to the proposed stormwater outlet at the eastern boundary of the site.

Overland Flow

Overland flow paths will be required for larger storm events and in the event that the piped in-ground stormwater system fails due to a blockage or other obstruction. Overland flow paths will need to be sufficient to convey the 100 year ARI storm event.

6.14.2 SEDIMENT, EROSION AND DUST

During construction, erosion prevention and sediment control measures will be required in accordance with KDCP and Landcom's *Managing Urban Stormwater: Soils and Construction*.

6.14.3 GEOTECHNICAL AND STRUCTURAL

A Structural Schematic Design Report (**Appendix 20**) has been prepared by TTW and documents that the structural design will be in accordance with the latest revision of all relevant Australian Design Standards, Codes and other statutory requirements.

Based on geotechnical bore holing, class 4 and 5 weathered bed rock was encountered at depths ranging from 1.2m-4m below residual silty clay, and class 3 or better siltstone bedrock was found at depths of 5m and 10.2m. Ground water was measured at a depth of 6m (RL113.7m) below the B.E.L of slab on ground.

In general, strip and pad footings will be adopted to bear on bedrock, presuming a minimum bearing capacity of 800kPa to maximum of 3500kPa. Bored piles will be used for where the footing cannot reach the minimum bearing capacity. Slab on ground will be founded on allowable bearing pressure of minimum of 100kPa engineering fill. Due to the defects in the bedrock, geotechnical recommendations include temporary batters no steeper than 1:1. Retaining walls will retain the soil and surcharge loads at locations below which will be laterally supported by foundation and suspended floors.

Further, the Preliminary Waste Classification Assessment (**Appendix 34**) prepared by JK Environments provides an assessment of the soil and/or bedrock to be excavated during the proposed development.

The natural soil and bedrock at the site are likely to meet the definition of Virgin Excavated Natural Material (VENM). Further assessment is required to confirm this classification following removal of the existing structures from the site.

Due to the presence of concrete fragments in the fill, the investigation should include excavation of test pits to allow better assessment of the presence/absence of asbestos in the fill.

Any unexpected finds encountered during the site works should be inspected by a suitably qualified contaminated land consultant. In the event that the find has the potential to alter the classification documented in the report, additional testing and reporting should be undertaken.

6.15 FLOODING

As documented in the Civil Engineering Conceptual Report (**Appendix 17**), through consultation with Ku-ring-gai Council, it has been confirmed that the site of the Grey House Precinct, does not fall within the

Flood Planning Area as shown the Ku-ring-gai Council Online Map. A screenshot of Council's online map is shown below.

It is recommended that the building finished floor level (FFL) is set at a minimum of 0.3m above the surrounding surface levels.

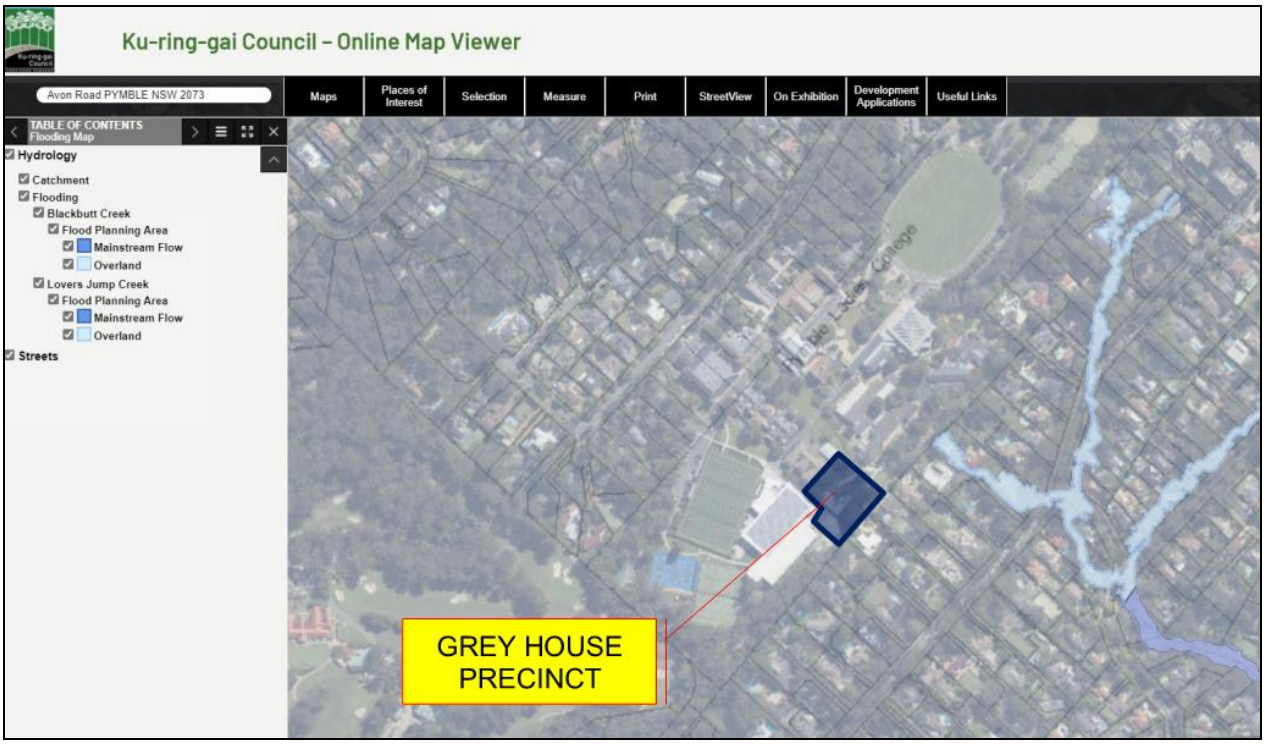

Figure 24. Council Flood Map (TTW 2021)

6.16 WASTE

6.16.1 OPERATIONAL WASTE

The Operational Plan of Management (**Appendix 32**) details the ongoing operational waste arrangements for the College. General waste will be decanted from across the site by a cleaning contractor and taken to the waste management area at the maintenance yard of the College. Annual average collections for the 18 bins totals approximately 155 tonnes. Recycling bins are located throughout the site and collected by a contractor, averaging annually 15 tonnes. Vegetation waste is collected by the grounds team and disposed of in the maintenance yard, with approximately 105 tonnes annually. Food waste is also collected and averages approximately 1 tonne per month during term time. Any additional trade waste can be collected on an ad hoc basis but estimated at annually at 75 tonnes.

6.16.2 CONSTRUCTION WASTE

A Waste Management Plan (**Appendix 33**) has been prepared by Taylor and aims to integrate sustainability principles and practices by maximizing the re-use of waste products and minimizing the quantity of waste going to landfill. The Waste Management Plan outlines the following:

- Identify, quantify volumes and classify the likely sources of waste to be generated during the construction phase and operation of the building.
- Provide measures to be implemented to manage, reuse, recycle and safely dispose of this waste.
- Identify appropriate servicing arrangements (including but not limited to waste management, loading zones, mechanical plant) for the site.

The Site Manager will assume the role of Waste Management Plan coordinator, and will be responsible for instructing workers, implementing and overseeing the Waste Management Plan, monitoring the effectiveness of the Waste Management Plan, and ensuring completion of independent audits.

Daily activities will generate a wide range of residues such as general waste, obsolete infrastructure and/or contaminated/hazardous materials. With a view to maximizing waste management, the following waste hierarchy principles are to be followed:

(1) Reduce: minimise waste production and over-consumption of materials by:
   - Incorporating design and building practices that minimise waste production;
   - Not over-ordering products or materials;
   - Specifying project requirements and planning ahead to avoid over-consumption of products and materials;
   - Minimising rework from errors and poor workmanship;
   - Ensuring storage areas are safe and secure;
   - Arranging deliveries to match work stages to avoid materials being stored on site longer than necessary.

(2) Reuse: wherever possible, reuse surplus or salvaged materials on site, off-site or on other projects:
   - Establish a system whereby all products that can be reused (for the same purpose or for a new one) are identified and stored;
   - Repair items so they can be reused or returned to the supplier.

(3) Recycle: all materials that can be recycled must be separated and sent to a recycling facility.

All hazardous or dangerous materials must be handled and disposed of by competent persons only, in accordance with EPA guidelines.

For all waste streams, monitoring would take place to ensure contamination of segregated skips does not occur. The type of surplus materials being produced would be continually reviewed and site set-up modified where possible to maximise reuse and recycling. The use of landfill would be the last resort.

The waste collection provider would ensure all handling of waste meets all statutory regulations and provide monthly registers that record the recycling each month.

6.16.3 WASTE CLASSIFICATION

A Preliminary Waste Classification Assessment (**Appendix 34**) has been prepared by JK Environments for the off-site disposal of waste soil and/or bedrock to be excavated during the proposed development. The assessment and reporting were undertaken with reference to the EPA's *Waste Classification Guidelines - Part 1: Classifying Waste (2014)*.

The fill material has been assigned a preliminary classification of General Solid Waste (non-putrescible). The natural soil and bedrock at the site are likely to meet the definition of VENM for off-site disposal or re-use purposes.

Further assessment is required to confirm these classifications prior to off-site disposal of the waste.

Due to the presence of concrete fragments in the fill, the investigation should include excavation of test pits to allow better assessment of the presence/absence of asbestos in the fill.

Any unexpected finds encountered during the site works should be inspected by a suitably qualified contaminated land consultant. In the event that the find has the potential to alter the waste classification documented in the report, additional testing and reporting should be undertaken.

6.17 CONTAMINATION

A Preliminary Site Investigation (**Appendix 21**) has been prepared by JK Environments, to identify past or present potentially contaminating activities at the site, identify the potential for site contamination, and assess the need for further investigation. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and land use by completing a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Prepare a conceptual site model (CSM); and
- Assess whether an intrusive investigation is required.

The scope of work included a desktop review of site information, a walkover site inspection, and reporting of findings within the Preliminary Site Investigation (inclusive of the CSM).

The findings demonstrate that historic uses of the site included agricultural purposes as part of the school/church grounds since 1916, school-related structures including tennis courts, and since 1951 demountables and a marquee. Cut and fill works may have been undertaken at various stages throughout this time to create a level platform for the developments. The immediate surrounds to the south of the site were mostly used for residential purposes, while the surrounds to the east, west and north of the site were part of the wider school grounds and underwent various stages of development for the school buildings and amenities.

The following potential contamination sources/AEC were identified:

- Fill material;
- Historical agricultural use;
- Use of pesticides; and
- Hazardous building materials.

The Preliminary Waste Classification Assessment (**Appendix 24**) identified historically imported fill and this AEC has not been adequately characterised.

Based on the potential contamination sources/AEC identified, and the potential for contamination, further investigation of the contamination conditions is considered to be required. A Detailed Site Investigation will be required to characterise the contamination conditions.

In summary, the following is recommended to better assess the risks associated with potential contamination at the site:

- A Detailed Site Investigation is to be undertaken to characterise the site contamination conditions and establish whether the site is suitable for the proposed development, or whether remediation is required. This must include sampling to meet the minimum sampling density specified by the NSW EPA. The use of test pits is recommended for this investigation; and
- If it is not practicable to do so as part of the Detailed Site Investigation, additional inspection and sampling is to be undertaken following demolition/removal of the existing demountables and marquee structures to confirm the classification of material to be excavated for the proposed development.

Notwithstanding, the Preliminary Site Investigation states that the historical land uses and potential sources of contamination/AEC identified, would not preclude the proposed development.

6.18 CONSTRUCTION MANAGEMENT

The construction phases of the development would be managed in accordance with the Project Management Plan (**Appendix 35**) prepared by Taylor. The Project Management Plan describes the strategy, methods, controls and requirements for the execution of the project.

In summary, construction is proposed to be completed in three (3) stages; demolition and enabling works, construction works, and external works. An approximate 21 month period is programmed from commencement of construction stage 1 to project completion.

6.19 ACCCESS

An Accessibility Report (**Appendix 30**) has been prepared by Morris Goding Access Consulting, and has reviewed the proposed design against the relevant Australian Codes and Standards under the provisions of the *Commonwealth Disability Discrimination Act* (DDA). The Accessibility Report aims to ensure that the accessibility considerations comply with the relevant statutory requirements, and meet the intent of the DDA of inclusive, dignified, and equitable access.

The Accessibility Report confirms that the drawings indicate that access requirements can readily be achieved subject to the recommendations being addressed in further design stages and ongoing consultation with the Access Consultant.

6.20 BUSHFIRE

The site comprises designated bushfire prone land based on the RFS Bushfire Prone Land Map, but as shown in Council's mapping (refer extract at **Figure 13**), the Grey House Precinct is not bushfire prone land and is considerably distanced from that portion of the site designated as such.

Additionally, the comments from the RFS referral (dated 06 May 2021) state that RFS have no concerns with the proposal relating to bushfire protection and that further consultation with the RFS is not required. Further consideration to bushfire is therefore not required in conjunction with this SSD.

6.21 BCA AND FIRE SAFETY

A Building Code of Australia (BCA) Assessment Report (**Appendix 28**) has been prepared by Steve Watson and Partners, against the Deemed-to-Satisfy (DTS) provisions of the relevant sections of the BCA and the applicable Building Regulations. The BCA Assessment Report details the non-compliances identified that require either amendments to plans or an Alternative Solution to satisfy the Performance Requirements of the BCA. The BCA Assessment Report confirms that the design is capable of complying with the requirements of the relevant sections of the EP&A Act, EP&A Regulation and BCA, subject to the recommendations provided within the Report.

A Fire Safety Statement (**Appendix 29**) has been prepared by Stantec, and confirms that the Fire Safety design of the building will generally satisfy the Performance Requirements of the BCA by complying with the DtS provisions. However, there are some aspects of the design that are to be refined through performance-based Fire Engineering to achieve compliance with the Performance Requirements of the BCA. It is concluded that the building would be able to comply with the Performance Requirements of the BCA without major changes to the current design.

PART G CONSULTATION

In accordance with the SEARs, consultation has, and will continue to be, undertaken with relevant public authorities, Council, service providers and the local community.

Specifically, consultation has been carried out with the following bodies:

- Ku-ring-gai Council
- Government Architect NSW (GANSW)
- Transport for NSW (TfNSW)
- DPIE Environment, Energy and Science Group (EES)
- Heritage NSW
- Sydney Water
- DPIE Place, Design and Public Spaces
- NSW Environment Protection Authority (EPA)
- DPIE Hazards Team
- NSW Rural Fire Service (RFS) and Fire and Rescue NSW (FRNSW)
- Sydney Trains
- Service providers
- Local community

The consultation undertaken to date in respect of the proposed development is documented in the Consultation Report attached at **Appendix 4**. The key matters identified in the report are summarised in the following sections.

7.1 KU-RING-GAI COUNCIL

A meeting was held with Ku-ring-gai Council on 23 April 2021 and subsequently, in response to the SEARs notification, Ku-ring-gai Council provided a response on 04 May 2021, outlining a number of recommended requirements for the EIS, including in relation to construction management, statutory instruments and strategic policies, ESD, transport and accessibility, built form and urban design, heritage, trees and landscaping.

These matters have been responded to in the appendices supporting this EIS, including the following specifically:

- Appendix 8 Architectural Drawings
- Appendix 9 Architectural Design Report
- Appendix 10 Visual Impact Assessment
- Appendix 12 Landscape Plans
- Appendix 13 Transport Impact Assessment
- Appendix 15 Construction Traffic Management Plan
- Appendix 23 Non-Aboriginal (Historic) Archaeological Assessment
- Appendix 24 Biodiversity Development Assessment Report Waiver Request
- Appendix 25 Arboricultural Impact Assessment
- Appendix 27 ESD Report
- Appendix 32 Operational Plan of Management and Schedule of Uses
- Appendix 35 Project Management Plan

Whilst Council has suggested that the five (5) storey scale of the development is too great in light of the established scale of the locality, it is considered that the scale of the proposed built form is compatible with the site and surrounding context. The five (5) storey built form has been stepped in accordance with the natural topography of the land and recessed into the slope, which has effectively reduced the visual scale of the development. As such, and as demonstrated in the Elevations and Cross-Sections within the Architectural Drawings and Visual Impact Assessment (**Appendices 8** and **10**), the proposal would

generally exhibit the appearance of a three (3) storey building from most vantage points, and would be consistent with the visual scale of established built form across the College site.
Further, the scale of the proposed development, coupled with the proposed boundary setbacks and landscaping, would appropriately relate to the neighbouring residential area with respect to visual transition and amenity.

Therefore, a reduction in the number of storeys is not considered to be required, given the drawings and assessment demonstrate that the design of the building achieves the objectives and intent underpinning Council's comments.

7.2 GOVERNMENT ARCHITECT NSW

Consultation in accordance with the SDRP process was carried out with the GANSW on 18 August 2021.

The architectural and landscape design were commenced by the GANSW, whilst some recommendations were provided in order to 'stitch' the Grey House Precinct into the overall College context and ensure an appropriate relationship with the neighbouring residential area. The formal minutes from the GANSW are attached at **Appendix 18**. A summary response to the issues raised within the meeting are provided in **Table 31** below, with more detailed responses contained at **Appendix 9** and **Appendix 19**.

Table 31. Government Architect Response

GA Points Raised	Response
Connecting with Country An understanding of Country can inform richer and more place responsive design solutions. The following recommendations apply:	
1. Demonstrate more rigorous consultation with Traditional Custodians and Knowledge-holders. The Connecting with Country Framework recommends engagement is undertaken and key strategies developed before sketch design, however there are still opportunities to better integrate Connecting with Country principles into the logic of the project through both the landscape and built form.	Consultation has been undertaken with Uncle Laurie Bimson, the local Elder of the Guringai Country. Ongoing consultation with Uncle Laurie Bimson to inform masterplan strategies for the college campus has been undertaken over a number of years.
2. The identification of a possible historic Aboriginal pathway near the site provides a useful metaphor to direct the design. Anchor the connection to Country by transforming the pathway metaphor into a coherent and integrated narrative to understand the new buildings or their experience. Explore other stories, and strategies so that the positive outcomes that Connecting with Country can produce are enabled.	The design will continue to align and draw upon indigenous stories through selection of local flora.
3. Consult local Traditional Custodians including Denis Folly and Susan Moylan-Combs.	It is noted that these are not the relevant local representatives. However, PLC has reached out to these representatives.
4. Refer to the draft Connecting with Country Framework on the GANSW website.	

Table 31. Government Architect Response	
GA Points Raised	**Response**
Site strategy and Landscape The strategy of introducing more intimate, human (and child) scaled spaces and landscape elements into the site to create a rich place responsive scheme is supported. The following recommendations apply: 5. Further development of the transition between the existing larger scale formal modes and smaller spaces. 6. Demonstrate the opportunity for the landscape to tell more stories, specifically in relationship to any emergent narrative from Connecting with Country. 7. Review the landscape strategy for the central courtyard to ensure it has the necessary planting and landscape elements to fulfil its potential and its role in bringing the landscape deeply into the built form.	The Landscape Report (**Appendix 12**) provides further detail on these points. There has been extensive consideration of connection to Country throughout the landscaping strategy, including utilising indigenous plants, using plaques to detail these plants and using sculptural and artwork elements for storytelling and references. The central atrium space has been developed with planting and climbing materials to ensure this space reaches its potential.
Movement and accessibility The current proposal is an elegant response to the slopping site and its complex topography. The following recommendations apply: 8. Review the accessibility of all spaces on the project from the perspectives of comfort and legibility. Present a clear and coherent strategy for access and movement for all people around the site and into all the build spaces and associated external areas.	The topography of the site necessitates the reliance on a lift to access the lowest and highest floors. A clear consolidated entry point the building is more legible and therefore more accessible. Wayfinding and accessible path of travel from the Centenary carpark was considered with the siting of the building. Development of a campus wide wayfinding strategy is ongoing.
Architecture The built form of the project carefully negotiates a complex site with a simple form that integrates interior functionality and connections with landscape. The architectural expression of the Grey House Precinct is to be commended. The following recommendations apply: 9. Review if the overshadowing of neighbours on Pymble Ave can be minimised through changes to the corners and edge of the building. Review the northern end of the new building and consider reducing the bulk and form to increase sunlight. 10. Re-examine the translation of the built form from sketch design to final design. Consider whether the architectural elegance	The matters raised have been considered and additional scenarios tested, which are provided at **Appendix 19**. A number of additional variations to the built form were considered and in each scenario there was negligible additional solar gain from the proposal. The initial diagrammatic sketch communicates the landscape strategy, and podium landscaping was considered to add significant bulk to the space. There is

Table 31. Government Architect Response	
GA Points Raised	**Response**
has been lost in the formalisation and increase in scale of the building. 11. The new building has a clear formal relationship with the interior character of the site and its historic buildings. Presently this same language is carried over to the suburban side of the building that faces Pymble Ave. In relation to the previous two points, re-examine the scale, character, and architectural language of this elevation so that it might fit into its context more appropriately.	no additional height or changes made to the façade. Four key materials assist in articulating the façade, with the brick base to reduce the scale of the tallest portion of the building. The ceramic fins references the verticality and colour of the Blue Gum tree trunks. Picture windows breaks down the scale of the flat elevation, while additional landscaping and climbing planters softens the appearance to the south.

In response, design amendments have been undertaken accordingly, with the resulting improved design demonstrated in the Architectural Drawings (**Appendix 8**), Architectural Design Report (**Appendix 9**) and Landscape Plans (**Appendix 12**).

7.3 TRANSPORT FOR NSW

In response to the SEARs notification, TfNSW provided a response on 04 May 2021, identifying the requirement for SIDRA analysis (based on cumulative traffic modelling) for the ultimate development and 10 year growth scenario for the following intersections:

- Pacific Highway/Livingstone Avenue; and
- Pacific Highway/Beechwood Road.

SIDRA Analysis has been included in the Traffic and Parking Impact Assessment (**Appendix 13**), and explanation and justification have been included of the model, data, and adopted daily traffic generation.

As requested by TfNSW, consultation with TfNSW has been ongoing, including through a meeting on 07 July 2021.

7.4 DPIE ENVIRONMENT, ENERGY AND SCIENCE GROUP

In response to the SEARs notification, EES provided a response on 03 May 2021, identifying the requirement for a BDAR given that at that point in time, a BDAR Waiver had not yet been prepared. Subsequently, a Biodiversity Assessment has now been prepared (**Appendix 24**) to support a BDAR Waiver.

EES also identified the requirement for an ESD Report, including address of the NARCliM projected impacts of climate change. The ESD Reportat **Appendix 27** includes a section on NARCliM.

EES noted the site is not impacted by mainstream or overland flow based on existing studies and Council mapping, and therefore raised no further requirements on flooding.

7.5 HERITAGE NSW

In response to the SEARs notification, Heritage NSW provided a response on 29 April 2021, identifying the requirement for an ACHAR and associated consultation. An ACHAR, including details of the consultation undertaken, is provided at **Appendix 22**.

7.6 SYDNEY WATER

In response to the SEARs notification, Sydney Water provided a response on 27 April 2021, outlining requirements for water-related infrastructure and integrated water cycle management. All matters have been addressed in the Civil Engineering Conceptual Report (inclusive of an Integrated Water Management Plan) at **Appendix 17** and the ESD Report at **Appendix 27**.

It is acknowledged that endorsement from Sydney Water will be required to ensure the development does not impact on any Sydney Water assets. This process has been initiated, as documented in the Hydraulic Report at **Appendix 38**.

7.7 DPIE PLACE, DESIGN AND PUBLIC SPACES

In response to the SEARs notification, DPIE Place, Design and Public Spaces provided a response on 06 May 2021, requesting that the EIS include consideration of the District Plan, LSPS, draft LHS, CSP and draft consolidated KLEP. All relevant legislation and policies have been considered in **Part D** and **Part E** of this EIS.

7.8 NSW ENVIRONMENT PROTECTION AUTHORITY

In response to the SEARs notification, the EPA provided a response on 05 May 2021, confirming that an EPL would not be required.

Accordingly, no further response or consultation with the EPA is deemed necessary.

7.9 DPIE HAZARDS TEAM

In response to the SEARs notification, DPIE Hazards Team provided a response on 23 April 2021, confirming that the proposed location is not affected by existing high-pressure dangerous goods pipelines. DPIE Hazards team also confirmed that the proposal was not related to any matters pursuant to *State Environmental Planning Policy No 33—Hazardous and Offensive Development* (SEPP 33).

Accordingly, no further response or consultation with DPIE Hazards Team is deemed necessary.

7.10 NSW RURAL FIRE SERVICE

In response to the SEARs notification, the RFS provided a response on 06 May 2021, advising of no concerns with the proposal relating to bush fire protection.

Accordingly, no further consultation with the RFS is deemed necessary.

A Fire Engineering Brief Questionnaire has been submitted to FRNSW for information. No further consultation is deemed necessary.

7.11 SYDNEY TRAINS

In response to the SEARs notification, Sydney Trains provided a response on 04 May 2021, stating 'no comments'.

Accordingly, no further consultation with Sydney Trains is deemed necessary.

7.12 SERVICE PROVIDERS

Consultation with Ausgrid has been undertaken in relation to the new substation. Whilst initially requesting a HV loop to Avon Road, Ausgrid subsequently advised that this was not required.

7.13 LOCAL COMMUNITY

Comprehensive consultation with the local community has been undertaken, as per the following summary:

- A neighbourhood meeting was held on site on 09 June 2021, with immediate neighbours (nine (9) chose to attend), to present the plans and overview of the project.
- A neighbourhood meeting was held via Teams on 21 July 2021. A total of 95 neighbours were invited to attend, and 12 chose to attend. FAQs were also delivered via a letterbox drop, to 95 properties.
- A further Teams meeting was held on 04 August 2021, with the two (2) closest adjoining neighbours to provide more information for their direct queries such as solar access, noise and privacy.
- A written response to the questionnaire provided by neighbours, was distributed via letterbox drop on 10 August 2021.
- A final Teams meeting was held with neighbours on 12 August 2021.
- The College has also received emails with various queries, and a petition that has been sent to DPIE and the Council.
- A meeting with Laurie Bimson (Local Elder for Guringai Country) was held on 6 September 2021, to provide the opportunity of local indigenous knowledge to be utilized in the design and landscaping.

The College has a commitment to ongoing and meaningful consultation with its neighbours.

7.14 DESIGN CHANGES

Based on the extensive consultation with the relevant public authorities, Council, service providers and the local community, the design of the proposal has been amended in direct response to discussions and feedback. These amendments also respond to the investigations and modelling that were requested to be carried out.

Some of the amendments adopted are referred to in the above sections, whilst *all* changes/actions are reflected in the final built form and landscape design as well as the technical reports. These changes are more extensively detailed in the Consultation Report at **Appendix 4**.

PART H ENVIRONMENTAL RISK ASSESSMENT

The SEARS requires the EIS to include an Environmental Risk Assessment to identify potential environmental impacts associated with the development. The Environmental Risk Assessment is provided **Appendix 5**.

The assessment undertaken comprised a qualitative assessment consistent with AS/NZs ISO 31000:2018 *Risk management – Guidelines* (Standards Australia). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. Comment on residual risk (the remaining level of risk following implementation of mitigation and management measures) is also provided.

It should be noted that the assessment is not intended to be exhaustive, but rather focuses on key impacts.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence':

Likelihood

A	Almost Certain
B	Likely
C	Possible
D	Unlikely
E	Rare

Consequence

1	Widespread irreversible impact
2	Extensive but reversible (within 2 years) impact or irreversible local impact
3	Local, reversible (with 2 years) impact
4	Local, reversible, short term (<3 months) impact
5	Local, reversible, short term (<1 month) impact

Risk scores for likely and potential impacts were derived using the following risk matrix (**Figure 25**).

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 25. Risk Assessment Matrix

The results of the environmental risk assessment are presented in **Appendix 5**. The risk assessment has been based on information available at the time of finalising the EIS.

PART I MANAGEMENT AND MITIGATION MEASURES

The collective measures required to mitigate the impacts associated with the proposed works are detailed below. These measures have been derived from the previous assessment in **Part F** and those detailed in appended consultants' reports.

by	Pymble Ladies College
in relation to	Built Form Approval Grey House Precinct within Pymble Ladies College 20 Avon Road, Pymble (Lot 1 DP 69541)

The following defines some of the terms and abbreviations used in this statement:

Approval	The Minister's approval of the project
BCA	Building Code of Australia
Council	Ku-ring-gai Council
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
Project	The development as described in the EIS
Secretary	Secretary of DPIE (or delegate)
Site	Land to which the project application applies
The College	Pymble Ladies College
Workcover	NSW WorkCover

The College will undertake the construction and operation of the proposed facilities in accordance with the following:

ADMINISTRATIVE COMMITMENTS

Commitment to Minimise Harm to the Environment

1. The College will implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the project.

Occupation Certificate

2. The College will ensure Interim and Final Occupation Certificates are obtained prior to the occupation of each stage of the project.

Terms of Approval

3. The College will carry out the project generally in accordance with the:
    a) EIS;
    b) Drawings prepared by BVN;
    c) Management and Mitigation Measures;
    d) Any Conditions of Approval.
4. If there is any inconsistency between the above, the Conditions of Approval shall prevail to the extent of the inconsistency.
5. The College will ensure compliance with the relevant requirements of the Secretary of DPIE arising from DPIE's assessment of:
    a) Any reports, plans, programs, strategies or correspondence that are submitted in accordance with this Approval; and

b) The implementation of any recommended actions or measures contained in reports, plans, programs, strategies or correspondence submitted by the Project Team as part of the application for Approval.

Access

6. The College will ensure at Construction Certificate Stage compliance with Part D3 BCA (2015) and the following:
    a) Provide door schedule which shows compliance with AS1428.1 (2009) with respect to clear openings, circulation space and luminance contrast on doorways, door force is 20N where a door closer is fitted.
    b) Provide slip resistance certification for ramps, to show testing under wet surface conditions in accordance with AS4586 – 2013.
    c) Detail all 1:14 gradients ramps to comply with AS1428.1 with regards to handrails on both sides with extensions and tactile ground surface indicators.
    d) All public stairs to comply with AS1428.1 Cl 11 Stairs (2009).
    e) Tactile indicators to be installed on the top and bottom of non-fire isolated stairs and ramps to comply with AS1428.4.1.

Operation of Plant and Equipment

7. The College will ensure that all plant and equipment used on site is maintained and operated in proper and efficient manner, and in accordance with relevant Australian Standards.

SPECIFIC ENVIRONMENTAL COMMITMENTS

Noise and Vibration

8. Construction on the site will only be undertaken between 7am and 6pm Monday to Friday, and 8am to 1pm on Saturdays. No construction will be allowed on site on Sundays or Public Holidays.
9. Prior to the commencement of major construction works, a Construction Noise and Vibration Management Plan will be updated, and submitted to Council.
10. Internal noise levels in educational spaces will be acoustically reviewed at the detailed design stage to account for the known building design, room uses and ventilation strategy. Any internal noise sources such as air conditioning, and any localized external noise sources including student activity, will be considered.
11. Waste collection and lawn mowing will be restricted to standard daytime hours to minimise the likelihood of disturbance to nearby receptors.

BCA

12. All buildings and structures will be designed to comply with BCA standards.

Contamination

13. Soils designated for off-site disposal will be subject to waste classification in accordance with NSW EPA *Waste Classification Guidelines*, 2014.
14. If suspect materials are encountered during the carrying out of works, work should cease in the area until the material has been analysed by qualified personnel. An Unexpected Finds Protocol should be implemented in relation to any potential unexpected finds of asbestos containing materials.
15. A Detailed Site Investigation is to be undertaken to characterise the site contamination conditions and establish whether the site is suitable for the proposed development, or whether remediation is required. This must include sampling to meet the minimum sampling density specified by the NSW EPA. The use of test pits is recommended for this investigation.

16. If it is not practicable to do so as part of the Detailed Site Investigation, additional inspection and sampling is to be undertaken following demolition/removal of the existing demountables and marquee structures to confirm the classification of material to be excavated for the proposed development.

ESD

17. The project will achieve equivalent to a 5 star Green Star rating, considered 'Best Practice' as defined by the Green Building Council of Australia.
18. The project will comply with Section J of the BCA.

Geotechnical

19. Site preparation and filling should be carried out in accordance with the guidelines contained in AS 3798 – 2007.
20. All excavated materials which are to be removed off the site will be disposed of in accordance with the provisions of the current legislation and guidelines including the *Waste Classification Guidelines* (EPA, 2014).
21. Appropriate foundation and retaining wall design will be required to manage slope stability and potential surface movements.

Archaeological Heritage

22. If during the course of the proposed development, any previously undetected Aboriginal 'objects', shell or sandstone are uncovered, work must cease in the vicinity of the object and further advice sought from the consultant and Metropolitan Local Aboriginal Land Council (LALC).
23. In the unlikely event that human remains are discovered during construction, all work must cease. OEH, the local police and the appropriate LALC should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
24. An induction should be provided to all construction staff, employees, contractors and subcontractors in respect of Aboriginal heritage protection and their responsibilities under the *National Park Act 1974* by a suitably qualified archaeologist. A written induction should also be provided for inclusion in all environmental and safety documentation for future reference.

Flora and Fauna

25. Any potential hydrological impacts are to be controlled by a Soil and Water Management Plan during construction and a Stormwater Management Plan and Wastewater Management Plan for long term operational water management.
26. Potential sedimentation will be controlled through an Erosion and Sediment Control Plan and Soil and Water Management Plan during construction.
27. On site actions prior to commencement of earthworks/clearing/construction will include 'no-go' zones, protective fencing, personnel-inductions, fauna checks prior to works, relocation of logs, and installation of erosion and sediment controls.
28. Weed, pathogen and pollution controls will be implemented during construction phases.
29. The requirement for a BDAR under the BC Act should be waived.

Traffic and Access

30. Traffic control should be implemented by College staff.
31. The Green Travel Plan should be implemented.

Waste

32. Waste generated during construction for disposal to be removed by a licensed waste contractor and disposed of in a licensed landfill facility as required.

33. Consider measures and performance-based targets for reduction, reuse and recycling options.

Air

Construction Traffic

34. During Construction:
    a) All trucks entering or leaving the site with loads have their loads covered;
    b) Trucks associated with the project do not track dirt onto the public road;
    c) The public roads used by these trucks are kept clean.

Dust Management

35. During the construction phase of the project, all reasonable and feasible measures to minimise the dust generated by the project.

Construction Noise Mitigation and Management

36. The Construction Contractor will need to, where reasonable and feasible, implement best practice noise mitigation measures, including:
    a) Judicious selection of mechanical plant and equipment (e.g. quieter machinery and power tools);
    b) Maximising the offset distance between noisy plant items and nearby noise sensitive receivers;
    c) Avoiding the coincidence of noisy plant working simultaneously close together and adjacent to sensitive receivers;
    d) Orientating equipment away from noise sensitive areas;
    e) Carrying out loading and unloading away from noise sensitive areas;
    f) Localised shielding of noisy equipment;
    g) Minimising consecutive works in the same locality;
    h) Considering periods of respite.

ENVIRONMENTAL RISK ASSESSMENT

37. An Environmental Risk Assessment to identify the potential environmental impacts associated with the construction of the development. The impacts and mitigations of that risk assessment have been incorporated in the above.

PART J PROJECT JUSTIFICATION

The proposal is considered to be justified in the context of environmental, social and economic terms and is compatible with the locality in which it is proposed.

This EIS is lodged on the basis of:

Supporting state, regional and local planning objectives

The proposal is consistent with the objectives, provisions and strategies outlined within the following state, regional and local plans and policies:

- *NSW State Priorities*
- *State Infrastructure Strategy 2018 – 2038: Building the Momentum*
- *Future Transport Strategy 2056*
- *Development Near Rail Corridors and Busy Roads – Interim Guideline*
- *The Greater Sydney Region Plan - A Metropolis of Three Cities*
- *North District Plan*
- *Crime Prevention through Environmental Design Principles*
- *Healthy Urban Development Checklist*
- *Better Placed: An Integrated Design Policy for the Built Environment of New South Wales*
- *Draft Greener Places Design Guide*
- *Ku-ring-gai Community Participation Plan*
- *Ku-ring-gai Local Strategic Planning Statement*
- *Draft Ku-ring-gai Housing Strategy*
- *Ku-ring-gai Community Strategic Plan 2038*
- *Ku-ring-gai Local Environmental Plan 2015*
- *Ku-ring-gai Development Control Plan*

Appropriate use of an approved site

The proposal will provide modern teaching and learning facilities to support the ongoing evolution of the College in accordance with the needs of students, staff and the broader community. The proposal is key to enabling the College to continue its important role in promoting educational excellence.

Environmental impacts have been minimised

Specialist consultants have assessed the risks and determined that the development can be undertaken with minimal environmental impacts. No significant risk to the locality is to result from the proposal.

Compatibility with surrounding development

The proposed development is compatible with the existing components of the College and with neighbouring residential properties. The investigations undertaken as part of this SSD conclude that no significant cumulative impact would occur from the proposed development.

Ecologically Sustainable Development

The principles of ESD as outlined in Clause 7(4) of the EP&A Regulation are addressed as follows:

- Precautionary Principle – The project presents no threat of serious or irreversible environmental damage. The project will apply industry best practice ESD initiatives, implement climate change adaptation principles, and include vegetation planting to compensate for tree removal.

- Inter-Generational Equity – The buildings will provide healthy internal and external environments for teaching and learning, today and into the future. The landscaping principles prioritising planting of native endemic species, will deliver benefit to current and future generations.

- Conservation of Biological Diversity and Ecological Integrity – The development has been sited on an area of the College site that has previously been disturbed, and allows for the more densely vegetated areas to be maintained in their current state. Accordingly, the proposal will respect the biological diversity and ecological integrity of the broader site. In addition, new native trees will be planted in the Grey House Precinct, in order to positively contribute to biological diversity.

- Improved Valuation, Pricing and Incentive Mechanisms – The design and operation of the Grey House Precinct will reduce energy and water consumption and greenhouse gas emissions. Life Cycle Costing will be used throughout the design process to justify capital investment and reduce ongoing impacts.

Comprehensive justification for the proposed school facilities (Grey House Precinct) within Pymble Ladies College, is provided throughout this EIS and in the plans and technical reports included as appendices.

PART K CONCLUSION

This EIS has been prepared to consider the environmental, social, and economic impacts of the proposed development for the Grey House Precinct within the grounds of Pymble Ladies College. The EIS has addressed the issues outlined in the SEARs (**Appendix 1**) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant EPIs, built form, social and environmental impacts.

The proposal is considered appropriate for the location and should be supported by the Minister for the following reasons:

- It has been prepared having regard to the relevant Planning legislation and is permissible with consent. The site is zoned for the purpose of a school and has historically operated as a school since the early 1900s;
- The proposal has been prepared with regard to the relevant state, regional and local planning policies and strategies, and demonstrates consistency and compliance with the objectives of the strategic documents;
- It has been prepared having regard to Council's planning policies and generally complies with the relevant objectives and controls pursuant to KLEP2015 and KDCP;
- The proposal is suitable for the site as evidenced by the site analysis and various site investigations;
- The proposal does not have any unacceptable off-site impacts on adjoining or surrounding properties or the public domain, in terms of amenity, traffic, social and environmental impacts;
- The proposed development would primarily support the *existing* student and staff population, noting that the only increase in student and staff numbers would relate to the ELC. As such, the proposal would result in only minimal intensification of the current use of the site;
- The site benefits from existing access, parking, servicing and traffic management arrangements that would suitably accommodate the minor increase in trip generation (ELC attendees only);
- The site is serviced by existing services and infrastructure that are capable of supporting the proposed development;
- The proposed built form is of an appropriate scale, creates a transition between the College and neighbouring residential areas, exhibits architectural design excellence, and would be constructed using high quality materials and finishes. The proposal will integrate with, and positively contribute to, the established character of the College, surrounding locality and nearby heritage conservation area;
- The proposal provides high quality landscaping, innovatively-designed open spaces on multiple levels of the building, versatile areas for passive, active, free and structured play, and significant vegetation planting prioritising native endemic species;
- The proposal has addressed the concerns raised during consultation with key government agencies, the community and other stakeholders;
- The proposed development will result in an enhanced educational environment for the College through:
    - Promoting excellence in education;

- Building on the strengths of the past to inform the present and create new futures that will enable students to experience growth and success;
- Achieve quality teaching and learning in all aspects of College life;

- The proposed development will contribute positively to energy efficiency and environmental sustainability. The proposed development has adopted and incorporated many ESD features to reduce energy and water consumption during the life of the proposed development.

In summary, the development warrants the support of the Minister and we therefore recommend that approval be granted to the SSD.