NSW Department of Education

Review of Environmental Factors

Upgrades to Kogarah Public School

Document version: V3

Date: 28/03/2025

NSW GOVERNMENT

Acknowledgement of Country

The NSW Department of Education acknowledges the Bidgigal people of the Eora Nation who are the traditional custodians of the land on which the upgrade of Kogarah Public School is proposed.

We pay our respects to their Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of Australia.

The NSW Department of Education is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

The NSW Department of Education recognises that by acknowledging our past, we are laying the groundwork for a future that embraces all Australians; a future based on mutual respect and shared responsibility.

Declaration

This Review of Environmental Factors (REF) has been prepared by Barker Ryan Stewart on behalf of the NSW Department of Education (department) and assesses the potential environmental impacts which could arise from the proposed upgrade of Kogarah Public School at 24B Gladstone Street, Kogarah.

This REF has been prepared in accordance with the *Guidelines for Division 5.1 Assessments* and any relevant addendum (the Guidelines), and the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP).

This REF provides a true and fair review of the activity in relation to its likely impact on the environment and the information it contains is neither false nor misleading. It addresses to the fullest extent possible all the factors listed in Section 3 of the Guidelines, the EP&A Regulation and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In preparing the REF I have declared any possible conflict of interests (real, potential or perceived) and I do not consider I have any personal interests that would affect my professional judgement.

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Abbreviations

Abbreviation	Description
ACM	Asbestos Containing Materials
AEC	Areas of Environmental Concern
AEGH	Above existing ground height
AHD	Australian Height Datum
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System
AIA	Arboricultural Impact Assessment
ANZS	Australian and New Zealand Standards

Abbreviation	Description
BAM	Biodiversity Assessment Method
BC Act 2016	*Biodiversity Conservation Act 2016*
BC Regulation	Biodiversity Conservation Regulation 2017
BCA	Building Code of Australia
BDAR	Biodiversity Development Assessment Report
BGL	Below ground level
CA	Certifying Authority
CASA	Civil Aviation Safety Authority
CC	Construction Certificate
C&D	Construction and Demolition
CM Act	*Coastal Management Act 2016*
CEMP	Construction Environmental Management Plan
COLA	Covered Outdoor Learning Area
CoPC	Contaminants of potential concern
CSM	Conceptual Site Model
CTMP	Construction Traffic Management Plan
CWC	Connecting with Country
DA	Development application
The department	NSW Department of Education
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DHW	Domestic hot water
DoE	NSW Department of Education
DP	Deposited Plan
DPC	Department of Premier and Cabinet
DPE	Department of Planning & Environment
DPHI	Department of Planning, Housing and Infrastructure
Design Guide	*Design Guide for Schools* published by the Government Architect in May 2018
DSI	Detailed Site Investigation
EFSG	Educational facilities standards and guidelines
EIS	Environmental Impact Statement
EMF	Electomotive Force
EMP	Environmental Management Plan
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*

Abbreviation	Description
EPI	Environmental Planning Instrument
EPL	Environment Protection License
ESD	Ecologically Sustainable Development
FCF	Fibre cement fragments
FCU	Fan coil units
FM Act	*Fisheries Management Act 1994*
FTE	Full time equivalent
GBCA	Green Building Council of Australia
GFA	Gross Floor Area
GIPA	*Government Information (Public Access) Act 2009*
GLS	General Learning Spaces
Ha	Hectares
HV	High Voltage
HVAC	Heating, ventilation and air conditioning
KnD	Kiss and Drop
KW	Kilo watt
LEP	Local Environmental Plan
LGA	Local Government Area
LPoD	Legal Point of Discharge
LSPS	Local Strategic Planning Statement
MDB	Main distribution board
MNES	Matters of National Environmental Significance
MSB	Main switch board
NCC	National Construction Code
NorBE	Neutral or Beneficial Effect on Water Quality Assessment Guideline (2022)
NPW Act	*National Parks and Wildlife Act 1974*
NPW Regulation	National Parks and Wildlife Regulation 2009
NPWS	National Parks and Wildlife Service (part of EES)
NSW	New South Wales
NSW RFS	NSW Rural Fire Service
NT Act (Cth)	*Commonwealth Native Title Act 1993*
NVIA	Noise and Vibration Impact Assessment
OEH	(Former) Office of Environment and Heritage
PA	Public Address
PAD	Potential archaeological deposit
PAH	Polycyclic Aromatic Hydrocarbons
PCEMP	Preliminary Construction Environmental Management Plan

Abbreviation	Description
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
PSI	Preliminary Site Investigation
PIHAI	Preliminary indigenous heritage and impact assessment
PMF	Probably Maximum Flood
POEO Act	*Protection of the Environment Operations Act 1997*
Proponent	NSW Department of Education
PTS	Permanent teaching spaces
PV	Photovoltaic
REF	Review of Environmental Factors
RF Act	*Rural Fires Act 1997*
Resilience and Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
Roads Act	*Roads Act 1993*
SCPP DoE	*Stakeholder and community participation plan,* published by the NSW Department of Education October 2024
SCPP DPHI	*Stakeholder and community participation for new health services facilities and schools* published by the Department of Planning, Housing and Infrastructure October 2024
SDRP	School Design Review Panel
SEIFA	Socio Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
SoHI	Statement of Heritage Impact
SRISI	Summary Report of Initial Site Investigation
SRZ	Structural root zone
STP	School Transport Plan
TfNSW	Transport for NSW
TGS	Traffic Guidance Scheme
TI SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TPZ	Tree Protection Zone
TTIA	Transport and Traffic Impact Assessment
TWG	Transport Working Group
VRF	Variable refrigerant flow
WM Act	*Water Management Act 2000*
WMP	Waste Management Plan
WWII	World War II

Executive Summary

The Proposal

The proposal relates to the upgrade of Kogarah Public School to facilitate additional permanent teaching facilities and a multi-purpose Hall (the proposed activity). The proposed activity is located at 24B Gladstone Street, Kogarah.

The objective of the proposed Kogarah Public School upgrade works is to address existing asset issues, including the demand for additional permanent teaching facilities and a dedicated hall.

The proposed upgrade of Kogarah Public School includes the following:

- Demolition of Block J and Block H, existing playground facilities and the eastern Covered Outdoor Learning Area (COLA) in addition to footings and services associated with former demountable buildings;
- Tree removal;
- Construction of a new three storey Classroom building and amenities facilities (proposed Building L);
- Construction of a single storey Hall with attached COLA (proposed Building M);
- New pedestrian pathway connections providing access throughout the site;
- Servicing and sustainability upgrades;
- Site landscaping works; and
- Increase in students from 468 to 874 students and an increase in staff from 46 to 59 full time equivalent.

Planning Pathway

The proposal involves works by the Department of Education (the department) (a public authority) within the boundaries of the existing Kogarah Public School. Accordingly, pursuant to Section 3.37 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP), the proposed works are classified as development which may be carried out without consent.

Therefore, the proposal is considered an ‘activity’ for the purposes of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is subject to an environmental assessment. For the purposes of this proposal, the department is the proponent and the determining authority, and the required environmental assessment is in the form of a Review of Environmental Factors (REF). The REF has been prepared in the accordance with the *Guidelines for Division 5.1 Assessments* (DPE, June 2022) and the *Guidelines for Division 5.1 assessments - consideration of environmental factors for hospital and school activities Addendum* (DPHI, October 2024).

Consultation

Consultation will be undertaken with in accordance with statutory requirements under the TI SEPP and having regard to the *Stakeholder and community participation plan for new health services facilities and schools* (Department of Planning Housing and Infrastructure (DPHI), October 2024) (SCPP DPHI) and the *Stakeholder and Community participation plan for new schools and major school upgrade projects undertaken under Division 5.1 of the EP&A Act 1979* (Department of Education, October 2024) (SCPP DoE).

Comments received will be carefully considered and responded to.

In addition, non-statutory consultation has been undertaken with a range of community and government stakeholders throughout the design process.

Environmental Impacts

Kogarah Public School is located adjacent to the St Paul's Anglican Church (and hall) site which is heritage listed in accordance with the Georges River Local Environmental Plan (LEP) 2021. Documented studies also identified the potential for archaeology associated with a graveyard associated with the nearby church, a rectory, two former dwellings nearby and WWII air raid trenches within the study area. Following test excavations, the Statement of Heritage Impact prepared by Jacobs determined that the proposed activity (subject to mitigation measures) is unlikely to directly impact the archaeological potential within the Study Area and the proposed built form design will generate no significant adverse impacts on the heritage significance of the church and hall.

Contamination reports identified the minor occurrence of asbestos in fill in addition to Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater. Whilst previous investigations did not identify contamination at the site that triggered a need for remediation, asbestos (as AF/FA) was detected in fill soils at one location (although the concentration of asbestos was below the health-based SAC) and the Detailed Site Investigation (DSI) identified various data gaps due in part to access constraints. A Remediation Action Plan has therefore been prepared to outline contingencies for remediation and requirements for pre-remediation (supplementary) investigation.

The development footprint is sited adjacent to Princes Highway which is a Classified Road. Air quality impacts have been assessed via air dispersion modelling and confirmation provided that, subject to the implementation of recommended mitigation measures, the proposed activity is adequate with no adverse impacts above associated criteria likely to arise once developed. Road noise impacts have also been assessed and mitigated through the implementation of appropriate measures.

Other impacts have been considered as detailed in this REF.

Justification and Conclusion

Based on the environmental assessment undertaken as part of this REF, it has been determined that the proposal will not result in any significant or long-term detrimental impacts. The potential impacts identified can be reasonably mitigated and where necessary managed through the adoption of suitable site practices and adherence to accepted industry standards.

The environmental impacts of the proposal are not likely to be significant. Therefore, it is not necessary for an Environmental Impact Statement (EIS) to be prepared and approval to be sought for the proposal from the Minister for Planning and Public Spaces under Part 5.1 of the EP&A Act. The proposed development will not have any effect on Matters of National Environmental Significance and approval of the Activity under the Commonwealth EPBC Act is not required.

On this basis, it is recommended that the department determine the proposed activity in accordance with Part 5 of the EP&A Act and subject to the adoption and implementation of mitigation measures identified within this report and Appendices.

1. Introduction

The NSW Department of Education (the department) proposes upgrade works to the existing Kogarah Public School (the activity) located at 24B Gladstone Street, Kogarah (the site).

The proposed upgrade is necessary to facilitate permanent teaching spaces in lieu of demountable buildings that have been removed from the site. Further, the school has operated since its establishment without a dedicated Hall and the proposed development will satisfy the demand for a purpose built Hall facility to cater for the needs of the school and the local community.

This Review of Environmental Factors (REF) has been prepared by Barker Ryan Stewart on behalf of the department to determine the environmental impacts of the proposed upgrade of Kogarah Public School. For the purposes of these works, the department is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of this REF is to describe the proposal, examine and take into account all matters affecting or likely to affect the environment and to detail mitigation measures to be implemented to manage impacts.

The potential environmental impacts have been assessed in the accordance with the *Guidelines for Division 5.1 Assessments* (DPE, June 2022), Guidelines for Division 5.1 assessments - consideration of environmental factors for hospital and school activities Addendum (DPHI, October 2024), EP&A Act, the *Environmental Planning and Assessment Regulation 2021*, and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessment contained within the REF has been prepared having regard to:

- Whether the proposed activity is likely to have a significant impact on the environment and therefore the necessity for an Environmental Impact Statement (EIS) to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act; and
- The potential for the proposal to significantly impact *Matters of National Environmental Significance* (MNES) on Commonwealth land and the need to make a referral to the Australian Government Department of Environment and Energy for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

2. Proposed Activity

2.1 The Site & Locality

The site is located within the Georges River Council Local Government Area (LGA) and within the suburb of Kogarah.

Kogarah Public School is located at 24B Gladstone Street, Kogarah and contains a site area of 1.644ha per Detail Survey. The school is accommodated within the following allotments:

- Lots 1-3 DP 999122;
- Lot 1 DP 179779;
- Lot 1 DP 667959;
- Lot 2 DP 175247; and
- Lot A DP 391026.

The site is irregular in shape with existing vehicular access and the car park provided from Gladstone Street along the south western boundary. Pedestrian access is provided from Gladstone Street and Princes Highway. The site accommodates eight (8) permanent buildings and a number of modular school buildings with play areas largely confined to the centre and north eastern portions of the site.

Site topography slopes gently from north west to east with a level difference of approximately 2.8-3m between the western edge of proposed Block L and the Princes Highway frontage in the east of the site.

The site is located adjacent to Princes Highway which is a Classified Road managed and maintained by Transport for NSW. Access to the site from Princes Highway is limited to pedestrian gates and an emergency vehicle access point only.

Vegetation is scattered throughout the site with a number of trees located around the periphery and within the development footprint towards the north eastern corner of the school. A pronounced row of street trees exists along the Princes Highway frontage of the site.

Development surrounding the site includes:

- North: Residential flat building at 71 Regent Street, retail tenancies orientated to Princes Highway (39-43 Princes Highway) and a smaller residential flat building at No 41 Princes Highway;
- East: Princes Highway and a mix of commercial and mid-rise residential development beyond;
- South: St Paul’s Church complex comprising St Paul’s Child care Centre (hall), St Paul’s Anglican Church and a residential flat building located at 24-30 Gladstone Street; and
- West: A mix of single dwelling and residential flat building development with Regent Street beyond.

The location and configuration of the site is shown in Figure 1 and Figure 2.

Figure 1: Aerial Locality Plan (Nearmap, 27 January 2025)

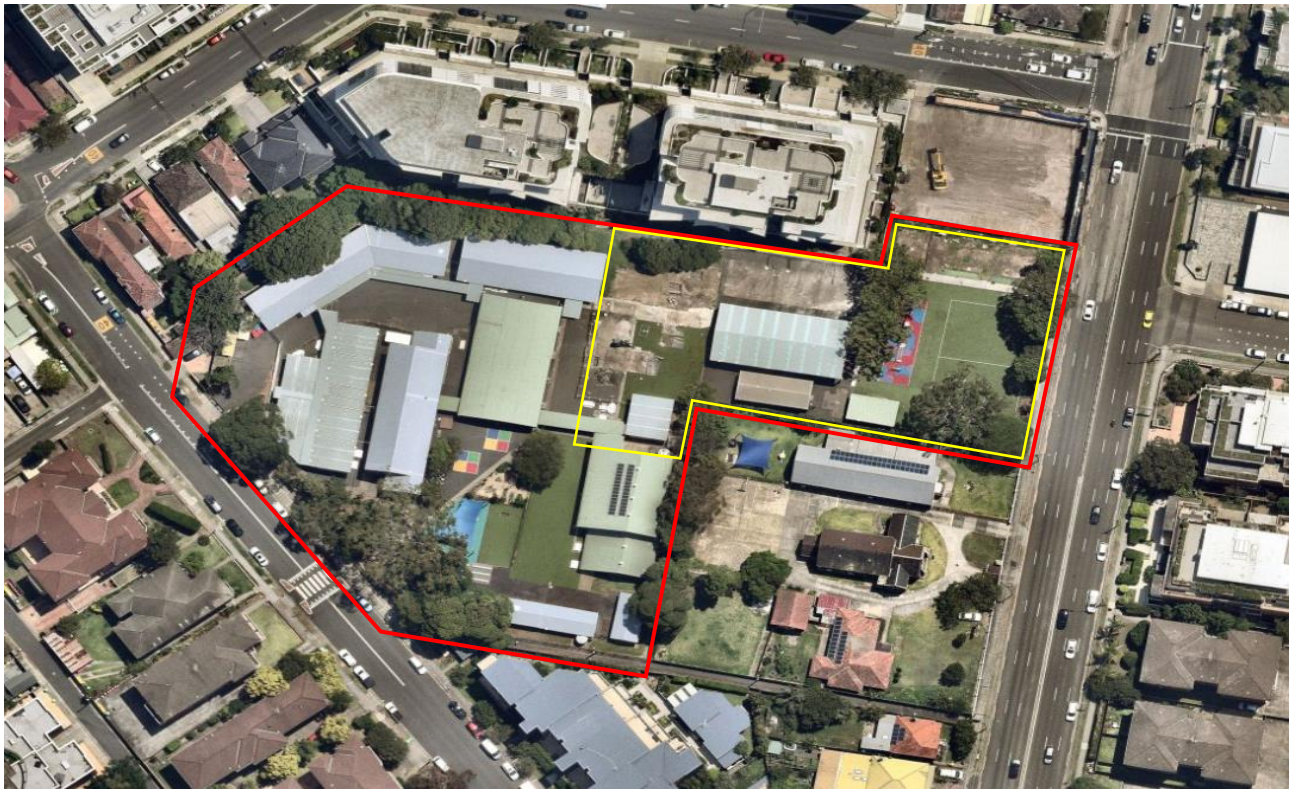

Figure 2: Aerial Site Plan – indicative development footprint identified in yellow (Nearmap, 27 January 2025)

2.2 Site Photographs

Figure 3: Photograph looking west toward proposed Classroom building footprint (Source: RP Infrastructure, 2025)

Figure 4: Photograph looking north east toward proposed Classroom building and Hall footprint (Source: RP Infrastructure, 2025)

Figure 5: Photograph looking west toward proposed Classroom building footprint (Source: RP Infrastructure, 2025)

2.3 Site Constraints and Opportunities

Consideration of site constraints has been undertaken through a review of the Section 10.7 (2 & 5) Planning Certificates dated 24/6/2024, mapping under relevant Environmental Planning Instruments (EPIs), and a review of specialist consultant reports and other desktop assessments.

Key site constraints include:

- Development footprint location adjacent to a Classified Road;
- Compact site area and surrounding high density development to the north;
- Heritage significance of the site adjacent to the south and potential archaeology within the subject site; and
- Parking and access.

Consideration has also been given to opportunities identified throughout project development, including:

- Orientation and setback of new buildings;
- Interaction with existing and future built form; and
- Street access and accessibility through the existing school site.

3. Proposed Activity

3.1 Summary

The proposed Kogarah Public School upgrade works include the following:

- Demolition of Block J (Sports Store) and Block H (Toilet Block), a portion of existing playground facilities and the eastern Covered Outdoor Learning Area (COLA) in addition to footings and services associated with former demountable buildings;
- Tree removal;
- Construction of a new three storey Classroom building and attached amenities facilities (proposed Building L);
- Construction of a single storey Hall with attached COLA (proposed Building M);
- New pedestrian pathway connections providing access throughout the site;
- Service upgrades;
- Site landscaping works;
- Increase in student and staff capacity of the site from 468 to up to 874 students and 46 to 59 full time equivalent staff.

Table 1 provides a summary of key aspects of the activity.

Table 1: Summary of the activity

Project Element	Description
Site Area	North eastern portion of the site, refer to Figure 2.
Project Name	Upgrades to Kogarah Public School
Project Summary	24 new Permanent Teaching Spaces (PTS) proposed within a three storey classroom building (Building L) adjacent to the proposed single storey Hall and attached COLA (Building M).
Use	Educational establishment
Student and Staff Numbers	Existing students – 468. Students at completion – up to 874 Total additional students – 406. Existing staff – 46 Full Time Equivalent (FTE). Projected staff – 59 FTE Total additional full time equivalent staff – 13.
Car Parking and Bicycle Spaces	The existing car park contains 20 car spaces within the south east of the site accessed from Gladstone Street. No change to the existing car park design or number of on-site car spaces is proposed. Bicycle parking – the site accommodates 5 bicycle parking spaces adjacent to Building F. The development proposes to integrate an additional 42 student bicycle spaces and 6 staff spaces within the site to cater for the increased demand.
Height	Proposed Classroom Building (Building L) – 13.45m (three storeys). Proposed Hall (Building M) – 7.85m (single storey).
Canopy Cover	22.6%
Off Site Works	Proposed off site works are limited to the following:

Project Element	Description
	• Temporary construction vehicle access proposed to the site from Princes Highway. • Modified stormwater connection via the existing Legal Point of Discharge to the established kerb pit within the Princes Highway road reserve. • New authority substation required within the Gladstone Street road reserve.

The key features of the proposed activity are identified in plan extracts within Figure 6 to 11.

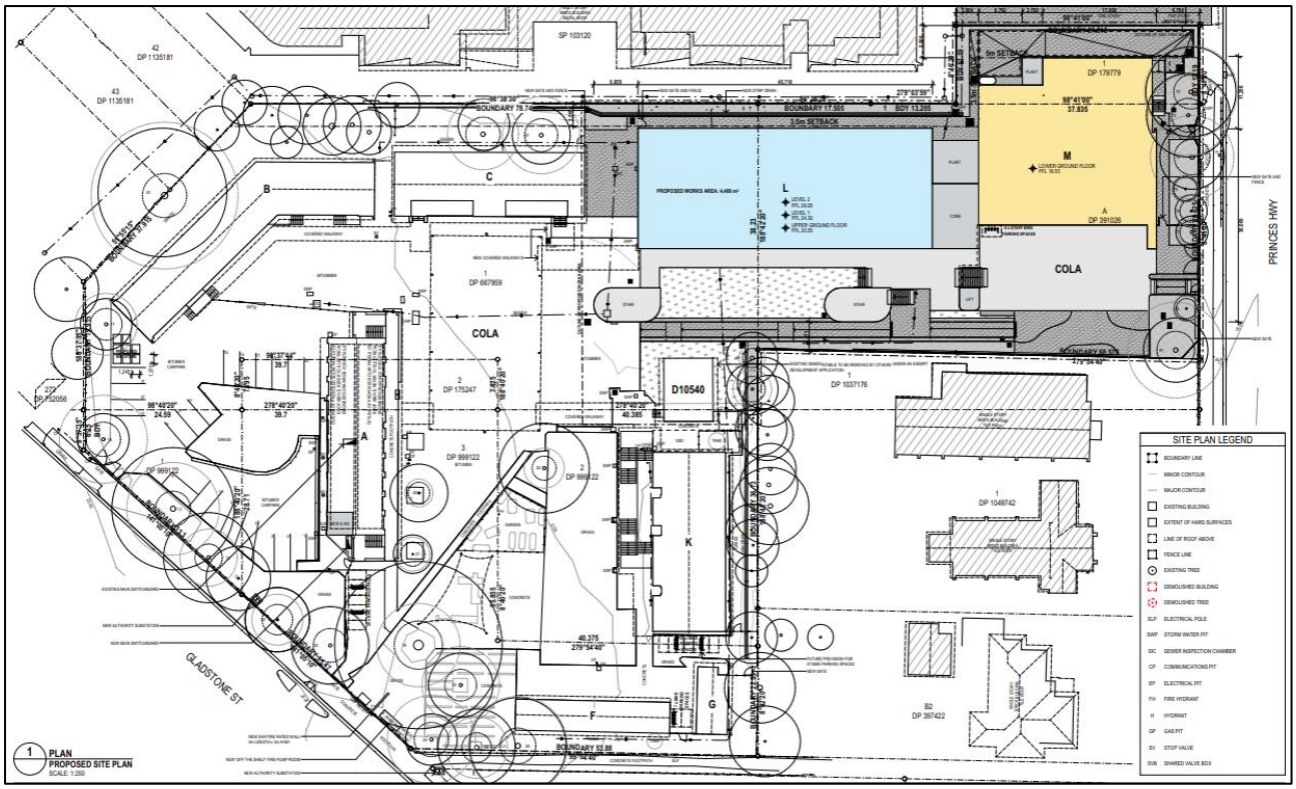

Figure 6: Proposed Site Plan (Fulton Trotter Architects, 2025)

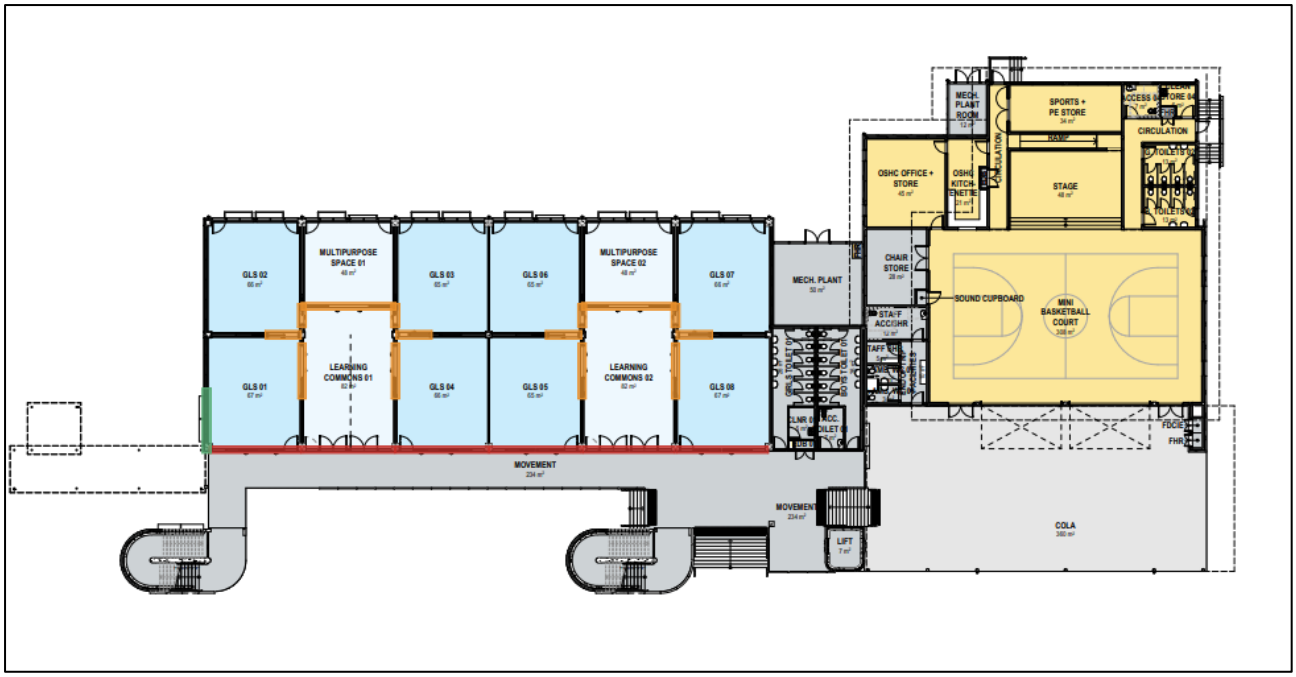

Figure 7: Proposed Ground Floor Plan (Fulton Trotter Architects, 2025)

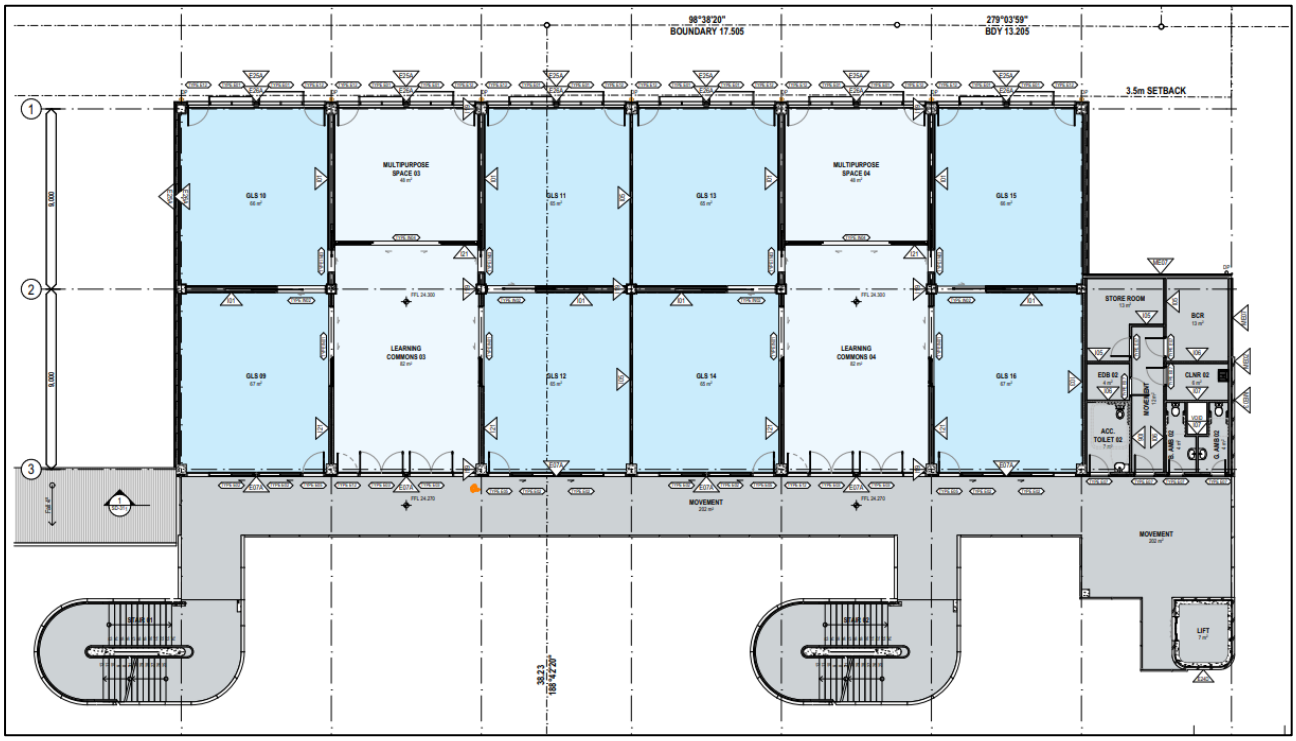

Figure 8: Proposed Level 1 Plan (Fulton Trotter Architects, 2025)

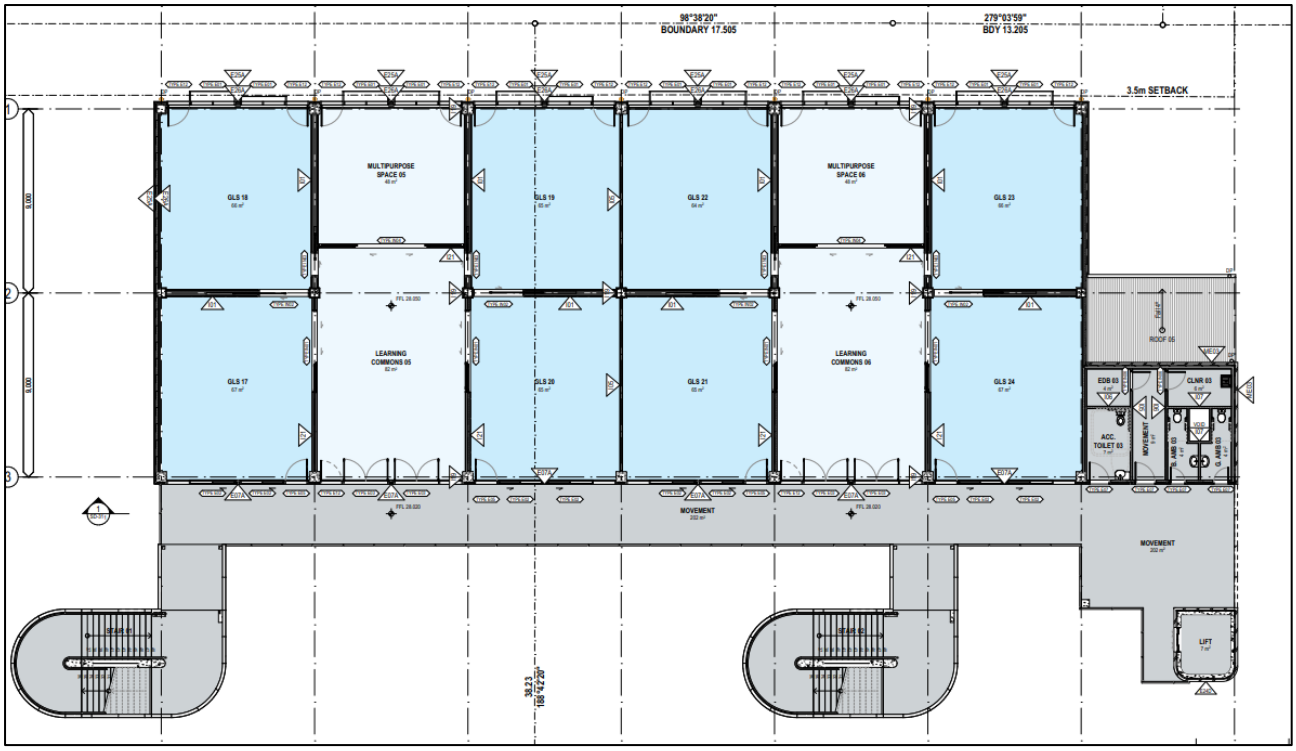

Figure 9: Proposed Level 2 Plan (Fulton Trotter Architects, 2025)

Figure 10: Perspectives View – Proposed Classroom building viewed from the south west (Fulton Trotter Architects, 2025)

Figure 11: Perspectives View – Proposed Hall and COLA viewed from the south (Fulton Trotter Architects, 2025)

3.2 Design development

3.2.1 Proposed Block L - Classroom Building

The proposed Classroom Building (Block L) comprises a three storey masonry and metal clad built form with two stairwells and a lift facility located at the building's southern elevation. Block L benefits from integration of curved architectural elements within the stairwells and lift shaft as evident in Figure 10. These elements appropriately assist with scale, articulation and character.

Proposed Block L will provide a combination of General Learning Spaces (GLS), Learning Commons and Multipurpose teaching spaces (24 in total) within a standardised architectural layout. Student amenities facilities will be provided at Ground Level with accessible and ambulant amenities facilities provided at Level 2.

Steel safety mesh is integrated into the southern elevation of proposed Block L to secure the upper level pedestrian movement areas adjacent to the classroom entry points. Frosted glass louvres will be integrated within the northern elevation of the building to minimise any unacceptable overlooking or direct sightlines to the residential development to the north. Louvres will be subject to a maximum openable angle which represents a permanent solution for privacy. Views from a person standing in the classroom building looking to the north would be appropriately obscured in order to maximise the privacy of internal occupants and residents to the north. The frosted glass louvred solution was preferred over the use of

perforated metal screening which significantly impacted daylight and amenity without any increase in privacy when compared with the louvred solution. The proposed louvres facilitate daylight in accordance with EFSG and Greenstar requirements which ensures long term amenity for these spaces. Refer to Figure 12 below which demonstrates the architectural merit of the northern elevation and the associated frosted louvre solution.

Figure 12: North Elevation of the Classroom building render identifying frosted privacy louvres (Fulton Trotter Architects, 2025)

3.2.2 Proposed Block M - Hall

The proposed single storey Hall (Building M) is located immediately adjacent to the new Classroom Building (Building L) and is architecturally defined by a gentle slope in roofline to provide additional solar access to the internal spaces. A COLA then provides an extension of the internal hall space by way of an angled roofline that will facilitate overflow seating for assemblies and covered play space to the south.

Integrated within the Hall are a number of ancillary facilities as demonstrated in Figure 7 including:

- Basketball court and open hall area;
- Performance stage;
- Out of School Hours Care office, storeroom and kitchenette;
- Student amenities facilities;
- Staff amenities including end of trip facilities; and
- Storage areas.

The new development provides all weather pedestrian connections between proposed Buildings M and L via stairs and a lift.

The built form has been designed with consideration of the standard ‘Hub Layouts’ for the Classroom Building and the pattern book for both the Hall and the classroom building.

The colour scheme of the new build is inspired by the existing school colours with neutral masonry elements and a combination of grey, green and earth inspired textures. Refer to Figures 13 and 14 for details on façade treatments.

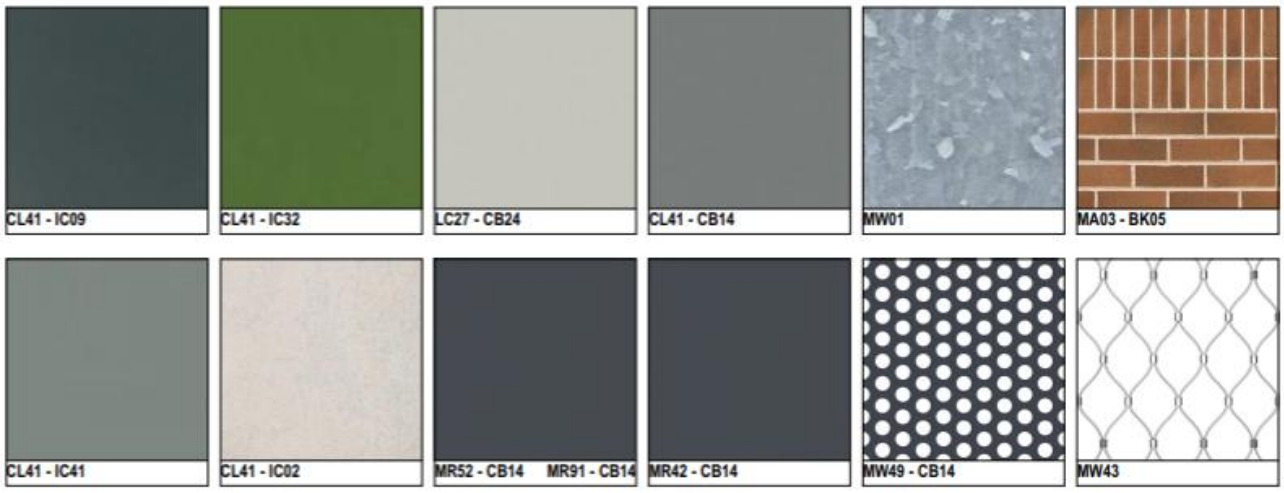

Figure 13: Colours and Materials (Fulton Trotter Architects, 2024)

Figure 14: Visualisation – Hall Eastern Facade (Fulton Trotter Architects, 2024)

3.2.3 Design Guide and Design Quality Principles

Fulton Trotter Architects have prepared an Architectural Design Report (refer Appendix 4) which responds to the Design Guide and Design Quality Principles identified in TI SEPP.

3.2.4 Connecting with Country

No formal Connecting with Country consultation with Aboriginal representatives has been undertaken during the design development of the project. However, in relation to Connection with Country, Fulton Trotter Architects confirmed the following in the Architectural Design Report:

> *The project has followed a simple approach in relation to Connecting With Country where the design aims to extend existing arrangements that the School currently has. The project will include indigenous artwork opportunities to external areas of the building and landscape that continue existing indigenous programs at the school.*

Architectural plans (refer to Appendix 2) identify an Indigenous Art Strategy which provides opportunities for the integration of future Indigenous art piece on a building exterior as extracted in Figure 15 below. The Indigenous Art Strategy will be required to progress to detailed design stage.

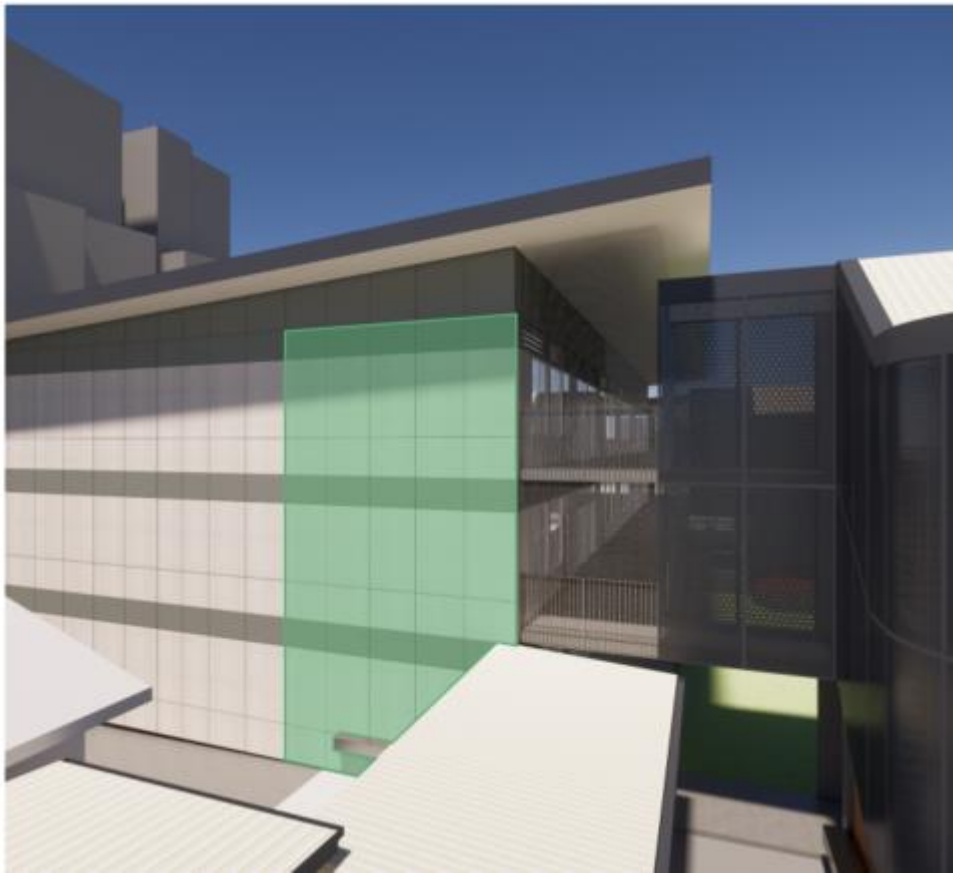

Figure 15: Indigenous Art Location Example (Fulton Trotter Architects, 2025)

3.3 Sustainability and Climate Change

3.3.1 Sustainability

A Net Zero Statement has been prepared by NDY demonstrating the project will avoid dependence on fossil fuels to operate at net zero emissions by 2035 (refer Appendix 9).

The Net Zero Statement confirmed the Kogarah Public School Upgrade is designed to be fully electric at practical completion, with no gas-powered plant used to meet space heating and domestic hot water (DHW) demand. In addition, Kogarah Public School Upgrade is to provide additional solar facilities within an existing building on the site. This is achieved through strategies addressing the following areas, with additional detail provided on each within the NZS document:

- On-Site Fossil Fuel Usage;
- Renewable Energy Generation;
- Energy-efficient design;
- Energy consumption and emissions calculations.

With respect to energy efficient design, NDY confirmed the project has implemented passive design principles alongside efficient active HVAC systems to reduce the demand when compared against a “code-compliant” alternative. The Net Zero Statement confirms that the design has implemented the following sustainability measures:

Shading

- *The façade incorporates eaves and other shading devices to reduce the energy demand of the building.*

Natural ventilation

- *A mixed mode natural ventilation system is currently designed when outdoor conditions are favourable. Whilst active air conditioning will also be provided, this will only need to operate during hotter and colder months, taking advantage of the Eastern Sydney climate, and consuming less energy as a result.*

Airtightness

- *An airtightness consultant will be engaged during detailed design to nominate an appropriate airtightness target for the building. Given the function of the building, minimising air leakage through the façade is an important consideration.*

Building fabric

- *As per the EFSG and Green Star requirements, the project will exceed the minimum requirements of Section J of the National Construction Code (NCC) 2022, by at least 20%. The project team are currently refining the specification of the glazing and insulation thermal performance by using a Verification Method of compliance (J1V2) which utilises an energy model to compare the performance and allow a bespoke solution that is relevant to the project to be developed.*

Efficient lighting

The project incorporates the following initiatives:

- *To AS/NZS 1680, AS/NZS 1158 and BCA Part J7*
- *Luminaire utilising LEDs to be used throughout*

HVAC systems

The school is designed to be fully electric at practical completion, with no gas-powered plant used to meet space heating demand. As per NDY's Schematic Design Drawings, the following are provided:

- *In-ceiling ducted reverse-cycle Variable Refrigerant Flow (VRF) fan coil units (FCUs) serving learning spaces. Condensers are located in a dedicated plant area.*
- *Outside air in learning spaces is ducted directly to FCUs, intake is via louvre on façade.*
- *Excess air in learning spaces is relieved via louvre on façade, complete with non-return damper.*
- *A mixed-mode natural ventilation control strategy is provided to all learning spaces, complete with SINSW's standard "Traffic Light" HVAC controls.*
- *BCR is to be provided with wall-mounted split A/C and outside air via in-line duct-mounted fan. Intake to the fan is via louvre on façade. Relief of excess air is via door grille. Condenser is located externally in a dedicated plant area.*

3.3.2 Sustainable Transport

A School Transport Plan (STP) is provided in the Transport and Traffic Impact Assessment (see Appendix 15) which identifies sustainable travel options to and from the school. The STP proposes strategies to encourage the wider use of sustainable and alternative transport. The mode share targets for the site were developed based on consideration of the transport targets from the Greater Sydney NSW Services and Infrastructure Plan (2018), existing staff and student travel mode surveys, and the school catchment analysis. Key recommendations / actions in the STP include the following:

- Integration of additional student / staff bicycle parking;
- Consideration of upgrade to external active transport facilities. This includes a review of footpath widths on Gladstone and Regent Streets to better support active transport;
- Staff carpooling initiative to minimise the use of private vehicles;
- Ongoing management of the Kiss and Drop facility to facilitate safe and efficient use for parents;
- Communication initiatives which outline the Kogarah Public School Green Travel actions and promote the uptake of sustainable travel options to and from school; and
- Development of a Transport Access Guide which will outline the school's approach to sustainable travel.

3.3.3 Climate Change

Consideration of changing climate conditions and relevant geographical climate variables has guided the design of the built form as follows:

- The mixed mode natural ventilation system can be implemented primarily when outdoor conditions are favourable. Active air conditioning will also be provided in more extreme weather events where heatwaves may impact students and staff for a prolonged period.
- The site is not located within a geographical area that is subject to frequent storm events, however the building design incorporates covered walkway connections to the existing school buildings in the west of the site and stairwells providing access to the Classroom Building and the pedestrian entry to the Hall incorporates weather protection to mitigate the impacts of wind and rain.
- Natural ventilation will be maximised through the use of louvred windows and openable windows to mitigate temperature increases in summer; and
- Weather protection is provided to key pedestrian areas.

3.4 Landscaping

The proposed landscape design responds appropriately to the site context and employs a replacement planting scheme designed to offset the loss of vegetation impacted by the proposed built form and servicing. Landscape documentation confirms that all trees proposed for removal will be replaced with suitable species at a replenishment rate of 1:1.

As evident in Figure 16, the landscape design provides new screen planting to the northern boundary of the site to assist with mitigation of privacy for students, staff and neighbouring developments. The screen planting will comprise of native trees to a maximum height of 10m at maturity with the species chosen for shade tolerance and site suitability adjacent to the multi storey residential development to the immediate north. Groundcover plantings will further soften the periphery of the mechanical plant located to the north west of the Hall.

Hard landscape elements include the provision of play equipment adjacent to the proposed COLA and pedestrian pathways that provide access to the more central areas of the site. New gates will also provide continued access to the Princes Highway.

The development will employ a native landscape planting palette that is consistent with the established character of the site. Further, 22.6% of the site will be occupied by tree canopy at maturation of new plantings.

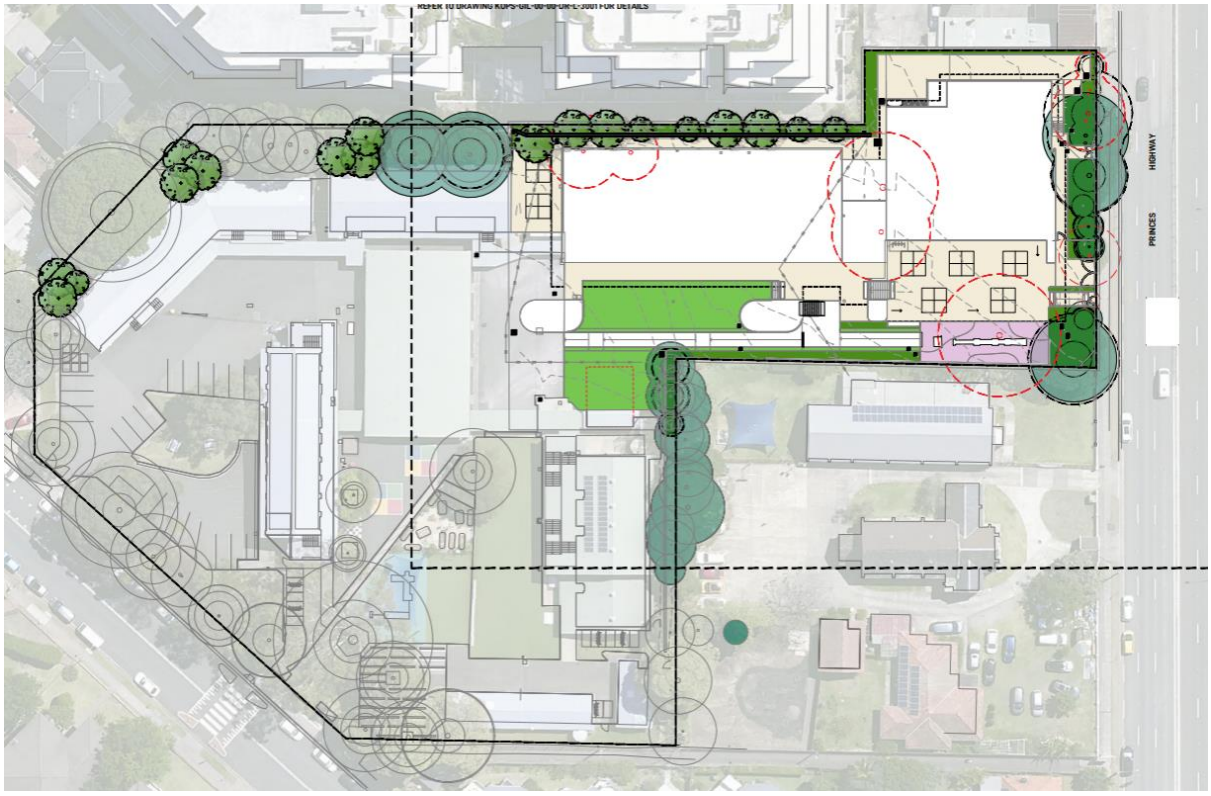

Figure 16: Schematic Landscape Plan (Ground Ink, 2025)

3.5 Access and Parking

3.5.1 Pedestrian Access

Existing pedestrian access will be retained from Gladstone Street and Princes Highway. No changes are proposed to the main pedestrian access from Gladstone Street whilst the Princes Highway entrance will be upgraded with a new pedestrian gate to be installed within the existing fence line to retain secondary access to the east.

3.5.2 Vehicular Access and Car Parking

The site accommodates an existing at-grade car park within the south east corner of the site containing 20 spaces accessed from Gladstone Street. No changes are proposed to the Gladstone Street vehicular access point or the existing car park. The site will retain 20 off street parking spaces for use by staff following works completion and decommissioning of the temporary demountables currently located within the car park.

A temporary vehicular access point for construction vehicles will be established via a crossover from the Princes Highway. External works within the Classified Road reserve of Princes Highway will be subject to the approval of Transport for NSW via the Section 138 Application process detailed as a mitigation measure in Appendix 1.

3.5.3 Bicycle Parking

The Site Plan includes the provision of 47 student bicycle spaces located in close proximity to the Gladstone Street main site entry near buildings A, K and F. 6 staff bicycle spaces are also provided which are proximate to the end of trip facilities within the new hall building and can be accessed via the Gladstone Street or Princes Highway site entry points (Refer to Figure 17 below).

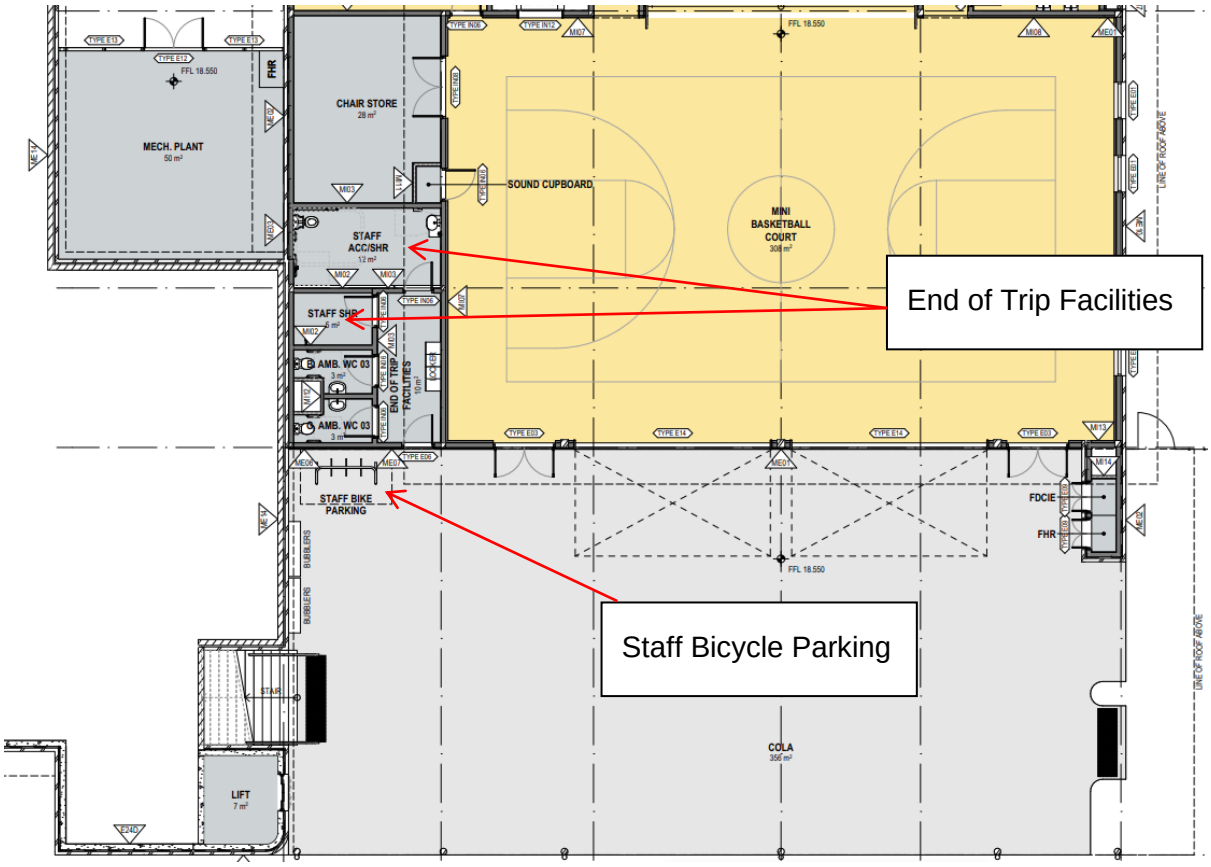

Figure 17: Location of Staff Bicycle Spaces and End of Trip Facilities (Fulton Trotter Architects, 2025)

3.6 Construction

A Preliminary Construction Management Plan (refer Appendix 13) has been prepared to outline the construction activities proposed. The plan is preliminary in nature and will be updated by the construction contractor who will be required to prepare a final Construction Management Plan (CMP) as per mitigation measures attached in Appendix 1.

As demonstrated in Figure 17 the Preliminary CMP identifies the following key construction measures:

- Construction access to be provided from Princes Highway only with a truck turntable to facilitate forward ingress and egress of construction vehicles. Note St Paul's Anglican Church may be used for temporary vehicle turning facilities and site

establishment areas, including parking and compound areas, during construction subject to final agreement with relevant stakeholders.

- Site establishment and indicative areas for the following:
    - Hoarding;
    - Site sheds;
    - Site entry;
    - Truck turntable;
    - Crane location; and
    - Materials handling areas.

A per the mitigation measures provided in Appendix 1, construction hours will be as follows:

- 7:00am to 6:00pm, Monday to Friday
- 8:00am to 1:00pm, Saturday
- No work without prior approval on Sundays and Public Holidays.

Note Figure 18 demonstrates the construction management option that utilises the adjacent St Paul's Church which is subject to agreement with relevant stakeholders.

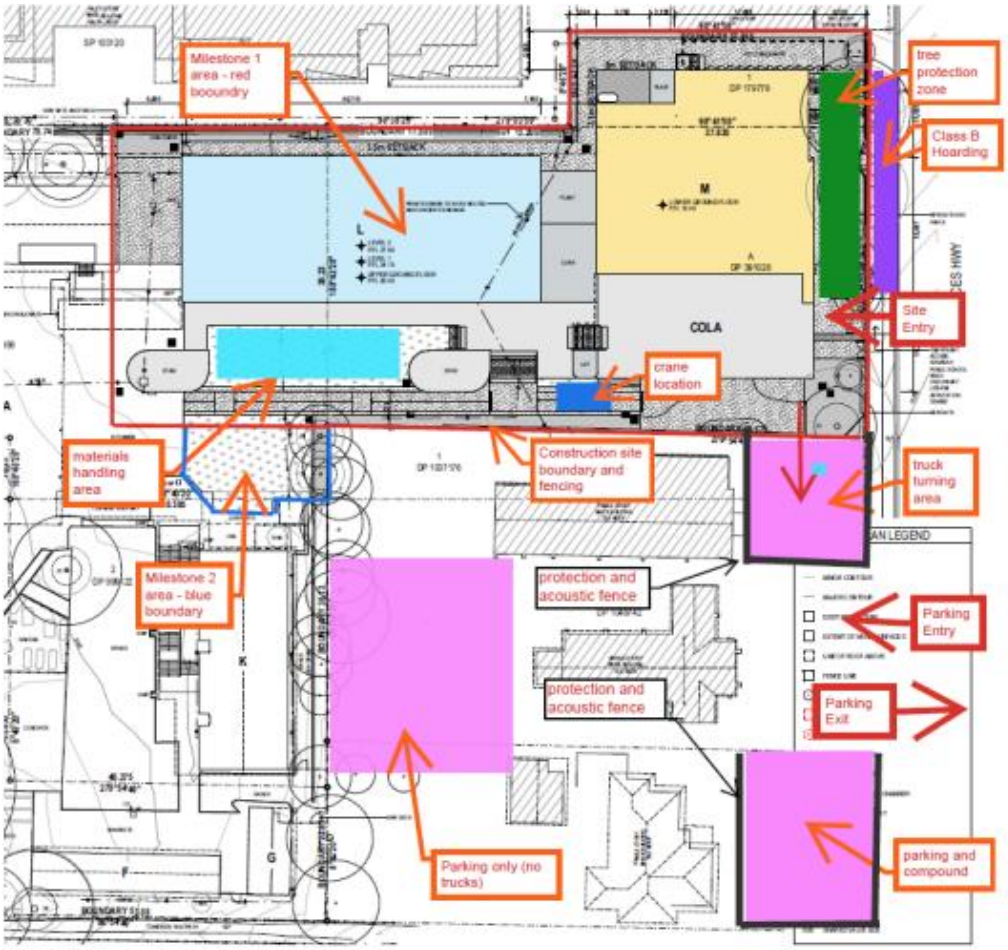

Figure 18: Proposed Construction Site Establishment Plan - Option utilising the Church (RP Infrastructure, 2025)

3.7 Demolition

The Demolition Plan identifies the demolition of built form elements and trees as follows:

- Demolition of Block J, Block H and demolition / removal of the eastern COLA to another site;
- Removal of 18 trees;
- Demolition of in ground services associated with the former demountable classrooms;
- Demolition of hardstand areas within the development footprint; and
- Demolition / relocation of existing play equipment.

Further details can be derived from Appendix 2 and the extract provided in Figure 19.

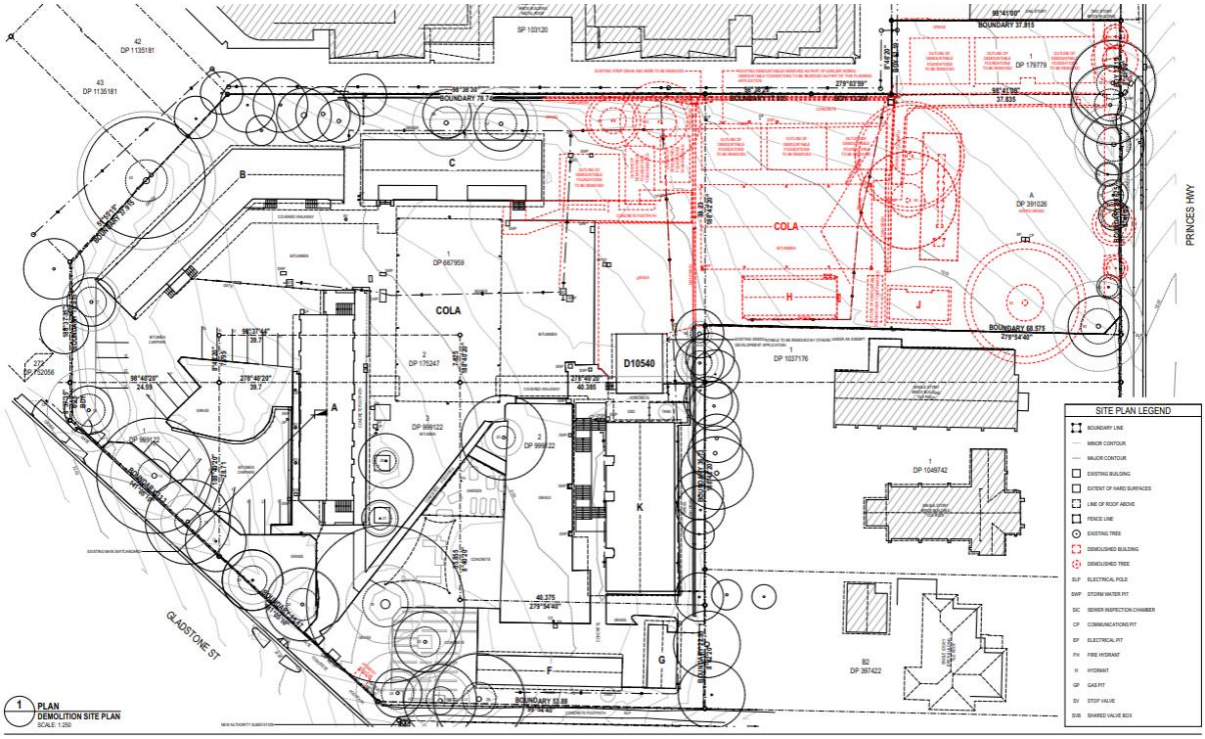

Figure 19: Demolition Plan (Fulton Trotter Architects, 2025)

3.8 Earthworks

Earthworks are proposed to facilitate the construction of the built form and associated site levels to maximise access through the site.

The Cut and Fill Plan replicated in Appendix 3 and Figure 20 below demonstrates a total cut volume of 510m^2 and total fill volume of 79m^2 which results in a net import fill volume of 431m^2.

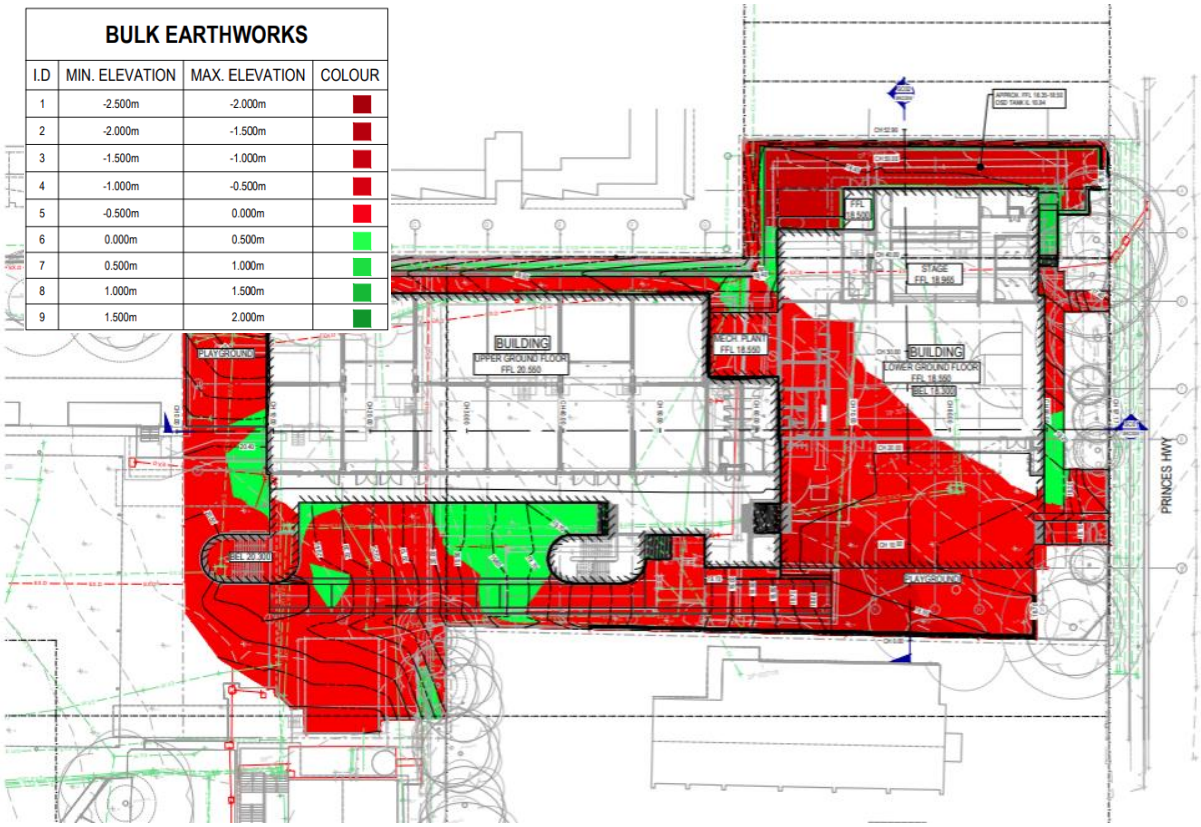

Figure 20: Bulk Earthworks Plan (Meinhardt, 2025)

3.9 Remediation

Whilst previous investigations within the Detailed Site Investigation (DSI - see Appendix 22) did not identify contamination at the site that triggered a need for remediation, asbestos was detected in fill soils at one location (although the concentration of asbestos was below the health-based SAC) and the DSI identified various data gaps due in part to access constraints. Based on the data obtained during the DSI, further investigation of the site is required to supplement the existing data. This further investigation is currently underway at the time of REF finalisation, and the Sampling, Analysis and Quality Plan (SAQP) for the investigation is attached in the DSI. Note this further investigation will confirm whether or not remediation is actually required.

Notwithstanding the above, A Remediation Action Plan (RAP) has been prepared by JKE (see Appendix 27) for completeness and to outline contingencies for remediation and requirements for pre-remediation (supplementary) investigation. Given the extent of contamination has not yet been confirmed, the RAP provides the below remediation options:

1. *On-site treatment of soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;*
2. *Off-site treatment of excavated material so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site;*

Or if the above are not practicable:

3. *Consolidation and isolation of the soil by on-site containment within a properly designed barrier; and*
4. *Removal of contaminated material to an approved site or facility, followed where necessary by replacement with clean material; or*
5. *Where the assessment indicates that remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.*

Based on the existing data for the site, the preferred remedial contingency options include:

- Option 4 excavation and off-site disposal to a licensed landfill facility; and
- A combination of Option 3 cap and containment, and Option 5 long-term management.

The findings of the pre-remediation (supplementary) investigation will establish whether there are any asbestos (or any other contaminant) concentrations in soil that exceed the threshold and warrant remediation. Depending on the nature and extent of such remediation, JKE consider that Option 4 would most likely be applicable for small quantities of contaminated soils, and a combination of Options 3 and 5 would be applicable for larger quantities of contaminated soils, should contamination impacts be identified.

Review of Section 4.8 of SEPP (Resilience and Hazards) 2021 and discussions with JKE have confirmed that future remediation works will be classified as Category 2 works in accordance with the Resilience and Hazards SEPP and can be undertaken without consent.

3.10 Tree and Vegetation Removal

An Arboricultural Impact Assessment (AIA) was prepared to determine the potential impacts of the proposal on trees (refer Appendix 19). The AIA assessed 43 trees within and adjacent to the site of which 25 were determined to be suitable for retention with a recommendation to remove 18 trees (all internal to the site) to address development conflicts.

The trees proposed to be removed are identified as trees 58-71, 77-79 and 82. Eight (8) trees have been identified as very low to low retention value, three (3) low to moderate, 3 moderate and four (4) as high retention value. The majority of the trees to be removed are native. The Arborist report includes specific criteria relating to the protection of the remaining trees on site especially during construction works.

The Landscape Plan identifies the proposed replacement of trees at a ratio of 1:1 which was determined to be the appropriate outcome for the school given site area and play space constraints. The new plantings will include trees within 45L volume pots and where possible these trees should be endemic to the local area or native trees which are already part of the vegetation community on the site.

3.11 Utilities and Services

3.11.1 Stormwater Management

One existing legal stormwater point of discharge is provided from the site to the Princes Highway drainage network in the north east. The proposed stormwater design (refer to the civil design package in Appendix 3 and Stormwater Management Report in Appendix 11) demonstrate the following:

- Existing legal point of discharge (LPOD) is to be maintained;
- Stormwater will be conveyed to the LPOD via a series of pits and pipes all draining via gravity to the north east corner of the site;
- The proposed stormwater drainage system will be required to convey generated stormwater runoff from the new developed site, while the stormwater runoff generated by the adjoining pervious areas will be catered for within the proposed diversion stormwater drainage system;
- An on-site detention tank with approximately 98m^3 storage volume is to be provided to the north of the proposed Hall which will ensure that the peak discharge flows draining from the proposed development activity can be managed by the downstream drainage systems; and
- The following water quality measures will be implemented to address relevant water quality objectives:
    - North Treatment - Ten number of (10) x 690 PSorb Stormfilters or equivalent; and
    - South Treatment - Four number of (4) x 690 PSorb Stormfilters or equivalent.

An extract from the Civil Works Plan is provided at Figure 21 for reference.

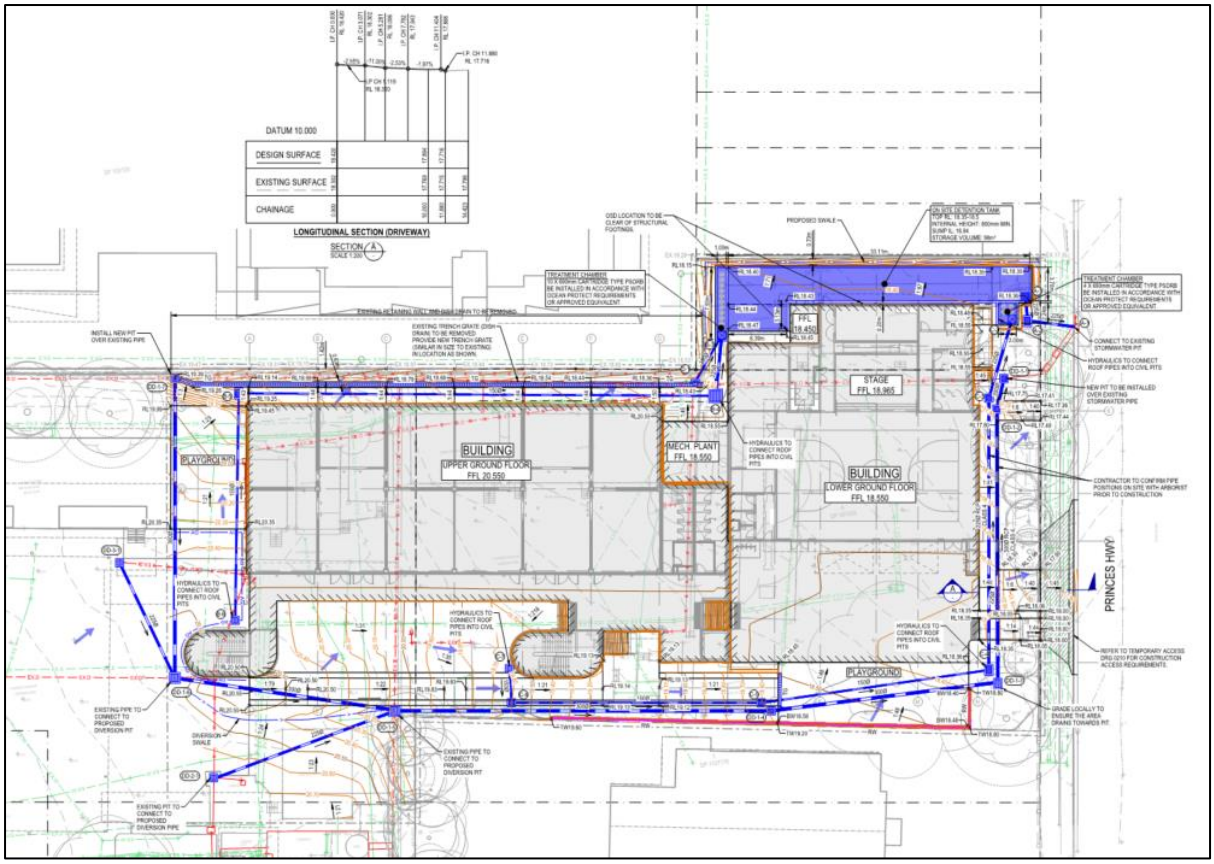

Figure 21: Civil Works Plan (Meinhardt, 2025)

3.11.2 Water, Sewer and Gas

The key utility and service requirements relevant to the proposed activity are as follows:

- Sewer and Water: Subject to Section 73 application, connection is proposed from the water network and sewer services of the activity to the existing network on Princes Highway.
- Gas: No gas connection proposed for the activity.

3.11.3 Electrical and Telecommunications

The school contains one main switch board (MSB) located in the Admin / Staff building (Building A) which serves all sub distribution boards throughout the site via a network of pits and conduit. The existing MSB is not adequate for re-use given it is:

- Built to an older Australian Standard AS3439.1
- Rated to 160A three phase (which is insufficient for the maximum demand); and
- Retains inadequate spare physical capacity (no space for new connections).

A new MSB is proposed to be located external to Block A which will have capacity sufficient to supply new and existing portions of the school. New consumer mains will be provided from the new substation to the new MSB. The existing MSB will be retained and used as a

main distribution board (MDB). New submains cabling will be provided from the new MSB to the MDB.

The new main switch board will supply the new portions of the school as well as back feed the old MSB. As per the Electrical and Maintenance Services Schematic Design Report (refer Appendix 24), the board is proposed to have the following characteristics:

- Rated to 800A three phase
- Form 3Bih
- IP56
- 36kA fault rating for 1 sec (TBC)
- Designed to AS61439

Minor trenching works will be required within the established school in the south and west of the site to facilitate appropriate electrical and telecommunication connections to the new Classroom Building and Hall. Details of the location of the works is shown in Figure 22 below. This includes location of the new MSB as well as trenching and conduits required for the upgrade works. Mitigation measures are provided in Appendix 1 which detail the requirements for trenching in relation to potential archaeology and trees within these areas.

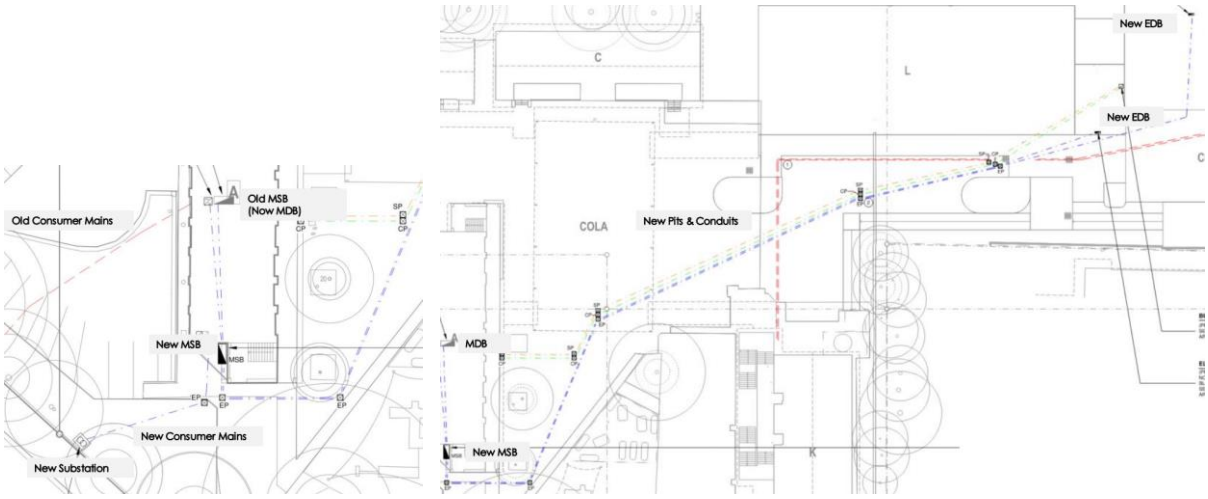

Figure 22: Extract proposed electrical supply updates for site (NDY, 2025)

3.12 Waste Management

A Waste Management Plan (WMP) has been prepared and attached in Appendix 14 demonstrating that adequate provision has been made for the management of construction and operational waste associated with the proposed activity. Refer to subheadings below for further details.

3.12.1 Construction Waste

Demolition and construction activities at the site will generate a range of construction and demolition (C&D) waste. All construction materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage during construction operations may involve some minor stockpiling of reusable material, as well as placement of wheeled bins for the separation of construction materials for recycling. Site area constraints will limit the onsite stockpiling of waste however and it is anticipated that construction waste will be progressively removed from the site as required. A bin for residual waste or contaminated material will also be made available at the site for disposal where necessary

Options for reuse, disposal and recycling of C&D waste are provided in the WMP (e.g. return to manufacturer, recycled at C&D processor, or disposed to landfill if contaminated).

The Contractor and their Project Manager will be responsible for the C&D elements of the WMP, including preparation of waste documentation and processes during the excavation and construction phases of the development.

3.12.2 Operational Waste

Currently the school operates with 3 x 1,100L general waste bins and 1 x 1,100L recycling bin. As stipulated in the Waste Management Plan for the increase in student and staff capacity, 8 x 1,100L (6 general waste and 2 recycling) waste bins are proposed to be accommodated within the existing bulk bin store within the car park accessed from Gladstone Street. The waste consultants, MRA have confirmed that the current waste storage area is sufficient in size to cater for the additional bins which are shown on the site plan within the Architectural Set in Appendix 2.

As per current school operations, bins will be collected from the internal bin storage areas by the private waste collection vehicle which can safely enter and exit the site in a forward direction.

3.13 Staging

No specific staging proposed.

3.13.1 Operation

Table 2 identifies the existing student / staff numbers and the proposed changes that will be facilitated by the upgrade works. Note the figures below identify student/ staff capacity numbers at project completion.

Table 2: Existing and Proposed Student / Staff Numbers

	Existing	Proposed	Change
Students	468	874	+ 406 students
Staff	46 FTE	59 FTE	+ 13 FTE staff

The department has confirmed that the full increase in students and staff will not be introduced upon immediate completion of the works and it could therefore be some time before growth in the locality and student enrolment catchment results in an increase in student / staff numbers at the scale of those identified in Table 2.

3.14 Related activities

Preliminary works that are not subject to assessment within this main works package have been recently undertaken within Kogarah Public School as follows:

- Decommissioning of demountables within the development footprint (11 demountables removed via the 'development without consent pathway'); and
- Establishment of a temporary classroom compound of demountables within the existing car park within the south west of the site (achieved via exempt development).

Whilst these works do not form part of this REF, they were necessary to facilitate technical investigations for the proposed activity and associated accommodation of students and staff within alternate classroom facilities. These works are not considered to form 'stages' in the main works package given they were achieved under separate REF or exempt development packages; however they have been identified for reference to ensure the staging of the development is clearly articulated.

Given preliminary works have been undertaken outside the assessment of this main works REF, the proposed main works package will be achieved within one single stage. All works, including the external emergency access vehicle crossover, will be delivered within the main works package.

4. Proposal Need and Alternatives

4.1 Proposal Need

Proposal need is articulated as follows:

- Kogarah Public School currently accommodates a range of core facilities that are significantly undersized with deficiencies identified across most facilities.
- Of particular note, the school was established and continues to operate without a dedicated hall which impacts daily operations, particularly in winter and during weather events that impact the use of outdoor / semi outdoor spaces for assemblies and sports.
- Records indicate that Seven (7) Demountable Teaching Spaces have been on site for longer than 7 years.
- Rezoning in the Kogarah North Precinct and Kogarah Town Centre indicates that dwelling uplift and associated enrolment increases will occur within the Kogarah Public School catchment. The existing site area cannot accommodate additional Demountable Teaching Spaces therefore permanent built form upgrades are necessary to address projected enrolment demand.

4.2 Alternatives

The proposed activity has been developed following a consideration of options and alternatives to address the need identified above. A summary of the options considered is provided in Table 3.

Table 3: Assessment of Options and Alternatives

Option	Discussion	Preferred Option
Option 1: The Proposed Activity	**Advantages** • Readily achieves the desired project objectives. • Gives rise to no unacceptable impacts as defined in this REF. • Provides learning spaces that future proof the school from additional construction in the future, which is beneficial for staff, students and the surrounding community. • Appropriately satisfies the demand for additional educational infrastructure in the catchment. **Disadvantages** • No identified disadvantages given environmental impacts have been appropriately mitigated and the works will not give rise to any unacceptable impacts.	Option 1 is preferred as the established demand for both permanent teaching facilities and a multi-purpose hall is satisfied within a design package that will generate no significant or unacceptable environmental impacts.

Option	Discussion	Preferred Option
Option 2: Two storey Classroom Building Option	**Advantages** • No significant amenity or project advantages noting the building was designed within the same footprint as the three storey option (Option 1). The two storey option was ultimately a height condensed version of the preferred three storey option. **Disadvantages** • Does not completely satisfy projected demand for Permanent Teaching Spaces within the site. • Demountable buildings likely to be required in the future to address demand. • Does not future proof the site.	Option 2 is not preferred as it fails to address the longer term projected demand for permanent teaching spaces on the site. This option is not considered to represent the 'future proof' response to development of the site with significant investment likely to be required in the future for additional permanent teaching spaces.
Option 3: Do Nothing	**Advantages** • No disruption to existing school operations. **Disadvantages** • Does not address established demand for permanent school infrastructure and a hall. • Does not future proof the site.	Option 3 is not preferred as it does not address the identified need for intervention at the site.

5. Statutory and Strategic Framework

5.1 Permissibility and Planning Approval Pathway

State Environmental Planning Policy (Transport and Infrastructure) 2021 (TI SEPP) aims to facilitate the effective delivery of infrastructure and educational establishments across the State and provides that various developments for the purposes of a government school are permitted without consent. The proposed activity is development permitted without consent as outlined at Table 4.

Table 4: Description of Proposed Activities under the TI SEPP

Division and Section within TI SEPP	Description of Works
3.37	The proposed activity comprises construction, operation or maintenance on behalf of a public authority within the boundaries of an existing or approved government school, including: • New permanent classroom building (Clause 3.37(1)(iii)); and • New Hall and associated Covered Outdoor Learning Area (Clause 3.37(1)(viii)). The proposed activity involves the construction of building(s) with a maximum height of three storeys which is less than the four storey limit prescribed in the TI SEPP noting that no height limit is stipulated for the site in the Georges River LEP 2021. In accordance with the requirements of Clause 3.37(5), the development constitutes 'construction works' which, in accordance with the provisions of Clause 3.3(3), facilitate the removal of vegetation and associated rectification and landscaping works as 'development without consent'. A review of historical consent information obtained from Georges River Council via the GIPA application process has confirmed the proposed activity would not result in the contravention of any existing condition of a development consent currently operating (other than a complying development certificate) that applies to any part of the school, relating to hours of operation, noise, vehicular movement, traffic generation, loading, waste management or landscaping. The Design Quality Principles set out in Schedule 8 of the TI SEPP and the Design Principles set out in the Design Guide for Schools have been considered as set out in Section 3.2.
3.37A	N/A
3.38	Section 3.38A of TI SEPP sets out notification requirements to the local Council and occupiers of adjoining land. Written notice of the intention to carry out the activity will be provided to Council and TfNSW before the activity commence. Any response received within 21 days of the notice will be considered by the Determining Authority.
Schedule 8	The activity has been designed in accordance with Schedule 8 as summarised

Division and Section within TI SEPP	Description of Works
	below and detailed in the Architectural Design Report in Appendix 4. Principle 1 – Responsive to context The proposed development seeks to address this principle as follows: • New buildings are setback from the street to maintain existing canopy trees along the Princes Hwy. • The building steps down the site to meet existing ground levels for accessibility, while minimising the extent of cut and fill. • The building's long elevation is orientated to the north for maximum climate control. • The roof line of the Hall building which faces the Princes Hwy has been considered in relation to scale of the neighbouring heritage Church Building. The three storey Classroom building is set further back into the site adjacent to the multistorey apartment building. • Indigenous plant species are being introduced in the new landscaped areas. • The colour scheme of the proposed building is inspired by the existing school colours which are chosen to reflect the natural context of wetlands. • The project presents an opportunity to connect further with the local indigenous community through the introduction of an art opportunity. Principle 2— Sustainable, efficient and resilient The proposed development seeks to address this principle as follows: • Collection of roof water for re-use. • Landscaping - used of indigenous species. • Regular column grid and open floor plates for maximum flexibly of layout in the future • Robust, low maintenance materials. • Stormwater management and Water Sensitive Urban Design. • Design to 5-Star Green Star Building v1 certification. Principle 3— Accessible and inclusive The proposed development seeks to address this principle as follows: • Part of design to provide safe and equitable access across the whole site from Gladstone Street through to the new Classroom and Hall buildings. • Provision of alternative means of access to the Hall via a lift that addresses the half floor step down in the building and an access compliant walkway through the landscaping. • Welcoming entrance from Princes Hwy for access to the new Hall building which may be used for School events and possible after hours access for Community. Principle 4— Healthy and safe

Division and Section within TI SEPP	Description of Works
	The proposed development seeks to address this principle as follows: • Part of design to provide safe and equitable access across the whole site from Gladstone Street through to the new Classroom and Hall buildings. • The Classroom Building has improved lighting internally, however frosted glass louvres provides privacy both for and from neighbouring properties to the north. • New fencing to be installed to separate students from maintenance areas and to improve supervision. Principle 5— Functional and comfortable The proposed development seeks to address this principle as follows: • Variety of learning and teaching spaces offering different levels of openness or insularity. • Operable walls to increase flexibility of uses and spaces. • Designated storage areas to minimise clutter. • Clear circulation paths. • Design seeks to enhance privacy whilst still maximising natural light where onlooking and overshadowing are a concern. • Natural as well as mechanical ventilation. Principle 6— Flexible and adaptable The proposed development seeks to address this principle as follows: • Regular column grid and open floor plates- maximum flexibility. • Rational circulation. • Consolidation of services and wet areas. • Long life, loose fit. • Variety of learning and teaching spaces offering different levels of openness or insularity. • Operable walls to increase flexibility of uses and spaces. • Robust, low maintenance materials. • The materials themselves are the final finish- no need for painting. • Natural as well as mechanical ventilation. Principle 7— Visual appeal The proposed development seeks to address this principle as follows: • Keeping to the scale of neighbouring buildings on the school site. • The colour scheme of the proposed building is inspired by the existing school colours which are chosen to reflect the natural context of wetlands. • The perceived bulk of the building from the street elevation is broken down by stepping back part of the building, further enhanced by a change of material. • The proposed building will have well-articulated elevations comprising a simple unobtrusive contemporary aesthetic and will sit

Division and Section within TI SEPP	Description of Works
	comfortably in the streetscape.

Activities permissible without consent require environmental impact assessment in accordance with Division 5.1 of the EP&A Act and are assessed and determined by a public authority, referred to as the determining authority. The department is the proponent and determining authority for the proposed works.

Additionally, section 5.7 of the EP&A Act states that an activity that is likely to significantly affect the environment must be subject of an EIS rather than an REF. The effects of the activity on the environment are considered in Section 7 and have been assessed as a less than significant impact and can therefore proceed under an REF assessment.

Section 171(1) of the EP&A Regulation notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the guidelines that apply to the activity.

The *Guidelines for Division 5.1 Assessments* (DPE June 2022) and the *Guidelines for Division 5.1 assessments Consideration of environmental factors for health services facilities and schools Addendum* (DPHI, October 2024) provide a list of environmental factors that must be taken into account for an environmental assessment of the activity under Division 5.1 of the EP&A Act. These factors are considered in detail at Section 7.

5.1.1 Existing Development Consents

A request for all development consents applying to the site was submitted to Georges River Council under the *Government Information (Public Access) Act 2009* (GIPA Act). The development consent(s) listed in Table 5 were identified by Council.

Table 5: Development consents applying to the site

Development Application #	Description	Date Determined
DA333/2006	DA333/2006 approved the construction of a 'Steel-covered outdoor learning area' within a central portion of the site. No works are proposed in proximity to the COLA that will be retained and the proposed development will not contravene a condition of this DA in relation to hours of operation, noise, vehicular movement, traffic generation, loading, waste management or landscaping.	4/09/2006
DA2018/0504	DA2018/0504 approved the 'Supply and installation of demountable classrooms to existing school grounds'. The demountable classrooms installed under DA2018/0504 have been recently decommissioned and removed from the site. The approved plans do not identify any landscape upgrades within the propsoed development footprint nor is a reference to landscaping included in the conditions of consent.	21/06/2019

Development Application #	Description	Date Determined
	The proposed development will not result in the contravention of a condition in this DA relating to hours of operation, noise, vehicular movement, traffic generation, loading, waste management or landscaping.	

As demonstrated above the proposed activity would not contravene any existing condition of the consent(s) currently operating (other than a complying development certificate) that applies to any part of the school, relating to hours of operation, noise, vehicular movement, traffic generation, loading, waste management or landscaping.

5.2 Environmental Protection and Biodiversity Conservation Act 1999

The provisions of the EPBC Act do not affect the proposal as it is not development that takes place on or affects Commonwealth land or waters. Further, it is not development carried out by a Commonwealth agency or development on Commonwealth land, nor does the proposed development affect any matters of national significance. An assessment against the EPBC Act checklist is provided at Table 6.

Table 6: EPBC Act Checklist

Consideration	Yes/No
Will the activity have, or likely to have, a significant impact on a declared World Heritage Property?	No
Will the activity have, or likely to have, a significant impact on a National Heritage place?	No
Will the activity have, or likely to have, a significant impact on a declared Ramsar wetland?	No
Will the activity have, or likely to have, a significant impact on Commonwealth listed threatened species or endangered community?	No
Will the activity have, or likely to have, a significant impact on listed migratory species?	No
Will the activity involve any nuclear actions?	No
Will the activity have, or likely to have, a significant impact on Commonwealth marine areas?	No
Will the activity have any significant impact on Commonwealth land?	No
Would the activity affect a water resource, with respect to a coal seam gas development or large coal mining development?	No

5.3 Other Approvals and Legislation

Table 7 identifies any additional approvals that may be required for the proposed activity.

Table 7: Consideration of other approvals and legislation

Legislation	Relevant?	Approval Required?	Applicability
State Legislation			
National Parks and Wildlife Act 1974	Yes	No	A Preliminary Indigenous Heritage and Impact Assessment (PIHIA) was prepared to identify whether there is potential for Aboriginal cultural heritage to be affected by the proposed upgrade works (Refer to Appendix 17). The report identified that the works footprint has undergone a range of historical disturbances, and the site has been impacted by moderate to high levels of disturbance as a result of these activities. No previously recorded or unrecorded Aboriginal objects, PADs or archaeologically sensitive landforms were identified as a result of the background research or survey of the Subject Area. Kayandel Archaeological Services confirmed that no further Aboriginal heritage investigatory works were required to support the development. Mitigation measures derived from the PIHIA are provided in Appendix 1 to mitigate impact to potential Aboriginal heritage. The proposal will not affect a NSW National Park.
Disability Discrimination Act 1992	Yes	No	The proposed activity will provide accessibility and inclusion for all persons accessing the site. As demonstrated in the Access Report (see Appendix 7), the development is capable of complying with the relevant Australian Standards and will allow for compliant access for all users. Further assessment of the design is required prior to issue of Crown Certificate as per mitigation measures in Appendix 1.
Rural Fires Act 1997	No	No	The site is not identified as bushfire prone land and further consideration of the Rural Fires Act is not required.
Water Management Act 2000	No	No	The proposed development is not located within 40m of a watercourse or coastline. As such, further consideration of the WM Act 2000 is not considered necessary.
Biodiversity Conservation Act 2016	Yes	No	The Biodiversity Conservation Act 2016 (BC Act) commenced on 25 August 2017 and repealed the Threatened Species Conservation Act 1995, Nature Conservation Trust Act 2001 and Native Vegetation Act 2003. Under the BC Act, Section 7.8 applies to Part 5 Activities. The site does not contain mapped NSW Biodiversity Values and the Biodiversity Report (refer to Appendix 25) confirmed that the site does not accommodate critical habitat, threatened species or contain an ecological population or community. Further, the assessment confirmed the proposal will not affect threatened flora or fauna or a critical habitat and the

Legislation	Relevant?	Approval Required?	Applicability
			development does not trigger the need for a Biodiversity Development Assessment Report (BDAR) or entry into the Biodiversity Offsets Scheme.
Heritage Act 1977	Yes	No	The site is not LEP or State heritage listed nor is it identified on the Department of Education's s170 Heritage Conservation Register. Notwithstanding, A Statement of Heritage Impact (SOHI) has been prepared (see Appendix 18) to assess the following: • The site adjacent comprising the St Paul's Anglican Church and Child Care Centre which is identified as a heritage item within Schedule 5 of the Georges River LEP 2021; • Documented potential archaeological significance within the school site; and • Two unlisted school buildings (Blocks B and C) that were deemed by Jacobs to exhibit significance. The SOHI confirmed that built heritage items present within the Study Area comprise school buildings B and C (unlisted) and St Paul's Anglican Church and hall (LEP ID I192) however impacts were considered to be neutral or minor. The proposed activities do not propose physical impacts to any of these buildings. The proposed works are physically distant from school buildings B and C and would cause only minor visual impact to the setting, views and vistas related to Building C due to its closer proximity to the works. This minor impact is mitigated by the setback and façade strategy incorporated into the proposed design. The use of the Church ground for a site compound is a temporary use and would be reinstated following the completion of construction works, therefore also only causing a minor impact which is mitigated by its temporary nature. Following the completion of a test excavation program which confirmed natural soils within the proposed ground disturbance footprint, it was determined that the proposed activity is unlikely to directly impact the archaeological potential within the Study Area due to its depth beneath ground surface and/or physical distance from the proposed activity. It was determined that potential heritage impacts are low and will not have a significant impact on the locality, community or environment. Mitigation measures are included in Appendix 1 to mitigate the impact of construction on registered or potential heritage within the site and surrounding development.
Fisheries Management	No	No	The proposed development will not result in any obstructions to tidal patterns or flows nor will it harm marine

Legislation	Relevant?	Approval Required?	Applicability
Act 1994			vegetation.
Contaminated Lands Management Act 1997	Yes	No	The site is not listed on the register for Contaminated Lands. Appropriate assessments however have been undertaken and are considered in this REF.
Protection of the Environment Operations Act 1997	Yes	No	The activity will not result in significant air, noise, water or waste pollution and an environment protection licence is not required.
Roads Act 1993	Yes	Yes	The development includes a proposed temporary vehicular crossover to the site from Princes Highway which will be subject to an assessment under Section 138 (1) of the Roads Act.
Mine Subsidence Compensation Act 1961	No	No	The site is not located within a Mine Subsidence District.
Environmental Planning and Assessment Regulation 2021 (Section 171A	No	No	The site is not located within a regulated catchment.
State Legislation – State Environmental Planning Policies			
State Environmental Planning Policy (Planning Systems) 2021	Yes	No	The site is not owned by an Aboriginal Land Council. The works are to be undertaken as 'development without consent' and do not constitute State or Regionally Significant development.
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Yes	No	Chapter 2 Vegetation in non-rural areas applies to the site and tree removal is assessed in this REF. The proposed vegetation removal does not exceed the biodiversity offsets threshold and approval of the Native Vegetation Panel is not required. Chapter 3 Koala Habitat Protection 2020 is not relevant to the land use zoning of the site. Chapter 4 Koala Habitat Protection 2021 is not relevant to land within the Georges River LGA. The site is not located within a regulated catchment therefore Chapter 6 is not relevant.
State Environmental Planning Policy (Sustainable Buildings)	Yes	No	Chapter 3 is applicable given the works comprise non-residential alterations or extension of an existing building which exceeds the $10 million trigger. The proposed development is consistent with the controls

Legislation	Relevant?	Approval Required?	Applicability
2022			identified in Section 3.2 as follows: a) The demolition and construction waste component of the WMP (see Appendix 14) demonstrates the proposed minimisation of construction waste through measures which prioritise recycling and re-use over waste disposal. Mitigation measures are included in Appendix 1 which ensure the processes identified in the WMP are implemented during demolition and construction. b) Passive design principles have been incorporated in the design, including high-performance building envelope, effective shading and building orientation, and natural ventilation openings to support comfortable and low-energy indoor environment quality. c) The design of the proposed classroom building has evolved to address daylight considerations with frosted louvres introduced along the north elevation to better facilitate natural light and amenity for students and staff. This will significantly reduce the reliance on artificial lighting within the classrooms and the louvred openings will facilitate ventilation of internal areas to minimise the need for air conditioning and cooling. Thermal assessments provided in the ESD Report (Appendix 8) further identify the merits of the proposal in relation to passive design. d) Solar panels are proposed to existing Building A. e) Energy consumption will be appropriately metered in accordance with Greenstar requirements, and the department's Sustainability Team will undertake scheduled monitoring to advise on usage and options for any reductions. f) Harvesting of roof water is integrated into the design for re-use on site. Further to the analysis above, the Net Zero Statement attached in Appendix 9 demonstrates a targeted reduction in fossil fuel usage on site in accordance with NSW government requirements. Embodied emissions are identified in Appendix 10 satisfying the requirements of the SEPP.
State Environmental Planning Policy (Resilience and Hazards)	Yes	No	Chapter 2 – Coastal Management The site is not located within a coastal area and consideration of the controls in Chapter 2 is not required. Chapter 4 – Remediation of Land

Legislation	Relevant?	Approval Required?	Applicability
2021			A Detailed Site Investigation (DSI - Appendix 22) has been undertaken to address recommendations of the Preliminary Site Investigation (PSI – Appendix 21). The DSI confirmed the Tier 1 risk assessment did not identify a trigger for remediation, however further investigation of the site is being undertaken due to the occurrence of asbestos in fill and to better understand the potential impacts of Polycyclic Aromatic Hydrocarbons (PAHs) in the groundwater. Mitigation measures are provided in Appendix 1 requiring the following: • Additional data gap analysis to confirm if remediation is actually required and if so, the extent of remediation works necessary. • Preparation of an interim Asbestos Management Plan to manage potential risks from asbestos in/on soil until the activity occurs; • Implementation of the Remediation Action Plan. • Preparation and implementation of a construction-phase Asbestos Management Plan; and • Preparation of a validation assessment report, as required, for the remediation works undertaken at the site. Discussions with JK Environments (Author of the DSI) have confirmed that the remediation works will be classified as Category 2 works and can be undertaken without consent.
State Environmental Planning Policy (Industry and Employment) 2021	No	No	No additional signage proposed.
State Environmental Planning Policy (Transport and Infrastructure) 2021 – Chapter 2			Chapter 2 of the TI SEPP provides controls associated with infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. Division 17 – Roads and road Infrastructure facilities Division 17 applies to certain development adjacent to roads. The site has a frontage to Princes Highway which is a classified road, and accordingly Clauses 2.119 and 2.120 of the SEPP are relevant. Clause 2.119 seeks to regulate the impacts of development on Classified roads. Clause 2.120 seeks to regulate the impact of road noise and vibration on specified land uses, including educational establishments. The proposal is supported with regard to the provisions of

Legislation	Relevant?	Approval Required?	Applicability
			Clause 2.119 as follows: • The proposal will not compromise the effective and ongoing operation and function of the classified road as demonstrated in the Transport and Traffic Impact Assessment prepared by Bitzios (refer Appendix 15); • No change to main vehicular access arrangements to the site are proposed. Main vehicular access to the school will be via the existing driveway off Gladstone Street. A temporary vehicular access point will be established to the site from the Princes Highway during construction only. This temporary construction access point will be managed in accordance with Construction Traffic Management Plan (Appendix 26) so as to not detract from the safety or efficiency of the Princes Highway; and • The proposal will not increase the volume of vehicles using Princes Highway to gain access to the site noting the vehicle crossover will be temporary for construction only and the School Transport Plan (see Appendix 15) provides realistic and measurable sustainable transport actions to reduce the reliance on vehicles accessing the site. The proposal is supported with regard to the provisions of Clause 2.120 as follows: • The proposal incorporates appropriate acoustic attenuation measures to the Classroom Building and Hall so as not to be affected by unreasonable traffic noise, vehicular emissions, or vibration; and • The Acoustic Report (refer Appendix 16) confirms that, subject to relevant recommendations, the intrusive road traffic noise levels will comply with internal noise levels specified by the EFSG and the TI SEPP.

5.4 Strategic Plans

Table 8 considers strategic plans that are relevant to the proposed activity.

Table 8: Consideration of applicable Strategic Plans

Strategic Plan	Assessment
A Metropolis of Three Cities – The Greater Sydney Region Plan	The proposed educational infrastructure upgrades align closely with the objectives of Chapter 3 – *Infrastructure and collaboration* – of the Region Plan as follows: • Objective 2 – *infrastructure aligns with forecast growth* :

Strategic Plan	Assessment
	The Kogarah Public School upgrades respond appropriately to forecast growth in enrolments within the catchment which have been modelled to 2041 scenarios. The proposed development has been refined through an ongoing options and masterplan analysis process to ensure that the preferred design can deliver tangible benefits for the community. • Objective 3 – *infrastructure adapts to meet future needs*: the design development has been guided by sustainability professionals that have facilitated design compliance with key Greenstar and NSW EFSG sustainability metrics. The development has been designed to accommodate the future needs of students, staff and the community as follows: o The multi-purpose Hall will satisfy the long term demand for all weather facilities that can be adapted to suit the curriculum and changing school operational needs. o The Hall can facilitate shared use with an adaptable design rationale adopted suitable for a diverse range of activities. o Accessibility has been prioritised throughout the site with a lift proposed to be within the built form to provide access between the new classroom building and the remainder of the school site, and the new Hall, COLA and the Princes Highway frontage. o End of trip facilities for staff are proposed to better facilitate the uptake of active transport methods that can reduce the reliance on vehicle travel to and from the site. • Objective 4 – *Infrastructure use is optimised*: o A comprehensive options analysis confirmed the proposed three storey classroom building represents the most effective means of integrating the established demand requirements for Permanent Teaching Spaces within a constrained site area. The three storey built form will minimise the development impact on existing play space and vegetation. The proposed site design was considered to be the optimal solution to address a highly constrained site.
Future Transport Strategy - Regional Transport Plan (NSW Government) – South East Sydney Transport Strategy	The South East Sydney Transport Strategy provides a blueprint for transforming the way people travel to, within and through South East Sydney to 2056. The Strategy forecasts changes to the regional transport network

Strategic Plan	Assessment
	through the development of the Metro service as it expands further south from Randwick to Kogarah via Kingsford Smith Airport. This service will provide opportunities for staff living in proximity to metro stations in the north outside the local catchment to access the site via public transport instead of private vehicle.
Georges River Local Strategic Planning Statement 2040	The Georges River Local Strategic Planning Statement 2040 (LSPS) confirms the following in relation to schools and education infrastructure: • An extra 31,600 students will need to be accommodated in both government and non-government schools in the South District by 2036. • Georges River LGA currently has 48 public and private schools. By 2036 the LGA would experience a growth of approximately 2,300 primary school children and 2,000 high school children. • A projected increase in school aged children of 30 per cent is envisaged. The proposed upgrade works directly respond to and address the demand identified for additional teaching facilities which will accommodate the increase in the student population in the LSPS. Whilst the LSPS does not specify direct *key actions* relating to public education and infrastructure, Part 7.1 of the document clearly articulates the need for new and more innovative use of existing schools. The proposed development represents a functional upgrade of an existing site, and the works are consistent with the intent of the LSPS in relation to public education facility upgrades.
Georges River Transport Strategy (prepared for Council by Cardno, 27 October 2021)	The Georges River Transport Strategy (2021) outlines relevant actions that will directly benefit the school including: • AT3: Prioritise footpath, shared path and cycleway upgrades in the 800-metre catchment of schools • Bk3: Advocate to TfNSW for additional cycle parking (including rails and bike sheds) at train stations, particularly at Kogarah and Hurstville stations • Kog2: Improve laneways in the Kogarah centre for walking and cycling • Kog8: Establish Kiss & Ride zones, particularly near schools in the Kogarah education precinct. The Georges River Transport Strategy and Bayside Transport Strategy and Bike Plan Draft Action Plan 2022 identifies shared paths on Princes Highway, Belgrave Street, Hogben Street, Kensington Street, Railway Street and Railway Parade which will improve the accessibility for all active transport users. Furthermore, Georges River Council is also currently undertaking pedestrian and active transport assessment for a number of its key precincts as a recommendation of its active transport strategy which is likely to

Strategic Plan	Assessment
	benefit users of Kogarah Public School and the surrounding locality.

5.5 Georges River Local Environmental Plan 2021

Table 9 considers key matters in the GRLEP 2021.

Table 9: Summary of Early Stakeholder Engagement

LEP Ref	Assessment
Zone	Site is zoned SP2 Infrastructure. The activity will facilitate the redevelopment of an existing educational establishment. The activity is consistent with and satisfies the objectives of the SP2 zone by providing additional infrastructure development.
Height of Buildings	There are no mapped LEP height restrictions on the land.
Floor Space Ratio	There are no mapped LEP FSR restrictions on the land.
Heritage	The site is not listed as a heritage item under Schedule 5 of the LEP nor is it located within a Heritage Conservation Area. The site adjoins the St Paul's Anglican Church precinct which contains a number of buildings and associated grounds that are listed as heritage items under Schedule 5. The SoHI (see Appendix 18) confirmed that heritage impacts associated with the proposed activity will be appropriately mitigated or managed to ensure that there is minimal impact on the adjoining heritage item, locality, community and/ or the environment.
Flood Planning	The site is not identified as flood affected.
Acid Sulfate Soils	The site is not identified as containing mapped Acid Sulfate Soils.
Riparian Lands and Waterways	Not identified on GRLEP 2021 mapping.
Airspace Operations	A review of airspace / aviation requirements has been prepared by Avipro and attached in Appendix 23. Key aspects of the review are identified as follows: • The site is proximate to Sydney Airport and subject to the Obstacle Limitation Surface of 51m AHD. • The ground level of the development footprint is approximately 20.4m AHD which retains approximately 30m of airspace above the site for construction machinery and crane infrastructure. • As the buildings are proposed with a height of approximately 13m there is approximately 18m above rooftop level for the erection of cranes and other plant. Avipro confirmed the following: *Provided all construction cranes and plant do not exceed 51m AHD in elevation, they will not impact safe aviation operations to and from Sydney Airport. The crane methodology and assumptions need to be confirmed at the construction stage and if there is a likelihood of exceeding RL 51, formal airspace application would need to be initiated.* A mitigation measure is provided in Appendix 1 requiring that crane / construction equipment and methodology is confirmed following the engagement of a contractor to determine if any construction equipment is likely to exceed the 51m AHD trigger for the Obstacle Limitation Surface. In the event that cranes and/or other construction equipment are likely to exceed RL 51, measures must be taken to seek

LEP Ref	Assessment
	formal assessment of the exceedances by the Civil Aviation Safety Authority (CASA) and Airservices Australia via SACL. Further the site is located in proximity to St George Hospital which requires appropriate helicopter access. A mitigation measure has been included which requires the consideration of potential flight paths for helicopters and crane use on the site with a requirement for the project team to consult with Sydney Airport and NSW Health in this regard. .

6. Consultation

6.1 Early Stakeholder Engagement

Table 10 provides a summary of early stakeholder (non-statutory) consultation undertaken to inform project development and preparation of the REF.

Table 10: Summary of Early Stakeholder Engagement

Stakeholder	Engagement
Georges River Council, TfNSW, Consultant Transport Engineers (Bitzios Consulting) and NSW Department of Education as part of the Transport Working Group (TWG)	A TWG meeting was held on 14/11/2024 which included a presentation overview of the proposed redevelopment work and identification of target program dates. The Rapid Transport Assessment was presented to identify baseline data including transport mode share statistics for students and staff, discussion of catchment area and locality constraints for active transport and commitments around integration of a School Travel Plan (STP) to increase uptake of active transport methods to and from the site. Existing local road constraints were discussed (Gladstone Street / Regent Street roundabout inefficiencies) in addition to the existing parking provision on the site. It was justified that no clear nexus could be established connecting the required upgrade of the roundabout to the proposed upgrade of Kogarah Public School as the location of the roundabout is centrally positioned in the CBD and upgrades would form part of the overall precinct redevelopment / renewal. The department confirmed that an agreement had been reached with the neighbouring Church to accommodate staff parking during construction. The TWG outlined construction access to the site via the Princes Highway (Classified Road under the care and control of TfNSW) and future integration of a vehicle crossover to the site along the eastern frontage at the Princes Highway for emergency vehicle access only. It was determined in the meeting that the school catchment is too small to warrant dedicated bus services given the vast majority of students reside within the walk-up designation and therefore not eligible for a bus pass. Accordingly, it was agreed that bus usage is

Stakeholder	Engagement
	unlikely to be adopted in the near future for students at the school. Key takeaways from the TWG meeting included: • End of trip facilities should be provided and promoted for the school. Note these facilities have been integrated within the proposed new build with showers and change facilities for staff to maximise the uptake of active transport. • Section 138 approval is required for the vehicle crossover works to The Princes Highway. This has been appropriately addressed in the mitigation measures attached in Appendix 1. • Construction Traffic Management Plan was required to be prepared to justify the use of the Princes Highway site access. A Construction Traffic Management Plan has been prepared and attached in Appendix 26. • A STP has been prepared to promote active transport methods for students and staff. The STP (refer to Appendix 15) provides an appropriate and realistic framework for the modal transport shift required to achieve the targets identified by the consultant.
Weekly Project Management Group (PMG) meetings including technical consultants and NSW Department of Education	Ongoing weekly PMG meetings (held via Microsoft Teams) were chaired by consultant Project Managers (RP Infrastructure). Meeting minutes were distributed weekly with actionable tasks identified for the PMG and consultants.
Weekly Design Meetings including Architects, technical consultants and NSW Department of Education	Weekly design meetings (held via Microsoft Teams) were chaired by Fulton Trotter Architects with a Project Design Register used to document actions, responsibilities and follow up comments.
Local Community	**October 2023 – Project Update Website** Provided an overview of the proposed project for the school and where to find more information. **August 2024 – Project Update Website** Provided details of the upgrade of the Public School including a hall and classrooms. It confirmed what due diligence had been carried out and that a Project Reference Group (PRG) that had been formed. The PRG included school leaders, parents and friends representatives and School Infrastructure representatives. **October 2024 – Project Update Website** Provided details of the site establishment works to provide demountable classrooms and amenities to enable to school to operate during the construction works. **29 October 2024 – Community Information Session** Community information session was held in the Kogarah Public School Library. 25 parents and community members attended and 15 teachers / staff members. The main issues raised included student safety during construction, privacy concerns from adjoining

Stakeholder	Engagement
	development, traffic and congestion and archaeological concerns. Details of the information session was letter box dropped to the nearby area included in Figure 23 below which included 928 residential properties and 9 businesses. The main themes of concerns raised include construction noise, communications with neighbours, privacy and view blockages. These have been considered in the environmental assessment in Section 7 below. **December 2024 Project Update – Works Notification** Provided details of the proposed development of 3 storey building and hall including plans and artists impression of development. Also included details of the works proposed over the holiday break.

Figure 23: Information Distribution Area (DoE, 2025)

6.2 Consultation

Additional consultation will be undertaken in accordance with statutory requirements under the TI SEPP and having regard to the SCPP DPHI and the SCPP DoE. This includes:

- Sending notices to adjoining neighbours, owners and occupiers inviting comments within 21 days;
- Sending notices to the local council and relevant state and commonwealth government agencies and service providers inviting comments within 21 days;
- Placing an advertisement in the local newspaper; and
- Making the REF publicly available on the Planning Portal throughout the consultation period.

Comments received will be carefully considered and responded to.

7. Environmental Impact Assessment

7.1 Traffic, Access and Parking

7.1.1 Operational Traffic, Access and Parking Impacts

A Transport and Traffic Impact Assessment (TTIA) has been prepared by Bitzios (refer Appendix 8). The TTIA confirmed the existing active transport network within the locality is generally well established including continuous pedestrian pathways and formalised crossing points. Importantly, there are pedestrian paths that connect the school to nearby public transport infrastructure.

Key findings are summarised below in relation to the existing environment:

- Pedestrian 'front door' access will be retained on Gladstone Street (Gate 1). Secondary pedestrian access will be retained from Princes Highway (Gate 3).
- Vehicular access will be retained on Gladstone Street to provide access to staff car parking and servicing for the school (via Gate 2). A temporary construction vehicle access point is proposed to be provided to the site from Princes Highway.
- A Kiss and Drop (KnD) facility will be retained on Gladstone Street. The KnD facility provides four (4) collection bays with no changes proposed.
- Existing bike parking facilities (5 in total) will be retained with additional facilities to be integrated within the site as student enrolments increase (total 47 student bike spaces and 6 staff bike spaces).
- Active transport accounts for 65-67% of student travel, with the majority of these walking to / from school. Car based trips account for 25-30% and public transport (i.e. bus and / or train) trips account for 4% of student travel.
- A significant proportion of the student growth will be within the surrounding walk and cycle catchment of the school, supporting local and state government goals of reduced car dependence.

An assessment of impact within the TTIA demonstrates that the development proposed is appropriate in regard to traffic and parking as demonstrated below:

- The existing four spaces provided in the KnD facility can service 144 - 206 vehicles over a 30 minute period which satisfies the expected demand based on mode share targets.
- The existing 20 car spaces on site were determined to be adequate and sufficient to accommodate the car parking demand for 56 staff as follows:
    - 6 staff bike spaces will be provided to encourage the use of active travel to and from work. Additional student bike spaces will also be integrated within the site (47 spaces to be provided).
    - Bitzios (see Appendix 8) contend that the Georges River DCP 2021 parking rate for an educational establishment at 1 space per 100m^2 GFA is unconventional given parking demands are rarely based on floor area and usually based upon staff and student numbers. Whilst the DCP rate would

generate demand for 43 spaces based on a proposed GFA of 4,206m^2, this rate does not consider local context or existing site constraints and does not represent the most appropriate site specific rate for Kogarah Public School.

- Bitzios identified that a parking rate of 1 space per 2 staff, plus pick up and drop off area, is a common parking rate for schools across various NSW Council's DCPs such as Bayside Council, City of Ryde, Willoughby Council and Cumberland Council. It was noted that many of these LGA's accommodated schools that have a potentially lower level of transport access than Kogarah, given its proximity to Kogarah Station (within 400m).
- It was determined that an appropriate site specific parking rate for the school was between 1 space per 2 staff and 1 space per 4 staff. The 20 spaces to be retained would therefore satisfy this demand for 59 staff at maximum school capacity. Rather than extending and promoting car-based travel, Bitzios confirmed it was the intent of the department to encourage increased mode shares for more sustainable travel (walk / cycle) through the STP and school handbook guidance. Mode share targets from the STP seek to achieve 75% and 50% car-based travel for staff in the short and long term, respectively.

The delivery of the school upgrade will be supported by the STP, Travel Access Guide and supporting operational guidance on the correct and appropriate use of the KnD zone. The STP (see Appendix 8) is a document that details sustainable travel options to and from the school and provides actionable recommendations to increase active transport for both students and staff. A mitigation measure requiring the implementation, monitoring and reporting on STP mode share changes is provided in Appendix 1.

No disruptions to the access of surrounding private properties will be generated by any operational changes to the site in relation to traffic, parking and access. The proposed temporary vehicular access point to be established from Princes Highway will be decommissioned at construction completion. This vehicle access point is expected to be utilised infrequently and is sited at an appropriate distance from the access points of surrounding sites, including the Church to the South, to maximise the safety and efficiency of Princes Highway.

7.1.2 Construction Traffic, Access and Parking Impacts

A Construction Traffic Management Plan (CTMP) has been prepared and attached in Appendix 26 which proposes that access for construction traffic will be facilitated by a single gate onto Princes Highway as shown in Figure 24. A separate Section 138 Roads Act approval is required to be obtained for this access. Appropriate signage will be placed at the entry gate and surrounding areas to notify vehicles of the location as outlined in the Traffic Guidance Scheme (TGS) to be approved by TfNSW. Hoarding (B Class) will be in place to demarcate the construction zone to the eastern extent of the site, while school operations and access will be maintained on Gladstone Street in line with existing conditions.

The CTMP confirmed that all loading is expected to be undertaken within the site area. All service vehicles must enter and exit the site in a forward direction, with the site to incorporate a turntable to facilitate this for larger vehicles. Should at some point in the future,

it be deemed that a Works Zone be required, an application will be made to relevant road authority (i.e. Council and TfNSW Network and Safety).

It is estimated that an average of 3-5 heavy vehicles per day is expected to access the site. The impact on the road network is considered to be negligible. Heavy vehicle movements will occur throughout the day but will be generally undertaken outside of peak traffic times. Access to private properties should not be affected as construction management measures will be implemented to avoid conflict with driveways, and traffic control will be required at busy times to ensure disruptions are minimised.

Pedestrian access will be maintained along the Princes Highway frontage at all times with the exception of when a truck is leaving the site. When a truck is exiting the site, one traffic controller on each side of the driveway will close a gate, keeping the path closed while the truck enters or exits the site, crosses the footpath, and turns left onto the Princes Highway. Once the truck has completed the turning manoeuvre and is clear of the footpath, the traffic controllers are to re-open the pedestrian gates and restore access to the path.

Due to the nature of the school operations being maintained during construction, restricted access and constrained location, the CTMP confirmed that no parking for construction workers will be provided on-site. Given the proximity of the site to public transport facilities, workers will be encouraged to utilise public transport with recommendations for the project to consider inclusion of a workers' tool drop facility and storage facility on-site near the site entrance. This would be facilitated outside school peak periods to ensure no adverse impacts or conflicts with school operations.

An existing temporary parking arrangement is currently in place to facilitate school staff parking off site at the nearby St Paul's Church to offset impacted parking spaces. This is currently in place while the temporary demountable learning spaces are located on the existing school car park and this measure will continue to be in operation during the construction phase. The CTMP confirmed therefore, existing school parking spaces will not be affected further by the construction activities.

Figure 24: Construction Vehicle Access Map (Bitzios, 2025)

7.1.3 Traffic, Access and Parking Mitigation Measures

The Traffic and Parking Impact Assessment concludes the activity is not likely to have significant environmental impacts in relation to traffic, access and parking subject to implementation of the mitigation measures in Table 11.

Table 11: Traffic, Access and Parking Mitigation Measures

ID	Mitigation Measure	Timing
OPTMM2 OPTMM3	• Provide an initial six (6) staff bicycle parking spaces and end of trip facilities (e.g. showers, lockers, change areas, etc) to support mode share targets. Provide 47 student bicycle parking spaces.	Upon completion of works
OPTMM1	• To assist in managing transport demands and operational efficiency of the infrastructure provisions implement a School Travel Plan, Travel Access Guide and supporting operational guidance on the correct and appropriate use of the transport facilities surrounding the site.	Upon completion of works Ongoing
UIMM6	• Implement the requirements of the Construction Traffic Management Plan prepared by Bitzios dated 13/02/2025.	During construction

7.2 Noise and Vibration

The Noise and Vibration Impact Assessment (NVIA prepared by NDY, see Appendix 16) utilised noise logger data to assess the operational and construction noise and vibration sources related to the proposed upgrade of the site. Refer to separate headings below which detail the assessments of construction and operational impact.

7.2.1 Operational Noise

Noise levels were measured using noise loggers at the sensitive receiver locations depicted in Figure 25. Noise logger 2 also captured noise data from the Princes Highway. Handheld noise measurements were also undertaken within the Princes Highway frontage of the site. The noise loggers were configured to record all relevant noise parameters including background noise (LA90) and equivalent continuous noise levels.

Key findings associated with the operational noise impact assessment are detailed below:

- To appropriately control noise emissions to the nearest sensitive receiver, 91 Regent Street, the external building envelope of the Hall building is to be acoustically treated to minimise noise breakout. NDY predicted that the majority of the noise breakout will be from the roof of the hall building to the adjacent apartments that overlook the school from a higher elevation. NDY assumed a reverberant internal noise level of 85 dBA from music and speech and associated calculations predict that the event noise emissions criteria can be met with a roof construction that achieves a minimum sound insulation rating of Rw ~40. A mitigation measure is included in Appendix 1 to this effect.
- NDY confirmed that noise from classrooms is not expected to cause noise emissions exceedances as the building façade of the proposed classroom building is predicted to sufficiently insulate noise from the nearest sensitive receivers.
- Noting that the existing school layout already has an outdoor play area that is directly adjacent to the early child care centre, increasing the student count from 480 to 874 students is expected to only increase potential noise emission levels by under 3 decibels. A less-than 3 dB change in noise levels is expected to be very minor / negligible.
- The estimated noise data of the mechanical plant (Plant A and B) identified some exceedances associated with the more stringent acoustic controls (45dBA limit) for the Church and Child Care Centre to the south. Recommended acoustic treatment mitigation measures to reduce the sound propagation of Plant A and B are provided as follows and included in Appendix 1:
- <u>Plant A</u>
    - Noise barriers are to be installed on all sides of the plant room to treat noise propagation in all directions.
    - Acoustic barriers are to extend from the base to minimum 2m above the tallest piece of mechanical equipment and have a min. surface mass of 8.5kg/m^2.

    - The outlet ducts of rooftop fans have been assessed with an indicative attenuator selection with insertion losses in Table 19 of the NVIA. − An acoustically lined bend before the termination of fan ductwork.
- Plant B
    - The acoustic louvres / noise barriers are to be installed on all sides of the plant room to treat noise propagation in all directions.
    - The acoustic louvres are to be a minimum of 300mm deep that can provide the sound transmission loss in Table 18 of the NVIA. Alternatively, acoustic barriers are to extend from the base to a minimum of 500mm above the tallest piece of mechanical equipment and have a minimum surface mass of 8.5kg/m^2.
    - The outlet ducts of rooftop fans have been assessed with an indicative attenuator selection with insertion losses.
    - An acoustically lined bend before the termination of fan ductwork.

Due to the close proximity of sensitive receivers R1 and R2 to the north, which overlook the proposed plant locations, the noise propagated to receiver R1 was observed to be borderline compliant with the evening noise limits. Hence it is recommended that Plant A (serving the new Classroom building) is only operational during daytime (7:00 am – 6:00pm) whereas Plant B (which serves the Hall) can run till 10pm (evening) as the hall may hold events. The above levels are propagated outside to the closest receiver's façade. With appropriate acoustic treatment measures such as utilising acoustic louvres / noise barriers on all plant walls as well as fan attenuators and lined ductwork, the recommended internal noise levels are predicted to comply with AS / NZS 2107.

Road traffic noise mainly emanates from Princes Highway. A preliminary traffic noise assessment was carried out to inform initial allowances for the external building envelope design. All façade penetrations and openings will be acoustically treated as per the requirements of the mitigation measures to mitigate road noise intrusion into the buildings.

Figure 25: Noise Logger Locations (NDY, 2025)

7.2.2 Construction Noise and Vibration

Section 8 of the NVIA (see Appendix 16) details a preliminary assessment of construction noise and vibration impact. The assessment presented predicted construction noise levels for excavation and demolition, structural and construction/ fit out phases to sensitive receivers surrounding the site.

Construction noise levels during all phases were predicted to be below the Highly Noise Affected 75Db (A) for external receivers. Notwithstanding, construction noise levels are predicted to be at the limit of 75 dBA and at the limit or exceeding the internal noise criteria in the existing school buildings and childcare therefore a construction noise and vibration management plan is required to be developed as soon the construction methodologies, programme and construction traffic management plans are finalised. Mitigation measures have been imposed in Appendix 1 requiring a management plan to be prepared to mitigate construction acoustic and vibratory impacts on neighbouring development. Further, a construction perimeter hoarding will need to be installed around the works footprint (minimum height 2 m, construction min. 12- 15 kg/m2 dense) to protect R1 – R4 receivers identified in the NVIA.

With respect to vibratory impacts, NDY confirmed that activities likely to cause some vibrations include piling, earthworks and earth compaction. Compliance with vibration limits for building damage is expected however subject to ensuring ground compacting equipment is selected to adhere to minimum safe working distances.

NDY concluded the following:

> *The above levels meet the construction vibration criteria (sensitive structures to vibration, 2.5 mm/s) as per DIN 4150 – 3. These values are not likely going to produce complaints from the neighbours and are below all the maximum recommended vibration values as depicted in the criteria section.*

Mitigation measures in Appendix 1 detail the standard working hours for all construction works.

The Noise and Vibration Assessment concludes the activity is not likely to have significant environmental impacts in relation to noise and vibration subject to implementation of the mitigation measures stipulated in Appendix 1.

7.2.3 Noise and Vibration Mitigation Measures

The Noise and Vibration Impact Assessment concludes the activity is not likely to have significant environmental impacts in relation to noise and vibration subject to implementation of the mitigation measures in Table 12.

Table 12: Noise and Vibration Mitigation Measures

ID	Mitigation Measure	Timing
NVMM1	• Façade construction on the assembly hall to meet minimum requirements for glazing (Nominally Rw ~40) and non glazed construction (Rw ~52 or greater) and roof	Upon construction completion

ID	Mitigation Measure	Timing
	construction (Rw 40). All façade penetrations and openings acoustically treated.	
NVMM3	• The PA system will be for voice announcements only (no music). • Speakers located away from the school boundary and oriented away from sensitive receivers. • The PA system use to be limited to school hours only • Sound power level noise limiting devices are required to adjust the speakers.	Upon construction completion Ongoing
NVMM2	• Hall noise levels need to: o Have a Music noise limiter to max (85 dBA) o Restrictions on amplified music nearer to the night-period etc. o No operations after 10:00 pm. o School needs to have a community liaison person in case of complaints.	Operational
OPMM4	• Combined sound power levels for the mechanical plant not to exceed 83 dBA and 79 dBA for Plant A and Plant B respectively. • Plant rooms with noisier equipment will require external outdoor insulation for walls and acoustic louvers.	Detailed design phase/. construction
OPMM4	• Plant A should only be operational during daytime (7:00 am – 6:00pm) whereas Plant B (which serves the Hall) can run until 10pm (evening) if required, as the hall may hold events.	Operational
OPMM4	• If a noisier electrical substation is installed (more than 58 dBA SWL) acoustic louvers will be required.	Detailed design phase/ construction
CMM14 CMM15	• Construction hours will only be during daytime. • Equipment time management (%) per construction phase as per table 20 in the Noise and Vibration Impact Assessment Report (see Appendix 16). • A perimeter hoarding will be needed around the new building (min 2 m tall and 12 – 15 kg/m2 dense). The perimeter hoarding will be needed also around the truck turning area	Prior to Construction During construction

ID	Mitigation Measure	Timing
	and heavy trucks routes (same height and construction) to protect the church and child care centre. • No vibratory piling. • A Construction Noise and Vibration Management Plan is required to be prepared when construction methods, programme and construction traffic is defined to ensure compliance with NML levels at all receivers.	

7.3 Contamination, Hazardous Materials & Remediation

A Detailed Site Investigation (DSI - Appendix 22) has been prepared by JK Environments (JKE) to address recommendations of the Preliminary Site Investigation (PSI – Appendix 21). The DSI included a review of existing project information, a site inspection, soil sampling from 15 boreholes and groundwater sampling from three monitoring wells. Areas of Environmental Concern (AEC) included: fill material; historical bus depot land use; use of pesticides; hazardous building materials; off-site areas (including dry cleaners and mechanics/service stations). The boreholes/test pits encountered fill materials to depths of approximately 0.2m below ground level (BGL) to 1.4mBGL in all locations and was generally underlain by sandstone bedrock. The fill typically comprised of sandy, clayey or gravelly soils with inclusions of igneous, ironstone, and sandstone gravel; plastic, glass, tile, metal and brick fragments; slag; ash; wood and root fibres. No fibre cement fragments (FCF) or asbestos containing material (ACM) was encountered in the fill material during the fieldwork.

A selection of soil and groundwater samples were analysed for the Contaminants of Potential Concern (CoPC) identified in the Conceptual Site Model (CSM). In fill soil, carcinogenic polycyclic aromatic hydrocarbons (PAHs) were reported at concentrations above the health-based site assessment criteria. Asbestos (as asbestos fines/fibrous asbestos - AF/FA) was also detected in fill soils at one location, although the concentration of asbestos was below the health-based site assessment criteria.

Whilst previous investigations did not identify contamination at the site that triggered a need for remediation, asbestos was detected in fill soils at one location (although the concentration of asbestos was below the health-based SAC) and the DSI identified various data gaps due in part to access constraints. Based on the data obtained during the DSI, further investigation of the site is required to supplement the existing data. This further investigation is currently underway at the time of REF finalisation, and the Sampling, Analysis and Quality Plan (SAQP) for the investigation is attached in the DSI. Note this further investigation will confirm whether or not remediation is actually required.

Notwithstanding the above, A Remediation Action Plan (RAP) has been prepared by JKE (see Appendix 27) for completeness and to outline contingencies for remediation and requirements for pre-remediation (supplementary) investigation. Given the extent of contamination has not yet been confirmed, the RAP provides the below remediation options:

6. *On-site treatment of soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;*
7. *Off-site treatment of excavated material so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site;*

Or if the above are not practicable:

8. *Consolidation and isolation of the soil by on-site containment within a properly designed barrier; and*
9. *Removal of contaminated material to an approved site or facility, followed where necessary by replacement with clean material; or*
10. *Where the assessment indicates that remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.*

Based on the existing data for the site, the preferred remedial contingency options include:

- Option 4 excavation and off-site disposal to a licensed landfill facility; and
- A combination of Option 3 cap and containment, and Option 5 long-term management.

The findings of the pre-remediation (supplementary) investigation will establish whether there are any asbestos (or any other contaminant) concentrations in soil that exceed the threshold and warrant remediation. Depending on the nature and extent of such remediation, JKE consider that Option 4 would most likely be applicable for small quantities of contaminated soils, and a combination of Options 3 and 5 would be applicable for larger quantities of contaminated soils, should contamination impacts be identified.

Review of Section 4.8 of SEPP (Resilience and Hazards) 2021 and discussions with JKE have confirmed that future remediation works will be classified as Category 2 works in accordance with the Resilience and Hazards SEPP and can be undertaken without consent.

Subject to the implementation of the RAP if deemed necessary following further pre-remediation investigations, JKE are of the opinion that the site can be made suitable for the proposed development. Mitigation measures are provided in Appendix 1 and Table 12 to address contamination risk at the site.

7.3.1 Contamination and Remediation Mitigation Measures

The DSI concludes the activity is not likely to have significant environmental impacts in relation to contamination subject to implementation of the mitigation measures in Table 13. Where any remediation is undertaken, a site validation report must be prepared on completion to demonstrate that the remedial and validation actions have been completed and to confirm that the site is suitable for the activity from a contamination perspective.

Table 13: Contamination and Remediation Mitigation Measures

ID	Mitigation Measure	Timing
LCMM1	• Remediation of known contaminated land is to be carried out in accordance with the	Prior to construction

ID	Mitigation Measure	Timing
	requirements of the Remediation Action Plan (RAP). Following completion of the remediation works, a Site Remediation and Validation Report is to be submitted to a NSW EPA-Accredited Site Auditor to confirm site suitability through a Site Audit Statement. The site suitability statement and Site Remediation and Validation Report is to be submitted to the relevant DoE Project Lead and DOE's Post Approval and Compliance Team. A notice of completion of remediation work must also be given to Council within 30 days of completion of the work in accordance with Section 4.14 and Section 4.15 of State Environmental Planning Policy (Resilience and Hazards) 2021.	
LCMM2	• At least 30 days prior to the commencement of any Category 2 remediation work, all required regulatory notifications are to be provided, including Notification of Category 2 Remediation Works to Council. Notice must be given in accordance with Section 4.13 of State Environmental Planning Policy (Hazards and Resilience) 2021.	Prior to construction
LCMM3	• Preparation of an interim and construction phase Asbestos Management Plan required to manage potential risks from asbestos in/on soil during demolition and construction. • Where asbestos or asbestos-containing material is to be disturbed or uncovered, compliance with SafeWork NSW requirements shall be adhered to. Asbestos shall be removed by a suitably qualified and experienced contractor, licensed by SafeWork NSW. The removal of such material shall be carried out in accordance with the requirements of SafeWork NSW and the material transported and disposed of in accordance with NSW Environment Protection Authority requirements and the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 'Transportation and Management of Asbestos Waste'.	Construction
LCMM4	• During construction works, should any unexpected contamination information or contaminants be identified which have the	Construction

ID	Mitigation Measure	Timing
	potential to alter previous site contamination assessments, conclusions and recommendations, the relevant DoE Project Lead must be immediately notified and works must cease in the location of the contamination. Works must not recommence until a suitably qualified and experienced contamination consultant has investigated the unexpected contamination and provided recommendations for the management of necessary remedial work required to render the site suitable for the activity in accordance with any relevant NSW EPA adopted guidelines. A Completion Certification from the contamination consultant shall be submitted to the relevant DoE Project Lead prior to construction works re-commencing. Following completion of the remediation through implementation of the recommendations from the suitably qualified contamination consultation, a Site Remediation and Validation Report is to be submitted to a NSW EPA-Accredited Site Auditor to confirm site suitability. A copy of the Site Remediation and Validation Report is also to be provided to the relevant DoE Project Lead and DoE's Post Approval and Compliance Team. A notice of completion of remediation work must also be given to Council in accordance with Section 4.14 and Section 4.15 of State Environmental Planning Policy (Resilience and Hazards) 2021.	
LCMM5	• Prior to the commencement of operation, a Site Audit Statement prepared by an EPA Accredited Site Auditor is to be provided to the relevant DoE Project Lead and DoE Post Approval and Compliance Team.	Prior to the commencement of operation

7.4 Hydrology, Flooding and Water Quality

7.4.1 Hydrology

In relation to groundwater the Geotechnical Investigation (refer Appendix 12) confirmed that all boreholes except BH107 and BH110 were dry on completion of augering. Standing water levels were measured at depths of 1.55m and 2.8m, 19 and 23 hours after completion of drilling in BH108 and BH107 respectively. It was confirmed that these depths were indicative

of perched groundwater within the residual sandy soils overlying the relatively impermeable bedrock and therefore do not represent a true groundwater table.

Groundwater monitoring wells were installed in BH203, BH207 and BH208 with depth to groundwater ranging from 3.8m (BH207) to 6.3m (BH208). The report confirmed that any seepage encountered will be able to be controlled using conventional sump and pump techniques and a mitigation measure is included in Appendix 1 detailing the requirement to obtain approval under the Water Management Act 2000 if groundwater is encountered and requires management during construction.

Stormwater will be channelled to an existing legal point of discharge (LPOD). Stormwater will be conveyed to the LPOD via a series of pits and pipes all draining via gravity to the north east corner of the site. The proposed stormwater drainage system will convey generated stormwater runoff from the new developed site, while the stormwater runoff generated by the adjoining pervious areas will be catered for within the proposed diversion stormwater drainage system.

An on-site detention tank with approximately 98m^3 storage volume is to be provided to the north of the proposed Hall which will ensure that the peak discharge flows draining from the proposed development activity can be managed by the downstream drainage systems.

The development has been designed to minimise any impacts to hydrology, refer to relevant mitigation measures provided in Appendix 1. Section 68 approvals will be necessary for the proposed modified stormwater connection works.

7.4.2 Flooding

The site is not flood affected in the 1% Annual Exceedance Probability (1% AEP) event or the Probable Maximum Flood (PMF) as demonstrated by TTW in the flooding Due Diligence Assessment (refer to Appendix 20).

TTW concluded the following:

> *Flood mapping from the study demonstrates that Kogarah Public School is unaffected by flooding in all events, up to and including the PMF. As a result, the proposed development is compliant with the objectives of the Georges River DCP (2021) and Chapter 6 of the Georges River Stormwater Management Policy (2020) and will have no impact on flood behaviour in the region.*

7.4.3 Water Quality

The site is not located within proximity to a natural watercourse, river, lake or coastal area.

The following stormwater quality treatment measures will be implemented to address relevant water quality objectives and ensure the development does not impact the quality of water downstream:

- North Treatment - Ten number of (10) x 690 PSorb Stormfilters or equivalent; and
- South Treatment - Four number of (4) x 690 PSorb Stormfilters or equivalent.

The development is not located within a Regulated Catchment as defined in Clause 171A of the EP&A regulation 2021.

Subject to the implementation of mitigation measures in Appendix 1 relating to implementation of civil design and erosion and sediment control during construction the development will generate no adverse or unacceptable impacts to water quality.

7.4.4 Hydrology, Flooding and Water Quality Mitigation Measures

The site is not flood affected, and the activity is not likely to have significant environmental impacts in relation to hydrology and water quality subject to implementation of the civil engineering mitigation measures in Table 14.

Table 14: Hydrology, Flooding and Water Quality Mitigation Measures

ID	Mitigation Measure	Timing
SWMM1	An Erosion and Sediment Control Plan must be implemented in accordance with the Landcom/Department of Housing *Managing Urban Stormwater, Soils and Construction Guidelines* (Blue Book). The controls must be in place, inspected and managed until the works are complete and all exposed erodible materials are stable relevant to each construction stage. Inspection records must be kept and provided to the Post Approval and Compliance Team on request.	Construction
SWMM5	The operational stormwater management system must be designed by a suitably qualified civil engineer. The system must: a. Ensure that the system capacity has been designed in accordance with the relevant Australian Standards; and b. Ensure that the system has been designed in accordance with the *Australian Rainfall and Runoff (Engineers Australia, 20016)* and *Managing Urban Stormwater: Council Handbook (EPA, 1997) Guidelines*. It is noted that any stormwater runoff generated by the proposed development activity must be collected via the proposed drainage system and will then be treated in a northern and southern chamber with a total of 14-units of 690 PSorb Stormfilters or equivalent.	Design

7.5 Aboriginal Heritage

Kayandel prepared a Preliminary Indigenous Heritage and Impact Assessment (PIHAI, see Appendix 17) to identify whether there is potential for Aboriginal cultural heritage to be affected by the proposed upgrade of Kogarah Public School. This report was prepared in accordance with the requirements of Heritage NSW's Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW 2010 (Due Diligence Code of Practice) (DECCW, 2010) and included recommendations regarding Aboriginal heritage constraints for the proposed works.

A site inspection/survey was undertaken by Kayandel to identify areas with the potential to retain intact subsurface archaeological deposits and assess the overall intactness of the works footprint. The field assessment included the completion of visual inspections throughout all readily accessible portions of the Subject Area. Detailed inspections were carried out at the location of ground surface exposures.

Ultimately the PIHIA concluded the following:

- All mature trees were examined for diagnostic attributes of culturally modified trees however no evidence of cultural modification were observed.
- No previously unrecorded Aboriginal objects were identified during the survey.
- The Subject Area has undergone a range of historic disturbances and it was assessed that the site has been impacted by moderate to high levels of disturbance as a result of these activities.
- No previously recorded or unrecorded Aboriginal objects, PADs or archaeologically sensitive landforms were identified as a result of the background research or survey of the Subject Area.

As detailed in the PIHAI, Kayandel confirmed that, due to previous disturbance and landscape and archaeological contexts, no further Aboriginal investigatory works are required with recommendations provided in Table 13 below.

7.5.1 Aboriginal Heritage Mitigation Measures

The Preliminary Aboriginal Heritage Impact Assessment confirmed the activity is not likely to have significant environmental impacts in relation to Aboriginal heritage subject to implementation of the mitigation measures in Table 15.

Table 15: Aboriginal Heritage Mitigation Measures

ID	Mitigation Measure	Timing
HMM8	If any unexpected Aboriginal objects, sites or places (or potential Aboriginal objects, site or places) are discovered during any construction work, all works in the vicinity must cease and the area must be appropriately protected. The DoE Heritage Team is to be notified, and an archaeologist engaged to undertake a site inspection to assess the find in consultation with the Registered Aboriginal Parties (RAPs).	During construction

ID	Mitigation Measure	Timing
	Following the on-site assessment, the archaeologist and RAPs (if they attended the site) are to advise on whether further management, mitigation or approvals are required in consultation with the DoE Heritage Team. Should Aboriginal objects be identified, these are to be registered in the Aboriginal Heritage Information Management System (AHIMS). An Aboriginal Heritage Impact Permit (AHIP) would also need to be obtained to impact the site. All relevant staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974*, which may be implemented as a heritage induction.	
HMM9	If human remains are identified, work must cease and the area around where the remains are found must be protected from all disturbance. Finds are not to be displaced from the location where they are found. The DoE Heritage Team is to be notified and a specialist archaeologist engaged to assess the find. If human skeletal material less than 100 years old is discovered, the NSW Police are to be contacted in accordance with the *Coroners Act 2009*. Aboriginal burials (older than 100 years) are protected under the *National Parks and Wildlife Act 1974* and should not be disturbed. Should the skeletal material prove to be archaeological Aboriginal remains, Heritage NSW and the Local Aboriginal Land Council must be notified. Notification should also be made to the Commonwealth Minister for the Environment, under the provisions of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.	During construction

7.6 Non Aboriginal Heritage & Archaeology

The site is not LEP or State heritage listed nor is it identified on the department's section 170 Heritage Conservation Register. Notwithstanding, A Statement of Heritage Impact (SoHI) has been prepared by Jacobs (see Appendix 18) to assess the following:

- The site adjacent comprising the St Paul's Anglican Church and Child care Centre (hall) is identified as a heritage item within Schedule 5 of the Georges River LEP 2021;
- Potential archaeological significance within the school site; and

- Two unlisted school buildings (Blocks B and C) that were deemed by Jacobs to exhibit significance.

7.6.1 Non-Aboriginal Heritage Background

Prior to the preparation of the SoHI, a Summary Report of Initial Site Investigations (SRISI) was completed which identified that the Study Area (comprising the school site and adjacent St Paul's Anglican Church) had the potential for archaeology related to a graveyard and WWII air raid trenches. In order to manage the identified archaeological potential at the site, and in light of the intended ground disturbing works of the proposed activity, the SRISI recommended an archaeological assessment be completed. Two stages of test excavations have subsequently occurred with the following five archaeological sites assessed in the SoHI:

- St Paul's Anglican Church Graveyard;
- St Paul's Anglican Church Rectory;
- WWII 1942 air raid trenches;
- Former residences, and
- A rubbish pit.

Further to the archaeological investigations documented, the SoHI also confirmed that built heritage items present within the Study Area comprise school buildings B and C (unlisted) and St Paul's Anglican Church and hall (LEP ID I192) located immediately adjacent to Kogarah Public School. In relation to these built form elements, the SoHI confirmed the following:

> *Building B was determined to be of historical significance as it represents post WWII institutional modernist architecture on a school building. Building B also demonstrates the shift to functional and modular, modernist school architecture, as initiated by the NSW Department of Education in the mid-20th century to meeting growing school numbers.*
>
> *Building C was determined to be significant as one of the oldest buildings on the school grounds. The building is associated with the NSW Department of Education's response to post WWII material shortages and growing school needs. Following the post WWII shift in industrial production away from armaments, manufacturing in the United Kingdom to satisfy peacetime requirements for prefabricated housing and utilitarian buildings. These were then imported into Australia and are primary contributors to an understanding of the evolution of the site and the NSW education system.*
>
> *Saint Paul's Anglican Church is historically significant as it is representative of one of Kogarah's earliest cultural buildings located along the main transport routes through the Municipality. The church and its associated hall reflect the initial settlement developments and the continued growth of suburban development with the growth and expansion of Sydney.*

The proposed activities do not propose physical impacts to any of these buildings. The proposed works are physically distant from school buildings B and C and would cause only minor visual impact to the setting, views and vistas related to Building C due to its closer proximity to the works. This minor impact is mitigated by the setback and façade strategy incorporated into the proposed design. The use of the Church ground for a site compound is a temporary use and would be reinstated following the completion of construction works, therefore also only causing a minor impact which is mitigated by its temporary nature.

Following the completion of a test excavation program which confirmed natural soils within the proposed ground disturbance footprint, it was determined that the proposed activity is unlikely to directly impact the archaeological potential within the Study Area due to its depth beneath ground surface and/or physical distance from the proposed activity.

7.6.2 Impact Assessment – Archaeology

Stage 1 Archaeological Investigation

Stage 1 investigated the potential for relics related to two phases of the church rectory associated with the neighbouring St Paul's Anglican Church. Three test trenches were excavated which uncovered the remains of the later 20th Century rectory building footings and demolition deposits containing fragmented building material. Soil layers were predominantly modern fill, though remnant natural clay was present overlying sandstone bedrock in some areas. The SoHI confirmed that yellowish-brown sandy clay identified during test excavations is considered consistent with the soil type expected in the Lucas Heights soil landscape.

No remains of the original rectory, stratified archaeological deposits, or graves were identified, and the sandstone bedrock was generally very shallow, varying from 200mm to 800mm below the current ground surface.

Stage 2 Archaeological Investigation

Following completion of Stage 1 and the removal of a number of demountable classrooms, further archaeological investigation was conducted for the areas of proposed activity ground disturbance (minus the area investigated as part of Stage 1). Based on the identified archaeological potential of the site, the potential for unexpected burials, and the proposed plans, three main test excavation areas were investigated:

- Where bulk earthworks were proposed for the western stairwell (in the western part of the Study Area), the full extent of the earthworks area;
- The location of 12 proposed building piles within the western part of the Study Area inclusive of a 2.4 x 2.4 m area centred on each pier location, and
- Two small test trenches over the footprint of the two former residences in the northeast of the Study Area.

The archaeological test excavation in the western part of the Study Area was specifically designed to clear the location of proposed ground disturbing activities of potential unexpected burials, and all locations were excavated to confirmed, intact, natural soils. No evidence of burials or potential for burials was identified.

Archaeological investigations were completed for 10 of the 12 footing pier locations and bulk earthworks area within the western part of the Study Area. The two remaining pier locations were inaccessible due to mature vegetation and will require management during construction.

In the western part of the Study Area, natural soil was present across the site buried beneath the school's primary landscaping fill, with varying depths of natural soil and bedrock. The soils investigated contained no artefacts.

In the northeast part of the Study Area, the excavation exposed the structural remains (footings) and demolition rubble of two 1890s cottages that were demolished in the 1960s. Although the footing appears substantially intact, the test excavation did not identify any stratified archaeological deposits or other features that would increase the site's significance such that it would be considered an archaeological relic (and protected under the Heritage Act).

In conclusion, the SoHI confirmed that no remains of stratified archaeological deposits or graves were identified within the Study Area.

7.6.3 Impact Assessment Built Form Heritage

A comprehensive assessment of historical impact was provided in the SoHI which demonstrated that the proposed built form, in particular Buildings L and M, will not generate any more than a ‘minor’ impact to the heritage significance of Blocks B and C within the site (unlisted) and the St Paul’s Anglican Church and ancillary facilities adjacent (Goerges River LEP Heritage Item – I192).

With respect to impact to Block B, the SoHI confirmed the following:

> *The new buildings do not encroach on the heritage item, being physically and visually distant, and their placement along the northern boundary continue the existing building pattern of school buildings arranged around the school fence line with open spaces and playground within the centre of the school.*
>
> *The impact of the proposed activity on the heritage item is assessed as Minor. No further mitigation measures are recommended*

With respect to impact to Block C, the SoHI confirmed the following:

> *Building L is proposed to be located adjacent to the heritage item on its eastern side. In order to reduce overshadowing by the larger building, it is set back from the heritage item by approximately 8 m, allowing a visual buffer between the two buildings and maintaining natural light levels through the windows in the eastern elevation of the heritage item.*
>
> *Although the heritage item is primarily aluminium, the difference in material does not present an increased visual impact due to the predominance of brick in the other school buildings, and the brick strip foundation along the front (southern elevation) of the heritage item. The proposed activity will result in buildings which are easily identifiable as new fabric whilst remaining sympathetic to the heritage values within the Study Area.*

The impact of the proposed activity on the heritage item is assessed as Minor. No further mitigation measures are recommended.

With respect to the impacts to St Paul's Anglican Church and ancillary facilities including the child care centre (hall), the SoHI confirmed the following:

The proposed activity would use existing areas within the church grounds for a construction site establishment, which would have impacts on the setting, view and vistas associated with the heritage item. One of the site establishment options proposes to use land in the northeast, southeast, and west of the heritage item's listed curtilage – it is assumed that this usage presents no physical impact to the church or hall buildings and no major groundworks are required which may present a vibration risk to the heritage item. As this site establishment/laydown activities area proposed to be temporary it is assessed that the impact is minor on the heritage item. No further mitigation measures are recommended.

Assessment of the proposed activities direct (physical) and indirect (visual) impacts to the identified heritage items demonstrated that the three items will be subject to minor impacts. These include Kogarah Public School – Building B (unlisted), Kogarah Public School – Building C (unlisted), and St Paul's Anglican Church and hall (Georges Rivers LEP 2021, I192). The minor impacts are associated with indirect (visual) impacts, and temporary proposed activities. The remaining three sites (all archaeological) – St Paul's Anglican Church Graveyard (unlisted), WWII 1942 air raid trenches (unlisted), and rubbish pit (unlisted) - would be subject to neutral impacts.

The extent and nature of potential impacts are low and will not have significant impact on the locality, community and/ or the environment. The impacts are predominantly neutral, with some minor visual impacts to the built heritage items in close proximity to the new buildings and site establishment areas. The SoHI confirmed that impacts will be appropriately mitigated or managed to ensure that there is minimal impact on the locality, community and/ or the environment.

7.6.4 Non-Aboriginal Heritage Mitigation Measures

The Statement of Heritage Impact confirmed the activity is not likely to have significant environmental impacts in relation to non-Aboriginal heritage subject to implementation of the mitigation measures in Table 16.

Table 16: Non-Aboriginal Heritage Mitigation Measures

ID	Mitigation Measure	Timing
HMM1	If any unexpected archaeological relic (or potential relic) of heritage significance is discovered during any construction work, all work in the vicinity must cease and the area must be appropriately protected. Materials should not be removed from the ground wherever possible. The DoE Heritage Team is to be notified and an archaeologist engaged to undertake a site inspection to ascertain whether the finds are significant relics.	Construction

ID	Mitigation Measure	Timing
	Construction works cannot recommence in that area until advised by the archaeologist, in consultation with the DoE Heritage Team. Should significant relics be identified, external approvals to impact the relics may be required.	
HMM2	As part of site establishment works, prior to use of the yard of St Paul's Anglican Church as a turning area, parking and compound area, protective hoarding must be installed to provide physical separation between vehicle movement and the heritage fabric of the St Paul's Anglican Church and hall (LEP I192).	Construction
HMM3	Two of the proposed footing pier locations for Building L were unable to be accessed during the Stage Two test excavation due to thick vegetation and trees. During construction when this vegetation is removed, excavation in this vicinity must be monitored by an appropriately-experienced Archaeologist and should extend to a depth sufficient to confirm the presence of intact natural soils or bedrock.	Construction
HMM4	A supplementary Archaeological Research Design must be prepared to support construction, which will assess potential archaeological impacts associated with detailed design. This ARD must be informed by the test excavation report prepared for the Stage One and Two test excavation programs. Refer to the Statement of Heritage Impact (Jacobs, 20/3/2025) for a map of required archaeological management.	Design and Construction
HMM5	Due to the high potential for human remains to be present, an exclusion zone must be established and no ground disturbing works are to take place within the mapped boundary of the graveyard. See Figure 10-1 in the Statement of Heritage Impact (Jacobs, 20/3/2025) for the mapped area.	Construction
HMM6	Following the completion of works, the land within St Paul's Anglican Church and hall (Georges Rivers LEP 2021, I192) grounds within its heritage curtilage must be reinstated to at least its current state.	Post Construction, prior to occupation
HMM7	Two of the proposed footing pier locations for Building L were unable to be accessed during the Stage Two test excavation due to thick vegetation and trees. During construction when this vegetation is removed, excavation in this vicinity	Construction

ID	Mitigation Measure	Timing
	must be monitored by an appropriately experienced Archaeologist and should extend to a depth sufficient to confirm the presence of intact natural soils or bedrock.	
HMM9	If human remains are identified, work must cease and the area around where the remains are found must be protected from all disturbance. Finds are not to be displaced from the location where they are found. The DoE Heritage Team is to be notified and a specialist archaeologist engaged to assess the find. If human skeletal material less than 100 years old is discovered, the NSW Police are to be contacted in accordance with the *Coroners Act 2009*. Aboriginal burials (older than 100 years) are protected under the *National Parks and Wildlife Act 1974* and should not be disturbed. Should the skeletal material prove to be archaeological Aboriginal remains, Heritage NSW and the Local Aboriginal Land Council must be notified. Notification should also be made to the Commonwealth Minister for the Environment, under the provisions of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.	Construction

7.7 Ecology

A Biodiversity Report was prepared by Water Technology and attached in Appendix 25. The purpose of the assessment was to document the findings of the biodiversity assessment and identify potential biodiversity constraints relevant to the proposed activity under the *NSW Biodiversity Conservation Act 2016*, *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, and the *NSW Fisheries Management Act 1994*.

The removal of 18 trees was assessed and the Flora and Fauna Assessment concluded that there will be no significant impacts on matters of national environmental significance. As there were no threatened species found, a Test of Significance was not required. The proposal will not cause a significant impact on the environment. Therefore, it is not necessary for an EIS to be prepared and approval to be sought from the Minister for Planning under the *EPBC Act 1999*.

The assessment confirmed that the proposed activity will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations, ecological communities, their habitats, or impact biodiversity values. Additionally, the proposed activity is not likely to have a significant impact on matters of national environmental significance or on the environment of Commonwealth land. Therefore, referral to the Minister under the *EPBC Act* is not required, nor a Species Impact Statement (SIS).

The assessment confirmed that potential impacts can be appropriately mitigated or managed to ensure minimal effect on the locality or community.

7.7.1 Ecology Mitigation Measures

The Biodiversity Report confirmed the activity is not likely to have significant environmental impacts in relation to Aboriginal heritage subject to implementation of the mitigation measures in Table 17.

Table 17: Ecology Mitigation Measures

ID	Mitigation Measure	Timing
TMM1	Trees not approved to be pruned or removed are to be protected and maintained in accordance with *AS 4970-2009 Protection of Trees on Development Sites* and are to remain in place until the completion of all construction work in the vicinity of the protected trees. Tree protection must be approved by a Consulting Arborist AQF Level 5. No materials, mixing, parking, disposal, repairs, refuelling, fires, stockpiling, or backfilling is allowed near remaining trees. Avoid storing bulk or harmful materials near trees. Keep spoil from excavations away from TPZs. Ensure wind-blown materials like cement don't harm trees. Contaminants stored properly with spill measures. Use AS 4454 leaf mulch with 90% recycled content for tree protection fencing. Chip trees marked for removal and use mulch 100mm deep. Avoid soil, weeds, sticks, and stones. Comply with AS 4454 (1999) and AS 4419 (1998). Contractors are to maintain plants are watered. Apply water at an appropriate rate suitable for the plant species during periods of little or no rainfall.	Pre construction
TMM2	Induction of all contractors and staff outlining the ecological sensitivity of the site, no-go areas, the need to minimise ecological impact, and all other required mitigation measures is to be undertaken. All trees to be protected shall be clearly identified and all TPZs surveyed. Protective fencing around existing trees and within TPZs must be installed before any site work begins. The fence must be 1800mm high chain wire mesh fixed to Galvanised steel posts, enclosing an area to prevent damage as defined in the Tree Protection Plan. No storage inside fenced area. Tree protection signage must be attached to tree	Pre construction

ID	Mitigation Measure	Timing
	protection zones before works begin. Signs should be displayed prominently and repeated at 10m intervals or closer when the fence changes direction. Signs must include information about the tree protection zone, access restrictions, developer's contact details, and Site Arborist information. Inspect all trees for hollows and nests. If fauna is discovered an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed.	
TMM3	Inspect all trees for hollows and nests. If fauna is discovered an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed.	
TMM4	Trenching is not allowed in TPZs or in areas enclosed by tree protection fencing. If trenching is necessary, approval must be sought from Level 5 arborist and trenching must be undertaken by hand with arborist supervision.	Pre construction
TMM5	Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including *Phytopthora cinnamomi*, the fungus myrtle rust *Uredo rangelli* and amphibian chytrid fungus.	Pre construction

7.8 Social Impacts

7.8.1 Social Baseline Data

To provide an overview of the social setting for Kogarah and the Kogarah Public School research was undertaken into relevant data for the locality. The statistics below provide a overview of the locality in relation to data relevant to the school.

Demographics

According to the Australian Bureau of Statistics' (ABS) Census information for 2021, the suburb of Kogarah had a population of 7,152 people, comprising 3,557 males and 3,598 females. Estimates for 2025 identify the current population of Kogarah at 9,178 people which is forecast to grow to 11,181 by 2046 or by 21.82%. Notable demographic findings are listed below –

- 62.1% of the population in 2021 was born overseas, compared to 46% for the Georges River LGA.
- Between 2016 and 2021 there was an increase in primary school aged children in Kogarah.

- Couples with children and one parent families make up 35.7% of households within Kogarah.
- 19.7% of households with children in Kogarah in 2021 were couples with young children, or under 15 years of age, which is a larger proportion than for the overall Georges River LGA. Only 2% of households with children were single parent households with young children, compared to NSW which is 3.8% of households with children are single parent households with young children.
- 57% of the Kogarah population in 2021 were employed full-time and 30% part-time. The unemployment rate in 2021 for Kogarah was 6.3% compared with 4.9% for NSW.
- The three most popular industry sectors for the resident population of Kogarah in 2021 were health care and social assistance (22.4%), professional, scientific and technical services (11.7%), and retail trade (9.6%). 4.8% of the resident population of Kogarah are employed in education and training compared to 7.8% for the Georges River LGA.
- 72.5% of the Georges River LGA resident workers travel outside of the LGA for work, which is not unusual considering the location of the Council area within the Sydney city.
- Household income levels in Kogarah in 2021 compared to NSW shows that there was a smaller proportion of high income households (those earning $3,000 per week or more) and a lower proportion of low income households (those earning less than $800 per week). Overall, 23.9% of the households earned a high income and 16.7% were low income households, compared with 25.1% and 21.0% respectively for NSW.
- In 2021, 449 (6.3% of residents) children attended primary school, 324 of those attended government schools, with remainder attending catholic or independent schools.

The Socio-Economic Indexes for Areas (SEIFA) Index of Disadvantage is a *general socio-economic index that summarises a range of information about the economic and social conditions of people and households within an area*. A low score indicates that there is a relative greater disadvantage such as low income, limited qualifications and low skilled occupations. A high score indicated a relative lack of disadvantage. The SEIFA index is based on the 2021 Census data and provides information on areas at different scales, such as LGAs and suburbs. The Index of Socio-economic Disadvantage is based on data relating to economic disadvantage such as income, the number of families with children under the age of 15 who live with a jobless parent, and unemployment rate, within a given area. In 2021 Kogarah scored 999, compared to the LGA scoring 1,011. Oatley was the highest scoring suburb in the LGA with a score of 1,101.9 and the lowest scoring suburb being Hurstville City Centre at 939.3.

Community Facilities

The Kogarah Public School is located in proximity to a wide variety of services and as such is a walkable suburb that is serviced well by public transport, schools, community facilities,

shops, health facilities and services. Figure 26 below shows an indication of the services within proximity to the school.

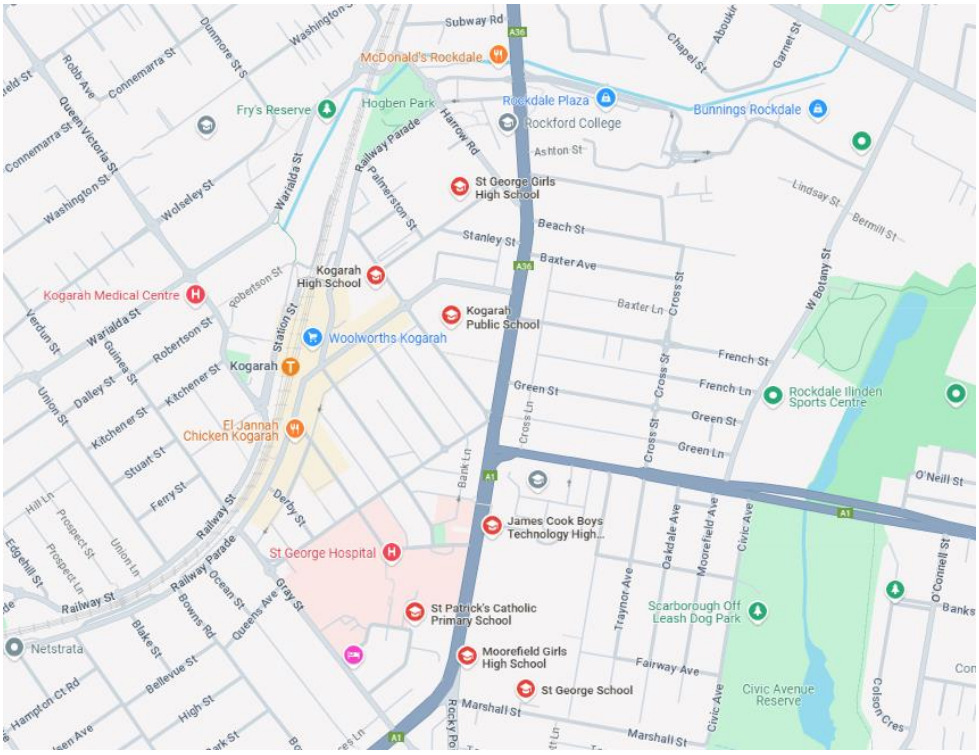

Figure 26: Nearby Schools, Services & Public Transport (Google Maps, 2025)

Crime Data

Crime data from the NSW Bureau of Crime Statistics and Research was assessed to understand the crime and safety profile of the suburb of Kogarah and Georges River LGA. Key findings are listed below:

- Data indicates the level of crime within the suburb of Kogarah varies between the lowest and very high level between October 2023 and September 2024. Assault was experienced at the high level of crime, drug offences was experienced at a very high level within this period. Malicious damage to property and theft was identified as a medium level crime.
- The hotspot for the crime of malicious damage to property within the vicinity of the site has covered a similar area around the site for the five years from 2020 to 2024. Refer to mapping extract below (Figure 27).
- The hotspot for the crime of domestic assault within the vicinity of the site has covered a similar area around the site for the five years from 2020 to 2024. Refer to mapping extract below (Figure 27).

- The hotspot for the crime of assault (non-domestic) within the vicinity of the site has varied around the site for the five years from 2020 to 2024 ranging from low to high. Refer to mapping extract below (Figure 28).
- The hotspot for the crime of theft (break and enter non-dwelling) within the vicinity of the site has been low to medium around the site for the five years from 2020 to 2024. Refer to mapping extract below (Figure 28).

Figure 27: Extract Hotspot Mapping – Assault – Domestic & Malicious Damage to Property (BOCSAR Mapping, 2024)

Figure 28: Extract Hotspot Mapping – Break & Enter – non-dwelling & Assault – non-Domestic (BOCSAR Mapping, 2024)

7.8.2 CPTED Assessment

Crime Prevention through Environmental Design (CPTED) assessments consider the design of a development and recommend appropriate measures to ensure that crime can be prevented or limited. There are 4 main criteria considered in a CPTED assessment, being access, surveillance, territorial reinforcement and space management. These criteria area considered below for the proposed alterations and additions to the Kogarah Public School.

Access

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

Effective access control can be achieved by creating:

- Landscapes and physical locations that channel and group pedestrians into target areas;
- Public spaces which attract, rather than discourage people from gathering; and
- Restricted access to internal areas or high-risk areas (like car parks or other visited areas). This is often achieved through the use of physical barriers.

Positive access control aspects of the design include:

- Maintenance of NSW DoE standard perimeter fencing which will restrict unauthorised entry to the site;
- Appropriate locks to be fitted to all external doors and windows;
- Fencing provided to limit rear access to the new Classroom and Hall buildings to authorised staff and maintenance personnel only.
- The development retains one main vehicle access point, allowing entry and exit to the car park by vehicles to be effectively controlled for access;
- Pedestrian access to the site is controlled via two gates which are closed and secured during school hours and outside of the pick up/ drop off times;
- Waste storage areas are located within the staff car park area which cannot be accessed by students; and
- Mail storage is internal to the building, discouraging theft or vandalism.

Surveillance

The Crime Prevention and the Assessment of Development Application Guidelines state that 'the attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical'.

From a design perspective, 'deterrence' can be achieved by:

- Clear sightlines between public and private places;
- Effective lighting of public places; and
- Landscaping that makes places attractive, but does not provide offenders with a place to hide or entrap victims.

Positive surveillance features of the development include:

- Passive surveillance of the modified Princes Highway pedestrian and emergency vehicle access will be provided from the Princes Highway and surrounding development;

- The development benefits from clear sightlines along new pedestrian paths and landscaped areas along the southern fringe of the school;
- The development features one main vehicle access point to the car park from Gladstone Street, allowing entry and exit to the car parks by vehicles to be effectively monitored;
- Continued use of intercom / camera system on main pedestrian gates to ensure that visitors to the site are monitored;
- Agreement opportunities for use of the site after hours by community, sport and recreation groups to create a sense of community and ownership of the spaces;
- Students and staff are channelled into the new Classroom Building via the ground level entry points comprising the lift and stairwells. This promotes the identification and surveillance of persons entering the building and will assist with identification of unauthorised personnel accessing upper levels.

Territorial Reinforcement

Territorial reinforcement can be achieved by enhancing 'community ownership of public space' as it sends positive signals and reduces opportunities for crime.

Effective territorial reinforcement and community ownership can be achieved by creating:

- Design that encourages people to gather in public space and to feel some responsibility for its use and condition;
- Design with clear transitions and boundaries between public and private space; and
- Clear design cues on who is to use space and what it is to be used for.

Positive territorial reinforcement aspects of the proposal include:

- The proposed external open space design provides a range of open, adaptable spaces and breakout areas, with landscaping and seating;
- Formal pathways, signage and limited points of entry assist with wayfinding throughout the site;
- Appropriate fencing, particularly along residential, church land and Princes Highway boundaries to clearly identify the school site from the adjoining spaces; and
- Architectural design and landscaping buffers provide visual cues that distinguish the appropriate use of areas like the Hall and associated COLA.

Space Management

Space management 'ensures that space is appropriately utilised and well cared for'. Strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti and the replacement of decayed physical elements.

Space management aspects of the proposal, both design related and operational, include:

- Implementation of the recommendations provided in the Waste Management Plan (see Appendix 14) which will ensure the site is clean and appears to be visually well cared for;

- Use of materials and lighting that are vandal resistant, where possible; and
- The proposed design adopts an 'uncluttered' landscape rationale which will also ensure that effective space management can be achieved.

Impact Analysis - CPTED

An assessment of the proposal in accordance with the CPTED principles confirms that the development can be managed to minimise the potential risk of crime and a re-design of the development is not required. Refer to Section 7.8.5 for mitigation measures.

7.8.3 Social Impact Analysis

Kogarah Public School is an existing educational establishment and operationally functions as an integral element of the social fabric of the locality. 'Social impacts' generally refer to the consequences that people experience when a new project brings change. Whilst the upgrade of Kogarah Public School won't facilitate a change in land use, this Social Impact Analysis is still necessary to identify, predict and evaluate likely social impacts arising from a project and propose responses to the predicted impacts.

Table 18 provides an analysis of social impacts in the context of the proposal. Note the analysis is not intended to function as the key review of environmental impacts which include amenity, privacy and acoustics given these are provided elsewhere in the REF, rather, it provides a holistic overview of social considerations and identifies and discusses solutions that ensure the development can avoid any impacts to a level that is appropriate and acceptable.

Table 18: Social Impact Discussion

Impact Type	Description and Level of Impact	Discussion / Solutions
Impacts on access – will there be an improvement to the quality of provision and a response to emerging and changing needs?	• Retention of main pedestrian access and car park from Gladstone Street to minimise streetscape impacts during construction – **established positive impact.** • Proposed pedestrian paths facilitate an accessible path of travel from the Gladstone Street and Princes Highway frontages – **established positive impact.** • Ensure access to new buildings are provided for all abilities – **potential negative impact if not designed / built appropriately**.	All recommendations/ requirements from the Access Report (see Appendix 7) have been included in mitigation measures provided in Appendix 1. Relevant DDA compliance will need to be demonstrated at a number of development stages including prior to issue of the Crown Certificate and prior to works completion.
Impacts on privacy, overshadowing, peace and quiet, and visual amenity (views / vistas) - will there be	• Potential overlooking of residents sited to the north from the new classroom building – **potential negative impact mitigated through design and operation – refer to discussion**. • Limited overshadowing generated due to the orientation of the site and adjoining residential development – **limited negative impact.**	The building has been designed to consider and address a number of the potential impacts mentioned. In relation to over-looking and privacy, the building includes appropriate screening to protect both the

Impact Type	Description and Level of Impact	Discussion / Solutions
significant change for neighbours and the local area during both construction and operation?	• Potential visual amenity impacts associated with construction of a three storey building adjacent to the residential flat building to north – **potential negative impact mitigated through adequate setback and architectural design – refer to discussion.** • Potential acoustic impacts associated with the siting of the new Classroom Building and Hall – **potential negative impact mitigated through siting, design and acoustic attenuation measures- refer to discussion.**	residents of the units and children attending the school. The new adjoining building has the potential to overshadow the school and the new school buildings have the potential to overshadow the adjoining public school. The buildings have been designed to limit the overshadowing as much as possible for adjoining sites. The buildings have been appropriately designed to limit acoustic / visual impacts to and from the school.
Impacts on sense of place - will there be effects on community cohesion or how people feel connected to the place and its character?	• No changes to the established land use – **no impact.** • The intent of the proposed development is to replace demountable infrastructure that has generated historical visual impacts within the site – **positive impact**. • The architectural design, landscaping and service upgrades are expected to represent a significant visual upgrade of the site – **positive impact.** • Proposed hall space to allow community use of larger space – **positive impact**. • Construction impacts will have potential temporary impacts on school and sense of place to immediate locality – **temporary negative impact**.	The contribution to sense of place for the longer term is overall a positive impact to the sense of place for the school and immediate surrounds. The potential temporary impacts during the construction phase of the development can be mitigated through appropriate management of the site. Any negative impacts from this phase will be minor and outweighed by the positive impacts form the future development.
Impacts on the way people get around – will there be changes associated with traffic or parking in the area?	• Temporary changes to traffic and parking during construction – **temporary negative impact**. • Improvements to the layout of the parking area following construction – **future positive impact**. • Existing pedestrian access points will be maintained to the site – **no impact long term, minor negative impacts during construction**.	The changes to traffic and impacts on traffic during construction will include appropriate management through construction. The existing car parking area at the school currently is covered in demountable buildings. Following the new building works, the car park will be re-established and marked to enable better use of the space.

Impact Type	Description and Level of Impact	Discussion / Solutions
		No changes are proposed to pedestrian access points in the future. Minor changes will be experienced during construction and appropriately managed.
Impacts on wellbeing - will there be benefits for students and the community associated with better school facilities, sporting facilities and grounds, and active transport options?	• Provision of a dedicated hall on a site that has never benefited from a formalised hall facility – **positive impact**. • Reduction in outdoor play space following the proposed increase in student numbers – **potential negative impact**. • Increase to capacity of the school which will enable more students within the catchment as it grows to attend – **positive impact**. • Potential for community use of school spaces with improved facilities which will improve the social capital of the Kogarah area – **positive impact**.	The reduction in play space is the only negative impact on well being for the students and community following the construction of the works. The potential impacts from play space reduction can be appropriately managed within the school through the use of the hall, staggered play times or other management opportunities.

7.8.4 Economic Impact Analysis

The proposed development will foster local jobs through additional employment opportunities associated with construction, maintenance and operation of the site. Key economic benefits are expected to include:

- Opportunities for additional Full Time Equivalent (FTE) roles at the site. When operating at full capacity following project completion the school is expected to require 13 additional FTE staff.
- Economic benefits for construction personnel engaged to assist with the build process.
- Economic benefits for ancillary servicing staff required to clean and maintain the upgraded site facilities.

The design of the development has been guided by a comprehensive options analysis which was driven by a review of constraints and opportunities. As demonstrated throughout this REF assessment, particularly in the impact assessment associated with privacy and visual amenity, the proposed built form represents an appropriate and considered response to the site and surrounding development which results in no significant adverse impacts that are likely to result in cumulative economic impacts.

7.8.5 Social & Economic Mitigation Measures

There are no specific social or economic mitigation measures as these have been covered in other parts of the REF assessment, such as access, traffic, design etc. CPTED mitigation

measures have been included in Table 19 and Appendix 1 to maximise operational safety for users of the site.

Table 19: CPTED Mitigation Measures

ID	Mitigation Measure	Timing
OPCPMM1	*Landscaping*: Maintain sightlines wherever possible via effective landscape management techniques using CPTED principles. Large trees or shrubs should not be planted immediately adjacent to balconies or roofs to prevent the vegetation from being used as an improvised or 'natural ladder'. Landscaping should be maintained so as to not inhibit access to any access gates, paths or building entries;	Operation
OPCPMM2	*Security*: Ensure use of high-quality locking systems, reinforced glass and signage and stickers. All glass should be reinforced. Predetermine and designate escape routes and safe areas for emergencies through appropriate emergency management plan.	Construction Operation
OPCPMM3	*Ongoing Site Maintenance:* Ensure the site and entry points are kept clean, damages are repaired and graffiti is removed as quickly as possible.	Operation

7.9 Overshadowing

Shadow diagrams have been prepared and attached in Appendix 3. Refer to relevant assessment discussions below.

Impact Assessment - Development to the North

The development footprint is sited to the south of the adjacent 11 storey development to the north and the approved 11 storey development to the north east and will therefore generate no solar impacts to properties to the north.

Impact Assessment - St Paul's Child care Centre – Play Space

St Paul's Child care Centre is located to the immediate south of the site and accommodates play space within the rear (western) setback. Note the play space (identified in yellow) accommodates an existing shade structure as evident in the aerial image below (Figure 29).

It should be acknowledged that the approved 11 storey building in the early stages of construction on the corner of Princes Highway and Regent Street will generate shadow impacts to both the Kogarah Public School site and beyond to the child care centre as demonstrated by the additional shadow diagrams prepared by Fulton Trotter Architects.

Figure 29: Aerial image identifying St Paul's Anglican Child care Centre (Nearmap, 2025)

Best practice for consideration of shadows and solar access is the maintenance of 2-3 hours of sunlight during mid-winter (21 June) to open space areas between 9am and 3pm within development adjacent. Refer to commentary and shadow diagrams below which confirms that the development will facilitate the retention of appropriate solar access at mid-winter to the open space area of the child care centre to the south. Where appropriate, an extract of the shadow diagram has been provided with the child care centre site depicted in red.

9am Shadows

At 9am (21 June) shadows generated by the proposed built form are cast to the south west, largely within the site. Shadows generated by the new Classroom Building extend into the rear setback and open space area of the adjacent child care centre (St Paul's Child care Centre). Approximately 90% of the child care centre's play space will be impacted by shadows at this time.

10am Shadows

At 10am (21 June) shadows generated by the proposed built form are cast to the south west, largely within the site. Shadows generated by the new Classroom Building extend into the rear setback and open space area of the adjacent child care centre (St Paul's Child care Centre). Approximately 80% of the child care centre's play space will be impacted by shadows at this time.

11am Shadows

At 11am (21 June) shadows generated by the proposed built form are cast to the south west, largely within the site. Shadows generated by the new Classroom Building extend into the rear setback and open space area of the adjacent child care centre (St Paul's Child care

Centre). Approximately 35 - 40% of the child care centre's rear play space will retain solar access at this time as demonstrated in Figure 30.

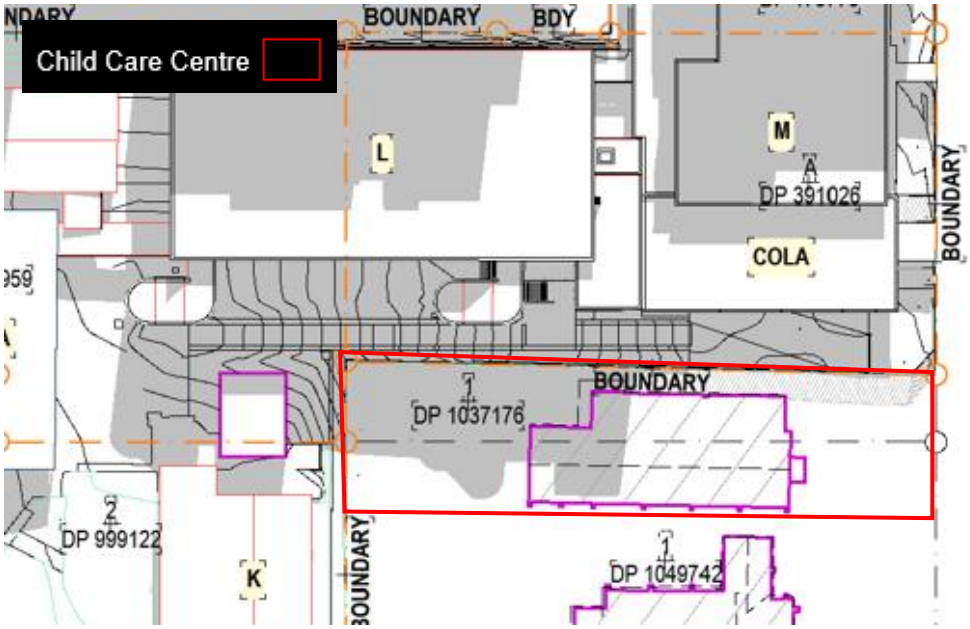

Figure 30: Shadow Diagram – 11am (FTA, 2025)

Midday Shadows

At midday (21 June) shadows generated by the proposed built form are cast to the south, largely within the site and extending into the rear setback and play space of St Pauls Child care Centre. Approximately 40 – 45% of the rear play space will retain solar access as demonstrated in Figure 31.

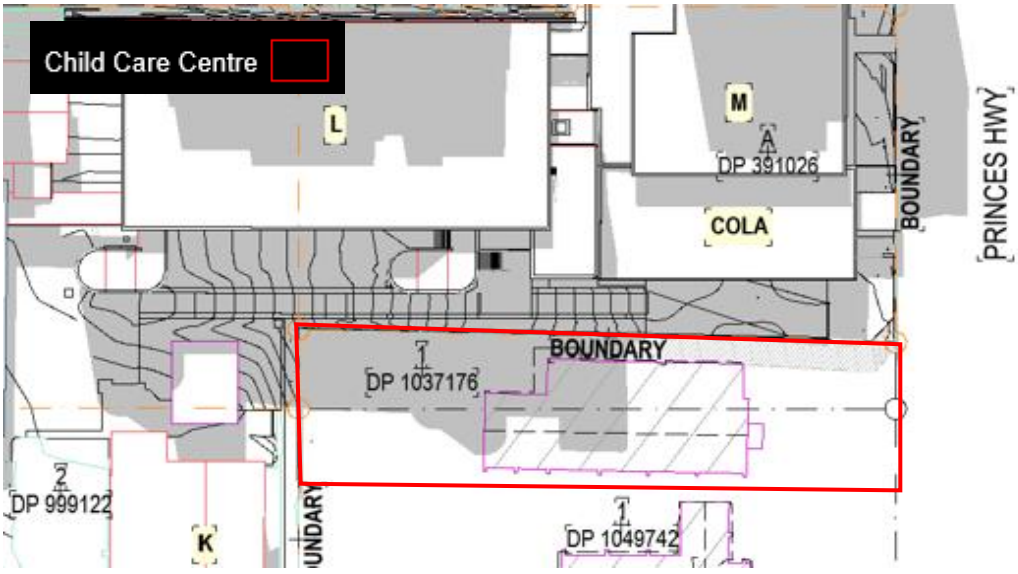

Figure 31: Shadow Diagram - Midday (FTA, 2025)

1pm Shadows

At 1pm (21 June) shadows generated by the proposed built form are cast to the south, largely within the site and extending into the rear setback and play space of St Pauls Child care Centre. Approximately 45% of the rear play space will retain solar access at this time as demonstrated in Figure 32.

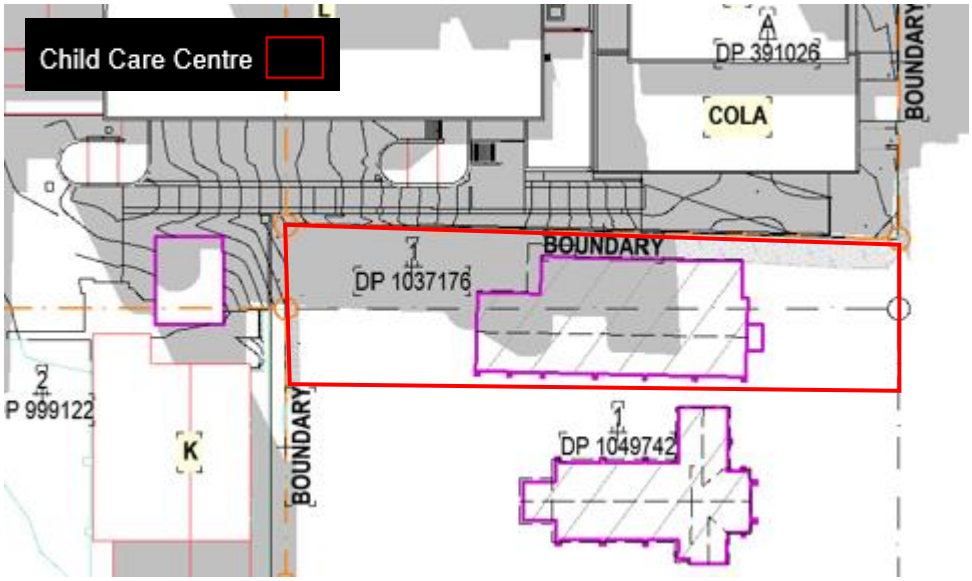

Figure 32: Shadow Diagram – 1pm (FTA, 2025)

2pm Shadows

At 2pm (21 June) shadows generated by the proposed built form are cast to the south, largely within the site and extending into the rear setback and play space of St Pauls Child care Centre. Approximately 45% of the play space will retain solar access at this time as demonstrated in Figure 33.

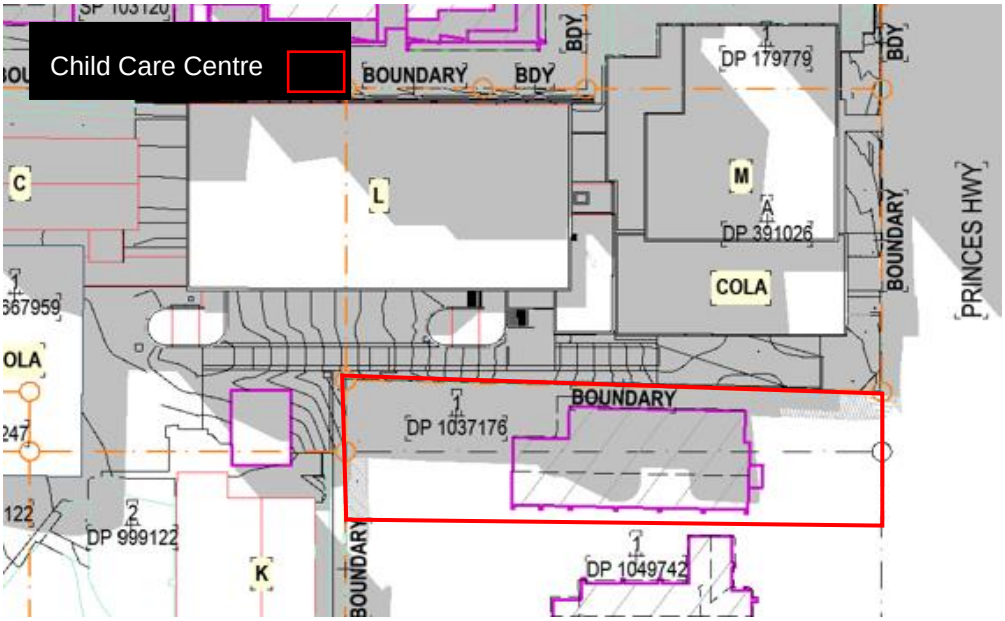

Figure 33: Shadow Diagram – 2pm (FTA, 2025)

3pm Shadows

At 3pm (21 June) shadows generated by the new Classroom Building and COLA are cast to the south within the adjacent St Paul's Child care Centre. Approximately 10-15% of the child care centre's rear play space will retain solar access at this time.

Assessment Conclusion – Child Care External Play Space

- The proposed development will facilitate the retention of solar access to approximately 40-45% of the adjacent child care centre's rear play space between the hours of 11am – 2pm on 21 June. This is considered to be an appropriate outcome within a constrained urban environment noting the existence of existing and approved 11 storey buildings to the immediate north of the site which generate solar impacts to both the school and the child care centre.
- Shadow diagrams provided for 22 September and 22 December confirm the child care centre retains solar access to 90-100% of the rear play space area between 9am-3pm.
- The solar impacts to play space are limited to winter months only and the play space currently accommodates a shade structure within the rear setback and a vegetated western buffer to the school which results in existing solar impacts to this area.
- From a contextual standpoint, Kogarah Public School is located within a highly constrained site that is significantly overshadowed by the existing 11 storey building at 93 Regent Street (Kogarah Central). The school's overshadowing will be further exacerbated by the approved 11 storey building to be constructed at 41-47 & 99 Regent Street as demonstrated in the additional shadow diagrams prepared by Fulton Trotter Architects.
- The proposed three storey classroom building has been sited with an appropriate southern setback 4.57m from the stairwells and 12.67m from the roofline of proposed Building L to the child care centre boundary to the south. Given the standardised NSW DoE Hub design layout for GLSs, limited flexibility is available to modify the depth of the proposed classroom building and the siting of the built form has been located with consideration of both privacy and overshadowing impacts to the north and south.

Impact Assessment - St Paul's Child care Centre - North facing Windows

St Paul's Child Care Centre is located to the south of the proposed built form. The northern elevation of the building contains windows at ground level as demonstrated in the streetview image at Figure 34. Details of the impacts are outlined below.

9am Shadows

- The northern windows of the child care centre will not be impacted by shadows at 9am on 21 June, 22 September or 22 December.

Midday Shadows

- Approximately four (4) of the five (5) windows will be unaffected by shadows at midday on 21 June with the one window (located furthest west) likely to experience some level of solar impact from the proposed classroom building.
- No solar impacts will be generated to the northern windows of the child care centre at Midday on 22 September or 22 December.

3pm Shadows

- All (five) north facing windows located within the adjacent child care centre will be impacted by shadows at 3pm on 21 June.

- By 3pm on September 22 however the shadows shift to the east and no windows within the child care centre will be impacted.
- Similarly, northern facing windows within the child care centre remain completely unaffected by shadows at 3pm on 22 December.

Assessment Conclusion – Child Care Centre North Facing Windows

North facing windows within the child care centre building will retain solar access at 21 June in the morning and midday periods (one out of five windows impacted at midday only).

Whilst shadows will be cast to north facing windows at 3pm on 21 June, both September and December shadow diagrams confirm these windows will be unaffected in the warmer months. Given the highly urbanised locality and presence of 10-11 storey buildings (existing and approved for construction) surrounding with 33m height limits, the afternoon impacts at 21 June are considered to be reasonable and will not give rise to any significant amenity impacts to users of the building.

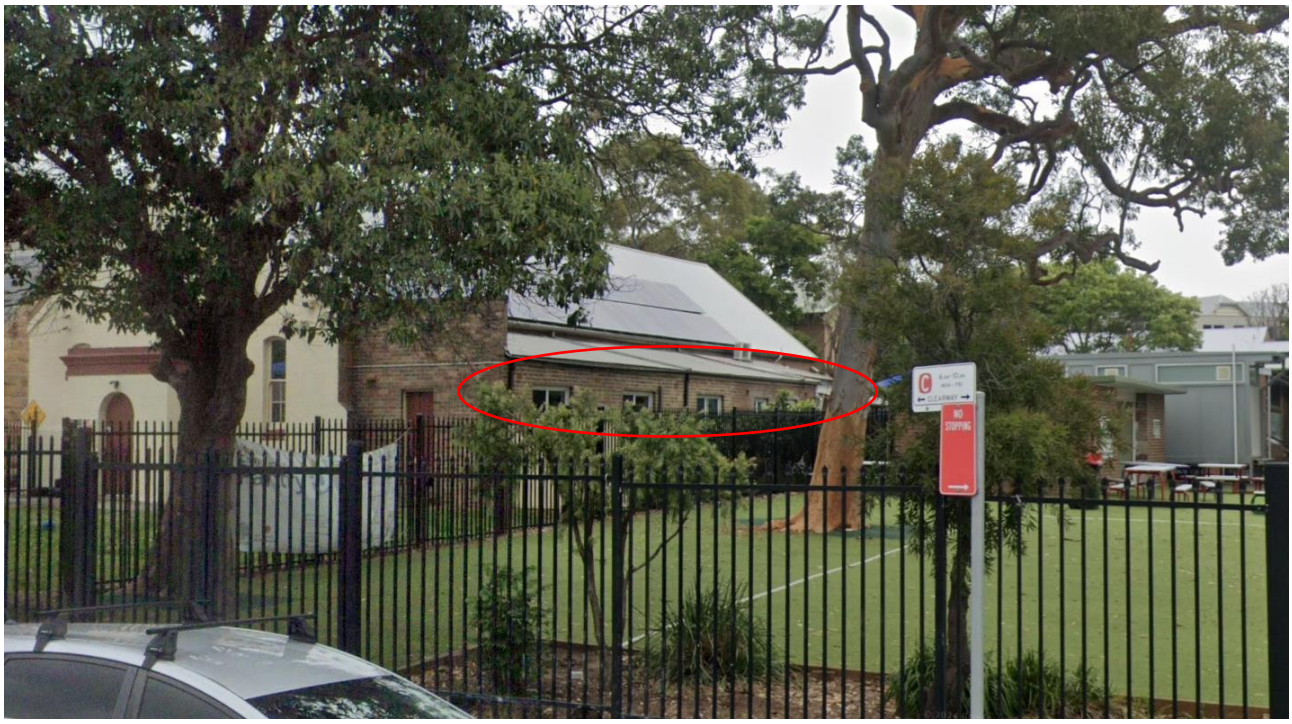

Figure 34: Looking south west to the northern windows of St Paul's Anglican Child Care Centre from Princes Highway (BRS, 2025)

No mitigation measures have been proposed for overshadowing.

7.10 Other issues

Issue	Consideration
Visual Amenity and Privacy	The works are proposed within an urbanised environment that does not comprise high scenic value. Whilst the classroom building and the hall will be visible from the public domain within the Princes Highway, surrounding development of 11 storeys in height to the north and the approved 11 storey shop top housing development to the

Issue	Consideration
	north east will retain visual dominance in the landscape. The works will be visible predominantly from residential development to the north and the built form elements are assessed under separate headings below. **Visual Amenity and Views** Proposed Hall (Block M) The proposed hall to be located in the north east of the site is single storey in height, setback 5m from the northern boundary and will not give rise to any unacceptable view or visual amenity impacts. Proposed Classroom Building (Block L) Kogarah Public School and surrounding development are located within an urban environment approximately 1.8km to the west of Botany Bay. The existing residential development identified as Kogarah Central (71-93 Regent Street) is located to the immediate north of the proposed three storey classroom building and comprises an 11-12 storey residential flat building as shown in the image at Figure 35 below. The proposed three storey classroom building is located with a setback of 3.5m to the northern boundary. The classroom building will be constructed with a building separation of approximately 7m to the ground floor level of 71 – 93 Regent Street, 9m to the podium level (generally three storeys in this location) and 10m-10.5m to the angular balconies within the upper levels.  **Figure 35: Nearmap 'Panorama View' identifying the interface between Kogarah Public School and sites to the north (Nearmap, 1 May 2023)** With respect to view impacts, Tenacity Consulting v Warringah Council [2004] NSWLEC 140 established the guiding planning principles which are used to assess

Issue	Consideration
	view sharing. Consideration of the four Tenacity Principles is provided below confirming the proposed three storey classroom building will not give rise to any unacceptable view impacts; • The vista to the south currently provided to the lower levels (1-3) of the residential apartments at 71-93 Regent Street to the north of the classroom building is not considered to be panoramic or iconic, nor is the vista considered to be 'views' to any landmarks, ocean, river or waterway areas. • This vista to the south/ south east generally spans across the existing Kogarah Public School site and is partially obstructed by an existing COLA and established trees within the site. • An assessment of the 'reasonableness' of the proposed development has been undertaken which identified that the proposed three storey classroom building readily achieves the maximum height control for the site (four storeys that can be achieved as 'development without consent') under the TI SEPP. Given the limited site area available for redevelopment it is considered that the proposed design represents the most appropriate architectural outcome for a site that is bordered on three sides by lots that are afforded a maximum building height of 33m in accordance with Georges River LEP 2021. The three storeys proposed is not unreasonable, nor is the 3.5m setback proposed to the northern boundary which will facilitate appropriate building setback to the 11 storey residential apartment building adjacent. • The proposed setback and building separation will continue to facilitate appropriate airflow and natural light to the adjacent apartments noting that solar access is already obstructed due to the units' orientation to the south. **Privacy and Overlooking** <u>Proposed Hall (Block M)</u> The proposed hall is single storey in height, setback 5m from the northern boundary and benefits from a northern elevation that is limited to one fire exit door that will be used in emergencies only and one window associated with a single accessible bathroom. The proposed hall will not give rise to any overlooking of neighbouring development to the north, east (Princes Highway) or the south (adjoining child care centre and church) due to the location of the development, the adjoining COLA and the location of the road network adjacent. <u>Proposed Classroom Building (Block L)</u> The proposed Classroom Building is three storeys in height with a setback of 3.5m from the northern boundary. Adjoining the northern boundary is an 11 storey residential flat building with a combination of windows and balconies orientated to the south. Due consideration has been given to the architectural interface of the two buildings and design development has been undertaken which has resulted in the following architectural design measures to mitigate privacy and overlooking: • Frosted glass louvres integrated into the northern elevation with a fixed restriction to the opening angle as per the indicative image provided at Figure 34. • The frosted glass will facilitate daylight ingress to the classroom whilst obscuring the view of a person standing in the classroom looking to the north. The maximum openable angle depicted in Figure 36 also demonstrates that

Issue	Consideration
	views from students and staff sitting or even standing within a classroom would be almost entirely obscured by the angle of the louvre. • An options analysis undertaken by project Architects confirmed the frosted louvre results in a better privacy outcome than external perforated mesh privacy screening which would still allow for direct/ obscured sightlines to residential levels adjacent. Further, the perforated metal mesh screening significantly reduces daylighting of the classroom facilities which is magnified by the significant overshadowing that occurs from the neighbouring residential development to the north. The proposed frosted louvre represents a solution that will appropriately mitigate direct overlooking and sightlines between users of the Classroom Building and the neighbouring residential development. A mitigation measure is included in Appendix 1 requiring the louvres to be manufactured with a fixed opening angle to mitigate privacy impacts. The proposed southern elevation of the classroom building exhibits stairways and movement areas that are treated with perforated mesh screening. This architectural treatment will appropriately mitigate any unacceptable overlooking of the St Paul's Child care Centre to the south.  **Figure 36: Indicative image demonstrating the intent of frosted glass louvres with set maximum opening angle**
Bushfire	The site is not identified as bushfire prone on the bushfire prone land map. Further consideration of bushfire impact is not required.
Soils and Geology	A Geotechnical Report has been prepared by JK Geotechnics (Appendix 12) which has considered the environmental impacts associated with the soil and geology of the site. The report did not identify any concerns with salinity and determined that all boreholes except BH107 and BH110 were dry on completion of augering with respect to groundwater. Seepage was measured at about 1.0m and 3.5m in BH107 and BH110 respectively. Standing water levels were measured at depths of 1.55m and

Issue	Consideration
	2.8m, 19 and 23 hours after completion of drilling in BH108 and BH107 respectively. These depths were considered to be indicative of perched groundwater within the residual sandy soils overlying the relatively impermeable bedrock and therefore do not represent a true groundwater table. The report confirmed that from a geotechnical perspective, the site is suitable for the proposed activity and that no mitigation measures are required to mitigate environmental impacts arising from the propsoed activity. Geotechnical recommendations are provided in the report to guide the detailed design of the development.
Waste	A WMP has been prepared by MRA Consulting (Appendix 14). **Construction** The impact of waste during construction on surrounding residents is temporary and will be undertaken in accordance with the Construction Environmental Management Plan required to be prepared prior to the issue of any Crown Certificate. If required and appropriate, stockpiles will be located on site with demolition and construction waste sorted accordingly before being re-used on site or transported off site for disposal/recycling at a licenced waste facility. **Operation** The existing waste storage area will be retained within the car park area in the south west of the site accessed from Gladstone Street. The bulk bin store will accommodate 8 x 1,100L bins as demonstrated on the Architectural Site Plan (see Appendix 2). Private waste collection is proposed 2 x weekly for general waste and fortnightly for paper and cardboard recycling. Waste trucks will continue to enter and exit the site in a forward direction. Waste collection will continue to be undertaken outside of school hours to minimise conflict with staff vehicles. The waste area will be regularly maintained and cleaned to avoid odour and unsightliness. Bins will be located throughout the school as per the current circumstances and the cleaner will transport waste to the waste area and allocate into the bulk bins provided.
Air Quality	An Air Quality Assessment (AQA - see Appendix 26) has been prepared to assess the impact of potential air emissions from the Princes Highway on the development in addition to construction impacts to air quality. **Construction Air Quality** The site and works footprint are located adjacent to a multi storey residential apartment building in the north and a Child Care Centre within the Church to the south, both of which are considered to be a sensitive use for air quality. Potential minor sources of air pollution associated with construction works and plant equipment may include: • Impact from plant emissions during works stage; • Other general construction activities. In relation to construction air quality the AQA confirmed the following: *Air emissions are expected to arise from the likely construction activities sociated with the proposed activity, including minor earthworks and site preparation, vehicles travelling on-site for material delivery, and building*

Issue	Consideration
	construction. Emission rates will vary daily, depending on the stage and type of activities, with peak times generating more air emissions. These dust sources are temporary in nature and will only occur during the construction period. *The potential air emissions associated with the construction activities are expected to be easily managed with good operational practices.* *To ensure dust generation is adequately controlled during the construction period and the potential for off-site impacts is reduced, appropriate (operational and physical) mitigation measures will be implemented as necessary.* **Operational Air Quality** The site adjoins the Princes Highway which is a Classified road and a potential source of polluting emissions due to volume of vehicle movements. Dispersion modelling was undertaken to assess pollutant impacts at the site. Modelling confirmed that pollutant concentration levels do not exceed the relevant criteria and it was therefore determined that the road traffic emissions would not lead to any unacceptable level of harm or impact at the site of the proposed activity. Subject to the implementation of mitigation measures stipulated in Appendix 1, the proposed development can be managed to address air quality impacts.
Wind	The proposed development is limited to buildings of one (1) and three (3) storeys in height and will not contribute to or be unnecessarily impacted by wind. No further assessment is required.
Land Use	The development is not proximate to any restricted land uses. The site is not proximate to an oil or gas pipeline. The site is not located within a Mine Subsidence District or an area of former mine workings. The site is not located in proximity to HV powerlines or telecommunications infrastructure that may have EMF considerations.
Coastal Risks	The site is not located within an area affected by coastal risk or identified in SEPP (Resilience and Hazards) 2021. No further assessment is required.
Aviation	A review of airspace/ aviation requirements has been prepared by Avipro and attached in Appendix 23. Key aspects of the review are identified as follows: • The site is proximate to Sydney Airport and subject to the Obstacle Limitation Surface of 51m AHD. • The ground level of the development footprint is approximately 20.4m AHD which retains approximately 30m of airspace above the site for construction machinery and crane infrastructure. • As the buildings are proposed with a height of approximately 13m there is approximately 18m above rooftop level for the erection of cranes and other plant. Avipro confirmed the following in relation to the impact of the proposed development and construction measures on aviation facilities and operation: *No crane methodology has been provided however it is assumed that with the approximate 13-metre maximum building height, tower cranes will not be*

Issue	Consideration
	installed. It is assumed that mobile cranes will support the preferred construction methodology. Mobile cranes are normally unlit as they typically only operate during daylight hours. If operating at night, in poor light, or in low visibility (rain, fog, dust storms, smoke haze etc) mobile cranes should be lit if they are deemed as potentially hazardous to aviation operations. Provided all construction cranes and plant do not exceed 51m AHD in elevation, they will not impact safe aviation operations to and from Sydney Airport. The crane methodology and assumptions need to be confirmed at the construction stage and if there is a likelihood of exceeding RL 51, formal airspace application would need to be initiated. *I have reviewed the most probable crane methodology and likely construction plan in the context of maintaining safe aviation operations to and from the St George Hospital HLS during the Kogarah Public School upgrade. Any proposed crane and construction activities are sufficiently remote from the HLS (approximately 640m), will be well below HLS elevation of 67.8 m AHD, and will not adversely impact safe aviation operations to and from the St George Hospital HLS during the Kogarah Public School upgrade.* A mitigation measure is provided in Appendix 1 requiring that crane/ construction equipment and methodology is confirmed following the engagement of a contractor to determine if any construction equipment is likely to exceed the 51m AHD trigger for the Obstacle Limitation Surface. In the event that cranes and/or other construction equipment are likely to exceed RL 51, measures must be taken to seek formal assessment of the exceedances by the Civil Aviation Safety Authority (CASA) and Airservices Australia via SACL. Further to the above, Kogarah Public School lies within an area defined in schedules of the Civil Aviation (Buildings Control) Regulations, which limit the height of structures to 50 feet (15.24 metres) above existing ground height (AEGH) without prior approval of the Sydney Airport Corporation Ltd (SACL). Should the height of any temporary structure and/or equipment be greater than 50 feet (15.24 metres) AEGH, an approval must be obtained in accordance with the *Civil Aviation (Buildings Control) Regulations Statutory Rules 1988 No. 161* prior to commencement of works. This has been reflected in the mitigation measure for aviation/ airspace in Appendix 1.

7.11 Cumulative Impact

A review of the Georges River Council DA Tracker, Sydney Regional Planning Panel and State Significant Development Application Portal has been undertaken which demonstrated the following:

7.11.1 Major Projects/ SSD

- Eight (8) applications or modifications are identified on the tracker within the suburb of Kogarah.

- Seven (7) of the applications relate to works associated with St George Hospital at Gray Street, Kogarah approximately 1.3km to the south of the site. No cumulative impact will be generated by any works associated with St George Hospital.
- One (1) application relates to road works associated with Stage 6 of the M1 which was approved in 2019. Works are contained within Presidents Avenue and immediate surrounds and will not give rise to any cumulative impacts.

No mitigation measures are required to address any cumulative conflict associated with SSD development in the locality.

7.11.2 Sydney South Planning Panel

- Twenty four (24) applications were identified on the portal within the suburb of Kogarah.
- Three (3) applications were identified within 500m of the site as follows:
    - 71-79 Regent Street which is the completed 11 storey residential flat building (Kogarah Central) to the immediate north. No cumulative impacts.
    - 58-68 Regent Street which is a residential flat building currently nearing completion to the north west of the site. Noting that construction vehicles are proposed to access the Kogarah Public School redevelopment site from a temporary vehicular access point at Princes Highway only, no cumulative impacts are likely to be experienced given vehicles associated with the 58-68 Regent Street development will access that site approximately 280m to the north west.
    - 70-78 Regent Street – completed residential flat building. No cumulative impacts.

No mitigation measures are required to address any cumulative conflict associated with developments identified above within the locality.

7.11.3 Council Approvals in the Immediate Vicinity

Approved mixed use development (11 storeys) at 41-47 & 99 Regent Street (located to the immediate north east of the site) – DA/183/2016

Demolition has commenced and external Project Managers are liaising with the proponents to ensure that construction traffic, if construction commences/ coincides with the Kogarah Public School upgrade, can be managed appropriately for the site located adjacent to the school. The approved mixed use development site will be accessed via Regent Street and in the context of the proposed school upgrade, cumulative impacts associated with traffic are expected to be negligible given the separation between the proposed Princes Highway temporary access for the school development and the Regent Street access point for the mixed use development.

Condition 1D (g) of DA/183/2016 stipulates the need for the proponent to prepare a Construction Traffic Management Plan ‘in consultation with School Infrastructure and/ or the P&C’. Further, the condition stipulates that construction work zones cannot be proposed in

locations that will compromise pedestrian access to the school. Traffic Control Plans were also required to be issued to the satisfaction of Council prior to issue of the Construction Certificate (CC). Noting that demolition is complete, it is assumed that Georges River Council reviewed and endorsed these traffic management plans prior to the issue of the CC. Condition 1DD further confirms that Site Management Plans for demolition and construction must be issued to the satisfaction of Council demonstrating that measures will be in place to manage impacts associated with construction.

DA/183/2016 will be subject to the requirements of the approved Acoustic Report (14/10/2023 – Acoustic Logic) and all EPA requirements associated with construction noise. Accordingly it is not considered that any unacceptable cumulative acoustic impacts will be generated by the developments if constructed simultaneously given acoustic mitigation measures will dictate the construction of both developments.

When reviewed in the context of the proposed Kogarah Public School update works, it is not considered that works associated with DA/183/2016 at 41-47 & 99 Regent Street will generate any significant cumulative or unacceptable construction or operational impacts. Mitigation measures have been imposed to ensure that the proposed activity at Kogarah Public School will not generate any unacceptable construction impacts to surrounding development. More specifically, measures associated with construction management and operational traffic will further ensure that the upgrade of Kogarah Public School, when considered in the wider context of surrounding approvals including DA/183/2016, can be managed appropriately.

7.12 Consideration of Environmental Factors

Section 171(1) of the EP&A Regulation notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the guidelines that apply to the activity.

The assessment provided in the sections above has been prepared to provide a detailed consideration of the factors that must be taken into account for an assessment under Division 5.1 of the EP&A Act. These factors are summarised in Table 20 and where mitigation measures have been proposed in response to the factor, these have been identified.

Table 20: Environmental Factors considered

Environmental Factor	Consideration	Mitigation Measure Reference
Any environmental impact on a community?	Community impacts that could arise from the proposed activity relate to traffic, access and parking, noise and vibration, stormwater management, air quality, visual, overshadowing and social impacts. These impacts have been duly considered as part of this REF assessment, and where required, mitigation measures have been included to minimise potential impacts where they cannot be avoided. The upgrade of Kogarah Public School will have a beneficial impact on the community through the provision of educational services and more specifically a purpose built hall. The proposed upgrade will also create additional employment opportunities for education and servicing/ maintenance staff. During construction works, there are anticipated to be some impacts relating to noise, dust and traffic. These impacts are temporary and are considered to be acceptable, subject to the implementation of mitigation measures.	GMM5 CEMM1 CEMM3 PACMM1 CMM2 CMM4 CMM13 CMM14 CMM15 CMM17 CMM18 CMM19 CMM20 UIMM6 NVM1 NVM2 NVM3
Any transformation of a locality?	The works relate to the upgrade of an existing/ established school. The upgrade will provide for the educational and employment needs of the local area and the scale of development will not generate any transformation of the locality. As demonstrated in this REF report, the proposal has been designed within a highly constrained site to minimise impacts on the surrounding area. The cumulative impacts associated with the development have been determined to be largely temporary in nature and offset by the	No mitigation measures required.

Environmental Factor	Consideration	Mitigation Measure Reference
	future benefits associated with the provision of upgraded school infrastructure facilities.	
Any environmental impact on the ecosystems of the locality?	Subject to the implementation of relevant erosion and sediment control and construction management mitigation measures, the proposed development will not result in environmental impacts on the ecosystems of the locality.	CMM2 TMM1 TMM2 TMM3 SWMM1
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	The proposal will not result in a reduction of the aesthetic, recreational, scientific or other environmental qualities of the locality. To the contrary, the proposed upgrade works will contribute to the aesthetic, recreational and scientific value of the locality through purpose built infrastructure for the benefit of the local community.	No mitigation measures required.
Any effect on locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	No previously recorded or unrecorded Aboriginal objects, Potential Archaeological Deposits or archaeologically sensitive landforms were identified as a result of the background research or technical survey of the site. Notwithstanding, if during construction works any Aboriginal objects or relics are uncovered, a mitigation measure has been included to cease works immediately and contact the relevant authority. The SOHI confirmed that built heritage items present within the Study Area comprise school buildings B and C (unlisted) and St Paul's Anglican Church and hall (LEP ID I192) however impacts were considered to be neutral or minor. The proposed activities do not propose physical impacts to any of these buildings. The proposed works are physically distant from school buildings B and C and would cause only minor visual impact to the setting, views and vistas related to Building C due to its closer proximity to the works. This minor impact is mitigated by the setback and façade strategy incorporated into the proposed design. The use of the Church ground for a site compound is a temporary use and would be	CMM2 CMM24 UIMM1 HMM1 HMM2 HMM3 HMM4 HMM5 HMM6 HMM7 HMM8 HMM9

Environmental Factor	Consideration	Mitigation Measure Reference
	reinstated following the completion of construction works, therefore also only causing a minor impact which is mitigated by its temporary nature. Following the completion of a test excavation program which confirmed natural soils within the proposed ground disturbance footprint, it was determined that the proposed activity is unlikely to directly impact the archaeological potential within the Study Area due to its depth beneath ground surface and/or physical distance from the proposed activity. It was determined that potential heritage impacts are low and will not have a significant impact on the locality, community or environment. Mitigation measures are included in Appendix 1 to mitigate the impact of construction on registered or potential heritage within the site and surrounding development.	
Any impact on the habitat of protected animals, within the meaning of the *Biodiversity Conservation Act 2016*?	Subject to fauna clearance surveys prior to construction, the Biodiversity Report (see Appendix 25) confirmed the development would not impact the habitat of any protected animals within the meaning of the Biodiversity Conservation Act 2016.	CMM2 TMM1 TMM2 TMM3 TMM4 TMM5
Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	As above, the Biodiversity Report (see Appendix 25) confirmed the proposal is unlikely to result in any impacts to the habitat of protected animals and the works are unlikely to endanger any species of animal, plant or other form of like, whether living on land, in water or in the air.	No mitigation measures required.
Any long-term effects on the environment?	As demonstrated throughout this REF assessment, the proposed Kogarah Public School upgrade will not result in any long-term effects on the environment.	No mitigation measures required.
Any degradation of the quality of the environment?	The demolition and construction phase of the proposed development will result in some short-term degradation of the	CMM2

Environmental Factor	Consideration	Mitigation Measure Reference
	environment which, subject to the implementation of mitigation measures relating to noise, erosion and sediment control and construction management, can be appropriately managed by the contractor.	CMM14 CMM15 CMM17 CMM18 CMM19 SWM1 LCMM1 LCMM2 LCMM3 LCMM5
Any risk to the safety of the environment?	The development has been designed with regard to the environmental constraints of the site and subject to compliance with the mitigation measures, the proposed development will not result in any risk to the safety of the environment.	CMM2 CMM14 CMM15 CMM17 CMM18 CMM19 SWM1
Any reduction in the range of beneficial uses of the environment?	The development comprises the proposed upgrade of an existing school and therefore will not give rise to any reduction in the beneficial use of the environment.	No mitigation measures required.
Any pollution of the environment?	Potential impacts associated with pollution are capable of being managed through the implementation of relevant mitigation measures during the construction phase of the development via the Construction Environmental Management Plan. Operation of the development will not give rise to any pollution impacts to the environment.	CMM2

Environmental Factor	Consideration	Mitigation Measure Reference
Any environmental problems associated with the disposal of waste?	Waste will be managed in accordance with the WMP prepared by MRA (see Appendix 14). The WMP has considered the waste generation associated with the demolition, construction and operational phases of the proposed site upgrade.	OPMM1
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	The proposal is unlikely to result in any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply.	No mitigation measures required.
Any cumulative environmental effects with other existing or likely future activities?	Cumulative impacts are discussed in Section 6.10 of this REF. The cumulative impacts are likely to be short-term and given the long-term benefits associated with the upgrade of the site, are considered to be acceptable.	GMM5 CEMM1 CEMM3 PACMM1 CMM2 CMM4 CMM13 CMM14 CMM15 CMM17 CMM18 CMM19 CMM20 UIMM6
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	N/A – site is not located within an area subject to coastal management controls.	No mitigation measures required.
Applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act?	A review of the relevant strategic plans and legislative context is provided as part of Section 4.4. The proposed activity is consistent with the provisions of the Sydney Region Plan and the Georges	No mitigation measures required.

Environmental Factor	Consideration	Mitigation Measure Reference
	River Local Strategic Planning Statement.	
Any other relevant environmental factors?	All other environmental factors have been considered and assessed in this REF.	No mitigation measures required.

8. Justification and Conclusion

The proposed upgrade works including new classroom building, hall and ancillary works at Kogarah Public School is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting, or likely to affect, the environment by reason of the proposed activity.

As outlined in this REF, the proposed activity can be justified on the following grounds:

- It responds to an existing need within the community;
- It generally complies with, or is consistent with all relevant legislation, plans and policies;
- It has minimal environmental impacts;
- Will provide positive social and economic benefits to the local community; and
- Adequate mitigation measures have been proposed to address these impacts.

The activity is not likely to significantly affect threatened species, populations, ecological communities or their habitats, and therefore it is not necessary for a Species Impact Statement and/or a BDAR to be prepared.

The environmental impacts of the proposal are not likely to be significant. Therefore, it is not necessary for an EIS to be prepared and approval to be sought for the proposal from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. On this basis, it is recommended that the department determine the proposed activity in accordance with Division 5.1 of the EP&A Act subject to the implementation of mitigation measures identified within this report and more specifically Appendix 1 of this report.