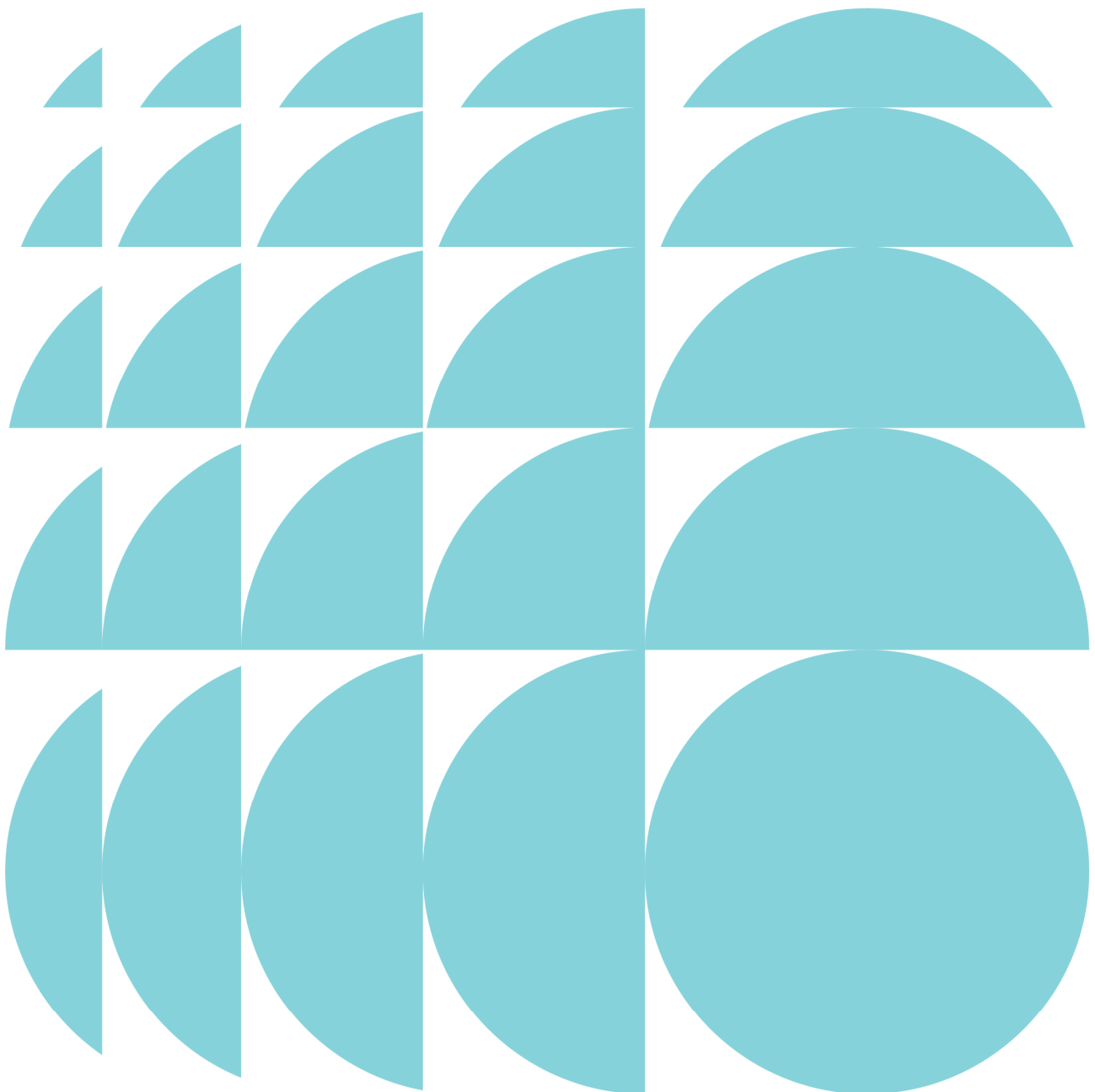


Environmental Impact Statement

126 Kent Road, Marsfield
Kent Road Public School Redevelopment

Submitted to Department of Planning and Environment
On behalf of NSW Department of Education - School
Infrastructure NSW

01 November 2018 | 218552



CONTACT

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This document has been prepared by:



Chris McGillick 1 November 2018

This document has been reviewed by:



Kate Tudehope 1 November 2018

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TTW
- T** Flood Risk Management Plan
Stefani Group
- U** Waste Management Plan
JBS&G
- V** Preliminary Environment, Construction and Site Management Plan
Blue Visions
- W** Disability Access Report
Lindsay Perry Access
- X** ESD Statement
Wood and Grieve
- Y** Lighting Strategy
Jones Nicholson Consulting Engineering
- Z** Site Services and Infrastructure Report
Jones Nicholson Consulting Engineers
- AA** Survey
Mepstead Associates

Provided under separate cover

CIV Report
Turner and Townsend

Statement of Validity

Development Application Details

Applicant name	NSW Department of Education
Applicant address	35 Bridge St, Sydney
Land to be developed	Kent Road Public School, 126 Kent Road, Marsfield
Proposed development	Redevelopment of Kent Road Public School as described in Section 3.0 of this Environmental Impact Statement

Prepared by

Name	Chris McGillick
Qualifications	BPlan (Hons)
Address	173 Sussex Street, Sydney
In respect of	State Significant Development - Development Application

Certification

I certify that I have prepared the content of this EIS and to the best of my knowledge:

it is in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000;

all available information that is relevant to the environmental assessment of the development to which the statement relates; and

the information contained in the statement is neither false nor misleading.

Signature



Name Chris McGillick

Date 1/11/2018

1.0 Executive Summary

Purpose of this Report

This submission to the Department of Planning and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) related to the Kent Road Public School Redevelopment.

The proposed Kent Road Public School redevelopment is identified as a State Significant Development (SSD) site in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Development of educational establishments for the purposes of alterations or additions to an existing school with a capital investment value of more than \$20 million is SSD for the purposes of the EP&A Act. As the proposed development will have a capital investment value exceeding \$20 million it is SSD. A CIV statement is provided under separate cover.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was sought on 30 May 2018. Accordingly, the SEARs were issued on 3 July 2018. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs.

Overview of the Project

The Development Application (DA) seeks approval for the redevelopment of Kent Road Public School, including:

- Site preparation;
- Construction of three (3) new two (2) to three (3) storey buildings to allow for increased student population from 750 to 1,000, containing;
 - 34 Homebase spaces;
 - Canteen;
 - Administration facilities;
 - Staff facilities;
 - Special program/counselling rooms
- Construction of a new Covered Outdoor Learning Area (COLA);
- Reconfiguration of car drop off / pick up arrangements on Kent Road;
- Landscaping and fencing;
- Tree removal.

The Site

Kent Road Public School is located at the corner of Kent Road and Herring Road in Marsfield. It is approximately 1.3km south-west of Macquarie Park and is within the City of Ryde Local Government Area.

Planning Context

Section 6.0 of the EIS considers all applicable legislation in detail. The proposal is consistent with the requirements of all relevant State Environmental Planning Policies. The site is zoned SP2 Infrastructure - Educational Establishment. The proposal is permissible with consent and meets the objectives of the subject zone.

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by NSW Department of Education - School Infrastructure NSW to manage and minimise potential impacts arising from the development.

Conclusion and Justification

The EIS addresses the SEARs, and the proposal provides for the redevelopment of Kent Road Public School with modern and improved facilities. The upgrading of Kent Road Public School to increase the capacity of the school will also increase the amount and range of enrolment opportunities for existing families and children living in the area. This will contribute to meeting forecast demand for education facilities in the Ryde LGA.

Increased capacity at Kent Road Public School will enable local students to be educated close to their homes, social networks and connections, preventing displacement of children from their local communities in order to access education opportunities. The potential impacts of the development are acceptable and are able to be managed. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Environment.

2.0 Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (Department) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for SSD for the redevelopment of Kent Road Public School.

Development for educational establishments with a capital investment value of more than \$20 million is identified in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* and is therefore declared to be SSD for the purposes of the EP&A Act.

The report has been prepared by Ethos Urban on behalf of NSW Department of Education - School Infrastructure NSW (SINSW), and is based on the Architectural Plans provided by Gardner Wetherill Associates (GWA) (see **Appendix A**) and other supporting technical information appended to the report (see Table of Contents).

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the SEARs for the preparation of the EIS, which are included at **Appendix B**. This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

2.1 Overview of Proposed Development

This application seeks approval for the following development:

- Site preparation;
- Construction of three (3) new two (2) to three (3) storey buildings to allow for increased student population from 750 to 1,000, containing;
 - 34 Homebase spaces;
 - Canteen;
 - Administration facilities;
 - Staff facilities;
 - Special program/counselling rooms
- Construction of a new COLA;
- Reconfiguration of car drop off / pick up arrangements on Kent Road;
- Landscaping and fencing;
- Tree removal.

An artist impression of the proposed new school entry is shown at **Figure 1**.



Figure 1 Artist impression of the new Kent Road main entry

Source: GWA

2.2 Background to the Development

SINSW has obtained approval via Part 5 of the EP&A Act and as Exempt Development or Complying Development under State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP) and for a range of works to support the school in advance of the redevelopment works. The works will enable the school to remain open for the duration of the redevelopment program, and include:

- Demolition of buildings;
- Relocation of demountable buildings;
- Provision of new, temporary, demountable buildings;
- Alterations and additions to existing school buildings;
- Construction of a sports court and shade structure;
- Formalisation of an at-grade car park (32 spaces);
- Bicycle parking (44 new spaces);
- Flood mitigation wall on Herring Road;
- Provision of a new substation; and
- A new (pedestrian) entry to the school from Herring Road.

A separate application under Part 5 of the EP&A Act as Development without Consent under the Education SEPP will address works, including:

- Installation of a new substation; and
- Installation of a temporary canteen.

2.3 Objectives of the Development

The primary objective of the proposed development is to increase the capacity of Kent Road Public School in order to meet the growing demand for public education. The proposed development will see a major upgrade of the existing school to accommodate 1,000 students (an increase of 250 students). This includes replacing some older buildings with modern educational buildings that will meet the learning needs of the students and provide a comfortable working environment for staff. Supplementary objectives include:

- Creating a welcoming atmosphere and pleasant school environment both internally and externally;
- Maximising natural light, natural ventilation and outlook to the outdoor environment;
- Providing easy and direct covered and accessible pedestrian linkages;
- Improving intuitive wayfinding within the school; and
- Improving pedestrian safety at school pick up/drop off points.

2.4 Analysis of Alternatives

Strategic need for the proposal

Marsfield and the local area, including Macquarie Park and Ryde is experiencing significant change with large numbers of apartment developments within the school's catchment currently underway or nearing completion.

Kent Road Public School falls within the Ryde Primary Schools Community. This is an area of growth with a projected increase of 1,344 (25%) Government Public School students by 2031 with enrolments at Kent Road Public School forecast to increase to 910.

The upgrading of Kent Road Public School to increase the capacity of the school will also increase the amount and range of enrolment opportunities for existing families and children living in the area. This will contribute to meeting forecast demand for education facilities in the Ryde LGA.

Increased capacity at Kent Road Public School will enable local students to be educated close to their homes, social networks and connections, preventing displacement of children from their local communities in order to access education opportunities.

As a result of this project, Kent Road Public School will capture a large proportion of the population growth within the region and this project will help to meet the long-term projected increase in the demand for government primary schooling by expanding the capacity and improving the facilities of Kent Road Public School.

Separate to this SSD application (see Section 2.2) the upgrading of the school library and facilities offers an opportunity for the broader local community to access the facilities outside of school hours for a range of community uses. Both the NSW Department of Education and Greater Sydney Commission support the use of joint and shared use agreements to increase the flexibility and capacity of local social infrastructure. Additionally, there is no library within 1.2km of the site, and the school library may provide a more accessible option for library floorspace for nearby residents.

The upgrade will also result in more appropriate, purpose-built permanent spaces for teaching and learning. The improved facilities will contribute to achieving the school's education objectives, improving the learning outcomes of students and the experiences of both teaching and non-teaching staff. The improved facilities will also contribute to meeting the NSW Department of Education's goal that "school infrastructure meets the needs of a growing population and enables future-focused learning and teaching"

Option 1 - Alternative Analysis

SINSW has explored a number of options for accommodating the increased student population during the concept design phase, including:

- Demountable Buildings
 - Add 11 demountable buildings to provide the accommodation required.
- Hybrid Option (Proposal)
 - New teaching spaces in three (3) two (2) - three (3) storey buildings; and
 - Refurbishment and upgrade of existing buildings.
- New School
 - Demolition of the existing school; and
 - Construction of a completely new school in three (3) storey buildings.

The Hybrid option was selected as the preferred option due to substantial benefits, including:

- Potential for future planning to meet projections past 2031;
- It most closely fulfils community requirements, and is the best value for money option;
- It most closely fulfils the SINSW five educational principles in a timely and least disruptive manner;
- It will deliver facilities that support future focussed learning; and
- It will be less disruptive to the operation of the school during the construction process.

Option 2 - Do Nothing

Under the 'do nothing' scenario, the current facilities at Kent Road Public School would not be able to accommodate the projected increases in student numbers. This would likely result in poorer education outcomes and would compromise health and safety standards as student numbers would exceed the capacity of existing infrastructure.

The Proposal

The proposal involves undertaking the proposed redevelopment as outlined in this SSD DA (as described in **Section 4.0**) (see **Figure 4**). It responds to site's unique constraints and provides future expansion options for the ongoing evolution of the school.

The school is bound by a number of development constraints, such as the RMS road reserve, native vegetation and overland flow that restrict the location of new development to a particular segment of the overall site (see **Figure 2** below). The proposed redevelopment has been the subject of a robust design process aimed at creating a facility that meets its functional educational needs and recognises and responds to the context and constraints of the school site.

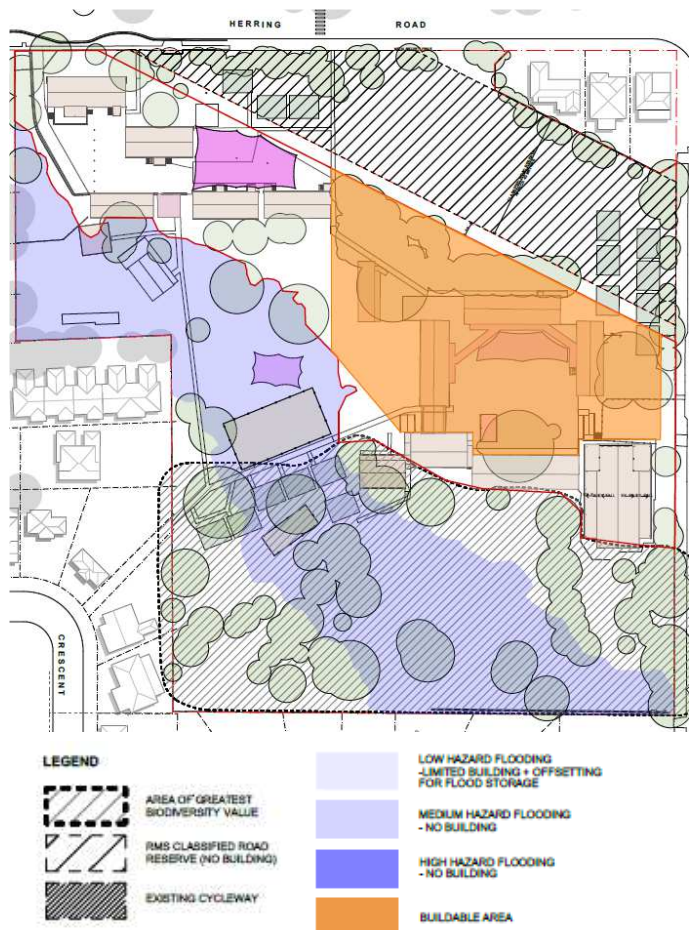


Figure 2 Kent Road constraints and buildable area analysis

Source: GWA

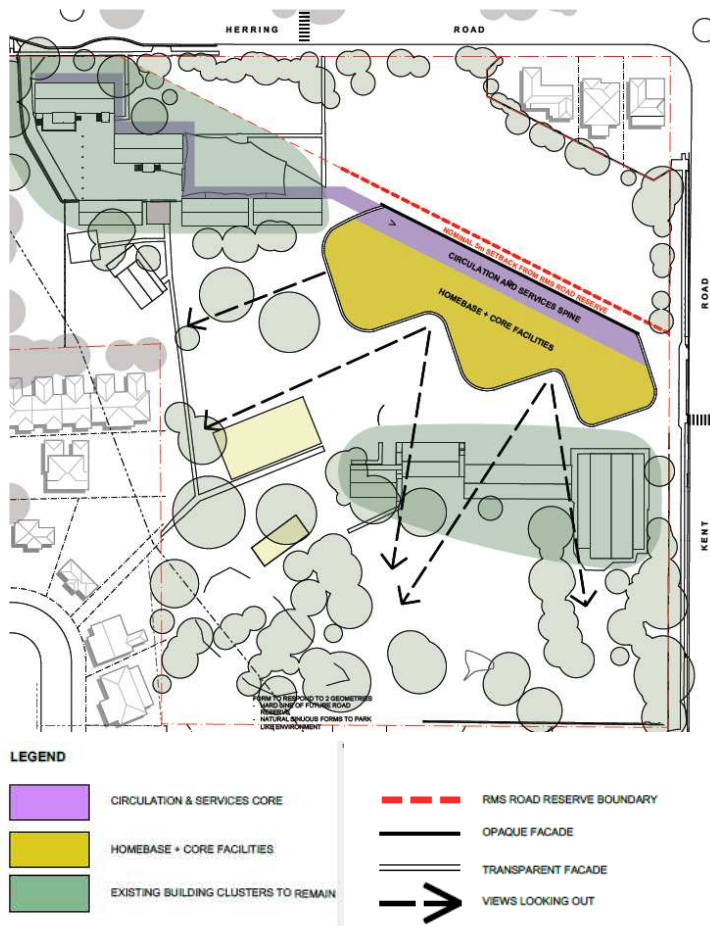


Figure 3 Concept Diagram

Source: GWA

Future Expansion

The proposal will facilitate the efficient construction of a high-quality building on the site that responds to the strategic need identified above. The proposal will deliver a flexible design that allows for future expansion options (subject to need and future, separate applications).

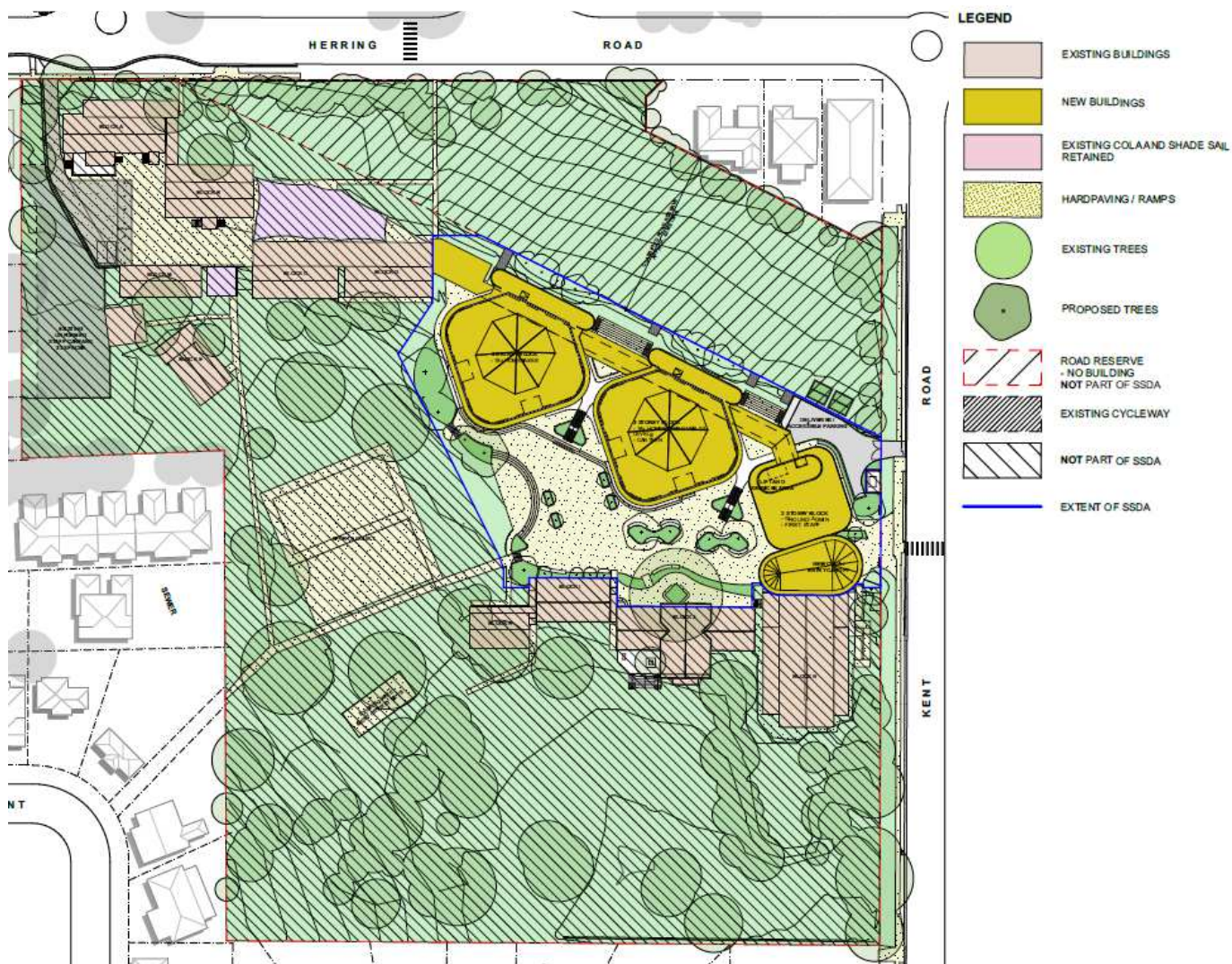


Figure 4 Proposed new Kent Road Public School layout

Source: GWA

2.5 Secretary's Requirements

In accordance with section 4.39 of the EP&A Act, the Secretary of the Department issued the requirements for the preparation of the EIS on 3 July 2018. A copy of the Secretary's Environmental Assessment Requirements (SEARs) is included at **Appendix B**.

Table 1 provides a detailed summary of the individual matters listed in the SEARs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 Secretary's Requirements

Requirement	Location in Environmental Assessment	
General		
The Environmental Impact Statement (EIS) must address the <i>Environmental Planning and Assessment Act 1979</i> and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000.	Environmental Impact Statement	
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Section 7.0	
Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: - adequate baseline data; - consideration of potential cumulative impacts due to other development in the vicinity (completed, underway or proposed); and - measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	Section 6.0 Section 8.0	
The EIS must be accompanied by a report from a qualified quantity surveyor providing: - a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; - an estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and - certification that the information provided is accurate at the date of preparation.	Section 4.13 Section 4.5	
Key Issues	Report / EIS	Technical Study
Statutory and Strategic Context		
Address the statutory provisions contained in all relevant environmental planning instruments, including: <i>Biodiversity Conservation Act 2016</i>; <i>State Environmental Planning Policy (State & Regional Development) 2011</i>; <i>State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017</i>; <i>State Environmental Planning Policy (Infrastructure 2007)</i>; <i>State Environmental Planning Policy No. 64 – Advertising and Signage</i>; <i>State Environmental Planning Policy No.55 – Remediation of Land</i>; <i>Draft State Environmental Planning Policy (Remediation of Land)</i>; <i>Draft State Environmental Planning Policy (Environment)</i>; and <i>Ryde Local Environmental Plan 2014</i>.	Section 6.1	-
Detail the nature and extent of any prohibitions that apply to the development.	Section 6.1	-
Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	Section 6.1	-
Policies		
Address the relevant planning provisions, goals and strategic planning objectives in the following: - NSW State Priorities; - The Greater Sydney Regional Plan, A Metropolis of three cities; - Future Transport Strategy 2056; - State Infrastructure Strategy 2018 – 2038 Building the Momentum;	Section 6.1	-

Requirement	Location in	Environmental Assessment
• Sydney's Cycling Future 2013; • Sydney's Walking Future 2013; • Sydney's Bus Future 2013; • Crime Prevention Through Environmental Design (CPTED) Principles; • Healthy Urban Development Checklist, NSW Health; • Greater Sydney Commission's North District Plan; and • City of Ryde Development Control Plan 2014.		
Operation		
Provide details of the existing and proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities.	Section 4.5 Section 4.15	Appendix A
Provide a detailed justification of suitability of the site to accommodate the proposal.	Section 2.4 Section 3.0 Section 6.2 Section 6.3	Appendix A
Provide details of how the school will continue to operate during construction activities of the new primary and secondary school, including proposed mitigation measures.	Section 4.13 Section 6.4.8 Section 6.4.9 Section 6.5	Appendix A
Built Form and Urban Design		
Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces.	Section 4.7 Section 6.2 Section 6.3	Appendix A
Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials, colours and CPTED Principles.	Section 4.1 Section 4.7 Section 6.2 Section 6.3	Appendix A
Provide details of any digital signage boards, including size, location and finishes.	N/A	N/A
Provide a design report that establishes design guidelines and development parameters, and includes diagrams, illustrations and drawings to clarify the design intent of the proposal and which clearly demonstrates how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of <i>State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017</i> ;	Section 6.1	Appendix A
Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Section 6.17	Appendix A Appendix Y
Provide detailed site and context analysis to justify the proposed site planning and design approach;	Section 2.4 Section 3.0	Appendix A
Provide a detailed site-wide landscape strategy. Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment.	Section 4.8 Section 6.3.3	Appendix C Appendix G
Environmental Amenity		
Detail and assess amenity impacts on the surrounding locality, including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 6.3.1 Section 6.10 Section 6.3.3 Section 6.3.4	Appendix A Appendix H Appendix O Appendix G
Undertake a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development).	Section 6.3.3	Appendix G
Lighting strategy and measures to reduce spill into the surrounding sensitive receivers.	Section 4.7.4	Appendix Y
Detailed outline of the nature and extent of the intensification of use associated with the increased floor space, particularly in relation to the proposed increase in staff and student numbers.	Section 4.5 Section 6.2.1	Appendix A
Detail any proposed use of the school grounds out of school hours (including weekends) and any resultant amenity impacts on the immediate locality and proposed mitigation measures.	Section 4.15 Section 6.10.2	Appendix A

Requirement	Location in Environmental Assessment	
Staging		
Provide details regarding the staging of the proposed development (if any).	Section 4.13	Appendix V
Transport and Accessibility		
Accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development;	Section 6.4	Appendix I
Details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area;		
The adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development;		
Measures to integrate the development with the existing/future public transport network;		
The impact of trips generated by the development on nearby intersections, including the key intersections: Kent Road/Herring Road, Herring Road/Epping Road Kent Road/Lane Cove Road, and Herring road/Agincourt Road (traffic modelling is to be undertaken using SIDRA network modelling for current and future years);		
Consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required;		
The identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i minimum 3.5 m wide travel lanes), additional bus stops or bus bays;		
Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site;		
The future pedestrian and cyclist desire lines, the proposed walking and cycling access arrangements consistent with City of Ryde Bicycle Strategy and connections to public transport services;		
The proposed access arrangements, including car and bus pick-up/drop-off facilities including consideration of internal pick-up and drop-off zones, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones;		
A review of road geometry, along Herring Road, Kent Road and any other roads used for pick-up and drop-off, with consideration of the existing and future on-street parking environment and bus movements;		
Proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance;		
Proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site;		
An assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development;		
An assessment of road and pedestrian safety adjacent to the proposed development which considers children crossing Herring Road and Kent Road to access the school and the details of required road safety measures and personal safety in line with CPTED;		
Emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including swept path analysis of largest vehicle, vehicle type and the likely arrival and departure times);		

Requirement	Location in Environmental Assessment	
The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: - assessment of cumulative impacts associated with other construction activities (if any); - an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; - details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; - details of anticipated peak hour and daily construction vehicle movements to and from the site; - details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; and - details of temporary cycling and pedestrian access during construction.		
Ecologically Sustainable Development		
Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development.	Section 6.19	Appendix X
Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy.	Section 6.19	Appendix X
Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance.	-	Appendix X
Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change. Specifically: - hotter days and more frequent heatwave events; o extended drought periods; - more extreme rainfall events; - gustier wind conditions; and - how these will inform material selection and social equity aspects (respite/shelter areas).	-	Appendix X
Social Impacts		
Include an assessment of the social consequences of the schools' relative location and decanting activities if proposed.	Section 6.5	Appendix J
Identify how the proposal will interact with the existing community including an assessment of the impact the proposal is likely to have on local recreation/community/cultural facilities.	-	Appendix J
Flooding		
Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.	Section 6.16	Appendix T
Provide an assessment of the impact on the existing overland flow paths within the development site.		
Demonstrate consistency with Council's floodplain risk management studies and plans.		
Noise and Vibration		
Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.	6.10	Appendix O
Identify and assess operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any		

Requirement	Location in Environmental Assessment	
school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities, and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.		
Biodiversity Assessment		
Identify and address the requirements of the <i>Biodiversity Conservation Act 2016</i> relevant to the State Significant Development Application.	Section 6.7	Appendix K
Where a Biodiversity Development Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal.		
Where the land is subject to a Biodiversity Certification Order, evidence of this Order and the terms is to be provided.		
<i>Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report.</i>		
Aboriginal Heritage		
Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the <i>Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011)</i> ;	Section 6.8	Appendix M
Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR;		
Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.		
Heritage		
Include a Historical Archaeological Assessment (HAA), prepared by a suitably qualified Historical Archaeologist.	Section 6.9	Appendix N
The HAA should identify what relics, if any, are likely to be present within the SSD site or in the vicinity, assess their significance and consider the impacts from the proposal on this potential resource.		
Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations.		
Contamination		
Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.	Section 6.11 Section 6.13	Appendix P Appendix R Appendix Q
Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works.	Section 4.3	-
Utilities		
Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure.	Section 4.12	Appendix Z

Requirement	Location in Environmental Assessment	
Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	Section 6.14	Appendix S
Contributions		
Address Council's "Section 94/94A Contribution Plan" and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	Section 4.16	-
Drainage		
Detail measures to minimise operational water quality impacts on surface waters and groundwater.	Section 6.14	Appendix S
Provide stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties.		
Sediment, Erosion and Dust Controls		
Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles.	Section 6.15	Appendix S
Waste		
Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	Section 6.17	Appendix U Appendix V
Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.		
Construction Hours		
Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	Section 4.14 Section 6.10.1	Appendix O Appendix V
Plans and Documents	Report	Technical Study
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.		
Architectural drawings including but not limited to the following requirements: - dimensioned including RLs; - plans, sections and elevation of the proposal at no less than 1:200 showing furniture layouts and program; - site and context plans that demonstrate active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links; and - detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality.	-	Appendix A
Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;	-	Appendix AA
Site Plans and operations statement demonstrating the afterhours and community use strategy;	Section 4.6 Section 4.15	Appendix A
Site Analysis Plan;	-	Appendix A
Stormwater Concept Plan and Stormwater Management Plan;	-	Appendix S
Sediment and Erosion Control Plan;	-	Appendix S
Shadow Diagrams;	-	Appendix A
View Analysis / Photomontages, including those from public vantage points;	-	Appendix G
An integrated Landscape Plan/Strategy (including identification of any trees to be removed and trees to be retained or transplanted);	-	Appendix C

Requirement	Location in Environmental Assessment	
Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures;	Section 6.20	Appendix V Appendix I
Geotechnical and Structural Report;	Section 6.13	Appendix R
Accessibility Report;	Section 6.18	Appendix W
Arborist Report;	Section 6.6	Appendix L
Historical Archaeological Assessment;	Section 6.9	Appendix N
Waste Management Plan;	Section 6.17	Appendix U
Acoustic Report	Section 6.10	Appendix O
Green Travel Plan;	Section 6.4.10	Appendix I
Salinity Investigation Report (if required);	-	Appendix R
Acid Sulphate Soils Management Plan (if required); and	Section 6.12	Appendix R
Schedule of materials and finishes including a physical material sample board (no larger than A3) with correct proportional representation of materials.	-	Appendix A
Consultation		
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners. In particular, you must consult with: • City of Ryde Council; • Government Architect NSW (through the NSW State Design Review Panel process); • Transport for NSW; and • Roads and Maritime Services.	Section 5.0	Appendix D
Consultation should commence as soon as practicable to agree the scope of investigation.		
The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.		
If you do not lodge a development application and EIS for the development within two years of the issue date of these SEARs, you must consult further with the Secretary in relation to the preparation of the EIS.	-	-
The assessment of the key issues listed above must consider relevant guidelines, policies, and plans as identified.	-	-

3.0 Site Analysis

3.1 Site Location and Context

The site is located at 126 Kent Road, Marsfield within the City of Ryde Local Government Area in the north-west of the Sydney metropolitan area. It is approximately 1.3km south-west of Macquarie Park and 3km south-east of the Epping CBD. It is well connected to the local and regional road network by Herring Road and Epping Road. Bus services stop in front of the site on Herring Road with connections to Macquarie University Railway Station to the north.

The site is in a residential setting and close to open space including Tindarra Reserve and the Ryde Community Sports Centre, Kenneth Park and Shrimptons Creek.

The site's locational context is shown at **Figure 5**.

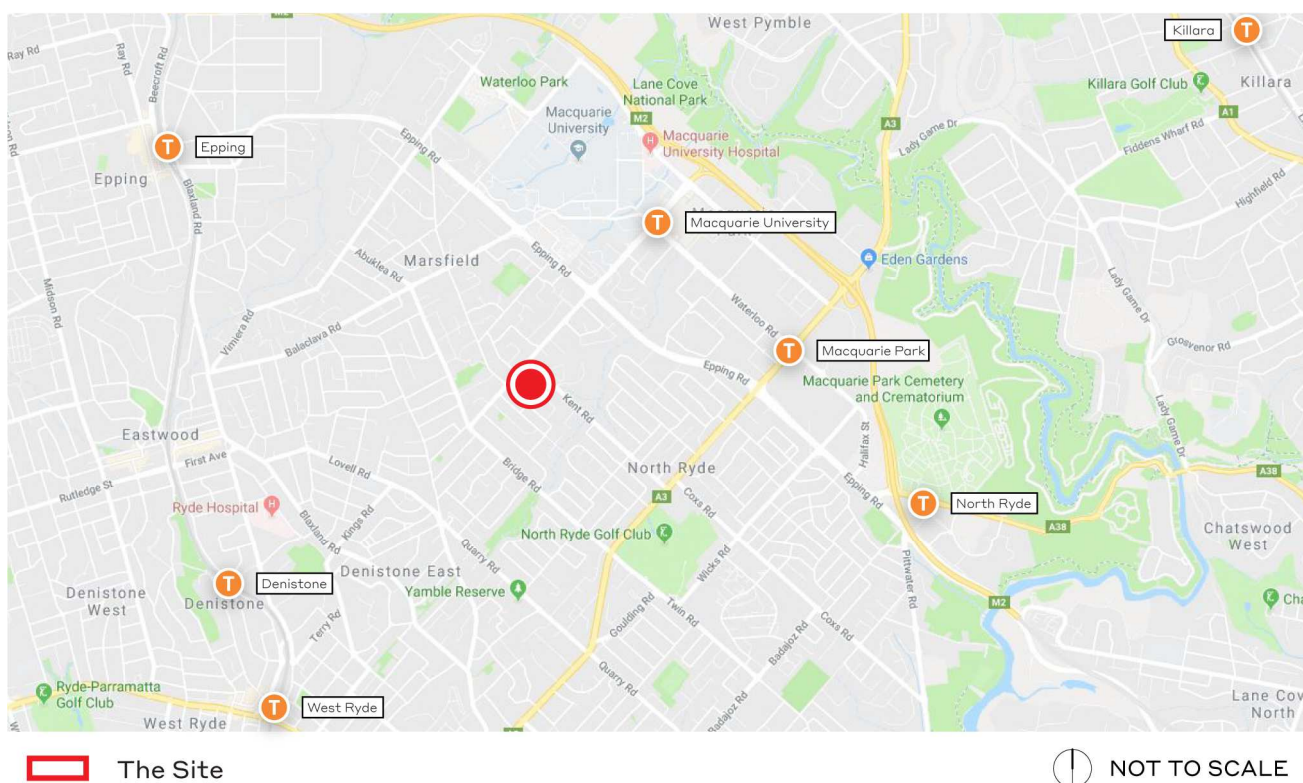


Figure 5 Locational context

Source: Googlemaps and Ethos Urban

3.2 Site Description

The site comprises eight lots as legally described at **Table 2**. The land is owned by the NSW Department of Education.

Table 2 Legal Description of the Site

Lot	Deposited Plan
Lot 1	DP 782254
Lot 1	DP 34283
Lot 1	DP 12030
Lot 2	DP 12030
Lot 3	DP 12030
Lot 4	DP 12030
Lot 5	DP 12030
Lot 5	DP 8612

The site's area is approximately 40,800m². It is irregularly shaped. It is noted that part of the site forms a reserve that has been identified for acquisition by the RMS in the future.

A survey plan is located at **Appendix C**. An aerial photo of the site is shown at **Figure 6**.



Figure 6 Aerial photograph of the site

Source: Nearmap and Ethos Urban

3.2.1 Road Reserve

Approximately 5,890m² of the northern part of the school grounds is zoned SP2 Classified Road and is identified for future acquisition by RMS. The land is owned by the Department of Education, and with agreement by RMS, the school has historically occupied the reserve which essentially forms part of the school's open space for play, with several temporary and moveable structures. The RMS reserve is identified at **Figure 9**.

No works are proposed on the road reserve as part of this application.

3.2.2 Existing Development

The school currently has approximately 750 students accommodated in 16 permeant Homebases and 15 demountable buildings. The school layout contains two main clusters of buildings dispersed diagonally across the site in an east-west direction. The north-west cluster houses K-2 and the south-east cluster houses years 3-6.

The existing school contains a number of single storey brick buildings constructed in the 1960's with some modern extensions. A number of demountable buildings were progressively introduced between 1970 and 2018.

Existing buildings are listed at **Table 3** and are shown in an annotated site plan in **Figure 7** below, whilst various photos of the site are shown in **Figure 9 – Figure 15**.

Table 3 Existing Facilities

Block	Use
Block A	Two (2) Homebases, Toilets, Staff, Practical Activities Area
Block B	Two (2) Homebases, Staff
Block C	One (1) Homebase, Staff Room
Block D	Two (2) Homebases, Toilets
Block E	Out of School Hours
Block F	Three (3) Homebases
Block G	Library
Block H	Special Programs
Block I	Two (2) Homebases
Block J	One (1) Homebase, Staff Room, Principal, Sick Bay, Toilets
Block K	One (1) Homebases, Staff
Block L	Toilets
Block M	Toilets
Block N	Hall and Stage, Canteen, Toilets
Block O	Six (6) demountables
Block P	Five (5) demountables
Block Q	Three (3) demountables
Block R	Uniform Shop

3.2.3 Topography

The school site has undulating topography that falls from north to south with a cross fall of approximately 7m.

3.2.4 Vegetation

The school grounds north and south of the building clusters are generally open and consist of grasslands with patches of mature tree growth with a large canopy. There is a patch of Blue Gum High Forest in the south-west corner of the school grounds, which is outside of the development area.

3.2.5 Flooding

The site is identified by Council's Macquarie Park Floodplain Risk Management Study & Plan. The affected part of the school grounds is largely restricted to the south to north-west part of the site through the natural depression that traverses the site. The flood affected area is identified by the site analysis at **Figure 2**.

3.3 Bushfire

The site is not identified by Ryde Council's Bushfire Prone Land Map.

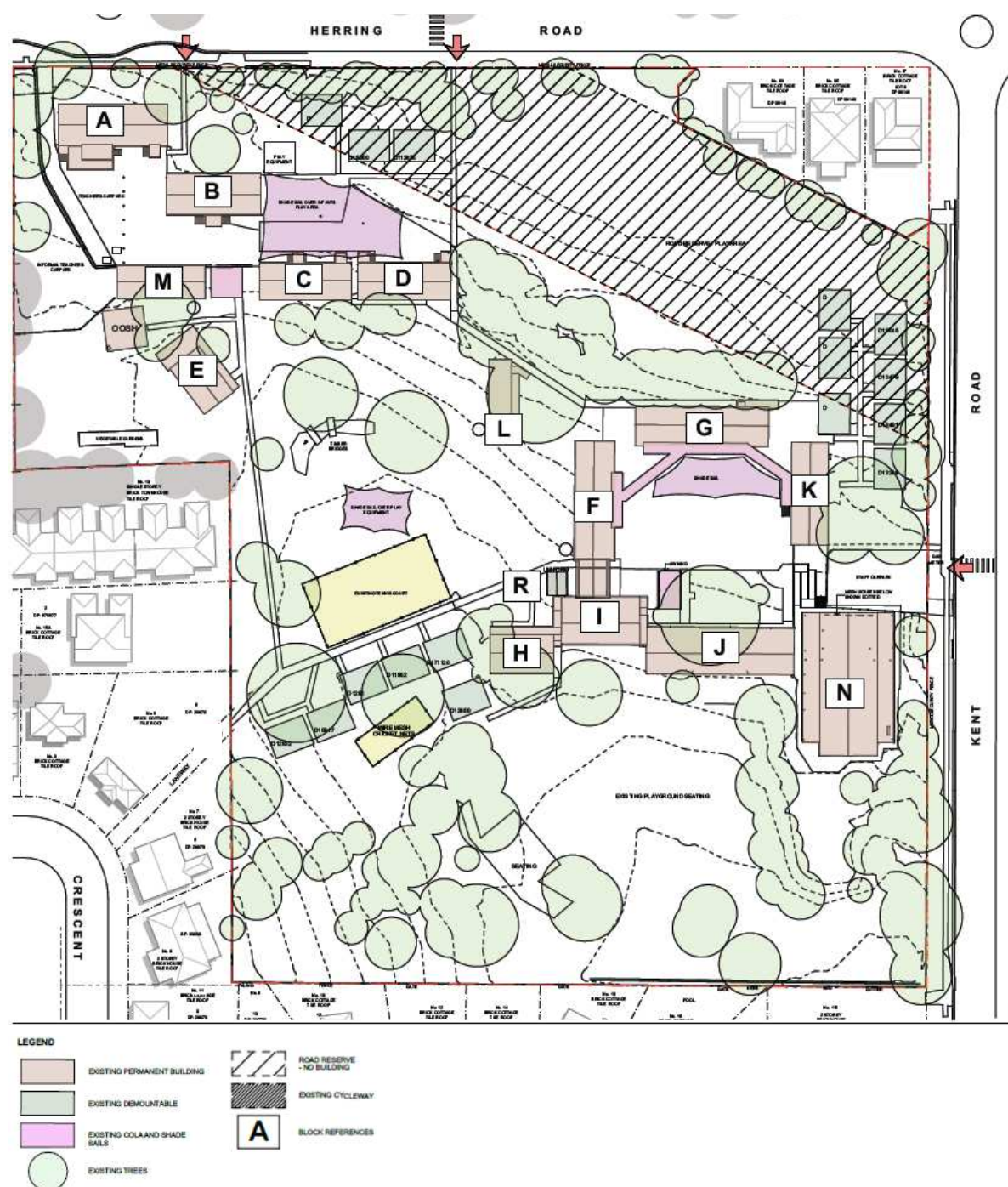


Figure 7 Diagram of existing buildings

Source: GWA

3.3.1 Car Parking and Access

The school is accessed by pedestrians from Kent Road and Herring Road. Pedestrian entries are highlighted at **Figure 7**.

There are 8 spaces for school set down and pick up 'kiss and ride' on Kent Road, shown at **Figure 8**.

The school contains 14 existing bicycle parking spaces.

The site has two existing car parking areas, providing 32 car parking spaces, including:

- A main car park off Kent Road; and

- A secondary part asphalt and unformed car park off Herring Road that provides informal parking for staff.

It is noted that there are changes to the car park arrangements proposed as exempt development under the Education SEPP as outlined at **Section 2.2**. The new car park will be formalised in the north-west of the school in the location of the secondary car park off Herring Road mentioned above, maintaining the number of car parking spaces within the school.



Figure 8 Existing set down / pick up arrangements

Source: TTPA



Figure 9 Block J

Source: Ethos Urban



Figure 10 **Block K**

Source: Ethos Urban



Figure 11 **Block F**

Source: Ethos Urban



Figure 12 **Demountable buildings along Kent Road**

Source: Ethos Urban



Figure 13 Kent Road staff car park

Source: Ethos Urban



Figure 14 Northern open space (RMS reserve land)

Source: Ethos Urban



Figure 15 Southern landscaped area

Source: Ethos Urban

3.4 Surrounding Development

The site is bounded by:

To the north: The site is bound to the north by residential development at the corner of Herring Road and Kent Road. Residential development that generally consists of two storey detached dwellings extends north of the site.

To the south: The site is bound by residential development to the south comprising predominantly detached dwellings. A townhouse development adjoins the southern boundary.

To the east: Opposite the site on Kent Road are detached residential dwellings between the school and the open space of the Ryde Community Sports Centre and playing fields. Further east is the Macquarie Park corridor including the Macquarie Shopping Centre and Macquarie University.

To the west: The site is bound by residential development to the west comprising predominantly detached dwellings.



Figure 16 Residential development on Kent Road

Source: Ethos Urban



Figure 17 Residential development on Herring Road

Source: Ethos Urban



Figure 18 RMS reserve land on Kent Road

Source: Ethos Urban



Figure 19 Ryde Community Sports Centre

Source: Ethos Urban

4.0 Description of the Development

This Section of the report provides a detailed description of the proposed development. Architectural drawings are included at **Appendix A**.

This application seeks approval for the following development:

- Site preparation;
- Construction of three (3) new two (2) to three (3) storey buildings to allow for increased student population from 750 to 1000, containing;
 - 34 Homebase spaces;
 - Canteen;
 - Administration facilities;
 - Staff facilities;
 - Special program/counselling rooms
- Construction of a new entry canopy;
- Reconfiguration of car drop off / pick up arrangements on Kent Road;
- Landscaping and fencing;
- Tree removal.

Photomontages of the proposed development are shown at **Figure 20** and **Figure 21**.

4.1 Development Principles

The planning and design principles adopted for the proposed development respond directly to the Education SEPP Design Quality Principles and include:

- **Context, built form and landscape:** Schools should be designed to respond and enhance the positive qualities of their setting, landscape and heritage, including Aboriginal cultural heritage.
- **Sustainable, efficient and durable:** Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.
- **Accessible and inclusive:** Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.
- **Health and safety:** Good school development optimises health, safety and security within its boundaries and the surrounding public domain, and balances this with the need to create a welcoming and accessible environment.
- **Amenity:** Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood.
- **Whole of life, flexible and adaptive:** School design should consider future needs and take a whole-of-life-cycle approach underpinned by site wide strategic and spatial planning.
- **Aesthetics:** School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements.

A Design Statement that addresses how the proposed school redevelopment meets each of these design principles has been prepared by the project architects, GWA, and is available at **Appendix A**.



Figure 20 Photomontage of the proposal (looking north-east)

Source: GWA



Figure 21 Photomontage of the proposal (looking south)

Source: GWA

4.2 Numerical Overview

The key numeric development information is summarised in **Table 4**.

Table 4 Key development information

Component	Proposal
Site area	40,800m ²
Maximum Height	13.4m
Student Population	1000 (increase of 250)

4.3 Site Preparation

The site will generally be cleared of development by a separate approval under Part 5 of the EP&A Act (refer to **Section 2.2**). Grading of the site will be required to provide the foundation for the new building.

4.4 Tree Removal

63 trees are proposed to be removed in order to accommodate the development. Further discussion of tree removal is provided at **Section 6.6** and the Arborist Report prepared by Temporal Tree Management at **Appendix K**.

4.5 Teacher and Student Numbers

As a result of the proposal the school enrolment will increase from 750 to 1,000 students. The number of staff will increase from 58 to 75 FTE.

4.6 Hours of Operation

The school provides a daily before school service from 7:00am - 9:00am and an after-school care service from 3:10pm - 6:00pm. The school's main hours are between 9:00am and 3:00pm. The school's hours of operation are not proposed to change.

4.7 Proposed New Buildings

The proposal includes construction of three (3) new buildings ranging from 2-3 storeys and a new entry canopy. Built form and use is further described below.

4.7.1 Built Form

Building Heights

The proposal incorporates three separate buildings, (Buildings P, Q and R) in an east-west arrangement that are all connected by a covered walkway along the northern façade (see **Figure 22 - Figure 23**).

The tallest buildings will be Buildings P and Q which both have a height of 73.7 RL to the top of the roof. This equates to 13.4m in height and is inclusive of three floors.

Building R is 11.7m in height. The entry canopy is 8.4 metres in height.

Building Setbacks

The new buildings are proposed within the centre of the school grounds with significant setbacks to existing sensitive receivers in the locality. Buildings P and Q are setback approximately 45 metres from residential dwellings to the north and 30 metres to the east. A 5 metre setback has also been provided to the RMS road reserve that crosses the school, to ensure a suitable setback, in accordance with the Education SEPP, is provided to future proof the development under a scenario where the reserve is acquired.

The new entry canopy and Building R are located at the eastern main entry along Kent Road, with a setback of 5-8 metres provided to the boundary.

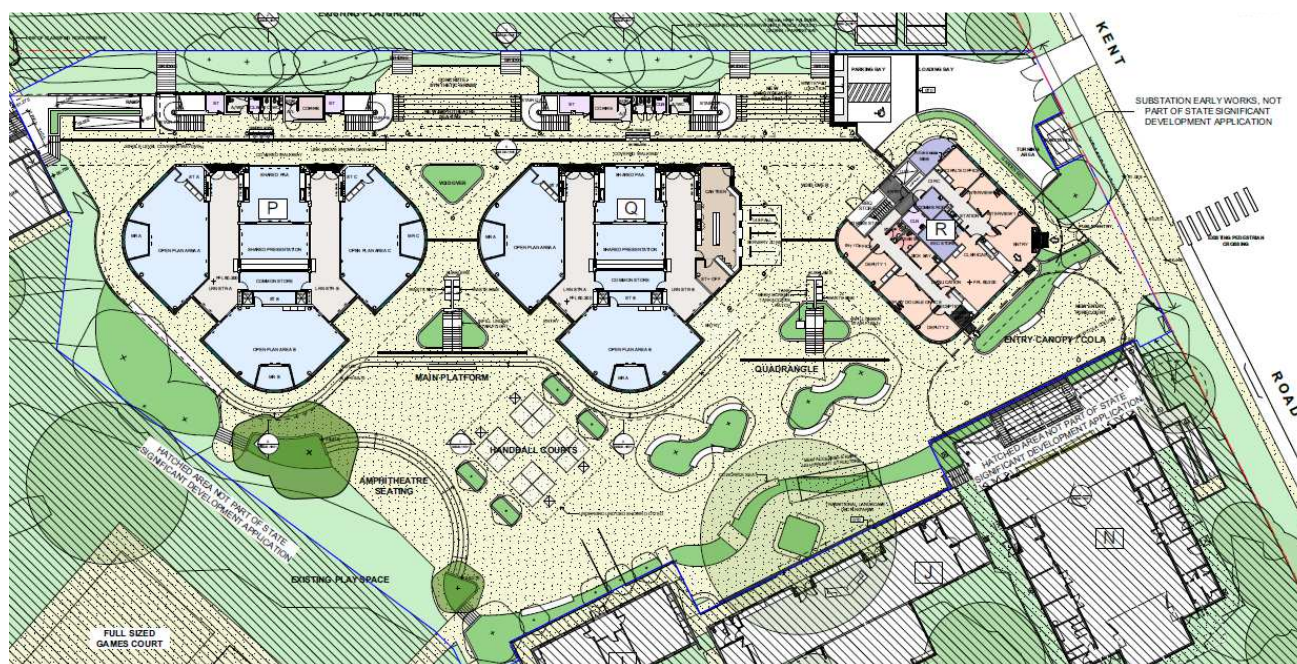


Figure 22 Building Arrangement (Ground Level)

Source: GWA

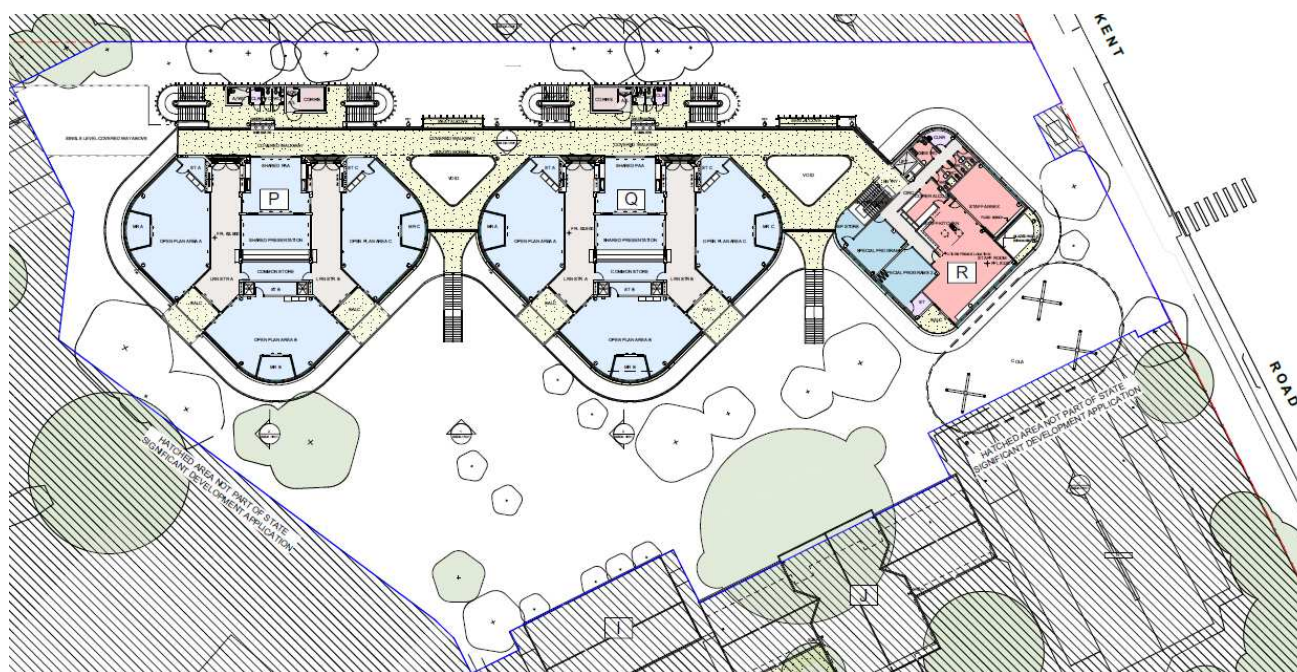


Figure 23 Building Arrangement (Level 1)

Source: GWA

4.7.2 Building Use

Homebases (Buildings P and Q)

Homebase units are the core teaching and learning environments for a primary school. They are designed to be adaptable learning environments that can support a range of teaching strategies from direct explicit instruction to facilitation of inquiry and authentic project and problem-based learning. It is configured to support a variety of seating plans from individual to large groups.

The layout of the typical homebase "pod" (**Figure 24**) consists of paired teaching spaces with common storage and meeting rooms and access to covered outdoor learning areas (balconies). The 'learning streets' are generously dimensioned circulation spaces that provide additional breakout areas. The typical floor layout (**Figure 25**) incorporates shared spaces for a practical activities area for 30 students (60m²) and presentation space for 60 students (50m²). The practical activities area will be able to spill out onto the covered walkway at each level. All spaces can be opened up or closed off depending on the mode of teaching and learning at the time.

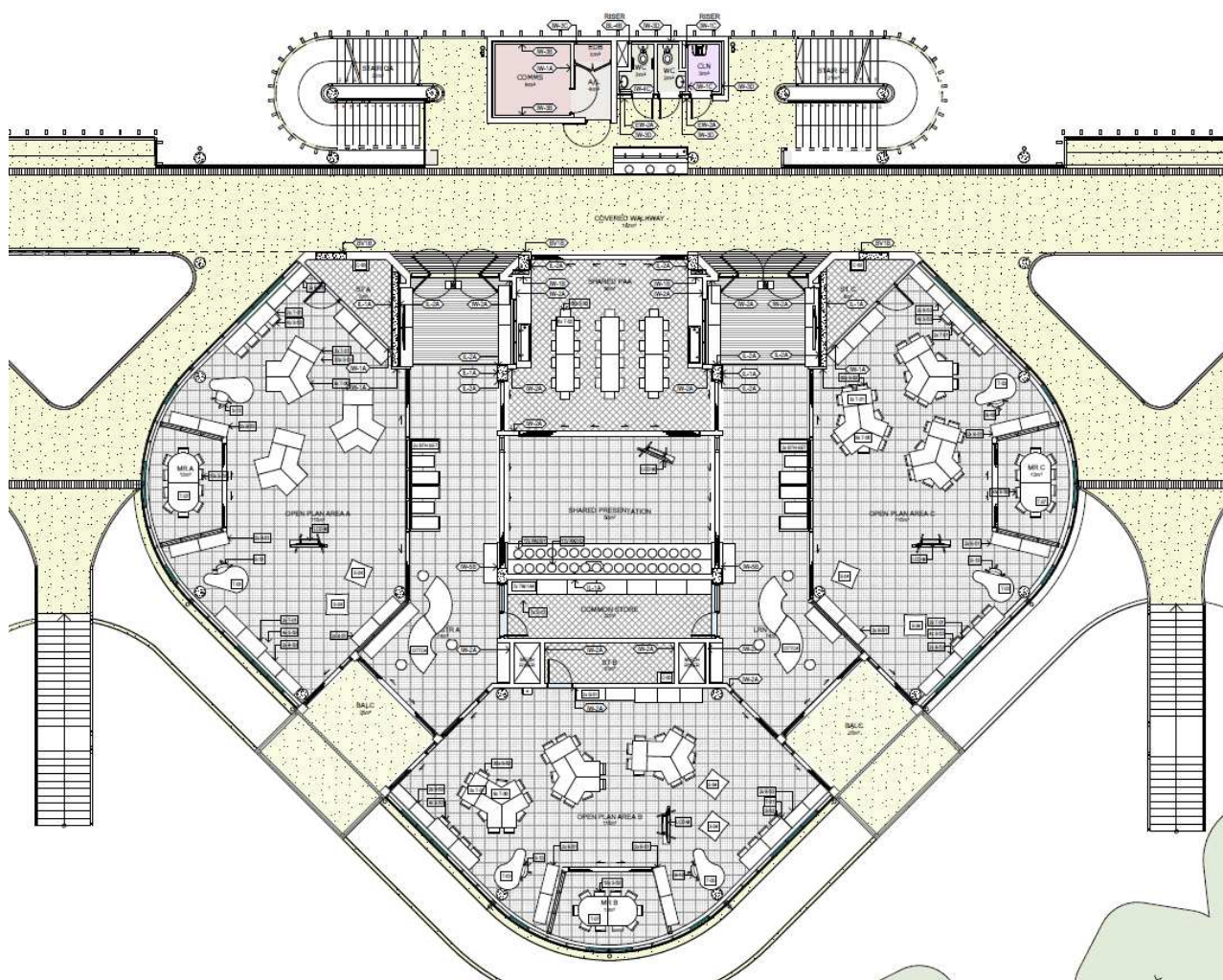


Figure 24 Typical Homebase 'pod' Layout

Source: GWA



Figure 25 Artist impression of a typical Homebase 'pod'

Source: GWA

Building R

The staff and administration facilities will be centralised at Building R adjacent to the Kent Road main entry. The Principal's office, clerical offices and staff facilities are co-located. Spaces for special programs are also located in Building R.

Entry Canopy

A new entry canopy will serve as the Kent Road main entry to the school, connecting the entry and main courtyard while providing shading and weather protection within a two-storey volume. The sheltered outdoor area can be used for a variety of learning and recreational purposes and tend to be used for informal and/or social learning activities, particularly as an extension to other learning units.

4.7.3 External Materials and Finishes

Building materiality and structural systems have been selected to deliver a robust low maintenance product. The proposal will utilise building cladding that consists of pre-finished powder coated façade systems with integrated sunhoods on a brick base. The brick will comprise of coloured (soft and natural) glazed to make the buildings recessive.

4.7.4 Lighting Strategy

All external lighting will be respectful to neighbours and will limit light spill. Lighting will comply with the requirements of AS 4282 standard.

4.7.5 Environmentally Sustainable Development

The proposal will incorporate a number of measures to ensure the project achieves high levels of environmental sustainability, including (but not limited to):

- LED lighting for long life and less consumption of energy;
- External façade & walls which incorporate thermal mass to create a thermally efficient external building fabric providing full year suitability within the Sydney climate zone;

- Glass selection of passive thermal performance – solar control for summer, passive thermal heating optimisation in winter;
- Operable windows for mixed-mode space conditioning;
- BMS building control will monitor & provide automated building operation & maximise energy efficiency;
- Economy cycle integration for suitable times of the year when outdoor ambient conditions don't require mechanical pre-treatment;
- Centralised gas hot water system for lower emissions impact;
- Water efficient fixtures and fittings – includes taps, wash basins, WCs, Urinals, showers and supplementary water uses for student education;
- On-site rainwater harvest – offset for irrigation demand & toilet flushing;
- Thermal comfort provided by a bespoke air conditioning system, high thermal mass & availability to natural daylight & passive thermal performance;
- Material specifications which select and prefer materials and products which include reused content, environmental product declarations, third party sustainability certifications or product stewardship programs; and
- Selection of durable, long-life cycle materials have demonstrated over time to improve the building longevity and life cycle.

4.8 Landscaping

A Landscape Schematic Design Report has been prepared by iScape Landscape Architecture and is available at **Appendix C** and is shown at **Figure 26**. The key elements of the landscape design include:

- Delineated areas of active and passive recreation;
- Integrated raingardens and landscaping to serve a dual purpose;
- Amphitheatre seating and extensive discrete seating areas that integrate with gardens and shade trees;
- Raised timber decks to provide seating and performance opportunities.

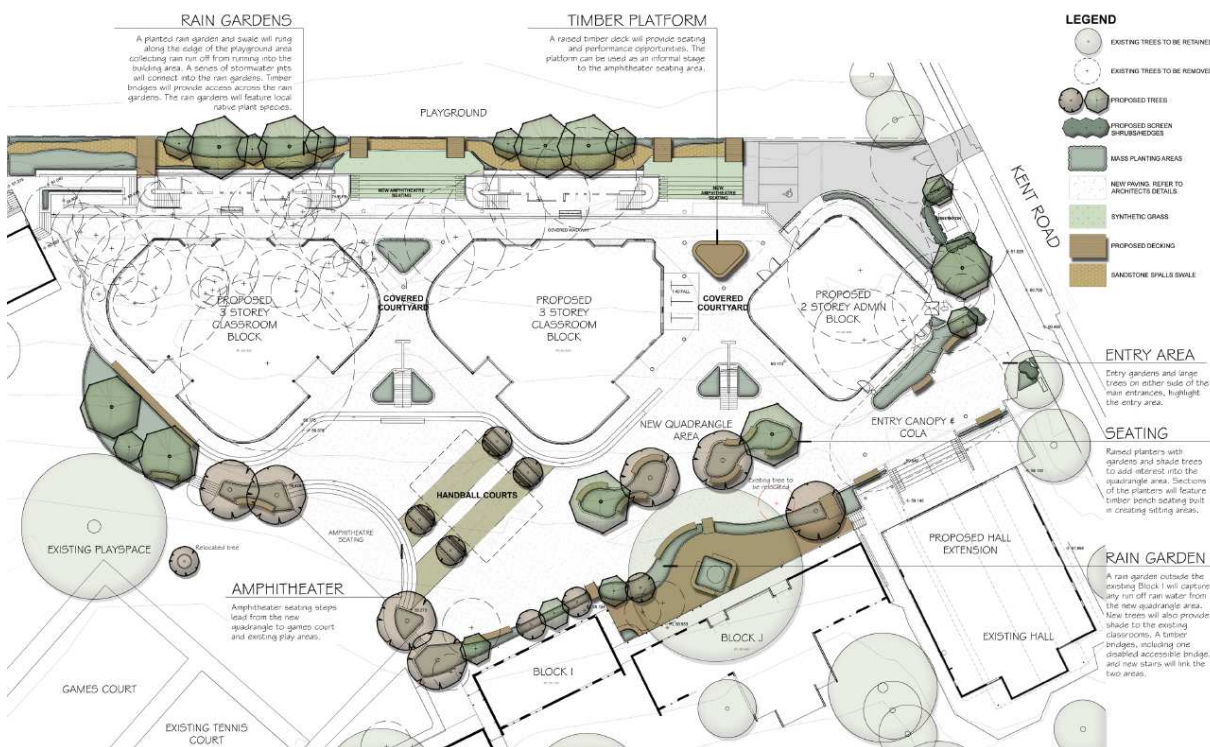


Figure 26 Landscape Concept

Source: iScape Landscape Architecture

4.9 Pedestrian Access

The Kent Road main pedestrian entry will be enhanced with new fencing by the proposal. Landscaping works will also enhance the entry with improved hard and softscape. There are pedestrian entries at Herring Road that will remain unchanged.

4.10 Vehicular Access and Parking

The existing vehicle entry on Kent Road will be relocated north of the main pedestrian entry. It will provide one (1) loading bay for service vehicles and one (1) accessible car parking space. A turning bay will allow vehicles to enter and exit in a forward direction.

Improvements to the schools existing car park facilities will be approved as exempt development under the Education SEPP (refer to **Section 2.2**). The school will accommodate parking spaces for staff at a dedicated parking area in the west of the school grounds, accessed off Herring Road.

4.11 Services and Utilities

A Site Services and Infrastructure Report has been prepared by Jones Nicholson (**Appendix Z**). A summary is provided below.

4.11.1 Electricity

The new building will be connected to the existing electrical network. A review of the capacity of electrical services has been undertaken and confirms that a substation is required to service the overall capacity of the school. Approval for a new substation will form part of an application under Part 5 of the EP&A Act, undertaken separately to the SSD DA (refer to **Section 2.2**).

4.11.2 Telecommunications

The site will connect to the existing telecommunications network. Minor works will be required to the school's campus distributor.

4.11.3 Water and Sewer

The new building will connect to existing water supply from the Herring Road boundary. A water meter upgrade will be required to service the new works. The existing drainage system has enough capacity to serve the proposal.

4.11.4 Gas

The school is supplied by two gas lines from the gas main on Herring Road and Kent Road. The existing system has enough capacity to supply the proposal.

4.12 Construction Staging and Jobs

Construction activities associated with the main works are expected to occur over 18 months and will include the following activities:

- Site establishment 4 weeks
- Early works 13 months (see **Section 2.2**)
- Main works 18 months

Consent for the construction of early works and the temporary school to accommodate the existing school population during the construction of the main works is separate to this SSD application (refer to **Section 2.2**).

The works are expected to create approximately 60 construction jobs and 17 FTE operational jobs.

4.13 Construction Hours

The proposed hours of construction are proposed as follows:

- Monday to Friday inclusive: 7.00am to 6.00pm;

- Saturday: 8.00am to 1.00pm; and
- No work on Sundays and Public Holidays.

4.14 Community Use of School Facilities

The design has considered the opportunity for shared use facilities with the broader community. The main forecourt is designed to encourage access for community onto the campus with a clear secure line into the heart of the school and its facilities.

This enables facilities designed around the forecourt to be accessible to community groups outside of school hours without compromising security to the rest of the campus. From the forecourt, the community can access multi-function facilities in the existing Hall building (Building N) for a variety of activities including meetings, formal gatherings, dance and drama as well larger events. The Hall is currently rented out three nights a week to various community organisations.

The refurbished Library (see **Section 2.2**) will also be accessible for community use to allow public use of library facilities including technology, meeting rooms, interview spaces, small seminars and general research opportunities.

Support facilities such as toilets are accessible for public use across all buildings that are available to the public, as not all facilities are likely to be open at the same time. General access can be provided through a controlled process managed by the school.

Sports facilities are located more centrally within the school and are capable of being made available for community use.

4.15 Contributions

The relevant contributions plan for the site is Section 94 Development Contribution Plan 2007 Interim Update (2014). The purpose of the plan is to enable Council to require a contribution towards the provision, extension or augmentation of public amenities and public services that will, or are likely to be, required as a consequence of development within the LGA.

SINSW is a government agency which relies on government grants to provide new facilities for the local community. The levying of a development contribution would divert a portion of these public funds, which have been specifically provided to fund a school redevelopment, to local services without any direct nexus to the impact on those services.

The inherent public character of the proposed development contrasts with a strictly commercial development where a full levy might be considered reasonable. The nature of the development means that the infrastructure which Council typically seeks to levy for will largely be provided by the school for use by staff and the public, including the Library, Hall and sports grounds which are available for community use as outlined at **Section 4.13**.

5.0 Consultation

In accordance with the SEARs issued for this project, consultation was undertaken with relevant public authorities, the community and Council.

A summary of the consultation undertaken to-date with Council, the State Design Review Panel (SDRP) the community and relevant agencies is provided at **Appendix D**. Several consultants have undertaken additional consultation with relevant parties during the preparation of their reports.

Agency and Council Consultation

SINSW has been engaged in ongoing consultation with Council regarding the development, and other works to be carried out at Kent Road Public School. Meetings to discuss the detailed design of the proposal and other matters including project scope, onsite parking, access, flooding and services infrastructure were held on 21 August 2018, 29 August 2018 and 3 September 2018.

TfNSW was contacted on 29 August 2018 and 3 September 2018 regarding the proposal. No response was received prior to finalising this EIS.

RMS was contacted on 29 August 2018, 3 September 2018 and 14 September 2018. RMS responded confirming they had no further comments for the project.

A summary of meeting minutes and meeting details prepared by SINSW is provided at **Appendix D**.

Local Aboriginal Land Council

The project team consulted with the Metropolitan Local Aboriginal Land Council (MLALC) in preparation of the Aboriginal Archaeological Survey Report. The MLALC did not raise any concerns over the proposal.

NSW Government Architect

Representatives of SINSW and project architects GWA met with the Office of the Government Architect NSW on 13 June and 18 July 2018 to review the design of the school in line with 'Better Placed – An integrated design policy for the built environment of NSW 2017'. The meeting minutes for the meeting are provided at **Appendix D**. A detailed response to these minutes is provided at **Appendix D**. Further consultation will be undertaken in accordance with the requirements of the Government Architect.

Community Consultation

SINSW has undertaken ongoing consultation and engagement with the local community during the design development. The community consultation and engagement strategy has comprised:

- Consultation with local school community groups;
- Engagement with the local community;
- Project website with ongoing updated information on the proposal;
- Fact sheets and project information at public locations;
- Media announcements; and
- Presentation to the school community.

SINSW implemented the following engage tools to communicate with the School and broader local community. This allows for School-centric involvement from school communities (including students, parents/caregivers, teachers, admin staff) unencumbered by broader community issues and Broad community involvement unencumbered by school community wants and needs. Broad community stakeholders include local residents, neighbours, local action groups and councils (see **Table 5**).

Table 5 Communication approach

Date	Communication Vehicle	Target Audience	Objective
Ongoing	Project Website	Wider Community	Provide regular update to the community regarding the progress of the project.
Ongoing	Information Booths	Parents and wider community	Inform stakeholders of project progress. The also act as a physical hub of information for staff or parents without computers.
Ongoing	Media Releases	Wider Community	Media released are provided to communicate branding and awareness, generating positive news stories and increase community participation in the project.
26/09/2018	School Community Presentation	Parents and wider community	Present the design of the School redevelopment to the parents and school community and providing response to key concerns.
10/2018	Letter box drop	Local community	Present the design of the School redevelopment to the local community and providing response to key concerns.
29/10/2018	Drop in information display	Local community, Parents and wider community	Inform stakeholders of project progress. The also act as a physical hub of information for staff or parents without computers.

Monthly community consultation sessions have been held since 5 December 2017. The latest Consultation session was held on 17 September 2018 and continue to be held. A total of 20 have been held to date. Meetings have been held at Macquarie Centre and North Ryde Library. The intention was to provide an opportunity for the community to seek further information about the project. **Table 6** below summarises matters raised and the project team's response.

Table 6 Community Consultation

Issue	Response
Traffic	- Concerns were raised over traffic congestion around the school. - An assessment of traffic has been undertaken by TTPA at Appendix I.
Green space	- Retention of green space was raised by the community. - The proposal is overall increasing green space by increasing the density of the new buildings.
Child safety during construction	- Safety of children within a live construction site was raised by the community. - A Preliminary Construction Management Plan has been prepared that outlines how the contractor will manage the site safely with measures to mitigate any safety risk to students or staff.

The proposed development will be placed on public exhibition for 28 days in accordance with clause 83 of the *Environmental Planning and Assessment Regulation 2000*. During the public exhibition period Council, State agencies and the public will have an opportunity to make submissions on the project.

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed DA. It addresses the matters for consideration set out in the SEARs (see **Section 1.5**). The mitigation measures at **Section 8.0** complement the findings of this section.

6.1 Relevant EPIs, Policies and Guidelines

The relevant strategies, environmental planning instruments, policies and guidelines as set out in the SEARs are addressed in **Table 7**.

Table 7 Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW State Priorities	NSW State Priorities are twelve high-level priorities for the State, being: • Creating jobs; • Delivering infrastructure; • Driving public sector diversity; • Improving education results; • Improving government services; • Improving service levels in hospitals; • Keeping our environment clean; • Making houses more affordable; • Protecting our kids; • Reducing domestic violence reoffending; • Reducing youth homelessness; and • Tackling childhood obesity. The proposal seeks to redevelop an existing school and create additional educational capacity in north-western Sydney. The proposal will therefore contribute to the provision of infrastructure, as well as jobs and education, thereby contributing to strengthening the local and regional economy.
The Greater Sydney Regional Plan, A Metropolis of three cities	In accordance with the Plan, this proposal will ensure an upgraded school can be delivered to meet Sydney's growing educational needs. The proposal will take enrolment pressure off the existing school and ensure a high-quality educational facility is provided for the future population of the school catchment. The proposal is also consistent with the other wider goals and directions contained within the Plan, including: • The creation of temporary job opportunities in manufacturing, construction and construction management, and on-going jobs in teaching and administration for the residents of Marsfield and the wider City of Ryde LGA; • Deliver additional educational infrastructure for the catchment that will take enrolment pressure of the existing school; • Revitalise an aged school to provide contemporary facilities to meet future educational standards, and provide increased jobs and growth; and • Deliver a sustainable, well-designed building that promotes the use of public and active transport. The redevelopment of the site will make a valued contribution to economic growth in Sydney and provide increased learning and employment opportunities.
Future Transport Strategy 2056	The Future Transport Strategy 2056 sets the 40-year vision, directions and outcomes framework for customer mobility in NSW and will guide transport investment over the longer term. This plan aims to place the customer at the centre and with feedback harness the rapid advancement of technology and innovation across the transport system to transform customer experience, improve communities and boost economic performance (TfNSW 2017). The proposal is consistent with the Strategy by delivering increased educational capacity in Sydney's north-west in a highly accessible location. The proposal does not prevent the objectives of the Strategy from being achieved.
State Infrastructure Strategy 2018 – 2038 Building the Momentum	The proposal is consistent with the State Infrastructure Strategy by: • Delivering school infrastructure to keep pace with student numbers; • Providing modern, digitally enabled learning environments; and

Instrument/Strategy	Comments
	Upgrading existing learning spaces.
Sydney's Cycling Future 2013	The Department of Education is supportive of students and staff using bikes as a mode of transport. However, with respect to providing cycling facilities, a travel mode survey revealed that the majority of students and staff arrive by bus or private vehicle to the school, with minimal bicycling trips recorded. Therefore, no additional cycling infrastructure is proposed under this development.
Sydney's Walking Future 2013	Whilst the development does not propose any walking infrastructure on the site, the school design has been carefully planned to minimise conflict between vehicles and pedestrians, particularly in the separated pedestrian entry and vehicle entry on Kent Road. Walking paths connect the school to the local area.
Sydney's Bus Future 2013	Sydney's Bus Future (2013) outlines the NSW Government's long-term plan to deliver fast and reliable bus services within Sydney to meet current and future customer needs. The school is located close to multiple bus stops and is serviced by regular bus services. Students, teachers and parents will therefore be able to easily access the site via bus, deterring the need to drive.
Crime Prevention Through Environmental Design (CPTED) Principles	Refer to Section 6.3.5 .
Healthy Urban Development (HUD) Checklist, NSW Health	The proposed development is consistent with the HUD checklist in that it: - Provides recreation facilities within the school campus which promotes and encourages physical activity and exercise; - Is highly accessible by public transport and is encouraging of active transport; - Has been designed having regard to preventing crime and promoting a sense of security for future students and teachers having regard to the CPTED principles; - Will respond to existing community needs and current gaps in educational facilities in the region; and - Has been designed to minimise disturbance and health effects associated with noise, odour and light pollution, and has been designed to address the potential for hazards (both natural and manmade) and address their mitigation.
Greater Sydney Commission's North District Plan	Under the Plan, Planning Priority N3 refers to providing services and social infrastructure to meet people's changing needs. It recognises that a projected increase in school-aged children of 20 per cent necessitates planning for new and more innovative use of existing schools. The NSW Department of Education estimates that an extra 21,900 students will need to be accommodated in both government and non-government schools in the District by 2036. The proposal will increase the capacity of the existing school to accommodate a greater number of students. Further, it helps meet the directions of a 'city supported by infrastructure' and 'a collaborative city', by helping to deliver much needed school infrastructure in north Sydney in a collaborative way, delivered in consultation between the Department of Education, the Department of Planning, Ryde City Council and other agencies including RMS.
State Legislation	
EP&A Act	The proposed development is consistent with the objects of the EP&A Act, in particular: - It promotes the social welfare of the community; - It allows for the orderly and economic development of land; and - It is development for public purposes and will facilitate the delivery of community services. The proposed development is consistent with Division 4.7 of the EP&A Act, particularly for the following reasons: - The development promotes education services and stimulates social welfare of the community; and - The development has been evaluated and assessed against the relevant heads of consideration under Section 4.15(1).
EP&A Regulations	The EIS has addressed the specific criteria within clause 6 and clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (see Section 6.21).

Instrument/Strategy	Comments																																		
	As required by clause 7(1)(d)(v) of Schedule 2, the following additional approvals will be required in order to permit the proposed development to occur. <table> <tr> <th>Act</th><th>Approval Required</th></tr> <tr> <td colspan="2">Legislation that does not apply to State Significant Development</td></tr> <tr> <td>Coastal Protection Act 1979</td><td>N/A</td></tr> <tr> <td>Fisheries Management Act 1994</td><td>N/A</td></tr> <tr> <td>Heritage Act 1977</td><td>N/A</td></tr> <tr> <td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr> <tr> <td>Native Vegetation Act 2003</td><td>N/A</td></tr> <tr> <td>Rural Fires Act 1997</td><td>N/A</td></tr> <tr> <td>Water Management Act 2000</td><td>N/A</td></tr> <tr> <td colspan="2">Legislation that must be applied consistently</td></tr> <tr> <td>Fisheries Management Act 1994</td><td>No</td></tr> <tr> <td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr> <tr> <td>Mining Act 1992</td><td>No</td></tr> <tr> <td>Petroleum (Onshore) Act 1991</td><td>No</td></tr> <tr> <td>Protection of the Environment Operations Act 1997</td><td>No</td></tr> <tr> <td>Roads Act 1993</td><td>No</td></tr> <tr> <td>Pipelines Act 1967</td><td>No</td></tr> </table>	Act	Approval Required	Legislation that does not apply to State Significant Development		Coastal Protection Act 1979	N/A	Fisheries Management Act 1994	N/A	Heritage Act 1977	N/A	National Parks and Wildlife Act 1974	N/A	Native Vegetation Act 2003	N/A	Rural Fires Act 1997	N/A	Water Management Act 2000	N/A	Legislation that must be applied consistently		Fisheries Management Act 1994	No	Mine Subsidence Compensation Act 1961	No	Mining Act 1992	No	Petroleum (Onshore) Act 1991	No	Protection of the Environment Operations Act 1997	No	Roads Act 1993	No	Pipelines Act 1967	No
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Protection of the Environment Operations Act 1997	No																																		
Roads Act 1993	No																																		
Pipelines Act 1967	No																																		
Biodiversity Conservation Act 2016	An assessment of Biodiversity impacts is provided at Section 6.6 . A Biodiversity Development Application Report is provided at Appendix L .																																		
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017	Under clause 35(6) of the Education SEPP, the consent authority must take into consideration (a) the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4 and (b) whether the development enables the use of school facilities (including recreational facilities) to be shared with the community. With regards to clause 35(6)(b), refer to Section 4.13.																																		
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 Schedule 4 Schools—design quality principles	In accordance with clause 35(6)(a), a Design Statement has been prepared by GWA (Appendix A). The design has been guided by the design quality principles set out in Schedule 4. A response to each design quality principle is provided by GWA in the Design statement. Several meetings have also been held with the Office of the Government Architect to ensure that these design quality principles have been met.																																		
SEPP 55	The Phase I Environmental Site Assessment and Soil Contamination assessment prepared for the site (see Appendix P and Q) demonstrates the site is suitable for the proposed development.																																		
Draft State Environmental Planning Policy (Remediation of Land)	The proposal remains consistent with the Draft policy as the proposed assessment has been undertaken in accordance with SEPP 55 with contamination assessed as being Category 2 as outlined further at Section 6.12 .																																		
Draft State Environmental Planning Policy (Environment)	The site is identified as 'Urban Bushland'. The proposal requires the removal of 63 trees in order to accommodate the SSD proposal (see Section 6.6). The design has been located to minimise impact on native vegetation within the school's ground by avoiding impacts to the significant Blue Gum High Forest in the southern part of the site. The Department can be satisfied the removal of vegetation is in the public interest and no reasonable alternative is available to the disturbance of vegetation proposed due to the significant site constraints of the school (see Figure 2).																																		
SEPP (Infrastructure)	Provisions of the SEPP (Infrastructure) relating to Education have since been transferred to the Education SEPP as of 2017.																																		
SEPP (State and Regional Development)	Development that has a capital investment value of more than \$20 million for the purpose of alterations or additions to an existing school is identified as SSD.																																		

Instrument/Strategy	Comments	
	The works have a CIV of over \$20 million, and so qualify as SSD. A Quantity Surveyor's certificate prepared by Turner and Townsend confirming the total CIV is provided under separate cover.	
State Environmental Planning Policy No. 64 – Advertising and Signage	No signage is proposed under this application and therefore, the provisions of SEPP 64 do not apply.	
Local Planning Instruments and Controls		
Ryde Local Environmental Plan 2014	Clause 2.3 – Zone	The proposed Educational Establishment uses are permissible with development consent in the SP2 Educational Establishment zone. No works are proposed within the SP2 Classified Road zoned land.
	Clause 4.3 – Height of Buildings	There is no height of building control that applies to the site.
	Clause 4.4 – Floor Space Ratio	There is no floor space ratio control that applies to the site.
	Clause 5.1 – Relevant Acquisition Authority	The relevant authority for the land zoned SP2 Classified Road is Roads and Maritime Services. RMS have advised that they have no current plans to acquire the land, however the buildings have been designed in consideration to it, should it be required.
	Clause 5.1A – Development on land intended to be acquired for a public purpose	No works are proposed within the SP2 Classified Road zoned land.
City of Ryde Development Plan 2014	Part: 7.1 Energy Smart, Water Wise	Refer to Section 6.16 and Section 6.21 .
	Part: 7.2 Waste Minimisation and Management	Refer to Section 6.18 .
	Part: 8.1 Construction Activities	Refer to Appendix V
	Part: 8.2 Stormwater and Floodplain Management	Refer to Section 6.16 .
	Part: 9.2 Access for People With Disabilities	Refer to Section 6.20 .
	Part: 9.3 Parking Controls	Refer to Section 6.4 .
	Part: 9.5 Tree Preservation	Refer to Section 6.6 and 6.7 .

6.2 Built Form and Urban Design

6.2.1 Density, Bulk and Scale and Setback

The proposal will provide a consolidated built form that is between two to three storeys in height. The new development is up three storeys (13.4m) in a locality that features predominantly two storey residential development. However, the new buildings are set back approximately 45m from development to the north and are set back from the Kent Road boundary by 5m while still being approximately 30m from dwellings to the east.

The two storey Building R is located closest to the boundary, while the taller three-storey Buildings (P and Q) are located centrally within the school grounds. The proposed buildings are complimentary to existing development within the school and will provide a modern expansion of facilities, providing greater efficiency by accommodating density vertically.

6.2.2 Site Layout

The buildings are located within the north-east part of the site identified as being suitable for redevelopment (see **Figure 2**). The buildings are oriented to ensure future acquisition of the RMS road reserve will not have a significant impact on the operation or function of the school. It also respects the significant vegetation across the school and will ensure overall, the new development is well integrated into the wider campus.

The proposed layout is anticipated to be more welcoming to staff and students from the primary Kent Road access point, with a new canopy connecting to the main buildings to ensure that paths of travel are protected from inclement weather.

6.2.3 Daylight

A Daylight Study prepared by Surface Design (**Appendix E**) has assessed the natural light levels of the proposed buildings as requested by the NSW Government Architect. The Study indicates:

- Level 1 and 2 open plan learning areas of the Building P and Q received satisfactory levels of natural light to at least 23% (29.95m²) of the floor area;
- Transitional walkways, awnings and the COLA shade structure provide shade, potential glare reduction and limit internal solar gains to the perimeter rooms without restricting the provision of natural light;
- The internal core and circulation spine areas are temporary learning areas and transition space and receive low levels of natural light. This design promotes high priority for the open plan learning areas to receive greater levels of natural light.

6.2.4 Natural Ventilation

The proposal incorporates multiple operable windows that will allow the buildings to be naturally ventilated. A review of natural ventilation has been undertaken by Windtech (**Appendix F**) who confirm the proposal has excellent potential for cross-ventilation through internal spaces.

6.3 Amenity Impacts

6.3.1 Overshadowing

Overshadowing to adjoining properties and solar access within the site has been shown in the shadow diagrams provided by GWA (**Appendix A**).

The shadow diagrams demonstrate that the proposal does not result in any overshadowing to adjoining residential properties with shadows restricted to within the school grounds during mid-winter.

Sufficient amenity is also provided for future users of the site, with satisfactory solar access maintained to key open spaces. The central courtyard receives sunlight in the morning with progressively greater overshadowing into the afternoon mid-winter. Notwithstanding, there is significant open space and play areas across the school that receive uninterrupted sunlight.

6.3.2 Visual Privacy

The proposal is located centrally within the school grounds with significant setbacks (approximately 45 metres to residential dwellings, however less to some boundaries). The proposed new buildings are oriented to primarily face south, and internally within the site, preventing overlooking concerns.

6.3.3 View Loss and Visual Impacts

A visual impact assessment has been prepared by GWA (**Appendix G**) that has considered views from key streets and publicly accessible views (shown at **Figure 27 – Figure 30**). The assessment shows that there is minimal visual impact as a result of the development due to the relatively low height of the proposal (3 storeys) and as a result the development is not out of proportion to surrounding development which includes two storey residential development.

As the new development is set back within the school grounds there a significant setback to surrounding residential properties, ensuring the new buildings would not be visually intrusive to any views. The school's grounds feature extensive landscaping and trees which are generally taller than the new buildings, ensuring the new development will be sit within a landscaped setting and will accordingly not be a dominant feature.

Impacts on views are accordingly considered to be minimal. Views across the school site are limited by boundary features such as fences and vegetation. Whilst the new buildings will be visible from the surrounding area, district views are not currently available and will not be impacts to any significant extent.



Figure 27 View from southern end of Kent Rd

Source: GWA



Figure 28 View from Kent Rd

Source: GWA



Figure 29 View from the corner of Kent Rd and Herring Rd

Source: GWA



Figure 30 View from Herring Rd

Source: GWA

6.3.4 Wind Impacts

A Wind Environment Statement has been prepared by Windtech (**Appendix H**). The results of the assessment indicate the school will benefit from shielding provided by the new buildings and the retained dense foliating street trees. The proposal incorporates wind mitigating design measures, including:

- Recessing the passive outdoor areas into the overall building footprint;
- The inclusion of densely foliating vegetation; and
- Full-height impermeable screens and balustrades.

Windtech confirm the proposal is expected to have a minimal impact upon the existing wind conditions within a majority of the outdoor trafficable areas of the site. Accordingly, wind conditions within the various outdoor trafficable areas are expected to be acceptable for intended uses.

6.3.5 Crime Prevention Through Environmental Design (CPTED)

The development implements the principles of Crime Prevention Through Environmental Design (CPTED), as identified in the Department of Planning's guideline titled Crime Prevention and the Assessment of Development Applications (2001) as follows:

Principle 1 – Natural Surveillance

As noted in Crime Prevention and the Assessment of Development Applications, good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance. In accordance with this principle, the development provides surveillance.

The development has been designed to provide passive surveillance over public areas, through the introduction of glazing to provide surveillance opportunities over the public domain and main school entry. This will promote the reality and / or perception that the open spaces are under casual surveillance during both the day and night. This acts as a way of creating the perception of risk in the minds of potential perpetrators. The well-lit nature of the school environment will also enhance passive surveillance providing continuous activation throughout the site.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Appropriate signage should reinforce the school's main entrance;
- Utilise strategically placed capable guardians, such as reception staff, to provide natural surveillance to the building entries; and
- Utilise trees with a high canopy that provide good shade for pedestrians, complemented with low groundcover landscaping to ensure good visibility for pedestrians.

Principle 2 - Access Control

Access controls use physical and symbolic barriers to attract, channel or restrict the movement of pedestrians. As noted in Crime Prevention and the Assessment of Development Applications, effective access controls make it clear where people are permitted to go or not go and makes it difficult for potential offenders to reach and victimise people and damage property.

The public will be free to enter the site during the day. However, all of the entry points into the buildings are located in areas which will be subject to high user traffic, as well as surveillance from passing pedestrians and motorists. This will ensure that people entering and exiting the school can be clearly seen from public spaces and adjoining buildings and monitored if necessary.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Use symbolic barriers, such as coloured or different paving materials to clearly define the publicly accessible areas and routes in and around the building; and
- Ensure all access points to the building are appropriately controlled by key / code locks (where necessary) in conjunction with the level of security to be provided to staff.

Principle 3 – Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. As noted in the Crime Prevention and the Assessment of Development Applications people feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

Landscaping and fencing around the school differentiates public and private spaces. In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Continue after hours management measures such as regular security patrols; and

- Ensure building entrances are either locked or well monitored after hours to increase the territorial reinforcement of the building.

Principle 4 – Space Management

Space management refers to providing attractive, well maintained and well used spaces. As noted in Crime Prevention and the Assessment of Development Applications, space management strategies include site cleanliness, rapid repair of vandalism and graffiti and the removal of damaged physical elements.

Durable and high-quality materials are proposed which will ensure that minimal maintenance is required for the proposed development. The use of durable façade treatments will also discourage graffiti or vandalism of the building facades. The continued maintenance of the building will ensure that it does not become degraded and will ensure that vandalism of the property is strongly discouraged.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

- Ensure graffiti is rapidly removed and all public spaces are kept clean and tidy; and
- Use robust materials and graffiti resistant surfaces where possible to mitigate against potential malicious damage.

6.4 Transport and Accessibility

A Traffic and Transport Impact Assessment has been prepared by TTPA and is included at **Appendix I**. The assessment includes details around construction traffic movements and management measures. The report outlines the existing surrounding road network arrangements and conditions and provides an assessment of the traffic and parking impacts associated with the proposal.

6.4.1 Travel Mode

A travel mode survey undertaken for the proposal indicates a significant proportion of students arrive by private vehicle and also by walking. The majority of set down/pick up activity occurs at the dedicated area on the Kent Road frontage, while some parents park in the local area and walk their children to the school. Relatively low numbers of students access the school by bus or bicycle.

A summary of mode share is provided at **Table 8**.

Table 8 Mode of Travel Survey

Mode	AM	PM
Car	35%	34%
Bus (School/Public)	27%	5%
Walking	37%	59%
Cycling	2%	2%

6.4.2 Operational Parking

In accordance with the NSW Department of Education's requirement to promote sustainable development and to minimise parking on-site, the proposal will provide minimal on-site car parking spaces, by maintaining the current number of parking spaces within the school (32 spaces). The development is supported by a range of sustainable transport initiatives including improved access to public bus services, and integration with the precinct-wide pedestrian and cycle pathway network.

As outlined at **Section 2.2**, a separate upgrade to on-site staff car parking has been undertaken as Exempt Development under the Education SEPP that provides parking for staff in the western area of the school. The school is accordingly considered to provide sufficient on-site parking.

6.4.3 Bicycle Parking

Ryde DCP sets out that bicycle parking equivalent to 10% of required car parking be provided in new buildings with greater than 600m² GFA. This equates to a requirement for 4 (rounded up) bicycle parking spaces. The proposal

will provide 44 additional bicycle parking spaces (60 in total) in a secure area between Buildings J and N as part of a separate application (see **Section 2.2**). Bicycle parking will be designed in accordance with AS 2890.3 Parking facilities – Bicycle Parking Facilities.

6.4.4 Operational Traffic

Traffic generation is largely influenced by travel mode and set down/pick up characteristics (see **Section 6.4.1**). The travel mode survey indicates a nett increase trip generation of:

- AM Peak 64 IN 55 OUT
- PM Peak 44 IN 53 OUT

Intersection Performance

Based on these trip generation rates and a trip distribution analysis using existing access patterns, all intersections assessed will continue to perform at a similar Level of Service as they did before the start of the proposed works. The road network performance has been measured against three parameters, being:

- Level of Service (LOS);
- Degree of Saturation (DOS); and
- Average Vehicle Delay (AVD).

The results of the modelling against these three parameters are shown in **Table 9**.

Table 9 Intersection Modelling Results

Intersection	Time	Period	LOS	DOS	AVD
Kent/Herring	AM Peak	Existing	A	0.56	6.1
		Development	A	0.57	6.2
	PM Peak	Existing	A	0.49	6.2
		Development	A	0.60	6.5
Herring/Agincourt	AM Peak	Existing	A	0.51	5.5
		Development	A	0.54	5.6
	PM Peak	Existing	A	0.49	5.6
		Development	A	0.50	5.6
Epping/Herring	AM Peak	Existing	F	1.18	102.9
		Development	F	1.18	103.5
	PM Peak	Existing	D	0.96	52.2
		Development	D	0.97	53.0
Lane Cove/Kent	AM Peak	Existing	B	0.83	19.0
		Development	B	0.84	19.9
	PM Peak	Existing	A	0.77	13.1
		Development	B	0.79	15.0

The modelling shows that generally all intersections will maintain the prevailing levels of service and will only have minor implications on the networks operation.

6.4.5 Traffic Safety

There is no evidence of a recurrent, persistent or adverse road crash history that would raise a particular local road safety concern. The site currently has 40km/h School Zones along Herring Road and Kent Road to safeguard students travelling to and from the school and minimise the risk and potential severity of a crash by reducing vehicle speed and increase motorist awareness via signs, dragon's teeth pavement markings and flashing lights.

6.4.6 Set down / Pick up

To adequately meet anticipated future set down/pick up peak demand it is proposed to increase the existing set down/pick up facility on Kent Road from 8 to 10 spaces (see **Figure 31**). The proposed arrangement will be capable of servicing up to 240 vehicles in the peak which is greater than the forecast maximum demand (217 vehicles).

6.4.7 Loading Facilities

All waste collection and loading activities will occur at the new loading bay accessed via the Kent Road driveway. Waste services will be undertaken by privately contracted service providers, outside of peak hours to minimise disruption to the peak traffic circumstances.

6.4.8 Construction Parking

No on-site parking will be provided for construction workers. Employees and sub-contractors will be encouraged to use public and active transport to access the site. As part of the induction program, contractors and sub-contractors will be advised that there is limited parking within adjacent streets. To minimise impacts on street parking, contractors and sub-contractors will be encouraged to use public transport or to car pool.

To support alternative travel, secure areas will be made available within the work compounds for tradesmen and staff to store equipment.

6.4.9 Construction Traffic

Construction vehicles will approach and depart the site via the sub-arterial road network including Lane Cove Road and Epping Road. An average of 2 trucks per day is expected, with a maximum of 8 trucks per day during peak construction (16 movements per day). The heavy vehicle movements are likely to be spread through the day however, in the worst-case scenario it is assumed that 25%, or 2 vehicles (4 two-way vehicle movements), would occur during the peak hour. Accordingly, the impact of construction traffic on local traffic is expected to be negligible.

6.4.10 Green Travel Plan

A draft Green Travel Plan (GTP) has been prepared by TTPA and is available at **Appendix I**. The GTP provides a package of measures with the aim of promoting sustainable transportation. A representative of SINSW will have responsibility for developing, implementing and monitoring the effectiveness of the GTP.

Suggested strategies to influence travel demand include:

- Pedometer-based walking program;
- Walk/Bike buddy scheme;
- Provide interactive timetables on-site to promote public transport usage;
- Allow for access to umbrellas and ponchos in case of wet weather;
- Provide good quality, accurate and useful directional signage to promote walking and cycling;
- Provide real time information on public transport arrival/departure times with information screens/monitors; and
- Implementation of a ride share system, which could include encouraging staff to participate in a peak-hour car-pooling club to drive to a nearby station.

Existing set down/pick-up arrangement



Proposed set down/pick-up arrangement

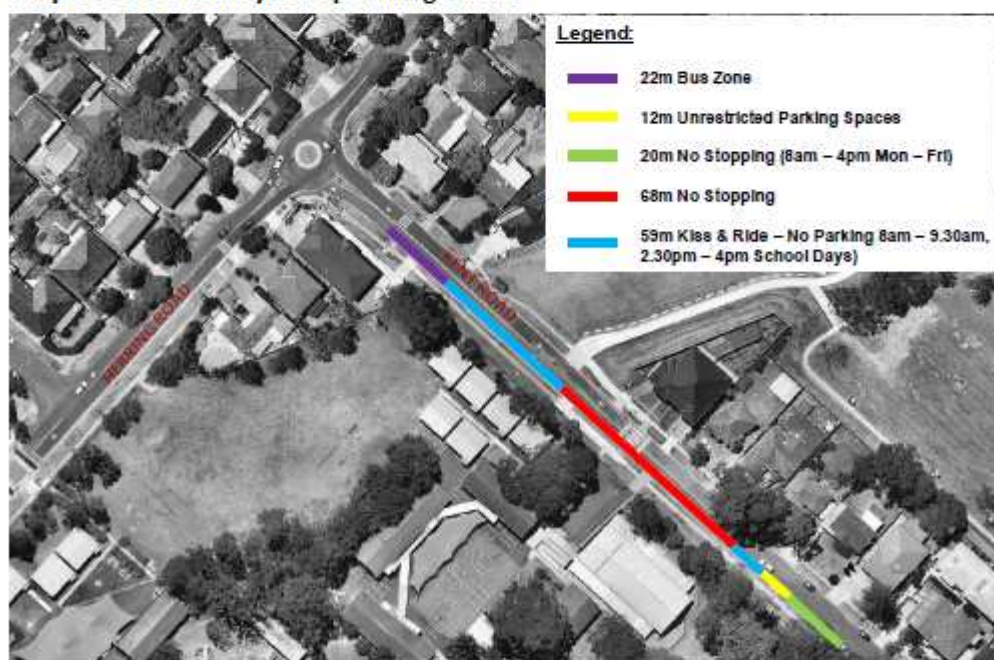


Figure 31 Existing and proposed set down / pick up arrangements

Source: TTPA

6.5 Social Impacts

As outlined at **Section 2.2** a range of works have been approved under Part 5 of the EP&A Act and as Exempt Development under the Education SEPP that will relocate classrooms and core facilities including the library, toilets and administration functions with new demountable buildings to allow the school to remain open during construction of the SSD works. Accordingly, no decanting works are required as part of the SSD DA.

An assessment of the social impact of the school's construction and the impact on the school and broader community has been undertaken by Ethos Urban at **Appendix J**, and is summarised below.

Potential impacts of the school's relative location due to construction include:

- Impacts to students' learning outcomes during construction, due to disruption to school routines, new learning environments and the relocation of existing demountable classrooms and reconfiguration of existing play spaces, as well as potential noise and dust.
- Impacts to student and staff access to school facilities due to construction activities, including:
- Parts of the school playground will be off limits due to construction, relocation of demountable buildings and occupation of east end of road reserve by the building contractor. As the road reserve is currently used for school sports, some sports activities will need to relocate to the southern edge of the school site. The school's existing access to green space has been recognised as adding significant value to the school and broader community, and the desire to retain as much outdoor play space as possible has been highlighted as a priority through community consultation.
- Social impacts associated with traffic changes during construction, for example, changes to pick up and drop off arrangements for children and families:
- Possible changes to mode of transport to school (e.g. from active travel to public transport or car travel due to construction activity)
- Traffic, road safety and parking were raised as significant concerns during community consultation.

Impacts on the broader community:

- Overall, the final scheme is likely to have a negligible impact on surrounding social infrastructure. As the Kent Road Public School site has a large amount of open playspace per student, which can continue to be utilised during construction, the proposal will not put additional demand on external community facilities.
- The upgrading of the school library and facilities offers an opportunity for the broader local community to access the facilities outside of school hours for a range of community uses. Both the NSW Department of Education and Greater Sydney Commission support the use of joint and shared use agreements to increase the flexibility and capacity of local social infrastructure. Additionally, there is no library within 1.2km of the site, and the school library may provide a more accessible option for library floorspace for nearby residents.
- The upgrading of Kent Road Public School to increase the capacity of the school will also increase the amount and range of enrolment opportunities for existing families and children living in the area. This will contribute to meeting forecast demand for education facilities in the Ryde LGA.
- Increased capacity at Kent Road Public School will enable local students to be educated close to their homes, social networks and connections, preventing displacement of children from their local communities in order to access education opportunities.
- Increased enrolments at Kent Road Public School may also support the viability of external early education and care services and before and after school care services close to the school, as families with primary school aged children also often utilise early education and care services. Early education and care services located close to primary schools can simplify pick up and drop off arrangements for households with children.

Impacts on the school community

- The upgrade to Kent Road Public School will result in more appropriate, purpose-built permanent spaces for teaching and learning. The improved facilities will contribute to achieving the school's education objectives, improving the learning outcomes of students and the experiences of both teaching and non-teaching staff. The improved facilities will also contribute to meeting the NSW Department of Education's goal that "school infrastructure meets the needs of a growing population and enables future-focused learning and teaching"

- Although current students will experience some disruption due to construction activity at the site, future students and their families will benefit from the improved school facilities.
- The expansion of school buildings will slightly reduce the amount of outdoor play space available on the site.

6.6 Biodiversity

A Biodiversity Development Assessment Report (BDAR) has been prepared by Eco Logical (**Appendix K**), prepared by Jennie Powell, who is an Accredited Person under the *NSW Biodiversity Conservation Act 2016* (BC Act). The BDAR has been prepared to meet the requirements of the Biodiversity Assessment Method (BAM) 2016, as established under Section 6.7 of the NSW BC Act.

The proposal impacts on one Threatened Ecological Community (TEC) listed under the BC Act; Blue Gum High Forest in the Sydney Basin Bioregion (BGHF), which is a Critically Endangered Ecological Community (CEEC).

One Plant Community Type (PCT) is present within the SSD site. The PCT has been mapped as PCT 1237 - Sydney Blue Gum - Blackbutt - Smooth-barked Apple moist shrubby open forest on shale ridges of the Hornsby Plateau, Sydney Basin Bioregion (0.23 ha). The PCT has been split into two vegetation zones based on their condition:

- Vegetation zone 1 is in a Low-Moderate condition and conforms to the CEEC listing of 'Blue Gum High Forest in the Sydney Basin Bioregion', under the BC Act.
- Vegetation zone 2 is present in a Low condition comprised mainly of planted vegetation. Vegetation zone 2 species are not characteristic of PCT 1237, but they have been assigned to this PCT as a best-fit. As such, vegetation zone 2 does not conform to the BC Act listing of 'Blue Gum High Forest in the Sydney Basin Bioregion'.

It is noted that Blue Gum High Forest (BGHF) is also be listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) as a Critically Endangered Ecological Community (CEEC). The condition of the PCT within the Development Site does not meet the minimum condition thresholds for the listing criteria under the EPBC Act.

No threatened flora or fauna species were recorded within the development site.

A small amount of native vegetation within the development site will be directly impacted, resulting in the clearing of 0.23 ha of PCT 1237. The remainder of the development site (0.54 ha) is comprised of land classified as 'Cleared/Exotics' which are devoid of native vegetation.

A total of 4 ecosystem credits are required to offset 0.23 ha of unavoidable impacts to PCT 1237. Habitat for candidate species credit was not recorded and therefore, no species credits are required to offset the development.

BGHF is listed as a Serious and Irreversible Impacts (SAIL) in the BioNet Atlas. The SAIL threshold for these communities is yet to be published by OEH. As such, detailed consideration of whether impacts on candidate SAILs are serious and irreversible is provided in the BDAR. Given the small area of degraded BGFH to be impacted (0.17 ha), it is considered unlikely that the development would result in a SAIL.

The Grey-headed Flying-fox is listed as Vulnerable under the EPBC Act and it is considered that this species is likely to use some of the development site for foraging. An assessment of the Commonwealth Significant Impact Criteria (Commonwealth of Australia 2013) was undertaken for the Grey-headed Flying-fox and concluded that the project would not have a significant impact on this species. As such, a referral to the Commonwealth is not required.

All impacts to Matter of National Environmental Significance have been avoided as far as practicable and all impacts have been assessed in accordance with Commonwealth guidelines.

6.7 Tree Removal

Temporal Tree Management has prepared an Arboricultural Impact Assessment to discuss the proposed removal of trees and their significance (**Appendix L**). A total of 231 trees were assessed within the school. The SSD proposal will require the removal of 63 trees.

Whilst there are some trees identified as having high retention value within the development footprint, the assessment notes that these trees are either easily replaced or show signs of declining health and warrant removal.

Trees 165 and 134 are mature Sydney Blue Gums with short useful life expectancies and are not considered to be a reasonable long-term option for the development of this site.

Three trees are identified for protection within the SSD works area, including 147, 206 and 207.

The proposed location of the new building complex is considered to be the most suitable in terms of minimising overall impact on the tree population within the school. Importantly, the proposed location avoids the 79 high retention trees that will not be negatively impacted.

Tree protection measures are proposed in accordance with the *Australian Standard for the Protection of Trees on Development Sites (AS 4970 2009)*.

Across the broader school site, all Blue Gum High Forest trees (including Tree 165 and 134) are proposed to be replaced within 6 months of project completion in a suitable location within the school that will allow for their long-term ability to thrive.

The assessment recommends that Trees 134 and 165 be aerially inspected by an ecologist prior to their removal to investigate the presence of faunal habitats within their canopy and hollowed stems. All fauna is to be safely captured and / or dispersed prior to their removal. Once evacuated, all hollows should be covered to ensure they are not reoccupied prior to the trees' removal.

6.8 Aboriginal Heritage

An Aboriginal Archaeological Survey Report (ASR) has been prepared by RPS (**Appendix M**) in accordance with the Office of Environment and Heritage (OEH) Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (the Code of Practice).

A search of the AHIMS database was conducted on 2 August 2018. No registered Aboriginal objects were located within the project area, however a total of four registered sites are located within the AHIMS search area. The closest registered Aboriginal site is located approximately 1.9 kilometres to the north-east of the school.

An Aboriginal archaeological survey undertaken on 7 August 2018 found that large portions of the school are highly disturbed. No unrecorded Aboriginal sites or areas of archaeological potential were identified during the survey. No additional cultural heritage values were identified. Therefore, in accordance with the Due Diligence Process, an AHIP application is not required for the proposal.

As no heritage values have been identified within the project area, further reporting, inclusive of an Aboriginal Cultural Heritage Assessment Report (ACHAR), is not expected to be required.

Notwithstanding, for completeness an ACHAR is currently being prepared and will be provided as part of future stages of the SSD process.

RPS recommend the following mitigation measures:

- No Aboriginal sites or areas of potential archaeological deposits have been identified, therefore the proposed works within the project area are unlikely to impact on any known Aboriginal objects, places or values. An ACHAR as stipulated by the SEARs for this project is not required for the proposed works. Works may proceed with caution and without an AHIP.
- If changes are made to the scope of proposed works assessed in this report, the potential impacts of the changes should be assessed by a qualified heritage consultant in consultation with the Metropolitan Local Aboriginal Land Council.
- An Aboriginal heritage induction should be undertaken for all personnel, contractors and subcontractors. The induction would provide an outline of the legal obligations of all personnel, contractor, and subcontractors under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1997*. RPS recommends the presentation of the induction prior to the commencement of any activity within the project area.

- If unexpected Aboriginal objects are identified during the proposed works, all activities within that area must cease and the area cordoned off. OEH must be notified by ringing Enviroline on 131 555 so that it can be adequately assessed and managed.
- In the unlikely event that human remains are identified, all activity within that area must cease immediately the area cordoned off. The proponent must contact the local NSW Police, who will make an initial assessment as to whether the remains are archaeological. If the remains are determined to be Aboriginal, OEH must be notified on Enviroline on 131 555. An OEH office will determine if the remains are Aboriginal or not. If the remains are identified as Aboriginal, a management plan must be developed in consultation with the Aboriginal community.

6.9 Heritage

A Historical Archaeological Assessment has been prepared by RPS (**Appendix N**) in accordance with *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Burra Charter) (2013) and associated Guidelines as well as best practice standards set by the NSW Heritage Branch.

An archaeological survey was undertaken on 7 August 2018. It found that there have been high levels of disturbance, particularly through construction of the school infrastructure and underground utilities. Accordingly, and in consideration of background research and available documentary evidence, the school has a low-nil level of archaeological potential.

RPS conclude that any potential archaeological remains are not considered to contribute to the significance of the site and would not meet the threshold for local or State significance and are therefore would not be considered relics. As such, a permit under Section 140 or Section 60 of the Heritage Act is not required.

RPS recommend the following mitigation measures:

- It is recommended that a heritage induction exercise be carried out in advance of the proposed works. All relevant staff, contractors and subcontractors would be made aware of their statutory obligations for heritage under the Heritage Act through the site induction and toolbox talks.
- If, during the course of development works, suspected archaeological relics, as defined by the *Heritage Act 1977* (as amended) are uncovered, work should cease in that area immediately. The Heritage Branch and the OEH (Enviroline 131 555) should be notified and works only recommence when an approved management strategy has been developed.

6.10 Noise and Vibration

An Acoustic Assessment has been prepared by Acoustic Logic and is included at **Appendix O**. The Assessment has identified the potential acoustic and vibration impacts of the development upon the closest receivers. The closest potentially affected receivers are identified in Figure 1 of the Assessment (**Figure 32**). These include receivers situated around the perimeter of the school.

The existing acoustic environment has been determined using a combination of long-term and short-term noise monitoring. Based on the background and ambient noise monitoring carried out at the nearest affected residential locations, Acoustic Logic has developed a set of project specific noise criteria (refer to Section 5 of the Acoustic Assessment) and mitigation measures to minimise any impacts from noise and vibration.



Figure 32 Site Monitoring Locations and Receiver Locations

Source: Acoustic Logic

6.10.1 Construction Impacts

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences. For residential properties, the “noise effected” level occurs when construction noise exceeds ambient levels by more than:

- 10dB(A)Leq(15min) for work during NSW EPA recommended standard construction hours (7am-6pm Monday to Friday and 8am to 1pm on Saturdays); and
- 5dB(A)Leq(15min) for work outside of standard construction hours. For residential properties, the “highly noise effected” level occurs when construction noise exceeds 75dB(A)Leq (15min) at nearby residences.

A summary of noise emission goals for both standard hours of construction and outside standard hours is provided at **Table 10** below.

Table 10 Construction Noise Emission Goals

Location	Noise management level, LAeq(15 min) dB(A)		
	Standard Hours Monday to Friday 7 am to 6pm; Saturday 8am to 1pm; Sunday and Public Holidays no work		Indicative Noise Levels Predicted dB(A)
	Noise Affected	Highly Noise Affected	
R1	51	75	45-63
R2	51	75	42-62
R3	51	75	43-65
R4	54	75	38-65

The level of construction noise will depend on the construction activity and where the activity is taking place. Intrusive noise emissions are associated with equipment typically having sound power levels of approximately 115 – 120dB(A)Leq(15min). Some exceedance of the EPA “Noise Effected” target levels may occur at the boundary of existing residences surrounding the school by these activities.

Works are proposed to be undertaken within NSW EPA standard construction hours.

Construction Vibration

Structural vibration as a result of construction activities is typically assessed by the following standards:

- German Standard DIN 4150-3 Structural Vibration: Effects of Vibration on Structures; and
- British Standard 7385 Part 2.

Excavation is the primary vibration generating activities. Acoustic Logic concludes that due to the distance between the site and the nearest residential properties, no vibration impacts are envisaged.

Construction Mitigation Measures

At this stage, the construction program has yet to be determined, however the following management measures are proposed to mitigate acoustic and vibration impacts:

- Preparation of a detailed Construction Noise and Vibration Management Plan;
- Manage noise from construction work that might be undertaken outside the recommended standard hours;
- The location of stationary plant (concrete pumps, air-compressors, generators, etc.) as far away as possible from sensitive receivers;
- Using site sheds and other temporary structures or screens/hoarding to limit noise exposure where possible;
- Sealing of openings in the building (temporary or permanent) prior to commencement of internal works to limit noise emission;
- The appropriate choice of low-noise construction equipment and/or methods;
- Modifications to construction equipment or the construction methodology or programme. This may entail programming activities to occur concurrently where a noisy activity will mask a less noisy activity, or, at different times where more than one noisy activity will significantly increase the noise. The programming should also consider the location of the activities due to occur concurrently; and
- Carry out consultation with the community during construction including, but not limited to advance notification of planned activities and expected disruption/effects, construction noise complaints handling procedures.

6.10.2 Operational Impacts

The primary operational noise sources from the school are expected to include:

- Outdoor play areas;
- Mechanical plant;
- PA system;
- School bells; and
- Classrooms and Hall.

Outdoor Play

The proposal does not seek to relocate existing playgrounds and it is reasonable to compare existing noise generation to the future situation. Acoustic Logic note:

- An increase of 250 children (from 750 children) would result in an increase of approximately 1.2dB(A) compared to existing levels. This would be a barely perceptible increase; and
- NSW EPA NPfI considers a residual increase of less than 2dB(A) to be negligible.

Therefore, it is considered that the noise exposure from outdoor play will not be significantly different to that of existing.

Mechanical Plant

At this early stage the selection of plant for the proposal has not been finalised and accordingly a detailed acoustic design assessment cannot be undertaken. However, an indicative assessment of primary plant items has been undertaken.

In general, plant will be acoustically treated to prevent noise emissions from adversely impacting the surrounding properties. This may include selecting the quietest plant practicable, or treating the plant with enclosures, barriers, duct lining and silencers as required to comply with noise criteria.

Public Address System and School Bell

At this stage the exact design of the PA and school bell system is not known, however Acoustic Logic recommend the following to ensure compliance with noise criteria:

- Speakers installed on the new façade of the school should not exceed the following maximum noise level when measured at 5m from the speaker (SPL at 5m), as follows:
 - Northern Façade – 74dB(A) at 5m distance.
 - Eastern Façade – 74dB(A) at 5m distance.
 - Southern Façade – 75dB(A) at 5m distance.
 - Western Façade – 79dB(A) at 5m distance.
- Speaker location and direction can be used to reduce noise spill to neighbouring properties while still maintaining suitable noise levels within the school grounds (typically 70-75dB(A)).
- Placing more speakers, closer to the noise receiver (i.e. playground) is a more effective way to provide coverage of the external areas while reducing noise spill to neighbouring properties.

Classrooms and Hall

Acoustic Logic confirm use of the internal spaces (including classrooms and hall) during evening time for community events is acceptable. However, use outside of the external spaces out of hours is not recommended.

Mitigation Measures

To manage operational noise impacts the following mitigation measures are recommended by Acoustic Logic:

- It is recommended that a detailed design of the proposed School PA system is carried out at CC stage.
- If buses are waiting in local roads for pickups, engines should be switched off.
- Detailed acoustic review of all external plant items should be undertaken following equipment selection and duct layout design. All plant items will be capable of meeting noise emission requirements of Council and the EPA Noise Policy for Industry (NPfI) 2017, with detailed design to be done at CC stage. This should include detailed acoustic review of any proposed PA system (speaker location, directionality, noise limiter etc).

6.11 Contamination

A Preliminary Site Investigation (PSI) has been undertaken by Arcadis (**Appendix P**) in accordance with NSW EPA guidelines. The PSI found:

- The site and immediate surrounding area have no history of industrial or commercial use and accordingly does not have a high potential risk for extensive contamination; and
- Within the proposed development area, potential indicators of contamination observed at the site included the presence of fill material and building materials containing asbestos and/or lead paint.

Based on the observations made during the site walkover and following analysis of site history, Arcadis is of the opinion that there is a low risk of contamination present onsite within the proposed development area.

Notwithstanding, due to potential sources of contamination being identified, Arcadis recommended a targeted assessment of site soils be undertaken. This was undertaken by Arcadis and the findings are outlined at the Soil Contamination Assessment and Indicative Waste Classification Due Diligence Report (**Appendix Q**).

Eight boreholes were tested within the development footprint with soil samples analysed to determine the potential risk to human health and environmental receptors.

Testing of soil samples found BTEX, PAHs, OCPs, OPPs, PCBs and eight priority heavy metals were found to have concentrations below the relevant criteria. No asbestos was reported.

Exceedances related to imported materials in raised planter beds. Arcadis recommend that further assessment, delineation and/or remediation of these soils should be completed. It is noted that the soils within the garden beds may be removed during the proposed development. If the soils are removed from site during development, Arcadis recommend that validation samples of the garden bed footprint should be completed once removed to ensure that any underlying remaining soils do not pose an unacceptable risk to human health.

Arcadis confirm the soil results indicated that there is no unexpected risk to human health for construction or maintenance workers.

The potential remediation work is Category 2 under *State Environmental Planning Policy No 55—Remediation of Land* and does not require consent.

Arcadis concludes that the site can be made suitable for the proposed development, subject to the implementation of further soil assessment and/or soil remediation and validation works, as required.

6.12 Acid Sulfate Soil

Arcadis has confirmed that the site is not located in an ASS risk area.

6.13 Geotechnical

A Geotechnical Investigation has been undertaken by AssetGeo (**Appendix R**) to assess the subsurface conditions and provide an engineering assessment for the proposal. The assessment found the subsurface comprises of a combination of asphalt, silty clay and sandy clay in depths up to 2.5m. Ironstone bedrock was encountered in depth between 0.6 – 1.3m. Shale bedrock was encountered between 2.3 – 3.3m.

Based on the results of the site investigations, the report provides advice on the geotechnical aspects of the proposed civil and structural design. These recommendations relate to excavation, retention, footings, anchors, pavements and floor slabs and drainage and have been considered during the design of the proposal. There are no geological impediments to the proposal.

6.13.1 Groundwater

Limited groundwater observations were made during investigations. The observations indicate that groundwater is unlikely to be a constraint to the proposed development.

6.14 Water Cycle Management

6.14.1 Stormwater

Stormwater management for the site is described in the TTW Civil Report at **Appendix S**. Run off from the roofs and hardscape will be collected by the building's hydraulic system and conveyed into local stormwater drain pits. A system of pits and pipes will be provided to collect the runoff generated in the ground areas. Prior to any stormwater discharge, the stormwater flows will pass through OSD or Gross Pollutant Trap (GPT).

The Civil Report confirms the stormwater system has been designed to meet the requirements of City of Ryde Council's DCP 2014 Part 8.2 Stormwater Management Technical Manual.

6.14.2 Water Sensitive Urban Design

Water quality management measures are embedded into the proposal as outlined by TTW at **Appendix S**. The proposed water quality management plan includes providing Enviropods, GPT and a vegetated swale along the play area. A rainwater tank is also provided to increase the school's water reuse rate. These measures comply with the intent of Ryde Council's water quality control requirements.

6.15 Sediment and Erosion Control

An Erosion and Sediment Control Plan has been prepared by TTW and is included at **Appendix S**. The Plan outlines the management processes to be put in place to maintain the quality of stormwater discharge during construction. Measures include sediment fences, settlement ponds and shaker grates.

TTW confirm all erosion and sedimentation management measures will be in accordance with Landcom guidelines – Managing Urban Stormwater Runoff: Soils and Construction (“Blue Book”).

6.16 Flooding

A Flood Risk Management Plan has been prepared by Stefani Group (**Appendix T**) to assess flooding impacts. A review of Council’s Flood report indicates:

- The site is affected by a 100-year ARI (Average Recurrence Interval) flood with flood depths up to 650mm; and
- The site is affected by a PMF (Probable Maximum Flood) with flood depths up to 1.55m.

The southern portion of the school is predominantly affected, being the main floodway through the site. No development is proposed with the floodway. The school will continue to be inundated as no filling or site level alterations are proposed by the SSD DA.

The flood risk management strategy is to allow the flood to continue to inundate the existing school topography and undertake works outside of the Medium and High Flood Hazard zones. The flow path shape will accordingly not be altered and so the flood regime and flood levels are not exacerbated on adjoining properties. The proposed development does not impinge on the 100-year ARI flood extent and is located outside of the Medium and High Flood Risk Precincts of the flood extent.

The new buildings will have a finished ground floor level of 60.3AHD which is above the minimum recommended Flood Planning Level (59.10 AHD). This provides a freeboard of approximately 1.7m and 1.3m in the 100-year ARI and PMF events, in accordance with the principles of the NSW Floodplain Development Manual.

6.17 Waste

A Waste Management Plan (WMP) has been prepared by JBS&G Australia and is included at **Appendix U**. The Plan provides an assessment of potential waste impacts associated with the construction and operation of the school. The WMP identifies the potential types and volumes of waste that are expected to be generated in the construction and operational phases of the proposed development and suggests systems to be implemented to appropriately manage this waste.

6.17.1 Operational Waste

The following are the main waste streams that would be expected from the proposed development:

- General waste;
- Paper and cardboard recycling;
- Comingled recycling; and
- Compost.

The WMP identifies likely waste streams including potential volumes of each stream during operation. It has been prepared with reference to the relevant legislation and policies.

It is noted that the proposal would not introduce any waste that is not already managed by the existing school operations. The WMP identifies management measures and disposal destinations for each waste stream for general waste and recycling. The WMP calculates the total waste generation following completion, which will service 1000 students. It is estimated that the school will generate a total of approximately 4,311 litres of waste and 2,117 litres of recyclables per week (5 working days).

All general waste will be deposited into dedicated 660 litre mobile garbage bins (MGB) that have been located in the quadrangle and adjacent to the northern loading bay. The volume of waste can be accommodated in 10 x 660 litre bins, which the design can accommodate. These will be transported on a ‘needs’ basis by site cleaners, taken to the waste collection point (adjacent to the loading dock) and replaced with an empty bin.

6.17.2 Construction Waste

The WMP identifies likely waste streams including the possible volume of each stream during construction of the proposal. Generally, waste will be segregated on site and transported to a recycling facility.

A detailed Construction Waste Management plan will be developed by the future site contractor as part of the CEMP for the school (refer to **Appendix V**). The contractor will be required to achieve compliance with EPA Guidelines.

6.18 Accessibility

A Disability Access Report has been prepared by Lindsay Perry Access is provided at **Appendix W**. The development has been assessed against the requirements of the Building Code of Australia 2016 (BCA), Disability (Access to Premises) Standards 2010 and The Disability Discrimination Act 1992 (DDA), with regard to access for persons with a disability. The Report concludes that the proposed development can achieve compliance with the relevant statutory requirements.

6.19 Ecologically Sustainable Development (ESD)

The environmental performance of the development has been assessed by using clause 7(4) of Schedule 2 of the EP&A Regulations and the EIS is accompanied by an ESD Statement prepared by Wood and Grieve (**Appendix X**). The initiatives and targets relate to the following aspects of the proposed development:

- ESD initiatives outlined by Wood and Grieve align with the national best practice sustainable building principles to improve environmental performance and reduce ecological impact;
- The proposal will align with the Green Building Council of Australia's – 'Green Star' framework noting that this is considered the 'national best practice building principle';
- The design measures as discussed in detail by Wood and Grieve in the ESD Statement demonstrate the way in which ESD is entrenched into the design proposal. Through the incorporation of these ESD measures, the proposal will be designed in accordance with recognised best practice principles, which are capable of being applied throughout the design and ongoing operation phases of the development.

Furthermore, the proposed development is consistent with the four accepted principles of ESD. The Regulation lists four principles of ecologically sustainable development to be considered in assessing a project. They are:

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles follows.

Precautionary Principle

The precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment and therefore the precautionary principle is not relevant to the proposal.

Intergenerational Equity

Inter-generational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- Implementing safeguards and management measures to protect environmental values;
- Facilitating education opportunities in close proximity to homes and public transport; and
- Improving the social infrastructure that will improve educational infrastructure outcomes.

The proposal has integrated short and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications such as waste disposal would be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this EIS and the appended technical reports.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

The BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the development site and methodologies to minimise impacts during construction a of the development. A small amount of vegetation (0.23ha) within the development site will be removed. The BAMC calculated that a total of 4 ecosystem credits are required to offset the unavoidable impacts on the development site.

The proposal has a limited impact on the biological diversity and ecological integrity of the school, requiring a small area of low-moderate condition Blue Gum High Forest to be impacted. This will be offset in accordance with the NSW BC Act.

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reusing, recycling and managing waste during construction and operation would be implemented to ensure resources are used responsibly in the first instance.

Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

6.20 Construction Management

A Preliminary Environment, Construction and Site Management Plan (CMP) has been prepared by Blue Visions and is provided at **Appendix V**. The CMP outlines the key principles and considerations for the management of the construction program and will be for the basis of the detailed site Environment Management Plan to be prepared by the contractor. Key aspects of the CMP include:

Community Consultation

- Regular meetings will be held by the contractor and relevant parties to communicate upcoming works to coordinate logistics and minimise disruption;
- Liaise with the community liaison officer to work with neighbours to understand any concerns and requirements and, where possible, adjust construction methodologies as necessary;
- Points of contact between the Contractor's project team and stakeholders will be agreed with stakeholders provided with 24-hour contact numbers;
- Key personnel from the Contractor's project team will be available to attend stakeholder internal briefings if required to communicate details of the proposed works to their respective team members; and
- A complaints management process will be established to appropriately record and respond to any concerns.

Noise

- Prior to the commencement of any works onsite a noise and vibration management plan will be developed by the Contractor for the mitigation of noise and vibration generated by the works;

- The noise and vibration from the use of any plant equipment and / or building services associated with the works will not give rise to an offensive noise as defined under the provisions of the Interim Construction Noise Guideline, EPA and Australian Standards;
- Plant known to emit noise strongly in one direction would, where possible, be orientated so that noise is directed away from noise sensitive areas;
- Stationary and mobile equipment including offsite vehicles would be maintained regularly; and
- Notifications of particularly noisy works would be undertaken prior to any planned works commencing. This would include either personal or community meetings with adjoining properties owners and/or tenants.

Work Health and Safety

- Careful and controlled management of worker and public safety will be undertaken in accordance with the NSW Work Health and Safety Act; and
- Typical approaches include job training, toolbox talks, and implementation of emergency management plans, safe work will be developed.

Hazardous Materials

- All hazardous substances will be registered, correctly stored, decanted, used and disposed in accordance with the Material Safety Data Sheet and regulatory requirements. Employees will be trained in the Safe Work Method Statement and provided with the appropriate Personal Protective Equipment.

Dust Control

- An Air Quality Management Plan will be developed by the contractor which will include measures such as installation of a shaker grid, wheel wash facilities, hosing of machinery and general manual cleaning. Management and contingency plans will be developed to avoid any likely impacts from dust.

Traffic Management

- During the normal school operating hours, minimal truck movements will be permitted with peak movements occurring prior to or after peak student arrival and departure times; and
- Loading of materials will be on Kent Road, where the contractor's entry to the works area and contractors' compound will be located.

7.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for Kent Road Public School has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the Site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 33 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and
- The likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- The complexity of mitigation measures;
- The known level of performance of the safeguards proposed; and
- The opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

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

Figure 33 Risk Assessment Matrix

Risk Assessment						
Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Significance of Impact	Manageability of Impact	Residual Impact
Key: C - Construction O - Operation						
Noise and Vibration	C + O	▪ Increase in noise and vibration levels during construction activities ▪ Increase in noise levels during the operation of the school facility	▪ Implementation of Construction Noise and Vibration Measures which considers the construction methodology and details specific mitigation measures in accordance with the DECCW Interim Construction Noise Guideline. ▪ Appropriate mitigation measures to be implemented to ensure vibration levels will not compromise human comfort or result in building damage. ▪ Appropriate sound minimisation measures to be incorporated within the plant and mechanical areas. ▪ Lighting and PA system will be designed to limit impacts to adjoining property.	C = 3 O = 1	C = 2 O = 2	C = 5 (low/medium) O = 3 (low)
Traffic and Parking	C + O	▪ Increase in construction traffic on local roads ▪ Increase in traffic and parking on local roads during operation	▪ A Preliminary Construction Traffic Management Plan has been prepared detailing measures to minimise any adverse impacts arising from construction traffic. ▪ Additional parking demand generated by the proposed development will be accommodated within on-site parking areas (subject to separate planning pathway). The existing road network has capacity to support an increase in traffic associated with the proposed development.	C = 3 O = 2	C = 2 O = 1	C = 5 (low/medium) O = 3 (low)
Amenity of Adjoining Properties	C + O	▪ Potential privacy impacts on adjoining properties. ▪ Potential overshadowing of adjoining properties.	▪ The building has been designed to limit privacy and overlooking of the adjoining property to the north.	C = 3 O = 3	C = 2 O = 1	C = 5 (low/medium) O = 4 (low/medium)
Air and Water Quality	C	▪ Potential for reduced air and water quality during construction	▪ A detailed Construction Environmental Management Plan will be developed once a contractor has been appointed to implement measures to ensure that air and water quality are maintained.	C = 2	C = 2	C = 4 (low/medium)

8.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 11** below. These measures have been derived from the previous assessment in **Section 6.0** and those detailed in appended consultants' reports.

Table 11 Mitigation Measures

Mitigation Measures
Flood The proposal will be in accordance with the findings of the Flood Risk Management Plan prepared by Stefani Group dated September 2018
Aboriginal Heritage - An Aboriginal heritage induction should be undertaken for all personnel, contractors and subcontractors. The induction would provide an outline of the legal obligations of all personnel, contractor, and subcontractors under the National Parks and Wildlife Act 1974 and the Heritage Act 1997. - In the unlikely event that human remains are identified, all activity within that area must cease immediately the area cordoned off. The proponent must contact the local NSW Police, who will make an initial assessment as to whether the remains are archaeological. If the remains are determined to be Aboriginal, OEH must be notified on Enviroline on 131 555. An OEH office will determine if the remains are Aboriginal or not. If the remains are identified as Aboriginal, a management plan must be developed in consultation with the Aboriginal community. - If unexpected Aboriginal objects are identified during the proposed works, all activities within that area must cease and the area cordoned off. OEH must be notified by ringing Enviroline on 131 555 so that it can be adequately assessed and managed. - Aboriginal Heritage will be managed in accordance with the Aboriginal Archaeological Survey Report dated 27 September 2018.
Biodiversity The proposal will be in accordance with the findings of the Biodiversity Development Assessment Report prepared by Eco Logical dated October 2018.
Tree Protection - Tree protection will be provided in accordance with Australian Standards (2009) AS4970: Protection of Trees on Construction Sites. - The proposal will be in accordance with the recommendations of the Arboricultural Impact Assessment prepared by Temporal Tree Management dated October 2018.
Transport and Accessibility Construction and operational traffic will be in accordance with the recommendations of the Traffic and Transport Impact Assessment Report prepared by TTPA dated September 2018.
Waste Waste will be in accordance with the recommendations of the Construction Waste Management Plan prepared by JBS&G dated 8 October 2018 and Operational Waste Management Plan prepared by JBS&G dated 8 October 2018.
Stormwater The proposal will be in accordance with the recommendations of the Engineering Report prepared by TTW dated 13 September 2018.
Noise and Vibration The proposal will be in accordance with the recommendations of the Acoustic Report prepared by Acoustic Logic dated 7 September 2018.
Contamination The proposal will be in accordance with the recommendations of the Preliminary Site Investigation prepared by Arcadis dated 27 April 2018 and Due Diligence Soil Contamination Assessment and Indicative Waste Classification prepared by Arcadis dated 30 July 2018.
Construction Impacts A Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor prior to the commencement of works. The CEMP will establish site management principles generally in accordance with the Preliminary Environment, Construction and Site Management Plan prepared by Blue Visions dated September 2018.

Mitigation Measures

Environmentally Sustainable Development

- The detailed design of the development is to incorporate the ESD principles and measures set out in the ESD Statement prepared by Wood and Grieve dated 13 September 2018.
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9.0 Conclusion and Justification

The Environmental Impact Statement (EIS) has been prepared to consider the environmental, social and economic impacts of the proposed redevelopment of Kent Road Public School. The EIS has addressed the issues outlined in the SEARs (**Appendix B**) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

Having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- The assessment of this proposal has demonstrated that the development will not generate any environmental impacts that cannot be appropriately managed and is consistent with the relevant planning controls for the site.
- The development will provide a significant new piece of social and educational infrastructure, providing a redeveloped school with permanent teaching spaces to accommodate 1,000 students. The provision of a new teaching and education facility will support and strengthen the availability of education facilities in the region.
- The area and shape of the site allows for the provision of new teaching and education facilities that meet the special design requirements for the proposed uses, whilst not resulting in any significant adverse impacts on surrounding uses.
- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation 2000.
- The proposed development is anticipated to create 17 full time positions at the school. This is anticipated to have additional social benefits for the region in terms of providing additional employment in a growing locality.
- Given the increase in housing development in the region, the proposed redevelopment is anticipated to have positive social outcomes in ensuring that local residents have access to high quality educational facilities.
- The development will not have a significant impact on any threatened flora or fauna species.
- The proposal will not result in any adverse traffic impacts on the surrounding road network, and parking demand associated with the proposed development can be accommodated within the site.

Given the above it is considered that the SSD application has merit and can be supported by the Department and the Minister for Planning.