Environmental Impact Statement

New High School in Jerrabomberra
SSD-24461956

Prepared on behalf of NSW Department of Education

November 2021

mecone

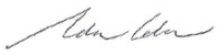
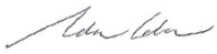
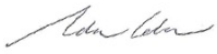
Project Director

Adam Coburn

Project Planners

Jordan Faeghi

Addison Boykin

Revision	Revision Date	Status	Authorised	
			Name	Signature
A	29/10/2021	Draft	A Coburn	
B	13/10/2021	Draft	A Coburn	
C	02/11/2021	Final	A Coburn	

* This document is for discussion purposes only unless signed and dated by the persons identified. This document has been reviewed by the Project Director.

Contact

Mecone
Suite 1204b, Level 12, 179 Elizabeth Street
Sydney, New South Wales 2000
info@mecone.com.au
mecone.com.au

© Mecone

All Rights Reserved. No part of this document may be reproduced, transmitted, stored in a retrieval system, or translated into any language in any form by any means without the written permission of Mecone.

Executive Summary

Purpose of report

This Environmental Impact Statement (EIS) has been prepared by Mecone NSW Pty Limited on behalf of the NSW Department of Education (DoE) to accompany an application for State significant development (SSD). DoE is seeking approval for a new high school in Jerrabomberra, NSW.

This EIS is submitted to the Minister for Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The proposal is for a new school and is therefore classified as SSD in accordance with Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011.

The EIS addresses the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning, Industry and Environment (DPIE) on 13 August 2021.

Overview of the proposal

The proposed development is for the construction of a new high school in Jerrabomberra, NSW.

The proposal will meet community demand and to ensure new learning facilities are co-located near existing open space infrastructure.

The proposal generally includes the following works:

- Site preparation.
- Construction of a series of buildings up to three storeys including administration/staff areas, library, hall and general learning spaces.
- Construction of new walkways, central plaza and outdoor games courts.
- Construction of a new at-grade car park with 34 parking spaces including two disabled spaces.
- Associated site landscaping and open space.

Objectives of the proposal

The key objectives of the proposal are to:

- Meet identified demand for a new high school in the area.
- Provide a high-quality facility that meets the needs of students and teachers, optimises educational outcomes

- Provide a built form that responds to the constraints of the site and avoids significant environmental impacts.

The site

The site is located at 300 Lanyon Drive, Jerrabomberra, and is legally described as part Lot 1 in DP 1263364. The school site comprises proposed Lot 2 under consent 332-2015 (not yet registered at the time of writing of this EIS).

The site is irregular in shape and has with an area of approximately 4.5ha.

The site currently has no road frontage. The future Environa Drive (currently under construction) will border the site to the west, and the north road (also under construction) will provide direct access into the school site.

The site is located within the Poplars development area. The masterplan for the Poplars includes a 35ha of Innovation Precinct (business park), 10ha of retail and services precinct, Innovation Hub and Learning Precinct, as shown in Figure 2-2. The subject site is located within the Learning Precinct portion of the Poplars development area.

Development of the Poplars is currently underway, though the majority of the area is undeveloped at this stage.

Project background and need

Demand for schooling within the Queanbeyan Secondary School Community Group (SCG) is anticipated to experience rapid growth due to plans for residential developments in the area (Googong, South Jerrabomberra, Bungendore and Jumping Creek), as well as ACT policy change related to reducing inter-state student enrolments.

It is estimated that by 2036 there will be a capacity shortfall of 1,065 students across the SCG. Specifically, for Jerrabomberra, projections indicate unmet demand of 488 students in 2036. This is expected to rise further in the future.

Given this forecasted increase in demand, the existing capacity in the SCG is insufficient to meet the needs of the community. Noting this, the NSW government, as part of its 2019 budget, committed to building a new high school in Jerrabomberra following.

Alternatives

DoE considered a number of alternatives to the proposal including:

A. Do nothing.

B. Upgrade existing facilities across the area.

C. New high school in Jerrabomberra.

Option A was discarded as it would not address the identified demand and would not deliver on the promise of a new high school. Option B was discarded because it would be costly to implement and would not deliver on the promise of a new high school. This option may also require many students to travel large distances to existing schools. Option C (the subject of this application) was chosen because it addresses identified demand, delivers on the promise of a new high school in Jerrabomberra and provides a geographically convenient school option for students in the area.

Consultation

Pre-lodgement consultation was conducted with various stakeholders including Queanbeyan-Palerang Regional Council officers; State agencies including Government Architect NSW and Transport for NSW; the local community; and local Aboriginal stakeholders. Comments provided by these stakeholders have been instrumental in the preparation of the EIS. Section 6 describes the consultation activities undertaken.

Planning context

The EIS has been prepared in accordance with the relevant legislative requirements of the EP&A Act and Environmental Planning and Assessment Regulation 2000 (EP&A Regulation). Section 5 of the EIS considers all applicable legislation in detail.

Land use permissibility

Queanbeyan Local Environmental Plan (West Jerrabomberra 2013) (the LEP) applies to the site. The site is zoned part B7 Business Park and part RE2 Private Recreation. Education establishments, which includes schools, are permitted with consent in the B7 zone and prohibited in the RE2 zone. Notwithstanding, the portion of the proposed school located in the RE2 zone is permitted with consent on the site pursuant to clause 2.5 and Schedule 1 of the LEP, which permit the additional permitted use of "education establishment" at the site.

Notable variations

The proposal includes variations to the LEP's height of buildings standard, primarily due to the site's sloping topography. The variations are minor and will have no notable environmental impacts. This is discussed in section 5.7 of the EIS.

EPBC Act

The Poplars development as a whole, including the school site, was referred to the Commonwealth Department of Agriculture, Water and Environment (DAWE) for assessment of matters of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999.

The development was determined to be a controlled action. The Poplars referral to DAWE has now been approved. A number of conditions must be satisfied before works can commence, including works at the school site. This is being carried out under a separate approval process, outside of the subject SSD application.

Environmental impacts and mitigation measures

Sections 7 and 7.19 of the EIS provide an assessment of the environmental impacts of the proposal in accordance with the SEARs. In summary:

- *Built form and urban design* – The proposal will contribute positively to the streetscape and will be compatible with the future built form context of the Poplars development area.

- *Environmental amenity* – The proposed buildings are well separated from the nearest residences (+100m) and will have no notable adverse impacts on the amenity of surrounding development in regard to overshadowing, privacy, wind or views. No mitigation measures are required.

- *Transport and accessibility* – The proposal will result in minor impacts on the performance of the surrounding key intersections. Analysis indicates that surrounding intersections will operate at a poor level of service in the future, but this is generally attributable to background growth in the surrounding area rather than the proposed school. A School Travel Plan will be implemented to encourage sustainable travel modes.

  The footpath network in the vicinity has been identified as deficient in areas and will be upgraded as part of the development.

- *Sustainability* – The proposal provides for a sustainable development consistent with the four principles of ecologically sustainable development (ESD) defined by clause 7(4) of Schedule 2 of the EP&A Regulation. The project includes a range of ESD measures and is targeting a 4 Star Green Star rating.

- *Heritage* – The site is not a heritage item, is not located in a heritage conservation area (HCA) and is not located near an item or HCA. The site has no known archaeological significance. The proposal will have no notable heritage impact, and no further heritage investigation or mitigation is required.

- *Aboriginal heritage* – The proposal will directly impact two sites recorded in the Aboriginal Heritage Information Management System. Archaeological investigations and consultation with Aboriginal stakeholders carried out as part of the EIS have concluded that the two sites are of low significance. The impact on the two sites, therefore, is considered acceptable with no further investigation required.

- *Noise and vibration* – The proposal will have minor and acceptable noise emission impacts during operation. Noise from the outdoor play areas is expected to exceed the background noise level at the nearest residential receivers (to the south) by up to 13dB, which is greater than the standard "background + 5dB" criteria. This impact is considered acceptable as it will occur for only short periods and is not typical offensive noise but rather "community" noise.

Construction noise is expected to exceed the noise management levels at the residential receivers to the south but will be less than the highly noise affected level. Reasonable and feasible mitigation measures will need to be implemented during construction as per EPA guidelines.

Regarding noise intrusion into the school, the site is located between the 20 to 25 Australian Noise Exposure Forecast (ANEF) contour, which is acceptable for a school subject to implementation of appropriate construction measures. These measures have been developed for the project and are specified in the submitted Noise & Vibration Assessment.

- *Biodiversity* – The proposal requires clearing of 1.46ha of native pasture, which has been identified as habitat for the endangered Golden Sun Moth. Notwithstanding, the submitted Biodiversity Development Assessment Report concludes that the clearing is unlikely to lead to a decrease in the viability of the local population.

  The proposed clearing generates an offset requirement of nine species credits under the Biodiversity Assessment Method. These credits have already been paid as part of a previous subdivision development application over the site.

  The proposal may result in a number of indirect impacts on surrounding biodiversity, such as weed introduction. A number of standard management measures, such as best practice weed and sediment and erosion control, are recommended to mitigate these impacts.

- *Contamination* – Site inspection including intrusive investigation has revealed no major contamination issues on the site. The site is considered suitable for the proposed use subject to the implementation of mitigation measures, including further investigation of a soil stockpile in the southern portion of the site (should the stockpile remain on site) and other general measures.

- *Stormwater management* – The proposal will provide for effective management of stormwater in terms of quantity and quality of flows, subject to implementation of the submitted stormwater management plan, which will be refined at the detailed design stage.

- *Soil and water* – The proposal will have no notable adverse impacts on soil and water. Sediment and erosion control will be implemented in accordance with the "Blue Book", and water quality improvement devices will be implemented in accordance with the submitted stormwater management plan.

- *Bushfire* – The required asset protection zones for surrounding bush fire threats are provided within the site and surrounding public road infrastructure. No additional clearing is required. The development will be exposed to Bushfire Attack Level 12.5 and will need to be constructed accordingly.

- *Riparian zone* – The proposal will result in no direct impacts to the adjacent and downstream watercourses. The proposal could potentially result in a number of indirect impact, such as soil instability and sediment runoff, and

therefore a number of mitigation measures will need to be implemented, including (but not limited to) vegetation buffers, permeable paving in select areas and water quality improvement devices.

- *Social impacts* – The proposal will create a positive impact on the community through provision of an accessible local school that is designed to respond to local and student needs. The submitted Social Impact Assessment provides a number of recommendations that could be implemented to further enhance the impact of the proposal. These recommendations generally relate to ongoing consultation/communication with key stakeholders.

- *Utilities* – All essential utilities are/will be connected to the site. A new kiosk substation is required for the development at will be located at the north-western corner of the site.

- *Waste* – The proposal will provide for satisfactory waste management during the construction and operation phases in accordance with the submitted waste management plans, which will be refined during the detailed design phase.

- *Aviation* – The proposal will have no impacts on the operations of Canberra Airport. The development works will be well below the obstacle limitation surface (OLS) and are outside the area to which lighting restrictions apply. No mitigation measures are required.

Conclusion

The EIS fulfils the requirements of the EP&A Act and EP&A Regulation, addresses all relevant matters for consideration prescribed by the SEARs and demonstrates that the potential impacts of the proposal can be satisfactorily managed or mitigated. Given the evident benefits of the proposal and lack of significant environmental impacts, it is recommended that consent be granted to the application.

Table of Contents

Schedule of Figures

Schedule of Tables

Appendices

Statement of validity

Applicant details

Name: NSW Department of Education c/- Mecone Pty Ltd NSW

Address: Level 2, 3 Horwood Place, Parramatta NSW 2150

Site and proposal details

Site address: 300 Lanyon Drive, Jerrabomberra

Legal description: Part Lot 1 DP1263364 (proposed Lot 2 under consent 332-2015)

Proposed development: Establishment of a new high school/education establishment in Jerrabomberra

Prepared by

Name: Adam Coburn

Qualifications: Bachelor of Environmental Planning, Master of Planning

Address: Mecone NSW Pty Ltd, Level 2, 3 Horwood Place, Parramatta NSW 2150

Certification

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

- It is in accordance with Part 4 of the Environmental Planning and Assessment Act 1979 and 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: Adam Coburn

Date: 02 November 2021

Glossary and abbreviations

Term/acronym	Description
AEP	Annual Exceedance Probability
AS	Australian Standards
BCA	Building Code of Australia
BC Act	*Biodiversity Conservation Act 2016*
COLA	Covered Outdoor learning Area
Council	Queanbeyan-Palerang Regional Council
CPTED	Crime Prevention through Environmental Design
DA	Development Application
DCP	Development Control Plan
DoE	Department of Education
DPIE	Department of Planning Industry and Environment
EFSG	Educational Facilities Standards & Guidelines
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
ESD	Ecologically Sustainable Development
GFA	Gross Floor Area
HVAC	Heating, Ventilation and Air Conditioning system
INP	Industrial Noise Policy
LEP	Local Environmental Plan
LGA	Local Government Area
North road	Currently unnamed future public road along the site's northern boundary (under construction)
Proposal	Establishment of a new high school in Jerrabomberra

Term/acronym	Description
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policies
Site	Part Lot 1 DP1263364 (proposed Lot 2 under consent 332-2015)
SSD	State Significant Development
Stream	Indicative size of a secondary school based on student population

1 Introduction

This Environmental Impact Statement (EIS) has been prepared by Mecone NSW Pty Limited on behalf of the NSW Department of Education (DoE) to support an application for State significant development (SSD). DoE is seeking approval for a new high school in Jerrabomberra.

The proposal is for a new school and is therefore classified as SSD in accordance with Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP).

The EIS has been prepared in accordance with the requirements of the Environmental Planning and Assessment Act 1979 (EP&A Act), the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) and the Secretary's Environmental Assessment Requirements (SEARs) issued on 13 August 2021.

1.1 Project overview

The proposed development is for the construction of a new high school in Jerrabomberra, NSW.

The proposal will meet community demand and to ensure new learning facilities are co-located near existing open space infrastructure.

The proposal generally includes the following works:

- Site preparation.
- Construction of a series of buildings up to three storeys including administration/staff areas, library, hall and general learning spaces.
- Construction of new walkways, central plaza and outdoor games courts.
- Construction of a new at-grade car park with 34 parking spaces including two disabled spaces.
- Associated site landscaping and open space.

The proposal has been designed to accommodate approximately 500 students with Stream 3 teaching spaces; however, the core facilities will be future-proofed to a Stream 5 level to enable possible future expansion.

The proposal includes site preparation works, including clearing and levelling, to accommodate the proposed buildings and play areas. The proposal involves the construction of a series of buildings housing general learning spaces, administration and staff wings, outdoor learning areas, a library and assembly hall.

The proposal includes construction of a new driveway and hardstand with access off the future road to the north (referred to as the 'north road' throughout this report). Pedestrian access is proposed off Environa Drive, the north road and the existing shared path to the southeast of the site.

1.2 Proposal objectives

The key objectives of the proposal are to:

- Meet identified demand for a new high school in the area.
- Provide a high-quality facility that meets the needs of students and teachers, optimises educational outcomes
- Provide a built form that responds to the constraints of the site and avoids significant environmental impacts.

1.3 Project background and need

The Queanbeyan Secondary School Community Group (SCG) is in Queanbeyan-Palerang Regional Council Local Government Area (LGA), which lies along the eastern segment of the ACT border. Jerrabomberra is a suburb of Queanbeyan and located in South Eastern NSW. There are two existing high schools within the SCG, namely Karabar High School and Queanbeyan High School. Students in Jerrabomberra currently fall within the Karabar High School catchment. The area is currently experiencing and expected to continue to experience a high rate of population growth.

Demand for schooling within the SCG is anticipated to experience rapid growth due to plans for residential developments in the area (Googong, South Jerrabomberra, Bungendore and Jumping Creek), as well as ACT policy change related to reducing inter-state student enrolments.

It is estimated that by 2036 there will be a capacity shortfall of 1,065 students across the SCG. Specifically, for Jerrabomberra, projections indicate unmet demand of 488 students in 2036. This is expected to rise further in the future.

Given this forecasted increase in demand, the existing capacity in the SCG is insufficient to meet the needs of the community. Noting this, the NSW government, as part of its 2019 budget, committed to building a new high school in Jerrabomberra.

1.4 Alternatives considered

DoE undertook a structured approach in assessing the various options to meet the identified service need. The options considered are outlined in the table below.

Table 1-1 Options considered

Option	Analysis
A. Do nothing. This option would involve allocating excess demand across existing schools.	This option is undesirable for the following reasons: • The identified service need would not be met.

Option	Analysis
	• There would be a capacity shortfall in the SCG, resulting in overcrowding and significant travel time for students.
B. Upgrade existing schools within the SCG. This option would involve expanding existing school core facilities, upgrading temporary learning spaces and adding additional classrooms.	This option would address the service need but is undesirable for the following reasons: • The required upgrades may be costly and not represent whole of government value for money. • Core upgrades may be required, which are intrusive and expensive to implement. • Site sizes of existing schools may prohibit building the required stream and capacity. • Some students would need to travel large distances to attend school.
C. Construct a new high school in Jerrabomberra. This is the option proposed under the subject application.	This option is preferred option for the following reasons: • The service need will be met. • It promotes sustainable travel and spatial alignment of capacity and demand. • It is suitably located within the Poplars Learning Precinct near Jerrabomberra Public School and David Madew Regional Park.

1.5 SEARs

The project SEARs were issued on 13 August 2021. The table below identifies where the SEARs are addressed within the EIS.

Table 1-2 Project SEARs

SEAR	Location in EIS
The Environmental Impact Statement (EIS) must be prepared in accordance with and meet the minimum requirements of clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000 (the Regulation).	Throughout EIS
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 9

SEAR	Location in EIS
In addition, the EIS must include: • an executive summary.	Executive summary (front of report)

• a complete description of the development, including:
  ○ the need for the development.
  ○ justification for the development.
  ○ suitability of the site.
  ○ alternatives considered.
  ○ likely interactions between the development and existing, approved and proposed operations in the vicinity of the site.
  ○ a description of any proposed building works.
  ○ a description of existing and proposed operations, including staff and student numbers, hours of operation, and details of any proposed before/after school care services and/or community use of school facilities.
  ○ site survey plan, showing existing levels, location and height of existing and adjacent structures/buildings and site boundaries.
  ○ a detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development.
  ○ plans, elevations and sections of the proposed development.
  ○ cladding, window and floor details, including materials.
  ○ a site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process).
  ○ plans and details of any advertising/business identification signs to be installed, including size, location and finishes.
  ○ any staging of the development.
  ○ details of construction and decommissioning including timing.
  ○ an estimate of the jobs that would be created during the construction and operational phases of the development along with details of the methodology to determine the figures provided.
	Section 1
	Section 3
	Appendix 1
	Appendix 2
	Appendix 3

• a detailed assessment of the key issues identified below, and any other significant issues identified in the risk assessment, including:	Section 7

SEAR	Location in EIS
○ a description of the existing environment, using sufficient baseline data and methodology to establish baseline conditions. ○ an assessment of the potential impacts of all stages of the development on all potentially impacted environments, sensitive receivers, stakeholders and future developments. The assessment must consider any relevant legislation, policies and guidelines. ○ consideration of the cumulative impacts due to all other developments in the vicinity (completed, underway or proposed). ○ identification of all proposed monitoring or required changes to existing monitoring programs. ○ measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment and triggers for each action. ○ details of alternative measures considered.	
• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all commitments included in the EIS.	Section 9
• the reasons why the development should be approved and a detailed evaluation of the merits of the development, including consequences of not carrying out the development.	Section 10
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.	Submitted separately
Key issues	
The EIS must address the following specific matters: **1. Statutory Context, Strategic Context and Policies** Address the statutory provisions contained in all relevant environmental planning instruments, including but not limited to: • State Environmental Planning Policy (State and Regional Development) 2011. • State Environmental Planning Policy (Infrastructure) 2007. • State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017.	Section 5

SEAR	Location in EIS
• State Environmental Planning Policy No 64 – Advertising and Signage. • State Environmental Planning Policy No 55 – Remediation of Land. • Draft State Environmental Planning Policy (Remediation of Land). • Draft State Environmental Planning Policy (Environment). • Draft State Environmental Planning Policy (Educational Establishments and Child Care Facilities). • Queanbeyan (West Jerrabomberrra) Local Environmental Plan 2013. Having regard to the relevant environmental planning instruments: • address the permissibility of the development, including the nature and extent of any prohibitions • identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards • adequately demonstrate and document how each of the provisions in the listed instruments are addressed, including reference to necessary technical documents.	
Address the relevant planning provisions, goals and strategic planning objectives in all relevant planning policies including but not limited to the following: • NSW State Priorities. • State Infrastructure Strategy 2018 – 2038 Building the Momentum. • Future Transport Strategy 2056. • South East and Tablelands Regional Plan 2036. • Crime Prevention through Environmental Design (CPTED) Principles. • Better Placed: An integrated design policy for the built environment of New South Wales (Government Architect NSW (GANSW), 2017). • Healthy Urban Development Checklist (NSW Health, 2009). • Draft Greener Places Design Guide (GANSW). • Koala Habitat Protection Guideline (DPIE, 2020). • South Jerrabomberra Development Control Plan 2015. • Towards 2040 Queanbeyan-Palerang Regional Council Local Strategic Planning Statement. • South Jerrabomberra Structure Plan 2013. • Queanbeyan Development Control Plan 2012.	Section 4
2. Built Form and Urban Design • Address:	Section 3.3 Section 7.1

SEAR	Location in EIS
○ the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. ○ design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours. ○ how Crime Prevention through Environmental Design (CPTED) principles are to be integrated into development. ○ how good environmental amenity would be provided, including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility. ○ how design quality will be achieved in accordance with Schedule 4 Schools – design quality principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools (GANSW, 2018). ○ how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Appendix 2 Appendix 25
• ·Provide: ○ a detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development ○ a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items.	Section 2 Section 7.2.3 Appendix 2
3. Tree Removal and Landscaping • · Provide: ○ where relevant, an arboricultural impact assessment prepared by a Level 5 (Australian Qualifications Framework) Arborist, which details the number, location and condition of trees to be removed and retained, includes detailed justification for each tree to be removed and details the existing canopy coverage on-site. ○ a detailed site-wide landscape strategy, that: - details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage.	Section 3.4 Appendix 4

SEAR	Location in EIS
- provides evidence that opportunities to retain significant trees have bene explored and/or informs the plan. - considers equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation - demonstrates how the proposed development would: • contribute to long term landscape setting in respect of the site and the streetscape. • mitigate the urban heat island effect and ensure appropriate comfort levels on-site. • contribute to objectives to increase urban tree canopy cover. o a detailed landscape plan prepared by a suitably qualified person.	
4. Environmental Amenity • Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. • Provide: o shadow diagrams. o a view analysis of the site from key vantage points and streetscape locations and public domain including photomontages or perspectives showing the proposed and likely future development. o an analysis of proposed lighting that identifies lighting on-site that will impact surrounding sensitive receivers and includes mitigation management measures to manage any impacts. o details of the nature and extent of the intensification of use associated with the proposed development, particularly in relation to the proposed increase in staff and student numbers and detail measures to manage and mitigate the impacts.	Section 7.2 Appendix 2 Appendix 3
5. Transport and Accessibility Provide a transport and accessibility impact assessment, which includes, but is not limited to the following: • analysis of the existing transport network, including: o road hierarchy.	Section 3.6 Section 7.3 Section **Error! R eference source not found.**

SEAR	Location in EIS
○ pedestrian, cycle and public transport infrastructure. ○ details of current daily and peak hour vehicle movements based on traffic surveys and / or existing traffic studies relevant to the locality. ○ existing transport operation for 1hr before and after (existing or proposed) bell times such as span of service, frequency for public transport and school buses, pedestrian phasing for signals. ○ existing performance levels of nearby intersections utilising appropriate traffic modelling methods (such as SIDRA network modelling that has been calibrated and validated). Intersections to be modelled should be determined in consultation with TfNSW and Council and include intersections such as: - Tompsitt Drive/Environa Drive. - Tompsitt Drive/Lanyon Drive. - Tompsitt Drive/Jerrabomberra Circle. - Coachwood Avenue/Coral Drive. - Coachwood Avenue/Firethorn Place. - Coachwood Avenue/Jerrabomberra Parkway. - Jerrabomberra Parkway/Bicentennial Drive. - Jerrabomberra Parkway/Brudenell Drive. - Jerrabomberra Parkway/Jerrabomberra Circle. • details of the proposed development, including: ○ a map of the proposed access which identifies public roads, bus routes, footpaths and cycleways. ○ pedestrian site access and vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes. ○ car parking, bicycle parking and end-of-trip facilities. ○ drop-off / pick-zone(s) and bus bay(s). ○ pedestrian or road infrastructure improvements or safety measures. • analysis of the impacts due to the operation of the proposed development, including: ○ proposed modal split for all users of the development including vehicle, pedestrian, cyclist, public transport and other sustainable travel modes.	Appendix 5 Appendix 6

SEAR	Location in EIS
○ estimated total daily and peak hour vehicular trip generation. ○ a clear explanation and justification of the: - assumed growth rate applied. - volume and distribution of proposed trips to be generated. - type and frequency of design vehicles accessing the site. - assumed safe travel routes for each model split. ○ details of performance of nearby intersections with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling). ○ cumulative traffic impacts from any surrounding approved development(s). ○ adequacy of pedestrian, bicycle and public transport infrastructure to accommodate the development. ○ adequacy of car parking and bicycle parking provisions when assessed against the relevant car / bicycle parking codes and standards. ○ adequacy of the drop-off / pick-up zone(s) and bus bay(s), including assessment of any related queuing during peak-hour access. ○ adequacy of the existing / proposed pedestrian infrastructure to enable convenient and safe access to and from the site for all users. ○ adequacy of access and egress for service and delivery vehicles. • measures to ameliorate any adverse traffic and transport impacts due to the development based on the above analysis, including: ○ preliminary School Transport Plan detailing: - an operational traffic and access management plan (OTAMP), for the site, pedestrian entries, the drop-off / pick-up zone(s) and bus bay(s). - travel demand management programs to increase sustainable transport (such as a Green Travel Plan). ○ arrangements for the Travel Coordinator roles. ○ governance arrangements or relationships with state and local government transport providers to update roads safety.	

SEAR	Location in EIS
○ infrastructure improvements, including details of timing and method of delivery. • analysis of the impacts of the traffic generated during construction of the proposed development, including: ○ construction vehicle routes, types and volumes. ○ construction program (duration and milestones). ○ on-site car parking and access arrangements for construction, emergency and construction worker vehicles. ○ cumulative impacts associated with other construction activities in the locality (if any). ○ road safety at identified intersections near the site due to conflicts between construction vehicles and existing traffic in the locality. ○ measures to mitigate impacts, including to ensure the safety of pedestrian and cyclists during construction. • a preliminary Construction Traffic and Pedestrian Management Plan. • preliminary detail on the school zone requirements to be installed including a school zone plan as per the School Zone 40km/h Policy. Note: Further guidance is provided in the TfNSW advice attached to the SEARs.	
6. Ecologically Sustainable Development (ESD) • Identify: ○ how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) would be incorporated in the design and ongoing operation phases of the development. ○ proposed measures to minimise consumption of resources, water (including water sensitive urban design) and energy. ○ how the future development would be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy. ○ how environmental design will be achieved in accordance with the GANSW Environmental Design in Schools Manual (GANSW, 2018). • Provide:	Section 7.5 Appendix 26

SEAR	Location in EIS
○ an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level. ○ a statement regarding how the design of the development is responsive to the NARCliM projected impacts of climate change. ○ an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design. ○ an outline of sustainability targets and demonstrate how these have been achieved in the design proposal.	
7. Heritage • Identify any archaeological potential or archaeological significance on and adjacent to the site and the impacts the development may have on this significance. • Provide a statement of significance and an assessment of the impact on the heritage significance of the heritage items on and adjacent to the site in accordance with the guidelines in the NSW Heritage Manual (Heritage Office and DUAP, 1996) and Assessing Heritage Significance (OEH, 2015).	Section 7.6 Section 7.7 Appendix 7
8. Aboriginal Cultural Heritage • Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) that: ○ identifies and describes the Aboriginal cultural heritage values that exist across the site. ○ includes surface surveys and test excavations where necessary. ○ has been prepared in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010). ○ incorporates consultation with Aboriginal people in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water, 2010). ○ documents the significance of cultural heritage values of Aboriginal people who have a cultural association with the land. ○ identifies, assesses and documents all impacts on the Aboriginal cultural heritage values.	Section 7.6 Appendix 7

SEAR	Location in EIS
○ demonstrates attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. ○ demonstrates attempts to interpret the Aboriginal cultural heritage significance identified into the development. ○ outlines procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material. Any Aboriginal objects recorded as part of the Aboriginal Cultural Heritage Assessment Report must be documented and notified to the Aboriginal Heritage Information Management System (AHIMS) within Heritage NSW of the Department of Premier and Cabinet.	
9. Social Impacts • Provide a Social Impact Assessment prepared in accordance with the draft Social Impact Assessment Guideline.	Section 7.8 Appendix 8
10. Noise and Vibration • ·Provide a noise and vibration impact assessment that: ○ includes a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation and construction. ○ details the proposed construction hours and provide details of, and justification for, instances where it is expected that works would be carried out outside standard construction hours. ○ includes a quantitative assessment of the main sources of operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities. ○ outlines measures to minimise and mitigate the potential noise impacts on nearby sensitive receivers. ○ considers sources of external noise intrusion in proximity to the site (including, road rail and aviation operations) and identifies building performance requirements for the proposed development to achieve appropriate internal amenity standards. ○ demonstrates that the assessment has been prepared in accordance with polices and guidelines relevant to the context of the site and the nature of the proposed development.	Section 7.9 Appendix 11

SEAR	Location in EIS
11. Biodiversity • Provide a Biodiversity Development Assessment Report (BDAR) that assesses the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and Biodiversity Assessment Method, except where a BDAR waiver has been issued in relation to the development or the development is located on biodiversity certified land. • Where a BDAR is not required because a BDAR waiver has been issued in relation to the development, provide: o a copy of the BDAR waiver and demonstrate that the proposed development is consistent with that covered in BDAR waiver. o an assessment of flora and fauna impacts where significant vegetation or flora and fauna values would be affected by the proposed development. Note: Further guidance is provided in the Biodiversity and Conservation Division Standard Environmental Assessment Requirements attached to the SEARs.	Section 7.10 Appendix 9
12. Contributions • Identify: o any Section 7.11/7.12 Contribution Plans, Voluntary Planning Agreements or Special Infrastructure Contribution Plans that affect land to which the application relates or the proposed development type. o any contributions applicable to the proposed development under the identified plans and/or agreements. Justification is to be provided where it is considered that the proposed development is exempt from making a contribution. o any actions required by a Voluntary Planning Agreement or draft Voluntary Planning Agreement affecting the site or amendments required to a Voluntary Planning Agreement affected by the proposed development.	Section 5.10
13. Staging • Assess impacts of staging where it is proposed and detail how construction works and operations would be managed to ensure public safety and amenity on and surrounding the site.	Section 3.7
14. Utilities • In consultation with relevant service providers:	Section 7.18 Appendix 12

SEAR	Location in EIS
○ assess of the impacts of the development on existing utility infrastructure and service provider assets surrounding the site. ○ identify any infrastructure upgrades required off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained. ○ provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.	
15. Stormwater Drainage • Provide: ○ a preliminary stormwater management plan for the development that: - is prepared by a suitably qualified person in consultation with Council and any other relevant drainage authority. - details the proposed drainage design for the site including onsite detention facilities, water quality measures and the nominated discharge point. - demonstrates compliance with Council or other drainage authority requirements. ○ stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties. • Where drainage infrastructure works are required that would be handed over to Council, provide full hydraulic details and detailed plans and specifications of proposed works that have been prepared in consultation with Council and comply with Council's relevant standards.	Section 7.12 Appendix 14
16. Flooding • Identify any flood risk on-site in consultation with Council and having regard to the most recent flood studies for the project area and the potential effects of climate change, sea level rise and an increase in rainfall intensity • Assess the impacts of the development, including any changes to flood risk onsite or off-site, and detail design solutions to mitigate flood risk where required.	Section 7.13 Appendix 15
17. Soil and Water • Provide: ○ an assessment of Water quality impacts, particularly the impact of the relevant environmental values as outlined in	Section 7.14 Section 7.15 Appendix 17

SEAR	Location in EIS
the NSW Water Quality Objectives (NSW WQOs) and Australian New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC Guidelines). o an assessment of potential impacts on surface and groundwater (quality and quantity), soil, related infrastructure and watercourse(s), including the dam and depression through the south east of the site. Assessment to consider the impacts on how the dam and depression will be managed in terms of overland flow and impacts from sodden ground especially in relation to access through to the residential areas and adjacent Council sports fields (e.g. Madew Oval). o details of measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. o an assessment of salinity and acid sulphate soil impacts, including a Salinity Management Plan and/or Acid Sulphate Soils Management Plan, where relevant.	
18. Waste • Identify, quantify and classify the likely waste streams to be generated during construction and operation. • Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. • Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site. • Provide a hazardous materials survey of existing aboveground buildings that are proposed to be demolished or altered.	Section 7.16 Appendix 19 Appendix 20
19. Contamination • Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. This must include the following prepared by certified consultants recognised by the NSW Environment Protection Authority: o Preliminary Site Investigation (PSI). o Detailed Site Investigation (DSI) where recommended in the PSI. o Remediation Action Plan (RAP) where remediation is required. This must specify the proposed remediation strategy.	Section 7.17 Appendix 17
20. Bush fire • Provide:	Section 7.11 Appendix 21

SEAR	Location in EIS
○ bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with Planning for Bush Fire Protection (NSW RFS, 2019) ○ a detailed site plan that illustrates all proposed works, site assessment parameters, and bush fire protection measures.	
21. Aviation • Provide a report prepared by a suitably qualified person: ○ identifying whether the proposed school is located within any of the following Australian Noise Exposure Forecast (ANEF) contours as specified in Table 2.1 of Australian Standard 2021:2015 Acoustics - Aircraft noise intrusion - Building siting and construction (AS 2021:2015): - <20 - Between 20 – 25 - Or >25 ○ providing details of any flight paths that may be impacted by the proposed development.	Section 7.19 Appendix 10
Plans and documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. Any plans and diagrams included in the EIS must include key dimensions, RLs, scale bar and north point.	Appendix 2
In addition to the plans and documents required in the General Requirements and Key Issues sections above, the EIS must include the following: Section 10.7(2) and (5) Planning Certificates (previously Section 149(2) and (5) Planning Certificate)	Appendix 22
• Design report to demonstrate how design quality would be achieved in accordance with the above Key Issues including: ○ architectural design statement. ○ diagrams, structure plan, illustrations and drawings to clarify the design. ○ intent of the proposal. ○ detailed site and context analysis. ○ analysis of options considered to justify the proposed site planning and design approach.	Appendix 3

SEAR	Location in EIS
○ summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice. ○ summary report of consultation with the community and response to any feedback provided.	
• Geotechnical and Structural Report.	Section 8.1 Appendix 13 Appendix 16
• Accessibility Report.	Section 8.3 Appendix 24
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, relevant special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: • the relevant Council. • Government Architect NSW (through the NSW SDRP process). • Transport for NSW. Consultation should commence as soon as practicable to inform the scope of investigation and progression of the proposed development. The EIS must describe and evidence 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. Targeted consultation in accordance with the Social Impact Assessment Guideline 2020 (Department of Planning, Industry and Environment) must also occur where there is a requirement to prepare and submit a Social Impact Assessment.	Section 6 Appendix 23
Further consultation after two years	
If you do not lodge a Development Application and EIS for the development within two years of the issue date of these SEARs, your SEARs will expire. If an extension to these SEARs will be required, please consult with the Planning Secretary three months prior to the expiry date. If any other significant issues are identified in the risk assessment, that are not identified in this SEARs, the Planning Secretary must be consulted in relation to the preparation of the EIS.	Noted.
References	

SEAR	Location in EIS
The assessment of the key issues listed above must consider, but not be limited to, relevant guidelines, policies, and plans as identified.	Relevant guidelines, policies and plans considered in assessment of key issues.

2 Site analysis

2.1 Regional context

The site is located in the Southern Tablelands region of NSW, approximately 15.4km southeast of central Canberra and 7.7km southwest of Queanbeyan, near the ACT/NSW border. A regional context map is provided at Figure 2-1.

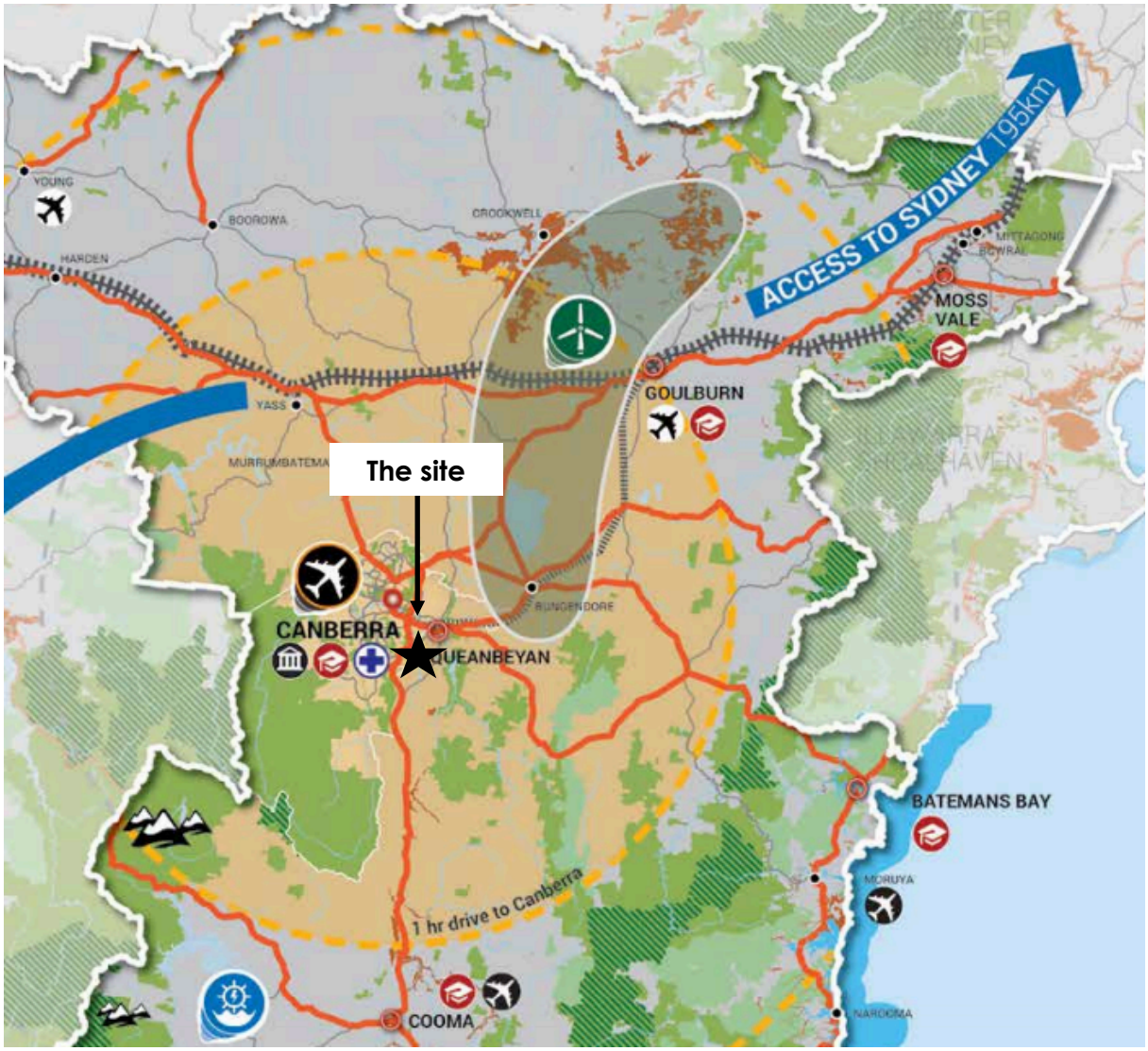


Figure 2-1 Regional context plan
Source: South East and Tablelands Regional Plan 2036

2.2 Local context and surrounding development

The site is located within the Poplars development area in Jerrabomberra, NSW. The masterplan for the Poplars includes a 35ha Innovation Precinct (business park), 10ha of retail and services precinct, Innovation Hub and Learning Precinct, as shown in the figure below. The subject site is located within the Learning Precinct portion of the Poplars.

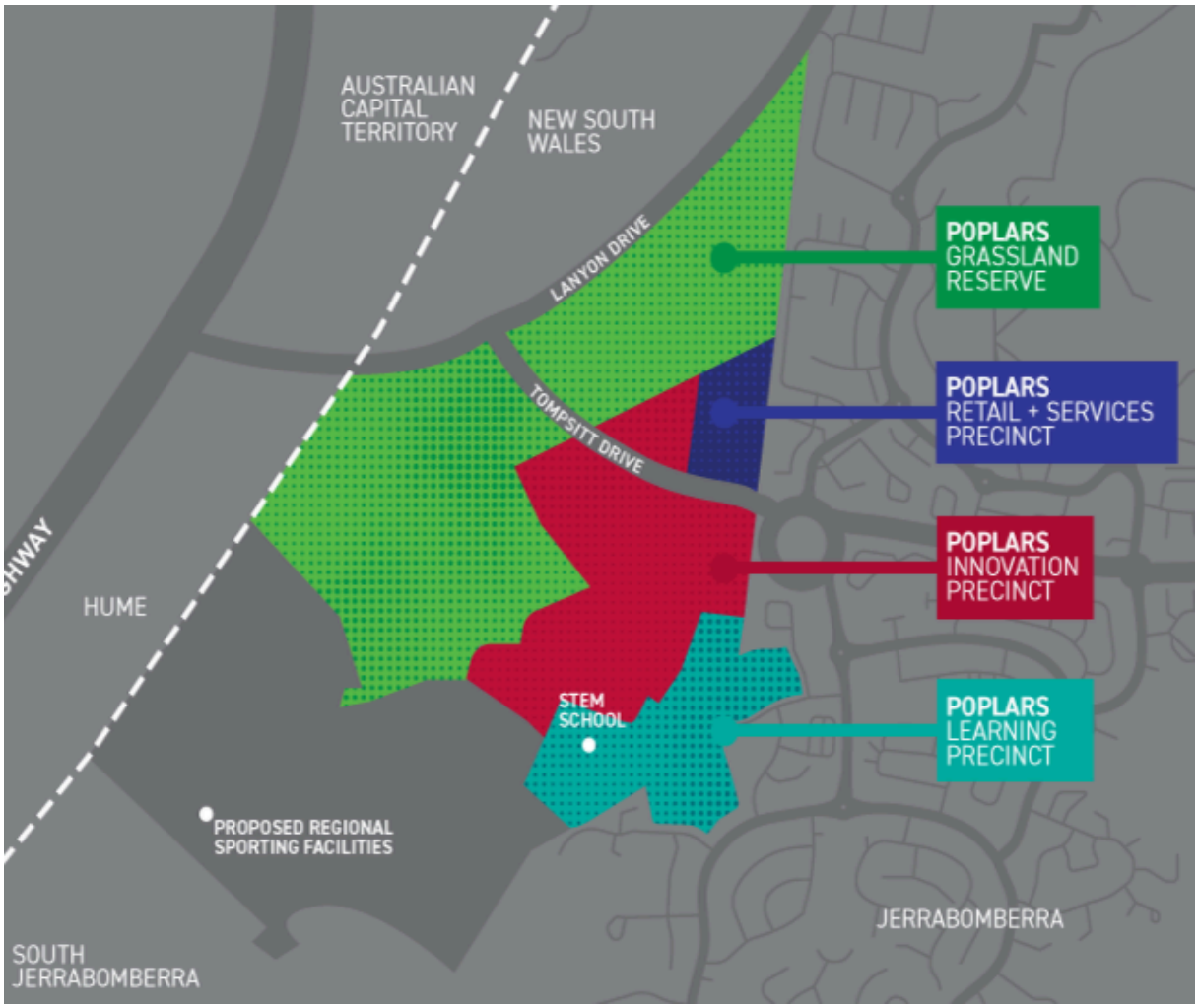


Figure 2-2 Poplars development site overview
Source: Poplars website

Delivery of the Poplars is underway, with Environa Drive, forming the subject site's eastern boundary, currently under construction. A future road with cul-de-sac runs along the site's northern boundary and is also under construction. The majority of the Poplars, however, remains undeveloped.

The site is located in excellent proximity to existing open space. The site adjoins David Madew Regional Park to the southeast and is located 100m east of an existing co-use recreational field associated with Jerrabomberra Public School.

Existing surrounding development generally includes low density residential developments and local sports facilities to the east, Jerrabomberra Public School to the northeast, and grazing land and natural grasslands to the north, south and west, as illustrated in Figure 2-3.

Figure 2-3 Local context map
Source: TKD Architects

2.3 Site description

The site is located at 300 Lanyon Drive, Jerrabomberra, and is legally described as part Lot 1 in DP 1263364.

The school site comprises proposed Lot 2 under consent 332-2015 (not yet registered at the time of writing of this EIS).

The site is irregular in shape and has with an area of approximately 4.5ha.

The site currently has no road frontage. The future Environa Drive (currently under construction) will border the site to the west. Additionally, there is an unnamed road currently under construction (referred to as the north road throughout this report) that borders the site to the north and will provide direct access into the school site.

The site is sloped from north to south, with approximately 14m level difference between highest and lowest points. At approximately +606 Australian Height Datum (AHD), the land at the northern site boundary is the highest point of the site, and the land across the north road continues to rise up, away from the site. The land falls away to the south, east and west. The site's lowest point is approximately +592m AHD and occurs at the southern boundary.

Jerrabomberra Creek is located approximately 150m to the southwest of the site, and adjoining land to the southeast is a small dam that forms part of a watercourse and broader wetland. This riparian corridor is discussed in further detail at section 7.15 of the EIS.

The site is identified bushfire prone land. Bushfire risk is addressed in further detail at section 7.11 of the EIS.

The site contains primarily grassland with no remnant trees. Biodiversity is discussed in further detail at section 7.10 of the EIS.

Currently there are no existing services and easements on the site. Once construction is complete on Environa Drive and the north road, services tie-ins will be available for gas, electricity, communications, water supply, drainage and stormwater.

Figure 2-4 Site aerial image with photo locations
Source: TKD Architects

Figure 2-5 Site looking towards future north road
Source: TKD Architects

Figure 2-6 Site looking towards Jerrabomberra Creek
Source: TKD Architects

Figure 2-7 Site looking towards Jerrabomberra
Source: TKD Architects

Figure 2-8 Site looking towards Mount Jerrabomberra
Source: TKD Architects

2.4 Existing consent

The school site forms proposed Lot 2 under consent 332-2015, which was approved by Council on 10 March 2021. This lot has not yet been registered at the timing of writing of this EIS.

3 Description of proposed development

3.1 Overview

The table below provides a summary of the key elements of the proposed development. The elements are described in further detail in the subsections below the table.

Architectural drawings by TKD Architects are attached at **Appendix 1**.

Table 3-1 Summary description of the development

Proposal element	Brief description
Gross floor area (GFA)	Building A: 5,148.35m^2 Building B: 1,480.98m^2 Storage shed: 14.56m^2
Maximum height	RL: 615330 Height above existing ground level: Approximately 12.8m
Land use	Educational establishment (high school)
Student capacity	500 students
Access	Vehicular access via future north road (under construction) Pedestrian access via future north road and existing shared path to the southeast of the site
Car parking	On-site car park with 34 parking spaces including 2 disabled spaces
Jobs	Construction: 107 jobs Operation: 44 jobs (school staff)
Construction hours	Monday to Friday: 7:00am to 6:00pm Saturdays: 8:00am to 5:00pm No work on Sunday or public holidays
Hours of operation	Main hours: Monday to Friday 8:00am to 5:00pm Out of hours: Subject to shared use agreement, school hall/gym may be used for community events on Saturday, Sunday and public holidays from 8:00am to 10:00pm
Off-site active transport upgrades	New pedestrian crossing across the future north road at its intersection with Environa Drive.

Proposal element	Brief description
	New pedestrian crossing on Jerrabomberra Parkway between Coachwood Avenue and Bicentennial Drive. New footpath on the western side of Jerrabomberra Parkway north of the new crossing. Widening of Coachwood Avenue to 2.5m to support a shared path on the southern side of the road. Widening of the shared path at the end of Coachwood Avenue to 2.5m.

3.2 Earthworks

The proposal includes stepping buildings that respond to the sloping nature of the topography. Nonetheless, some cut and fill is required to achieve the required building platforms and play areas. In general, cut will occur in the centre portion of the site, while fill will occur on the edges.

Specifically, it is estimated that a total cut volume of 14,720m^3 and total fill volume of 8,600m^3 will be required. A bulk earthworks plan is provided at Figure 3-1.

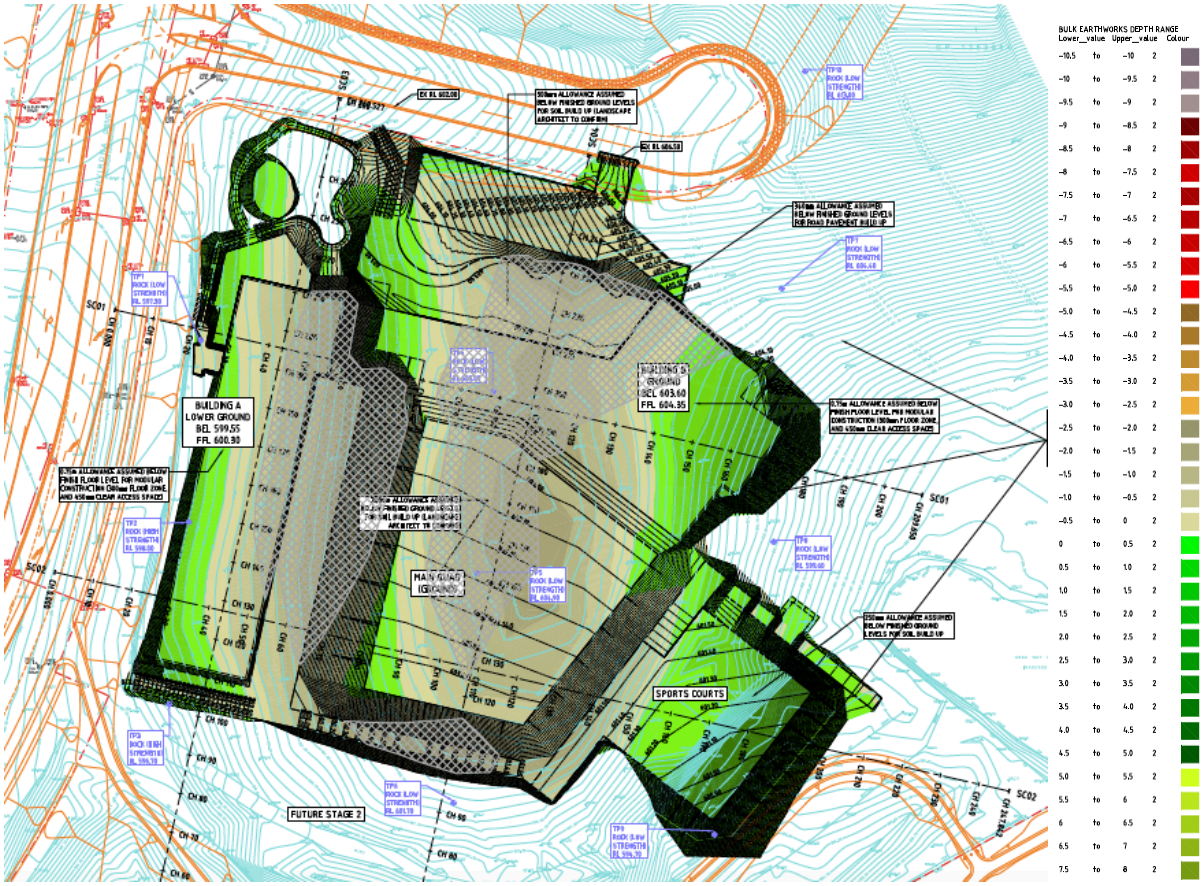


Figure 3-1 Bulk earthworks plan
Source: M+G Consulting

3.3 Built form and design

3.3.1 Layout

The proposed layout consists of two buildings, namely Building A and Building B, organised in an L-shape around a main quad.

Building A is two to three storeys in height and is L-shaped, with one winge oriented north-south along Environa Drive and the wing oriented east-west along the future north road. Building B is two-storey in height and is positioned to the east of Building A, forming an extension of the L-shape.

The L-shape layout has been chosen as it:

- Protects the main quad from undesirable winter winds.
- Frames the high point of the site on two sites, giving structure to the high point of the site while retaining a sense of openness to the expansive views towards the south.
- Responds to the street corner context.
- Consolidates the buildings together efficiently, allowing for future expansion.

Building A contains the administrative facilities and learning spaces, while Building B contains a gym/hall and canteen.

A site plan is provided below.

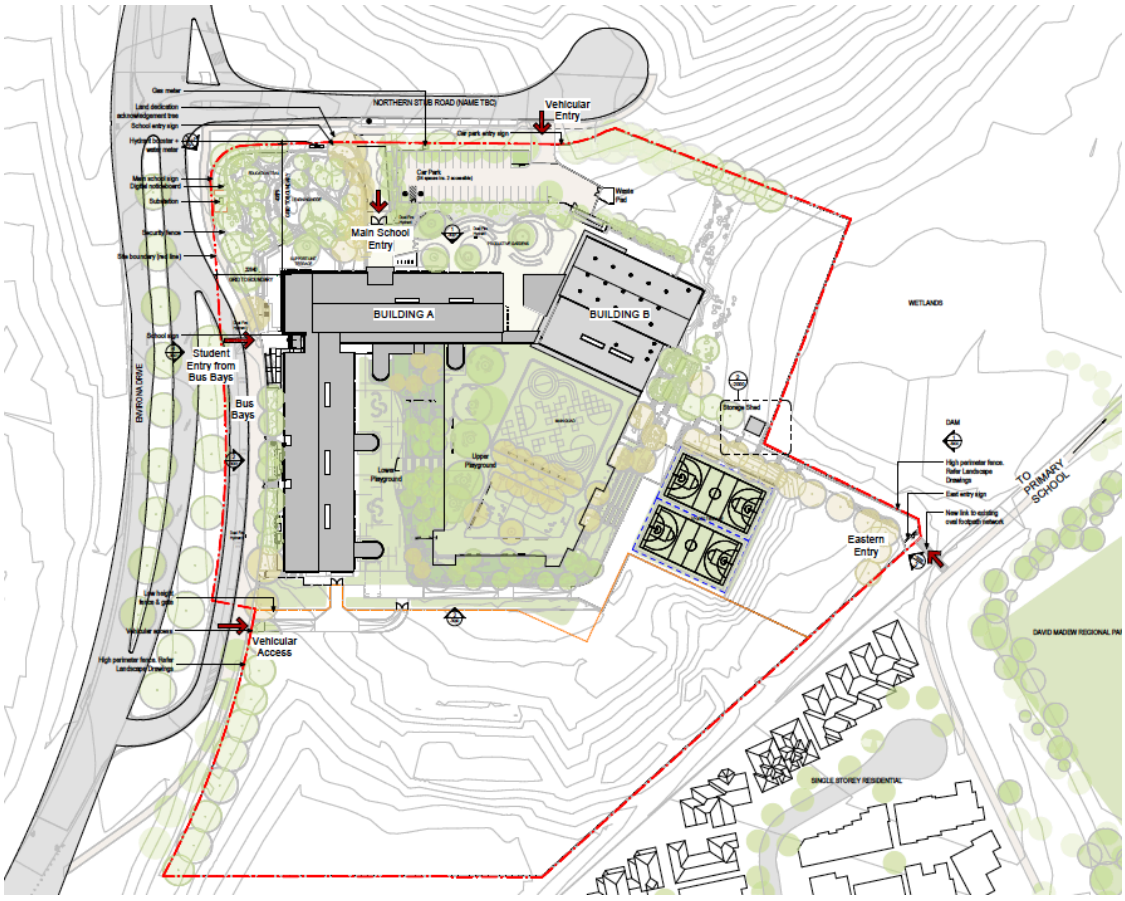


Figure 3-2 Site plan
Source: TKD Architects

3.3.2 Height, bulk and scale

The bulk and scale of the proposed buildings respond to the natural topography, with the buildings stepping down the slope towards the west and south.

Breaks in the built form have been made, to allow visual and physical permeability, and to further break down the building mass.

The design of finishes, including external screening and sunshades, create a visual rhythm on the facades which divides up the length of the buildings.

Vertical circulation, such as the several sets of stairs and the lift are expressed externally, to further divide the built form.

The design's approach to bulk and scale is illustrated in the 3D diagrams below. Further commentary on the subject is provided at section 2.3 of TKD's Architectural Design Report at Appendix 3.

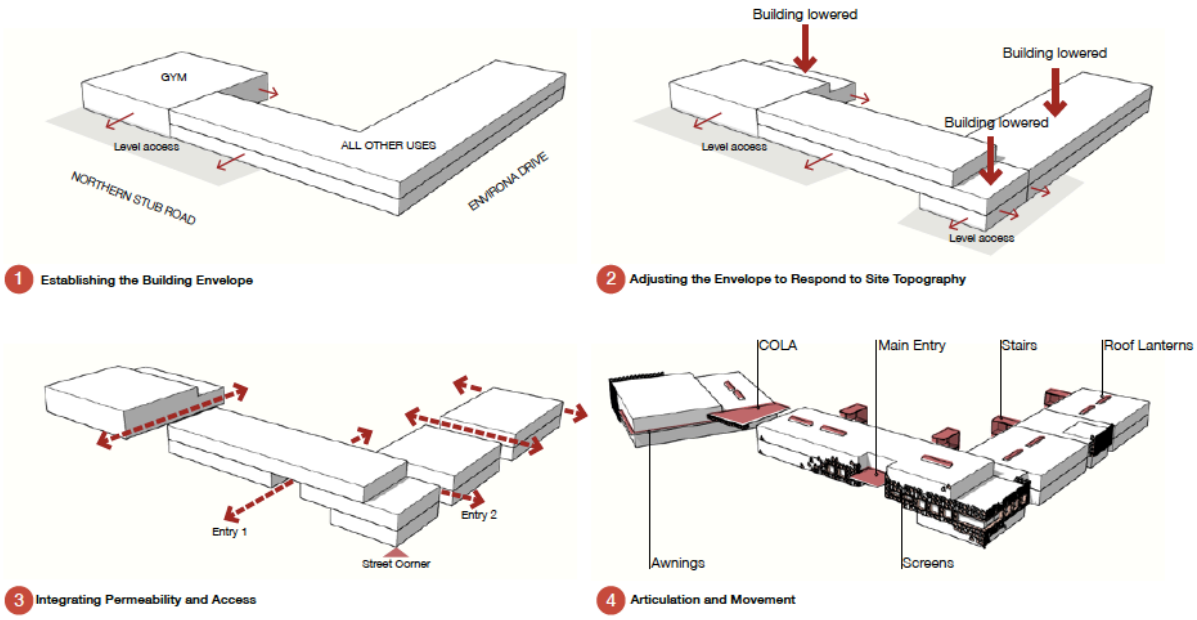


Figure 3-3 Building morphology – 3D views
Source: TKD Architects

3.3.3 Density

The proposal has a GFA of 6,645m^2. This density is a function of the required building area under the Educational Facilities Standards & Guidelines (EFSG), as well as a response to height limits, the environmental constraints of the site and the need for proximity between learning spaces throughout the school.

The proposal easily complies with the site's 1:1 FSR standard. This is discussed further at section 5.7 of the EIS.

3.3.4 Setbacks

The proposal features the following setbacks from the boundaries:

- **Northern boundary (future north road):** The Building A façade is set back from the northern boundary by 44m. This large setback allows for an appropriate civic presence and entry sequence/experience. Building B is set back approximately 38m from the northern boundary and is positioned at an angle so that it does not face the road directly.

- **Southern side boundary:** Building A is set back from the southern boundary by approximately 101m and from the south-eastern boundary by approximately 117m, providing ample separation from the neighbouring residential development.

- **Western boundary (Environa Drive):** Building A is set back from Environa Drive by 22m, which incorporates a bus bay, 6m-wide paved footpath and green planted buffer zone.

- **Eastern side boundary:** Building B is set back from the wetland to the east by 37m, allowing an appropriate green buffer between the school buildings and wetland.

3.3.5 Façade and articulation

The elevational treatment of each building includes facade treatments that bring a fine-grain appearance to the buildings. Generally, the facade composition for each component responds to the surrounding development, urban context and unique environmental conditions.

The facades are proportionally longer than they are tall. Breaking the building lengths vertically is therefore the most effective way to modulate the perceived scale of the buildings.

Building A is broken down into a series of "neighbourhoods", with the size of each neighbourhood based loosely on the area required to accommodate six GLSs. The mass is then further broken down by a series of articulating devices, including vertical sun shading and floor-to-ceiling glazing accentuating the vertical direction. Form follows function, in that the teaching spaces can be read externally as they all utilise this facade typology. Key locations around the building have increased visual emphasis via use of a decorative "moth" screen, in reference to the Golden Sun Moth habitat located on site and the surrounding area.

Building B utilises the same articulation tools but adapts them to be more suitable for the gym use. High level windows and glazed tilt-up doors give a sense of openness and indoor/outdoor connectivity. The decorative screen wraps the north-eastern corner of the building so that Building B ties into the overall aesthetic of the school and the moth motif is visible from the eastern residential neighbourhoods.

3.3.6 External materials and finishes

The surrounding landscape has provided the key point of departure for the materials palette concept. Materials have been selected for their natural tones and textures, as well as for durability and maintenance characteristics.

The Modern Methods of Construction (MMoC) methodology adopted for the project has also required materials to be lightweight and easily transportable.

Through-coloured fire cement cladding forms the primary cladding material and is selected to meet the above characteristics, provide for low embodied energy and provide an earthy quality and colours, responding to the natural surrounding landscape.

The feature screen around the building is prefinished, folded and perforated aluminium folded into abstracted moths and is intended to communicate the importance of moths to the local ecology and Indigenous stories.

Metal roofing has been selected for its durability and given the roof pitch has been minimised to keep the building appearing low-lying in the landscape.

Trellises are used around the facades to bring landscape onto the building and to integrate the school further with the aesthetic of the site.

Inspiration images and cladding materials are shown below.

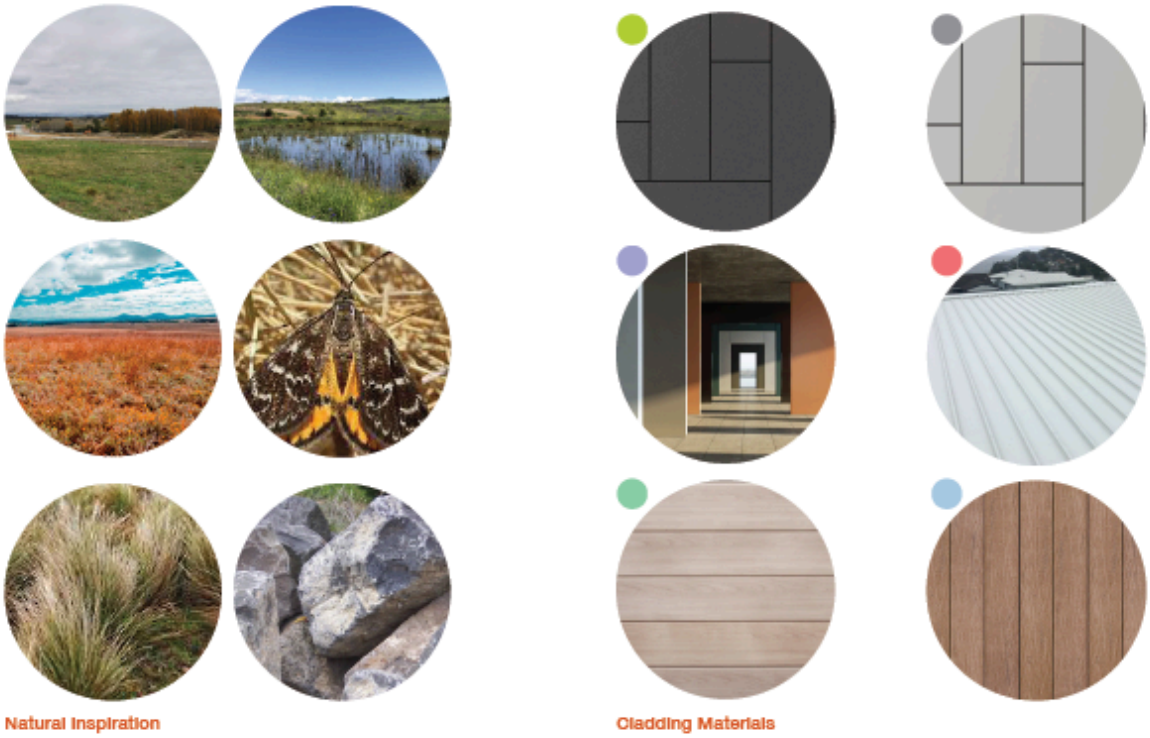


Figure 3-4 External materials and finishes board
Source: TKD Architects

3.3.7 Relationship to surrounding development, topography and streetscape

Relationship to surrounding development

The main Building A forms an L-shape aligned with the adjoining roads (Environa Drive and future north road). This alignment provides a suitable public address for the school and integrates the school with the emerging urban grain.

The school buildings are well set back from the southern and western boundaries, providing significant separation between the adjoining wetlands and adjoining residential area.

Relationship to topography

Being a sloping site, the natural topography was considered from the very early stages of the design. The buildings frame the high point of the site and allow for views out to the south and west.

A reasonable balance of cut-and-fill has been sought, with 3D modelling and the analysis of several options undertaken by the civil engineer. This information informed the finished floor levels for the project as well as the arrangement of

landscape terracing. The section drawings below demonstrate a close relationship between the existing ground level and the proposed finished floor levels.

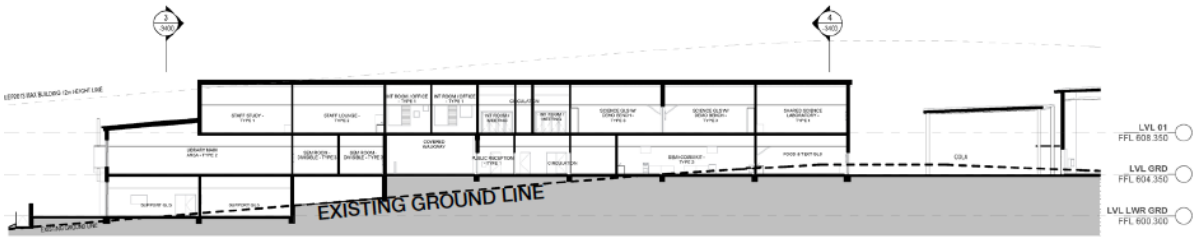


Figure 3-5 Building A section through east-west wing
Source: TKD Architects

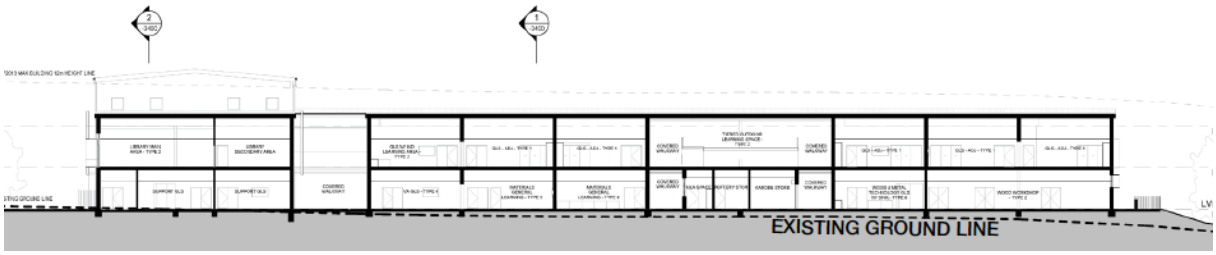


Figure 3-6 Building A section through north-south wing
Source: TKD Architects

Relationship to streetscape

When viewed from Environa Drive, the buildings relate well to the topography, with the lower ground and ground floors in the foreground, and the first floor set back so that it visually recedes. When looking to the northeast from Environa Drive, the buildings respond to the alignment of the road, setting up a new urban edge which is likely to be in keeping with future development of the business park along the road.

The setback from the north road provides a generous green forecourt to the school. The building mass recedes with the pedestrian entrance and landscape response being the main focus.

3.3.8 Services

Waste and other services have been considered in the design of the proposal, with specialist consultants engaged from an early stage of the project. Services have been designed to have minimal visual impact on the building aesthetic.

Refer to section 4 of the Architectural Design Report at Appendix 3 for further detail.

3.3.9 Access to daylight, ventilation and acoustic separation

The design utilises a combination of passive and mechanical measures to ensure the amenity and comfort of students and staff.

The design of facades respond to the local climate including sun, wind and aspect to minimise peak heat loads in summer and use passive heating in the winter. The design achieves high levels of daylight through skylights and windows, and provides line of sight to high-quality external views.

In regard to ventilation, a mixed mode strategy will be utilised. When external conditions are favourable, windows to the learning spaces can open to facilitate natural ventilation.

In regard to acoustic separation, the buildings have been arranged to provide amenity both for students and neighbouring uses. Given the significant separation distances, the proposal will not impact the acoustic amenity of adjacent residences. Refer to section 7.9 of this report further discussion.

3.3.10 Access to landscape and outdoor spaces

The proposal features a landscape design with ample outdoor spaces including main quad area, sports courts, productive garden and other gathering places. The landscaping is integrated with the building design, ensuring students have easy and frequent access to outdoor spaces. The landscape design is described further in section 3.4 below.

3.4 Landscaping

A landscape plan has been prepared by Context and is attached at Appendix 4 The landscape strategy includes four different levels, reflective of the site's sloping topography, including:

- Upper terrace, which includes the main school entry, productive garden and main quad.
- Lower terrace, which provides access to Building A and the hard paved outdoor space for students in front of the building.
- Sports court.
- Car park.

All terraced outdoor spaces are connected by flights of stairs and ramps to provide full accessibility for all abilities. The embankments between the levels are planted with native grasses, shrubs and trees.

Key features include shade tree plantings, productive garden with raised planter beds and seating opportunities, semi enclosed outdoor learning areas, garden beds, shade trees, open play spaces, planted embankments and tiered seating.

The multifunctional main quadrangle will act as a circulation, breakout and play space for the school. Covered walkways, covered outdoor learning spaces and canopy trees throughout the campus provide protection from the sun and rain.

A total of 160 trees are proposed, including a mix of native and exotic trees. The total mature canopy tree coverage will be approximately 18.2%, a significant improvement over the site's current nil canopy coverage.

The proposed landscape masterplan is shown in the figure below.

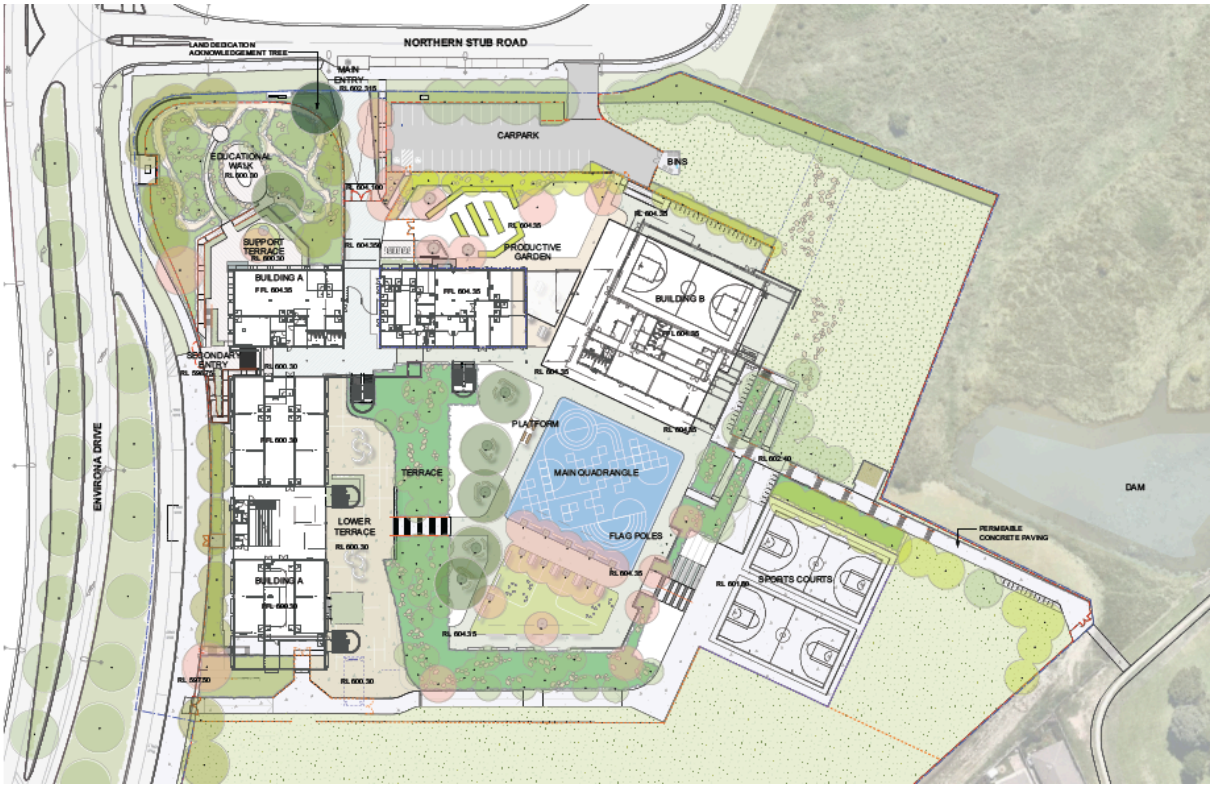


Figure 3-7 Landscape plan
Source: Context

3.5 Security fencing

The proposed campus is located within secure private grounds and protected by an EFSG-compliant 2.1m-high palisade fence and gates.

Fencing lines have been set back from the northern stub road and Environa Drive intersection boundary with low level planting in front so that their visual impact is reduced.

Lower internal fences separate the currently used and developed outdoor school spaces from the car park and the grassland areas within the school grounds.

A 2.4m-high chainwire fence has been proposed around three sides of the sports courts for ball control, while the western side remains unfenced to allow for unrestricted viewing and access from the tiered seating.

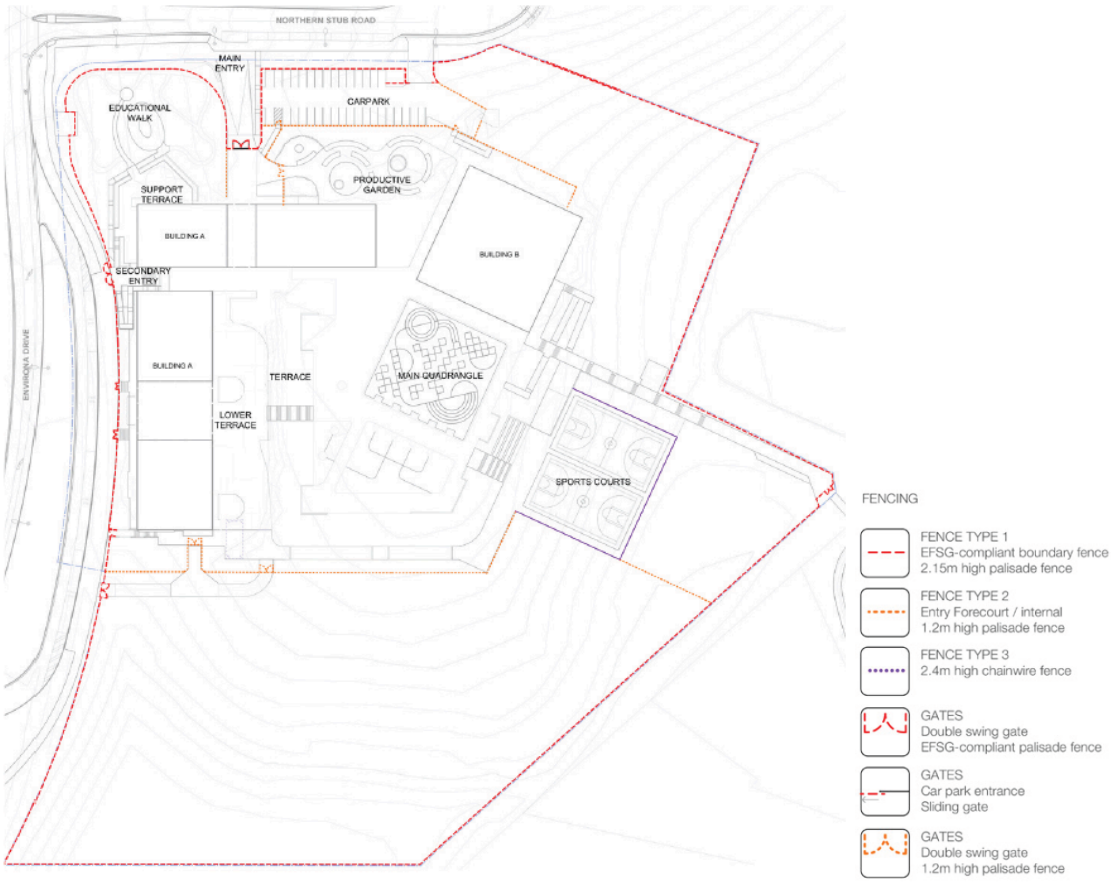


Figure 3-8 Fencing plan
Source: Context

3.6 Access, parking and servicing

3.6.1 Vehicles

The car park is located in the north of the site, easily accessible from the future north road. The car park is fenced, with planting around the outside of fence as a visual buffer. A total of 34 staff car spaces are provided in the car park, including two accessible spaces.

The waste collection area is inside the car park, adjacent the main entry for ease of collection.

Deliveries to the canteen, gym food technology and administration facilities can all occur from the car park, while deliveries to the wood and metal workshop are better serviced from the bus bay via a temporary loading zone for use only when buses are not utilising the bay.

Additionally, a separate vehicle access will be provided from the bus zone for deliveries to the wood and metal store. This access will be fenced and physically separated from the high school.

Emergency vehicular access has also been considered. Two entrance points are provided due to the division of the site in upper and lower levels.

Car pick-up/drop-off will occur via eight bays along the north road. Bus pick-up and drop-off will occur via a dedicated bus lane along the Environa Drive frontage.

An access diagram is shown below.

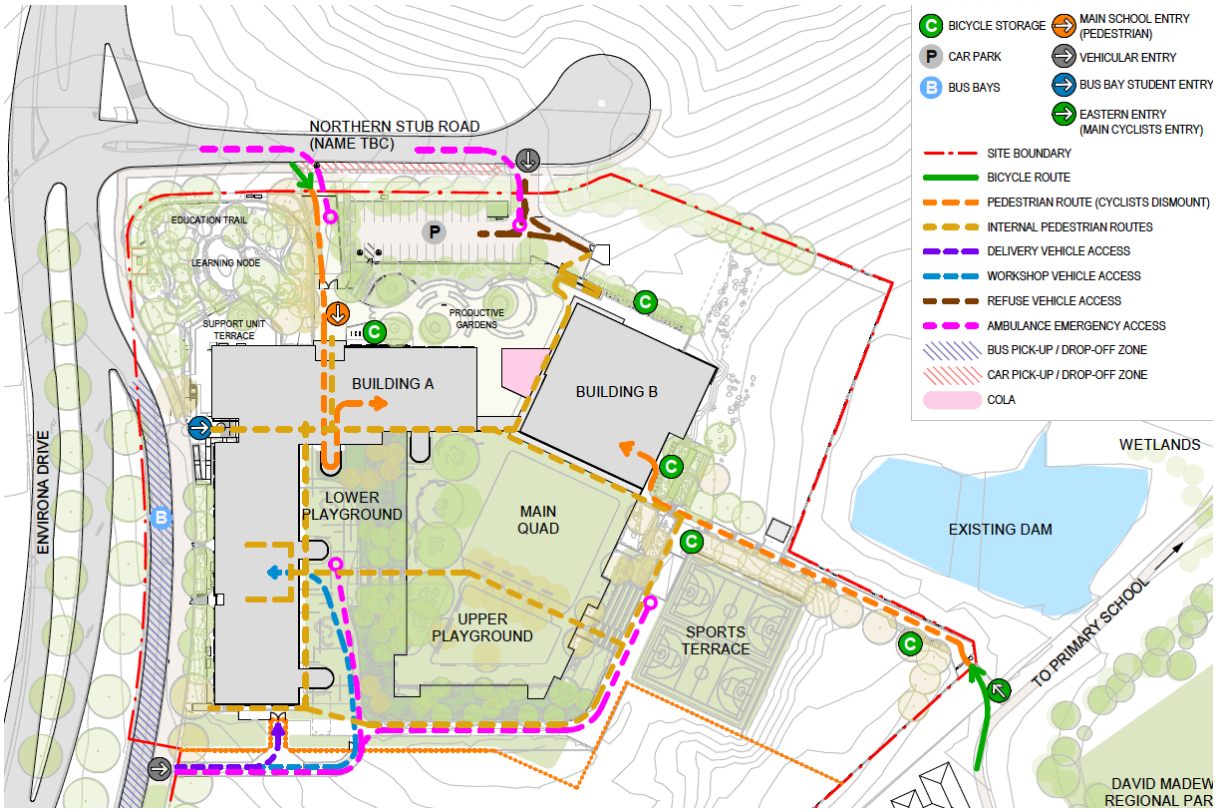


Figure 3-9 Access diagram
Source: TKD Architects

3.6.2 Pedestrians and bicycles

The proposal features the following two main entries for pedestrian, scooter and bicycle access:

- Main entry off the north road connecting to a future separated shared path along Environa Drive.
- Eastern entry off the existing shared path to the south of the site near David Madew Regional Park.

Also, a separate student entry from the bus zone is provided along the western boundary.

These entry points are identified in the access diagram at Figure 3-9 above.

3.7 Staging

There are currently no plans for staged construction or occupation. However, it is understood that staged construction or occupation could occur subject to preparation of a Staging Report in accordance with standard conditions of consent.

3.8 Construction

Construction of the proposal will be undertaken during the following hours:

- Monday to Friday: 7:00am to 6:00pm.
- Saturdays: 8:00am to 5:00pm.
- No work on Sunday and public holidays.

Construction is anticipated to commence in early 2022 and be completed in early 2023.

Approximately 107 construction jobs will be created during construction.

3.9 Operational details

The school will accommodate up to 500 students and employ approximately 44 staff.

The school is expected to commence operation in 2023.

The school will operate from 8:00am to 5:00pm Monday to Friday.

Out of hours community events may be held in the hall/gym from 8:00am to 10:00pm on Saturday, Sunday and public holidays, subject to a shared use agreement.

3.10 Signage

The proposal seeks consent for five school identification signs as detailed below:

- One digital pylon sign located at the north-western corner of the school. This signage will extend approximately 4.17m above ground and have a display area of 1.8m x 1m.
- Two signs located on the perimeter fence around the north-western corner. This signage will comprise lettering affixed to the fence, with each sign approximately 900mm high.
- One sign located on the perimeter fence at the east pedestrian entry. This signage will comprise lettering affixed to the fence, approximately 400mm high.
- One wall sign located on the west elevation of Building A, above the student entry from the bus bays. This signage will have an area of 6.28m x 1.5m.

The signs are illustrated in the figures below.

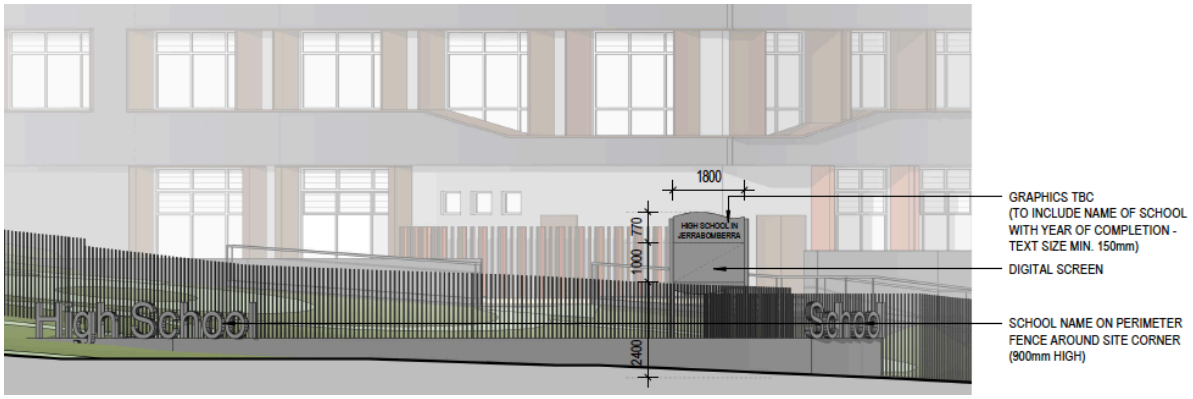


Figure 3-10 North-western corner signage
Source: TKD Architects

Figure 3-11 West elevation entry signage
Source: TKD Architects

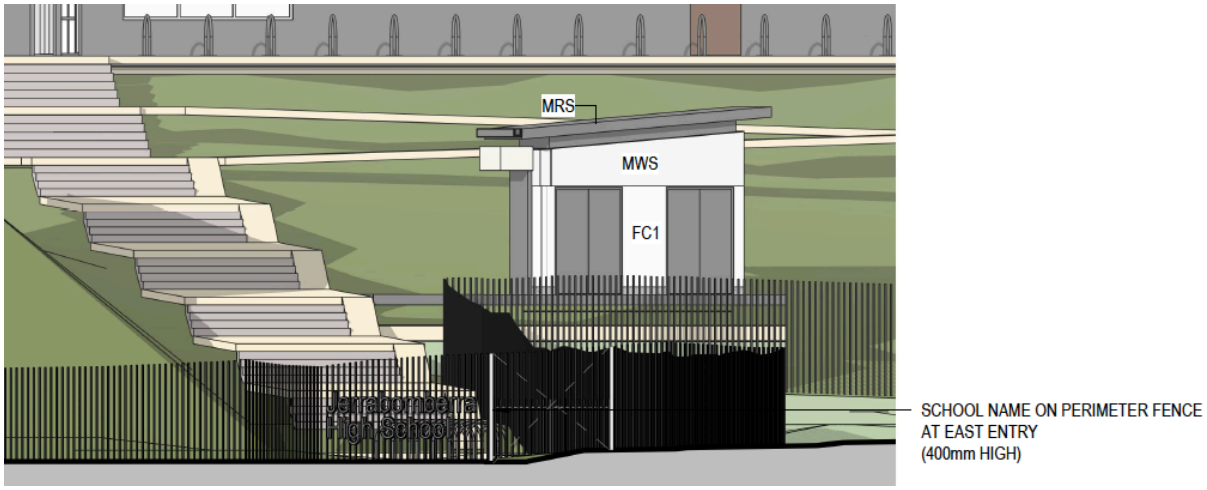


Figure 3-12 East pedestrian entry signage
Source: TKD Architects

3.11 Joint use agreement

Student recreation needs can generally be met on site. In the future, playing field access for students will be facilitated via a joint use arrangement for David Madew Oval. The joint use agreement is subject to ongoing discussions and agreement with Council and DoE, and is being progressed outside of the SSD process.

School facilities including the hall and sports courts may be used by the community after hours subject to future joint use agreements. Future joint use agreements would be subject to discussion and agreement between DoE, Council and community groups, and would be progressed outside the SSD process.

3.12 Off-site active transport infrastructure upgrades

The proposal includes the following upgrades to the surrounding active transport network to facilitate safe and convenient access to the school:

- New pedestrian crossing across the future north road at its intersection with Environa Drive.
- New pedestrian crossing on Jerrabomberra Parkway between Coachwood Avenue and Bicentennial Drive.
- New footpath on the western side of Jerrabomberra Parkway north of the new crossing.
- Widening of Coachwood Avenue to 2.5m to support a shared path on the southern side of the road.
- Widening of the shared path at the end of Coachwood Avenue to 2.5m.

Refer to section 3.2.2 of the Transport Assessment at Appendix 5 of this EIS for further detail.

4 Strategic context

The proposal is consistent with the relevant planning provisions, goals and strategic planning objectives in relevant planning policies, as outlined in the table below.

Table 4-1 Assessment against strategic plans

Strategic plan	Purpose
NSW State Priorities	The 14 NSW State Priorities were unveiled in 2019 to provide a framework for economic growth, infrastructure delivery, service provision, and community wellbeing and safety across NSW. The proposal seeks to construct a new school to expand enrolment capacity in the area. Through its provision of important educational services, the proposal supports the priority of "improving education results". The other priorities are generally not relevant given the proposal's nature and location.
State Infrastructure Strategy 2018 – 2038 Building the Momentum	The State Infrastructure Strategy is a 20-year infrastructure investment plan for the NSW Government that places strategic fit and economic merit at the centre of investment decisions. The Strategy's strategic objective for education infrastructure is to "Deliver infrastructure to keep pace with student numbers and provide modern, digitally-enabled learning environments for all students". The Strategy primarily relates to addressing enrolments in schools, which are expected in to increase by 25% over the next 20 years. The proposal is consistent with the Strategy's relevant objective in that it provides for a new educational establishment incorporating best-practice approaches to education. The proposal also meets growing demand for high school enrolment in the region.
Future Transport Strategy 2056	The Future Transport Strategy 2056 is an update of the NSW Long Term Transport Masterplan. It sets the 40-year vision, directions and outcomes framework for transport customer mobility in NSW. The Strategy will be delivered through a suite of accompanying plans, including Services and Infrastructure Plans and issue-based or placed-based Supporting Plans. The proposal encourages active transport, which is assisted by the school's proximity to existing residential areas and future business park. There are no other specific objectives or actions in the Strategy directly relevant to the proposal.
Crime Prevention Through Environmental	The proposal has been assessed against the four key principles of CPTED including surveillance, access control, territorial

Strategic plan	Purpose
Design (CPTED) Principles	reinforcement and space management. Refer to the CPTED Report at Appendix 25 for further discussion.
Better Placed: An integrated design policy for the built environment of New South Wales (GANSW, 2017)	This policy sets out the NSW Government's position on design in the urban environment. It provides clarity on what the NSW Government means by good design and functions to assist in the design and assessment of projects. The policy includes seven applicable objectives: • Better fit – contextual, local and of its place; • Better performance – sustainable, adaptable and durable; • Better for community – inclusive, connected and divers; • Better for people – safe, comfortable and liveable; • Better working – functional, efficient and fit for purpose; • Better value – creating and adding value; and • Better look and feel – engaging, inviting and attractive. In accordance with these objectives, the proposal is sustainable, functional, sensitive to its context and visually distinctive. Notably, the design has been reviewed by the State Design Review Panel (SDRP) as discussed at section 6.2.1 and **Appendix 2** of the EIS.
Healthy Urban Development Checklist	The purpose of the Healthy Urban Development Checklist is to assist health professionals in providing advice on urban development proposals. The proposal is consistent with the Checklist as it will provide for a new development characterised by well-designed open spaces, quality environment, opportunity for social cohesion, healthy food and high-quality learning facilities.
Draft Greener Places Design Guide	The Draft Greener Places Policy aims to guide the planning, design and delivery of Green Infrastructure in urban areas across NSW. The Policy is centred around the following four guiding principles: • Principle 1 – Integration; • Principle 2 – Connectivity; • Principle 3 – Multifunctionality; and • Principle 4 – Participation. In accordance with these principles, the proposal successfully integrates building form and green open space; provides for a series of accessible connected open space; features multifunctional green space that simultaneously provides environmental performance and enhances facility amenity;

Strategic plan	Purpose
	and incorporates the needs of various stakeholders including students, staff, community and local Aboriginal stakeholders.
Koala Habitat Protection Guideline	Impact on Koala Habitat is discussed in the Biodiversity Development Assessment Report (BDAR) Appendix 9 of the EIS. Capital Ecology confirm that the site is located over 6km from the nearest Koala records, with significant urban development between the site and records. The subject site is considered unlikely to support koala habitat now or into the future.
NSW South East and Tablelands Regional Plan 2036	The South East and Tablelands Regional Plan 2036 is the NSW Government's strategy for guiding land use planning decisions for the region over the next 20 years. The regional plan sets out four strategic goals for the region: • A connected and prosperous economy. • A diverse environment interconnected by biodiversity corridors. • Healthy and connected communities. • Environmentally sustainable housing choice. Key relevant directions from the plan are addressed below. *Direction 21: increase access to health and education services* The proposal is consistent with this direction by providing for a new high school that responds to demand and considers the specific needs of the local student population. *Direction 22: Building socially inclusive, safe and healthy communities* The proposal is consistent with this direction by locating a new school in a central location that will contribute to a walkable neighbourhood.
Queanbeyan-Palerang Local Strategic Planning Statement – Towards 2040 (LSPS)	The LSPS sets a 20-year vision for Queanbeyan-Palerang. A series of land-use planning priorities are identified to inform the direction and content of the LSPS. The LSPS states that families should have the choice for the children to attend local primary and secondary schools within the town. The site is identified as part of an 'education precinct' in the 'West Jerrabomberra innovation Precinct Concept Plan'. Specific actions identified for Jerrabomberra include: • Zone land and construct new Regional Sports Facility at West Jerrabomberra and construct enabling infrastructure. • Finalise Jerrabomberra Innovation Precinct Local Planning Agreement.

Strategic plan	Purpose
	• Council to construct enabling infrastructure to release recreational, business and residential land at West Jerrabomberra and South Jerrabomberra. The school will support the growth of the West Jerrabomberra Precinct and surrounding residential areas.
Queanbeyan-Palerang Community Strategic Plan 2018-2028	Council's Community Strategic Plan is a high-level aspirational plan that identifies the community's main priorities and aspirations for the future, and the strategies for achieving these. The Plan is structured around five key pillars, namely community, choice, character, connection and capability. There are no actions in the Plan directly relevant to the site or school development, but the proposal aligns with the following key goals: • 1.1 We build on and strengthen our community cultural life and heritage. • 1.4 We are a learning community. • 1.5 We have an active and healthy lifestyle. • 3.1 We consider the environmental impacts of future development. • 3.2 Our region's urban landscapes are well managed and maintained promoting community pride. • 3.3 Our natural landscape and water resources are sustainability managed. • 3.4 We actively promote and implement sound resource conservation and good environmental practice. • 3.5 We ensure ethe future planning for the regional is well coordinated and provides for its sustainable management.
South Jerrabomberra Structure Plan	The purpose of the Structure Plan is to inform the development of South Jerrabomberra over a 25-year period, specifically in its provision of infrastructure, and to aid it being delivered in a logical and efficient manner. The site is identified as 'Employment and Potential Employment Land'. It is noted that more recently, the LSPS identified the site within an education precinct.
QPRC Integrated Transport Strategy 2019	The Strategy provides direction for transport; including the public transport, cycling and footpath networks and links, heavy vehicle management, future road planning and regional integration with the ACT and the broader NSW. The proposal aligns with the general goal of creating well connected communities, as the school will provide pedestrian

Strategic plan	Purpose
	connections to the adjoining business park and residential areas.

5 Statutory context

5.1 Planning approval pathway

The SRD SEPP nominates certain types of development as either State significant development (SSD), State significant infrastructure or regionally significant development.

Under clause 15(1) of Schedule 1 of the SRD SEPP, development for the purpose of a new school, regardless of the capital investment value, is categorised as SSD.

The proposal is for the purposes of a new school and is therefore classified as SSD. The consent authority under section 4.5 of the EP&A Act is the Minister for Planning and Public Spaces or their delegate.

The EP&A Act establishes the assessment framework for the proposal. Section 4.12(8) requires that a development application for an SSD be accompanied by an EIS prepared by or on behalf of the applicant in the form prescribed by Schedule 2 of the Environmental Planning and Assessment Regulation 2000.

5.2 Permissibility

The site is zoned part B7 Business Park and part RE2 Private Recreation under the Queanbeyan (West Jerrabomberra) Local Environmental Plan 2013 (the LEP). Educational establishments are permitted with consent in the B7 zone but prohibited in the RE2 zone. Nonetheless, pursuant to clause 2.1 (in conjunction with Schedule 1) of the LEP, the entire site is subject to an additional permitted use clause that allows for educational establishments to be carried out on the land with development consent.

The figure below shows the LEP's Additional Permitted Uses (APU) map. The school site comfortably sits within the area marked "1" on the APU map.

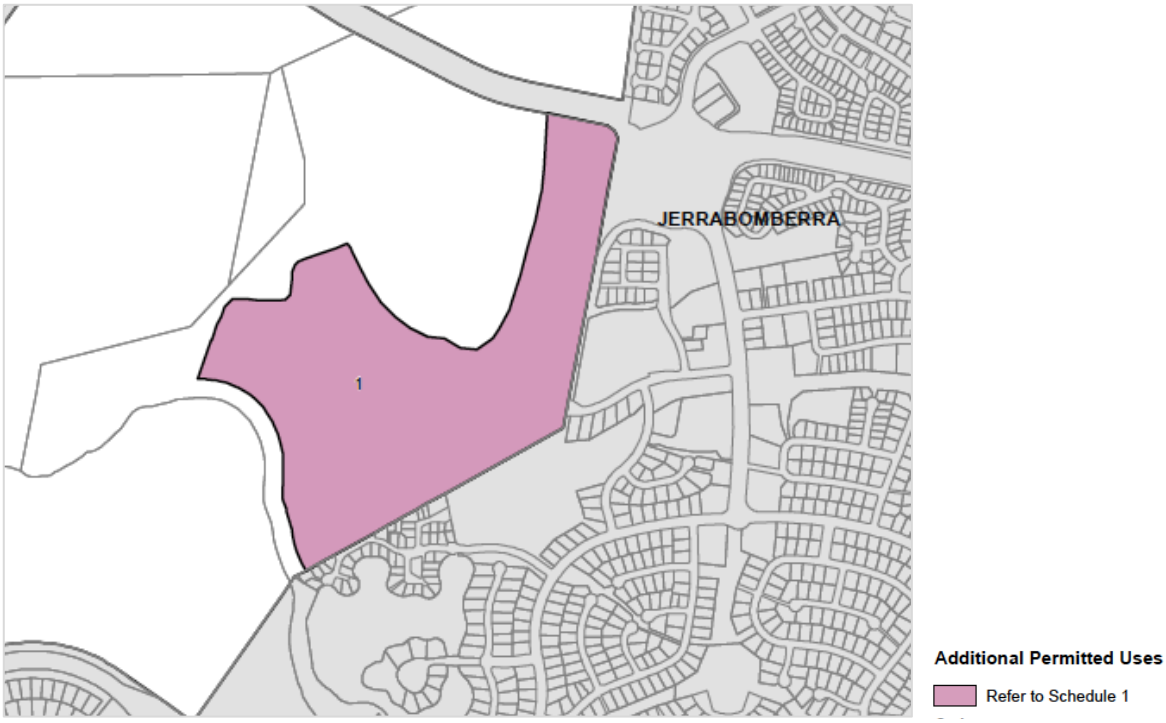


Figure 5-1 Additional permitted uses map
Source: Queanbeyan LEP (West Jerramomberra) 2013

5.3 EPBC Act

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is federal legislation that provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places defined as "matters of national environmental significance" (MNES). A referral must be made to the Australian Government Minister for the Environment for actions that are likely to have a significant impact on MNES.

Land within the overall Poplars development area contains biodiversity values listed as MNES pursuant to the EPBC Act.

As confirmed by the BDAR (Appendix 9), the proposed development is unlikely to have a significant impact on EPBC Act listed flora or ecological communities given the development footprint does not support any EPBC Act listed flora species or support any EPBC Act listed ecological communities. However, the proposed development will impact 1.46ha of Golden Sun Moth habitat, a threatened species listed under the EPBC Act.

The impact of all stages of the Poplars development area on MNES was referred to the Commonwealth Department of Agriculture, Water and Environment (DAWE) on 28 September 2020 (EPBC Act Referral No. 2020/8801), and the development was determined to be a controlled action. The school site was included in the referral to DAWE.

The Poplars referral to DAWE has now been approved. A number of conditions must be satisfied before works can commence, including works at the school site.

5.4 NSW Biodiversity Conservation Act 2016

The NSW Biodiversity Conservation Act 2016 (BC Act) outlines the NSW framework for addressing impacts on biodiversity from development and clearing.

The BDAR by Capital Ecology (Appendix 9) confirms that the development footprint does not support vegetation with a vegetation integrity score sufficient for its clearance to result in generation of ecosystem credits. Accordingly, the proposed development does not generate an ecosystem credit obligation.

The proposed development will, however, involve the clearance of 1.46ha of threatened species habitat (Golden Sun Moth), which generates an offset obligation of nine species credits. Notwithstanding, the entire offset obligation has been met as the nine credits were purchased in accordance with the relevant condition of consent of the subdivision DA for the site (332-2015).

5.5 EP&A Act

The table below provides consideration of the proposal in the context of the objects of the EP&A Act.

Table 5-1 Objects of the EP&A Act

Objects of the EP&A Act	Comments
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources	The proposal will promote social and economic welfare in Jerrabomberra without significant adverse environmental impacts.
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The proposal incorporates a number of ESD measures outlined in section 7.5 of the EIS. The proposal is targeting a 4 Star Green Star rating.
(c) to promote the orderly and economic use and development of land	The proposal promotes the orderly and economic use of land by placing a new school on relatively unconstrained land adjacent to an existing urban area.
(d) to promote the delivery and maintenance of affordable housing	This objective is not applicable to the proposal.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats	The proposal involves the clearance of 1.46ha of threatened species habitat (Golden Sun Moth), generating an offset obligation of nine species credits. As noted by Capital Ecology in the BDAR at Appendix 9 of the EIS, the entire offset obligation for the proposed development has been met

Objects of the EP&A Act	Comments
	as the nine credits were purchased as part of the facilitating subdivision DA for the site (DA332-2015).
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	The built and cultural heritage (including Aboriginal cultural heritage) of the site and adjoining properties has been considered as part of this EIS. As discussed in sections 7.6 and 7.7 of the EIS, the proposal would have no unacceptable heritage impacts.
(g) to promote good design and amenity of the built environment	As discussed in section 7.1 and Appendix 3, the proposal features a high-quality, purpose-built design that provides high amenity for users.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants	The proposal has been designed in compliance with relevant Building Code of Australia (BCA) and Disability Discrimination Act 1992 (DDA) standards for building construction.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State	Prior to lodgement, consultation was carried out with a range of State government agencies and Council as detailed in section 6 of this EIS. Also refer to the consultation report at Appendix 23.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	The local community and other stakeholders were consulted prior to lodgement as discussed in section 6 of this EIS, and the community will be able to provide further input during the formal exhibition process.

5.6 State Environmental Planning Policies

5.6.1 Education SEPP

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) *2017* (Education SEPP) aims to provide a state-wide framework for delivery of education facilities.

Clause 57 of the Education SEPP requires that new school development resulting in an additional 50 or more students be referred to TfNSW for comment. This clause also requires consideration of accessibility of the site and potential traffic safety, road congestion and parking implications. These matters are addressed at section 7.3 of the EIS and in the Transport Assessment at Appendix 5.

Clause 35 requires consideration of the design quality principles in Schedule 4. These principles are addressed in the Architectural Design Report by TKD Architects at **Appendix 2**, and a summary is provided below.

Principle 1: Context, built form and landscape

The proposed design is based on information drawn from the site analysis and urban design principles to ensure the project responds to the context and is site- and community-specific.

The locality is undergoing transition, with new roads under construction and a small retail precinct to north of the site recently completed. Despite no detailed approvals for surrounding development, it is expected that future development will consist of large-format floor plates with one to two storeys, as well as open space grasslands.

School buildings have been located to the north of the site adjacent to the future business uses, with significant landscape space provided between the school buildings and adjoining grasslands and low-density residential development.

The scale of the school at two to three storeys is in keeping with the expected future built form and responds to the site's sloping topography, nesting within the surrounding landscape.

Principle 2: Sustainable, efficient and durable

The proposal has been designed with regard to the principles of environmentally sustainable development. The buildings' location, orientation, sun shading and passive thermal design elements are the first step to creating a sustainable building solution. This is further enhanced by the adoption of design elements including passive design, energy and water efficiency, best practice waste and recycling principles, and the promotion of active and sustainable transport nodes.

Principle 3: Accessible and inclusive

The site has been designed to provide an accessible and inclusive ground plane such that buildings are all served by ramps and/or lifts, catering for the complexity of the existing site topography. The design of the quadrangle aims to provide walkway transitions between the various areas. This creates equitable access for all users. The site layout is clear and simple, promoting easy and direct circulation. This will be enhanced by clear wayfinding signage.

Principle 4: Health and safety

The design ensures that natural light, ventilation and acoustics create healthy and safe learning/teaching environments. The landscaping of the site and arrangement of the fence assist in integrating the school into the site and public domain. Several Crime Prevention Through Environmental Design strategies have been adopted, including securing the site with 2.1m high palisade fences, the layout of the building around the quadrangle to provide natural surveillance and entry forecourts strategically located to limit entry points to activate parts of the campus.

Principle 5: Amenity

The school has been designed to have a considerate and desirable visual impact on the neighbouring streets and communities. Its massing has been minimised and based on the natural topography, and its form has been broken down into proportional elements. The materials palette ties into the natural landscape.

The new buildings are located away from neighbouring residential properties. New timber lap and cap fencing to the adjoining residential boundaries and a landscape buffer will be provided. Shadow diagrams have been prepared for the proposed development. These diagrams largely demonstrate that the shadow impacts of the proposed development to neighbours have no adverse impact throughout the year.

Principle 6: Whole of life flexible and adaptive

The new High School in Jerrabomberra is designed to be flexible and adaptable. Learning and breakout spaces are designed with large, glazed sliding doors to provide connections and opportunity for flexible learning environments that can accommodate individual classrooms or co-teaching models.

The project has been designed to consider a whole of life cycle approach in consideration of a wider public and environmental benefit over time. The school site and masterplan allow opportunity for expansion and connectivity if additional learning spaces are required in the future

Principle 7: Aesthetics

The existing context is in a period of transition due to its position within a new business park subdivision. The building responds to the changing character by providing an urban edge to the new street frontages and a landscape edge to the grasslands and existing residential neighbourhoods.

The facade composition for each component of the school campus has been developed in accordance with the design guidelines and development parameters established for the project. Generally, the facade composition for each component responds to the surrounding development, urban context and unique environmental conditions.

The surrounding landscape has provided the key point of departure for the materials palette concept. Materials have been selected for their natural tones and textures, as well as for durability and maintenance characteristics.

5.6.2 Other relevant SEPPs

The proposal's consistency with other relevant current and draft SEPPs is outlined in the table below.

Table 5-2 SEPP assessment

SEPP	Comment
State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)	Clause 15 of Schedule 1 of the SRD SEPP identifies that development for the purpose of a new school (regardless of capital investment value) is SSD. The proposal is for the purposes of a new school and is therefore classified as SSD.
State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)	No clauses of the ISEPP are directly relevant to the proposal. The development is not traffic-generating development under Schedule 3 of the ISEPP and does not adjoin a classified road or other busy road.
State Environmental Planning Policy No 64—Advertising and Signage (SEPP 64)	Five signs are proposed as part of the application as outlined in section 3.10 of the EIS. These signs are consistent with the aims of SEPP 64 in that they are compatible with the desired amenity and character of the area, provide effective communication in a suitable location and are of high-quality design and finish. SEPP 64 contains no detailed controls directly applicable to the proposed signage, and consultation with TfNSW is not required given the size and location of the signage. An assessment against the general criteria in Schedule 1 of the SEPP is provided at Appendix 27 of the EIS. In summary, the signage will have no adverse impacts in relation to character of the area; special areas; views and vistas; streetscape, setting or landscaping; site and building; associated devices and logos; illumination; or safety.
State Environmental Planning Policy No. 55 Remediation of Land (SEPP 55)	Clause 7 of SEPP 55 requires that the consent authority consider whether the land is contaminated and whether it is or can be made suitable for the proposed use. Contamination is discussed in section 7.17 and Appendix 17 and Appendix 18 of the EIS. The contamination assessment has concluded that the site is suitable for the proposed use subject to standard mitigation measures and minor investigations being undertaken.
State Environmental Planning Policy (Koala Habitat Protection) 2021	The Koala SEPP replaces SEPP 44 – Koala Habitat Protection and applies to Queanbeyan-Palerang LGA under Schedule 1. The site is identified within the Central and Southern Tablelands Koala Management area. Impact on Koala Habitat is assessed in the BDAR at Appendix 9 of the EIS. Capital Ecology confirms that the site is located over 6km from the nearest Koala records, with significant urban development between the site and records. The site is therefore considered unlikely to support koala habitat now or into the future.

SEPP	Comment
Draft State Environmental Planning Policy (Remediation of Land)	The Explanation of Intended Effect (EIE) for the draft SEPP was on exhibition from 31 January 2018 until 13 April 2018. The draft SEPP will retain the key operational framework of SEPP 55 and add new provisions relating to remediation works. The proposed new conditions are generally not relevant to the proposal given that no remediation works are proposed.
Draft State Environmental Planning Policy (Environment)	The draft Environment SEPP consolidates and simplifies seven existing SEPPs. The Explanation of Intended Effect (EIE) for the draft Environment SEPP was on exhibition from 31 October 2017 until 31 January 2018. None of the SEPPs to be consolidated are applicable to the proposal.
Draft State Environmental Planning Policy (Educational Establishments and Child Care Facilities)	An EIE has been exhibited for proposed changes to the Education SEPP. The proposed changes focus on resolving operational issues, clarifying provisions and other housekeeping issues. The changes are not directly relevant to this SSD application.

5.7 Queanbeyan (West Jerrabomberra) LEP 2013

The table below addresses key sections of the LEP.

Table 5-3 Queanbeyan (West Jerrabomberra) LEP 2013 assessment

Clause	Comment
Land use table	The site is zoned part B7 Business Park and part RE2 Private Recreation. A zoning map is provided below the table. The proposal's land use is "school", which is a type of "educational establishment". These definitions are provided below: ***educational establishment*** *means a building or place used for education (including teaching), being—* *(a) a school, or* *(b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act.* ***school*** *means a government school or non-government school within the meaning of the Education Act 1990.* Educational establishments are permitted with consent in the B7 zone but prohibited in the RE2 zone.

Clause	Comment
	Nonetheless, the site benefits from an additional permitted use clause (clause 2.5) that permits educational establishments on the site.
Zone objectives	The objectives of the B7 Business Park zone are as follows: • To provide a range of office and light industrial uses. • To encourage employment opportunities. • To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. • To provide for a well-designed business park development that appropriately responds to site constraints and adjoining residential development. The proposal is consistent with the zone objectives in that it provides for a development that is compatible with the locality, providing facilities to meet the day-to-day needs of workers and their families. The objectives of the RE2 private Recreation zone are as follows: • To enable land to be used for private open space or recreational purposes. • To provide a range of recreational settings and activities and compatible land uses. • To protect and enhance the natural environment for recreational purposes. • To preserve the amenity of the existing development in the neighbourhood. The proposal is consistent with the zone objectives in that it contributes to the provision of a range of recreational settings, with the site largely occupied by open space to be used by school students.
2.5 Additional permitted uses for particular land	This clause, in conjunction with Schedule 1 and the Additional Permitted Uses map, permits development for the purposes of education establishments on the site despite the provisions of the land use table.
4.1 Minimum subdivision lot size	LEP mapping identifies the site as subject to a 4,000m^2 minimum lot size control. The proposal includes no subdivision, and therefore this clause is not relevant.

Clause	Comment
4.3 Height of buildings	The site's B7-zoned land has a maximum height of 12m, while the site's RE2-zoned land has a split building height of 8.5m and no height. The proposal exceeds the height limit in both the 12m and 8.5m height zones. Further discussion is provided below the table.
4.4 Floor space ratio	The site's B7-zoned land has a maximum FSR of 1:1, while the remainder of the is not subject to an FSR control. The area of the site subject to the FSR control is 1.6ha. The school provides a total GFA of 6,645m^2, which including some GFA on land not subject to an FSR control. Therefore, it is clear the built form in the area subject to the control is well below the 1:1 FSR control.
5.1 Relevant acquisition authority	LEP mapping does not identify any part of the site as land reserved for public purposes.
5.10 Heritage conservation	The site is not identified as either a heritage conservation area or a heritage item, and is not located in proximity to either a conservation area or item. No adverse impacts on (non-Aboriginal) heritage are anticipated. The site contains two Aboriginal Heritage Information Management System (AHIMS) sites, and the proposal will directly impact both sites. The impact is considered acceptable given the sites are of low significance. This is discussed in further detail in the Aboriginal Cultural Heritage Assessment (ACHA) at Appendix 7.
6.1 Earthworks	The proposed development is supported by concept civil engineering drawings (Appendix 14), which include with appropriate erosion and stormwater control methods to be implemented during construction.
6.2 Riparian land and watercourses	The site does not contain land identified as a watercourse on the Riparian Lands and Watercourses Map and is not located within 40m of such land. As such, assessment of the proposal against this clause is not required. Nonetheless, the EIS includes assessment of the proposal's impacts on the dam/watercourse to the east of the site, which is not identified in the LEP mapping. See section 7.15 of the EIS for further discussion.
6.3 Airspace operations	An Aviation Assessment by GHD supports the application (Appendix 10) to assess the proposal's impacts on the airspace operations of Canberra Airport. The report confirms that the school site is located approximately 7.5km from the southern runway end. The obstacle

Clause	Comment
	limitation surface (OLS) at this location is some 109m above the existing ground surface level, meaning it is well above the proposed development works. The adjacent terrain will also provide partial or full shielding of the approach and take off surfaces.
6.4 Development in area subject to aircraft noise	The site is situated within the 20-25 Australian Noise Exposure Forecast (ANEF) contour for Canberra Airport. The supporting Aviation Assessment at Appendix 10 confirms that a school within the 20 to 25 ANEF zone would be considered conditionally acceptable on the basis that appropriate noise control features be incorporated in the construction of the school buildings, i.e, consistent with Table 2.1 of AS 2021-2000. An evaluation of aircraft noise levels has been undertaken in the Noise & Vibration Assessment (Appendix 11). The evaluation confirms that internal noise levels are limited to those recommended in AS2021, subject to the implementation of recommended building construction materials.
6.5 Development control plans	The site is located on land identified as an urban release area, and a development control plan (South Jerrabomberra DCP 2015) (SJDCP 2015). Note: Pursuant to clause 11 of the SRD SEPP, development control plans do not apply to SSD. Notwithstanding, the relevant provisions of the SJDCP 2015 have been addressed in section 5.8 of the EIS as required by the project SEARs.
6.6 Essential services	An Infrastructure Management Plan has been prepared by Norman Disney & Young, which confirms that the site will be adequately serviced. The report is provided as Appendix 12.
Schedule 1	This clause applies to certain land at Lanyon Drive, Jerrabomberra being part of Lot 1, DP 1263364 and marked "1" on the Additional Permitted Uses Map. Development for the purposes of an educational establishment is permitted with development consent. The proposal is for an educational establishment and is located in the area marked "1" on the APU map. It is therefore permitted with development consent.

LEP mapping

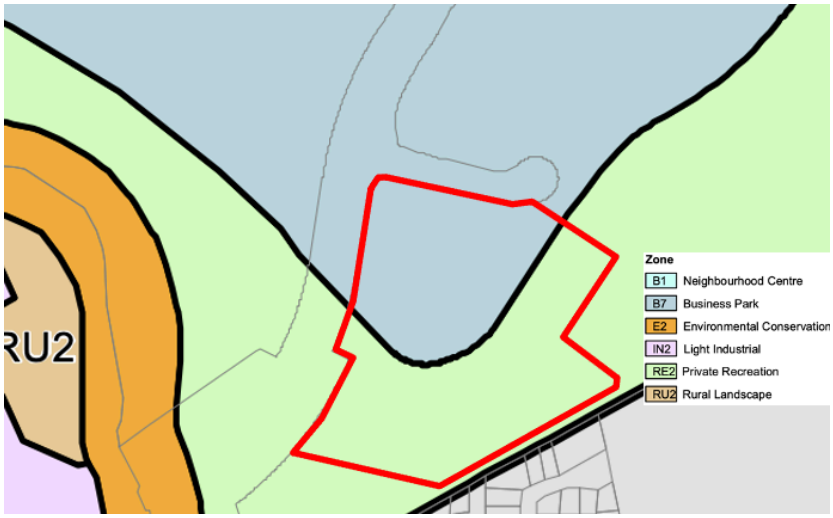


Figure 5-2 Zoning map
Source: Queanbeyan (West Jerrabomberra) LEP 2013

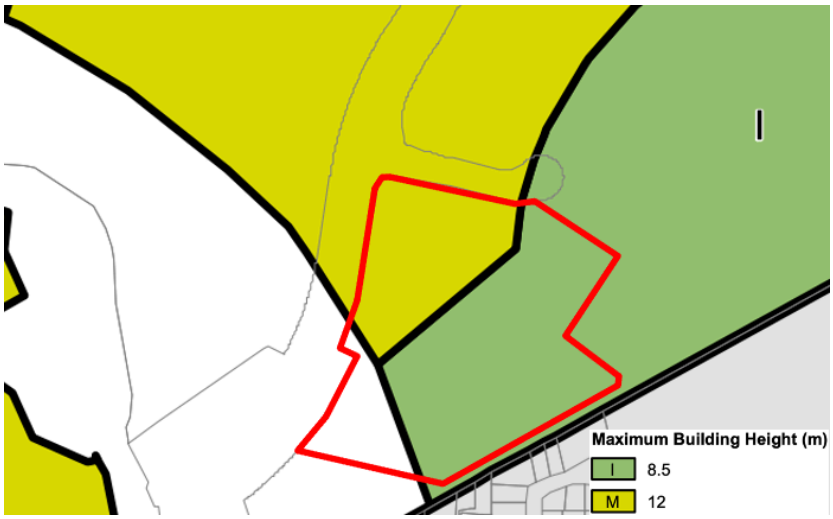


Figure 5-3 HOB map
Source: Queanbeyan (West Jerrabomberra) LEP 2013

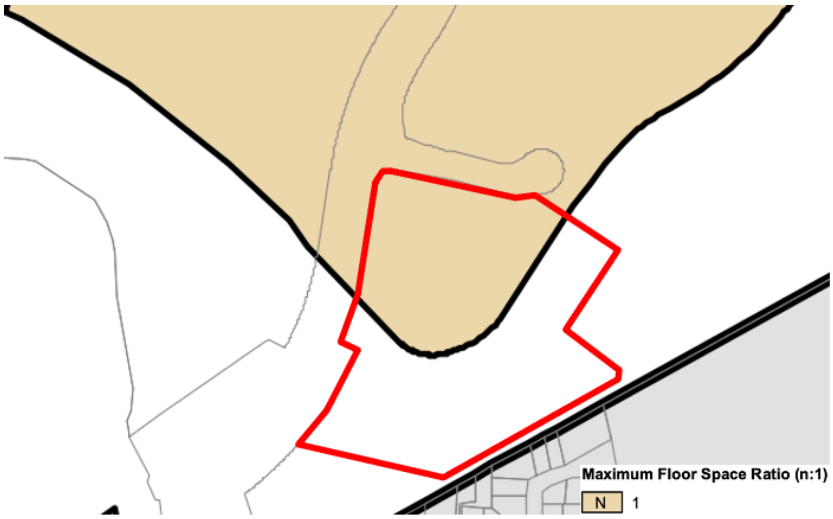


Figure 5-4 FSR map
Source: Queanbeyan (West Jerrabomberra) LEP 2013

Figure 5-5 Riparian lands and watercourses map
Source: Queanbeyan (West Jerrabomberra) LEP 2013

Height variation discussion

The proposal provides a maximum building height of approximately 12.8m (800mm/6.67% variation) in the 12m height zone, and 8.98m (480mm/5.65% variation) in the 8.5m height zone. These variations are illustrated in the section drawings below.

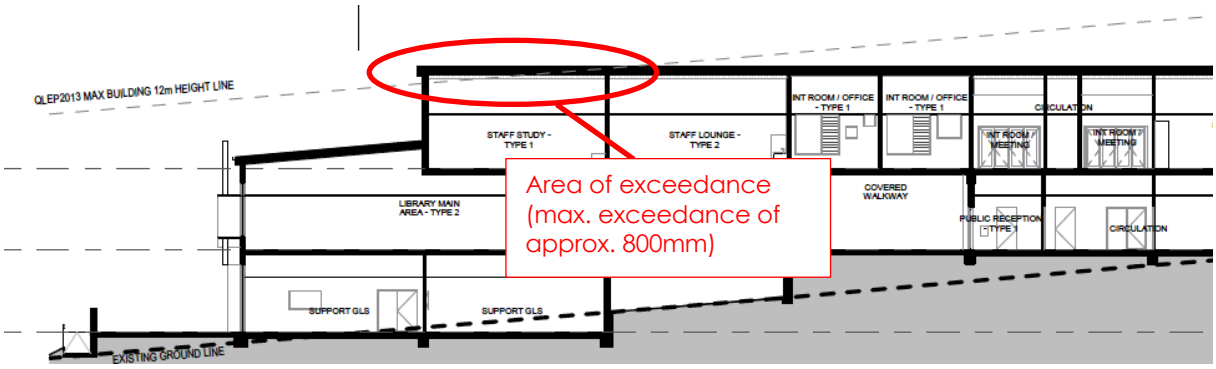


Figure 5-6 Building A E-W section showing height variation
Source: TKD Architects

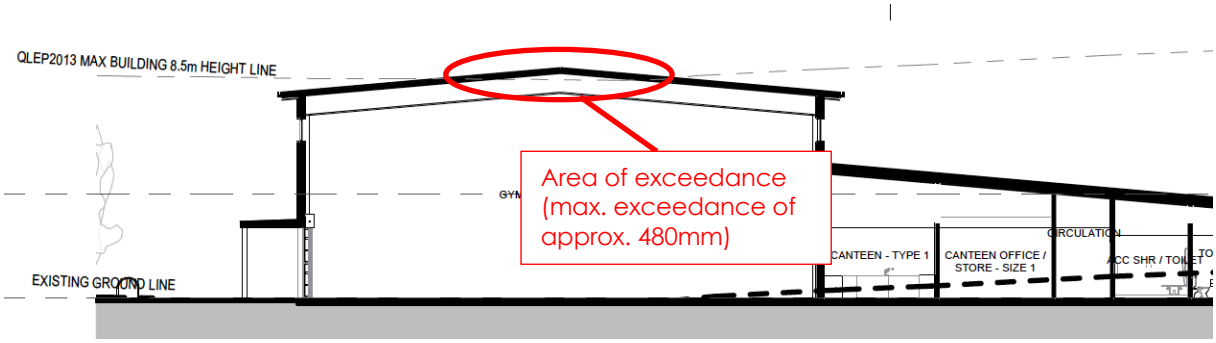


Figure 5-7 Building B N-S section showing height variation
Source: TKD Architects

Clause 42 of the Education SEPP identifies that development consent may be granted for development for a school that is SSD even though the development would contravene a development standard imposed by an environmental planning instrument. Accordingly, the proposal can be approved despite the variation to the height standard, with no formal clause 4.6 variation request required.

The proposed height variations are minor and are largely a result of the site's sloping topography, in particular:

- The variation to the 12m zone is limited to the eastern end of the top level of Building A. The building has been purposefully designed to follow the natural slope towards Environa Drive, stepping down from three to two storeys. The proposed variation only occurs at the very edge of the top level, just before the building steps down.
- The variation to the 8m height limit is limited to the ridgeline of the Building B roof. As evident in the section drawing above, the variation occurs due a slight dip in the natural topography. This dip is not a significant feature of the natural landscape and does not warrant a stepped building response. Also, the nature of Building B (gym) requires a large floor-to-ceiling height.

Despite the variations, the proposal is consistent with the objectives of the height of buildings standard, which are as follows:

(a) to ensure that buildings are compatible with the existing and desired future character of the locality,

(b) to minimise visual impact, overshadowing, disruption of views, loss of privacy and loss of solar access to existing development,

(c) to ensure that buildings do not adversely affect the streetscape, skyline or landscape when viewed from adjoining local, classified or collector roads or other public places such as parks or community facilities.

Regarding (a), the scale of the school at two/three storeys is in keeping with the expected future built form in the Poplars development area and responds to the changing character by providing an urban edge to the new street frontages and a landscape edge to the grasslands and existing residential neighbourhoods.

Regarding (b), the proposal will cause no notable adverse visual impact, overshadowing, disruption of views, loss of privacy or loss of solar access to existing development, in particular:

- As illustrated in the overshadowing diagrams prepared by TKD Architects (Appendix 2), the development will cause no adverse overshadowing. The buildings are generally low in scale and located more than 100m from the nearest residential dwellings. At mid-winter (worst-case), the shadow will generally stay in the site, with minor impact to the adjoining land to the east (neighbouring dam) in the afternoon. Refer to section 7.2.1 of the EIS for further discussion.
- As discussed at section 7.2.3 of the EIS, the proposal is not expected to disrupt any views. The proposal will sit comfortably within the landscape and provide an appropriate street address to the north and west.
- As discussed at section 7.2.2 of the EIS, the proposal is not expected to result in any adverse privacy impacts given the buildings are well separated from surrounding development.

Regarding (c), as discussed at section 7.2.3 of the EIS, the proposal adversely affect the streetscape or landscape. The proposal will set an urban edge to the north and west that is likely to be consistent with future surrounding development.

Overall, compliance with the LEP's height limits is considered unreasonable and unnecessary in this instance due to the site's sloping topography, the minor nature of the variations and lack of adverse environmental impacts resulting from the variations. It is clear that strict compliance with the standard would not result in a notably better planning outcome.

5.8 Additional approvals required

The proposal requires connection to the adjoining public road network, which will require approval under Section 138 of the Roads Act 1993. Notably, Section 4.42 of the EP&A Act that a Section 138 permit cannot be refused if it is necessary for carrying out an SSD.

Pursuant to section 4.41 of the EP&A Act, a controlled activity approval under the Water Management Act 2000 is not required for works on waterfront land (i.e., riparian zone) because the application is SSD.

5.9 Development control plans

5.9.1 Queanbeyan Development Control Plan 2012

Clause 11 of the SRD SEPP states that development control plans do not apply to SSD applications. However, the project SEARs require the application to address the Queanbeyan Development Control Plan 2012 (QDCP 2012) as a relevant policy. Accordingly, an assessment against key relevant controls of QDCP 2012 provided in the table below.

Table 5-4 Queanbeyan Development Control Plan 2012 assessment

Clause	Comment
Part 2 All Zones	
2.2 Car Parking	
This part of the development control plan outlines requirements for the provision of car parking and service delivery facilities.	**Complies** Part 2.2 of the Queanbeyan DCP 2012 requires car parking rates for educational establishments to be provided per the Education SEPP. However, the Education SEPP does not provide car parking rates for new educational establishments. As confirmed within the supporting Transport Assessment (Appendix 5) the proposal will provide 34 off-street parking bays, which meets staff requirements and is consistent with the mode share targets specified in the assessment.
2.3 Environmental Management	
This part of the development control plan relates to energy efficiency requirements of buildings, water use and conservation, solar impacts and waste management. The controls apply to all development in the Queanbeyan LGA.	**Complies** The proposal incorporates a number of ESD measures as outlined in section 7.5 of the EIS. The proposal is targeting a 4 Star Green Star rating.
2.4 Contamination	
This part of the development control plan applies to all development and outlines requirements relating to the use and/or development of land that is or may be contaminated.	**Complies** Contamination is discussed in section 7.15 and at Appendix 17 and Appendix 18 of the EIS. The contamination assessment has concluded that the site is suitable for the proposed use subject to standard mitigation

Clause	Comment
	measures and minor investigations being undertaken.
2.5 Flood Management	
This part of the development control plan provides development controls and guidelines in respect of flood prone land in Queanbeyan.	**Complies** Flooding is discussed in section 7.13 and Appendix 15 of the EIS. The flood assessment has concluded that all proposed buildings are located outside the flood extent in the 1% annual exceedance probability (AEP) and probable maximum flood (PMF) levels.
2.6 Landscaping	
This part of the development control plan outlines requirements and procedures for landscape planning and design for development sites.	**Complies** As confirmed by the Landscape Design Report (Appendix 4), a high-quality landscaped solution is proposed for the site. The landscape design satisfies the DCP as: • Approximately half the landscaped areas will be revegetated for Golden Sun Moth habitat, with the other half largely consisting soft landscaped areas including garden beds, play areas and sporting facilities. • Planting has been used within all setbacks to screen the development with consideration to promoting natural surveillance. • No mature trees are to be removed.
2.7 Erosion and Sediment Control	
Sedimentation from development sites is a major pollutant for watercourses and drainage systems, causing significant environmental damage as it results in phosphorous, microorganisms, and chemicals polluting waterways. It is therefore imperative to ensure that when a site is developed appropriate measures are implemented to prevent loss of sediment and to rehabilitate the site through interim and long term measures	**Complies** A Civil Schematic Design Report including concept drawings by M+G Consulting has been prepared to detail civil works and stormwater drainage arrangements for the development (Appendix 14). The proposed stormwater strategy is generally in accordance with the requirements of QDCP 2012.

Clause	Comment
2.9 Safe Design	
This part of the development control plan sets out guidelines for the creation of safer urban environment and it applies to all development (including applications for subdivision) including land in both public and private ownership.	**Complies** An assessment of the proposal against CPTED principles has been undertaken at Appendix 25 of the EIS.
2.11 Airspace Operations and Airport Noise	
This part of the development control plan outlines requirements to ensure the protection of surrounding airports and airspace	**Complies** An Aviation Assessment has been undertaken to support the application and is provided as Appendix 10**.** The assessment confirms the proposal is acceptable from noise and airport operations perspectives.

5.9.2 South Jerrabomberra DCP 2015

As noted above, clause 11 of the SRD SEPP states that development control plans do not apply to SSD applications. However, the project SEARs require the application to address SJDCP 2015 as a relevant policy. An assessment against key relevant controls in the SJDCP 2015 is provided in the table below.

Table 5-5 South Jerrabomberra Development Control Plan 2015 assessment

Clause	Comment
Part 11 Business Park and Employment Lands Controls and Principles	
11.2 Business Park Desired Future Character	
11.2.1 Overall Objectives for Development in the Business Park In the case of the Business Park the following objectives need to be complied with include: 1) Encourage commercial, professional and health care services and light industrial activities in a concentrated business park. 2) Achieve an attractive and sustainable built form that complements the visual character of the area. 3) Maintain the integrity of the topography, scenic landscape and	**Complies** Whilst not a business or industrial use, the proposed school will achieve an attractive and sustainable built form and won't inhibit the operation or function of surrounding business uses. Specifically, the school satisfies the overall objectives in the following manner: • The school has been designed in response to the site's sloping topography. • Buildings are cited to the north edge of the site adjacent to future business development, with grassed open space

Clause	Comment
character of the area by limiting the extent of cut, fill and site regrading. 4) Moderate the effect of building height with larger building footprints allocated to flatter sites and smaller or narrower buildings to more sloping sites. 5) Size and type of development does not compromise the regional importance of the Queanbeyan CBD. 6) Building heights are to be consistent with the Height Maps in the relevant LEP.	providing a buffer to adjoining open space areas. • Buildings have been located on the relatively flat high point of the site, with steeper slopes to be used as open space. • The use of the site as a school will not compromise the regional importance of Queanbeyan. • Minor variations are proposed to the height of building control, which are further discussed in Section 5.7 of the EIS.
11.4 Site Coverage	
a) The maximum site coverage shall not exceed 70% of the site area. b) The minimum landscape area is 10% of the site area. Landscaped areas include all permeable and semi permeable surfaces outside of the defined site area but does not include hardstand driveway, paths and parking areas. The minimum dimension of a landscaped area needs to be 2.0m.	**Complies** Approximately half of the site will be unused and revegetated as habitat for the Golden Sun Moth.
11.5 Setbacks	
a) The following setback requirements listed below apply to all development: Main street frontage: 7.5m (landscaped with no parking) Secondary Street frontage: 3m (landscaped with no parking) Side and rear boundaries: From zero	**Variation proposed** The following setbacks are provided: • North road (primary): 32m to building and 2.5m to car park. • Environa Drive (secondary): 22.8m The variation to the landscaped front setback control is considered acceptable. The actual building is set back a significant distance from the street (24.5m more than the minimum control), and a 2.5m landscaped strip with six large trees is provided between the boundary and car park, providing a suitable landscape buffer.

Clause	Comment
11.6 Car parking and vehicular access	
a) Compliance with Part 2.2 Car Parking of the Queanbeyan Development Control Plan 2012.	**Complies** Part 2.2 of QDCP 2012 requires car parking rates for educational establishments to be provided as per the Education SEPP. The SEPP, however, does not specify parking rates for high schools. As discussed in the supporting Transport Assessment (Appendix 5) the proposal will provide 34 off-street parking bays. The number is consistent with the mode share targets specified within the assessment and is considered to be acceptable.
11.7 Building Design	
a) The façade of buildings facing the street should be of a high design quality. Monotonous facades consisting of one plane and colour are to be avoided, b) Buildings are to be of brick or non-reflective cladding including roof. Storage areas are to be screened, c) Office accommodation for development should be located at the front of buildings to ensure that blank facades are broken up. The office area should be positioned as an attached structure to the main building to give identity and point of entry to the overall development form (Figure 1) or internal to the building, d) Colours and materials shall be compatible with the natural scenic qualities of the locality. Visually prominent buildings with incompatible colours will not be supported. e) New materials for construction are to be used. New buildings should be constructed from low maintenance materials and incorporate energy efficient design principles, f) The extensive use of reflective glazed windows is not permitted, g) The appearance of industrial sites, when viewed from nearby residential	**Complies** The proposal has been purposefully designed for use as an educational establishment in accordance with the applicable reference design documents and guidelines. The proposal generally satisfies the built form controls in the following manner: • The façade of each building will consist high-quality building materials including pre-finished fibre cement, non-combustible pre-finished metal cladding, aluminium box sections, perforated aluminium panels, trellis and proliferated metal wall sheeting. • Non-reflective metal roof sheeting has been adopted. • Admin areas are located adjacent to the main school entrance. • The materials palette is designed based on the colours of the surrounding natural environment, which helps the building fit in to the landscape and visually recede. • The proposal has been designed with low maintenance materials and incorporates energy efficient principles. • Glazing has been minimized with external window shading, inspired by the Golden Sun Moth, provided to screen windows.

Clause	Comment
areas should be addressed through the location of plants and trees that break up the mass of buildings (Figure 2), h) Buildings are to be designed to address both frontages with entries and active frontages or a single main entry being provided at the corner	• The proposal has been sited to address both the Environa Drive and north road frontages.
11.8 Safety and Security	
Compliance with Part 2.9 of the Queanbeyan Development Control Plan 2012.	**Complies** An assessment of the proposal against CPTED principles has been undertaken by Mecone at Appendix 25 of the EIS.
11.9 Landscaping and Visual Amenity	
a) Provide landscaping to side and rear boundaries adjoining car parking and access areas. b) Provide for a minimum 50% of landscaped areas as soft landscaping elements such as gardens, lawns shrubs and trees. c) Use planting to complement any staff outdoor recreation area. d) Design front planting zones that will soften and complement the view of the buildings, loading, use areas including car parking from the street; e) Protect existing mature trees and their canopies as part of the development.	**Complies** As confirmed by the Landscape Design Report (Appendix 4), a high-quality landscaped solution is proposed for the site. The landscape design generally satisfies the DCP's requirements as follows: • Approximately half of the site will be revegetated for Golden Sun Moth habitat, with the other half largely consisting soft landscaped areas including garden beds, play areas and sporting facilities; • Planting has been used within all setbacks to screen the development with consideration to promoting natural surveillance; and • No mature trees are to be removed.
11.10 Vehicular Access and Loading/Unloading	
a) Compliance with the relevant controls in Queanbeyan City Council's DCP 2012 part 2.2 Car Parking.	**Complies** The proposed car parking has been generally designed in accordance with QDCP 2012 requirements. It is noted that the QDCP 2012 does not specify a parking rate for schools; instead it refers to the Education SEPP (which also does not specify a parking rate for schools). The proposed parking quality is based on operational requirements and the target mode share. Refer to the

Clause	Comment
	Transport Assessment at Appendix 5 for further detail.
11.11 Pedestrian Access and Mobility	
Controls: a) To assist people with a disability the main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity. b) The design of facilities (including car parking requirements) for disabled persons shall comply with the relevant Australian Standard (AS 1428 Pt 1 and 2 or as amended) and the Disability Discrimination Act 1992 (as amended). c) The development shall provide at least one main pedestrian entrance with convenient barrier free access to the ground floor and/or street level. d) The development shall provide continuous access paths of travel from all public roads and spaces as well as unimpeded internal access	**Complies** The main site entry points will be clearly visible from both the Environa Drive and north road frontages. The proposed car park has been designed to comply with the relevant Australian Standards and Disability Discrimination Act 1992. Access paths are provided from the street frontage to the main entry points. Refer to the Transport Assessment at Appendix 5 for further detail.
11.12 Site Works	
b) The maximum permissible cut and fill to accommodate any building or associated structure is limited to 2m, except in those circumstances referred to below. All exposed cut and fill is to be suitably retained to structural engineers detail or battered. c) Council will consider, in case of particularly undulating sites, a cut of up to 4m in depth where the abutting wall of the building serves the purpose of a retaining wall. This provision is subject to the wall of the building satisfying the National Construction Code requirements in regard to structural integrity and drainage. (Figure 3).	**Complies** The site slopes up to 11m from the central high point, necessitating cut and fill across the site to accommodate the development. Buildings have been sited on the flatter high point, with steeper areas reserved for open space, to minimise earthworks on the site.
11.15 Site Facilities and Services	

Clause	Comment
c) Waste and Recycling Storage and Collection General i. All development is to adequately accommodate waste handling and storage on site, including trade waste or hazardous / toxic waste. The size, location and handling procedures for all waste, including recyclables, is to be determined by advice from Council's Sustainability and Better Living Division and Workcover Authority of NSW where applicable.	**Complies** An Operational Waste Management Plan (WMP) has been provided as Appendix 20, detailing operation waste management practices. Waste collection areas have been designed to handle the expected waste generation rates of the school use.
d) Location requirements for Waste Storage Areas and Access i. Where waste volumes require a common collection, storage and handling area, this is to be located: o Where a waste vehicle is required to enter the site, the access and circulation area shall be designed to accommodate a vehicle with the following dimensions: Vehicle length 10 metres Vehicle height 4 metres Ramp width 4 metres Turning circle AUSTROADS template for HRV R=12.5m, Speed=5kph Axle height 9 tonne/axle	**Complies** The waste collection area has been strategically located off the carpark to the north road. Swept path diagrams provided within the Operational WMP (Appendix 20) confirm the pad and site can be accessed by both rear lifting Medium Rigid Vehicle (MRV) (8.8m long x 2.5m wide x 4.5m high) and front lifting Heavy Rigid Vehicle (HRV) (11m long x 2.5m wide x 4.25m high).
11.17 Drainage	
Controls: a) Development application site plans shall detail methods of stormwater collection and control, including all downpipes, drains and pits, site levels and nearest Council main.	**Complies** A Civil Schematic Design Report including concept civil drawings has been prepared by M+G consulting support the application. The report and drawings are provided as Appendix 14.

5.10 Development contribution plans

The site is subject to the South Jerrabomberra Local Infrastructure Contributions Plan 2018. Table 4 of the plan explicitly notes that the plan does not apply to "government schools". The proposed school is on behalf of the State government, and therefore Council's contribution plan does not apply.

This is consistent with the advice from DPIE in Circular D6 "Crown Development Applications and Conditions of Consent". The circular notes that Crown activities provide facilities which lead to significant benefits for the public in terms of essential community services and employment opportunities, and the activities are not likely to require the provision of public services and amenities in the same way as development undertaken with a commercial objective. The circular recommends that, where the applicant is a Crown authority and the development is for educational services, no contributions should be collected for open space, community facilities, parking, and general local and main road upgrades.

It is noted that Poplars has entered into a voluntary planning agreement (VPA) with Council (Jerrabomberra Innovation Precinct Infrastructure) to deliver public infrastructure and dedicate land to Council.

6 Consultation

Consultation have been undertaken in accordance with DoE's consultation policy (Planning and Delivery School Infrastructure NSW Public Consultation Policy), which provides a framework to actively engage the community and other stakeholders in relation to the planning of major projects.

A comprehensive Consultation Report is attached at Appendix 23 of the EIS. Key consultation activities and outcomes are outlined in the subsections below.

6.1 Community engagement

DoE conducted the following community engagement activities prior to lodgement:

- SINSW held a Community Engagement Hub across three days in November 2020 at Googong Shopping Centre.
- In November 2020 an online survey was activated to obtain feedback from the local community what is important to them when designing the school. The survey received 695 responses. Key findings included:
    - There was also feedback that the catchment should include other parts of the surrounding area.
    - There was strong support for the delivery of the school and for students to be able to access high quality secondary schooling locally.
    - The school has been long awaited by the community and should be built as quickly as possible.
    - Design should include sustainability features, such as passive solar design and solar power.
    - Access to the school should be safe for students walking and cycling, with some concern about the interaction between traffic and active travel.
- SINSW established a dedicated phone channel and email address to enable people to ask questions and/or provide feedback on the design.
- A dedicated webpage was also established for the school to provide up to date information about the proposal. Most of the information was published in downloadable files and included:
    - Three planning updates (7 pages total) published from November 2020 – July 2021.
    - The planning updates were also mailed out to 6,600 Jerrabomberra households collectively from November 2020 – July 2021.

- A Project Reference Group (PRG) was established at the start of the project to provide feedback into the design process. The PRG is attended by representatives from the Department of Education, the Principal from Karabar High School and a community representative. The PRG has met approximately nine times between August 2020 and June 2021.

6.2 Public authority engagement

6.2.1 Department of Planning, Industry and Environment (DPIE)

A meeting was held with representatives from the DPIE and SINSW in September 2020. The meeting provided DPIE with an overview of the site, existing constraints and opportunities and key planning considerations. Key areas of discussion included the interface between building heights and the surrounding local context, traffic generation and consultation timing associated with the Aboriginal Cultural Heritage Assessment.

6.2.2 Government Architect NSW

The proposed design was presented to the SDRP on 31 March 2021 and then again on 7 July 2021. The SDRP issued formal comments on 19 April 2021 following the first presentation and further comments on 15 July following the second presentation. TKD Architects has prepared detailed responses to the SDRP's comments; these are provided at Section L of the Architectural Design Report at Appendix 3.

The new high school has been developed to respond to GANSW's Draft Connecting to Country Framework and through consultation with Ngambri Elder Woman Dr Matilda House and representatives of the Aboriginal Educational Consultative Group (AECG), to create a strong, place driven identity that will help instil pride in the school and community.

6.2.3 Queanbeyan-Palerang Regional Council

There has been regular engagement and contact with Council throughout the EIS preparation process. Some of this occurred through formal meetings or email correspondence for relevant planning matters.

The formal consultation activities included:

- Project meeting held in April 2021 with representatives from Council and SINSW. The meeting focussed primarily on where services will be located on site, infrastructure ownership and potential joint use agreements.

- Partnerships meeting in April 2021 with representatives from Council and SINSW. The meeting provided Council with an update on the current scheme and key consultant findings. Other areas of discussion included the potential joint use agreement for David Madew Oval and associated funding requirements.

- Project Control Group (PCG) meetings held between May 2021 and August 2021 with representatives from Council, SINSW, the Department of Regional NSW and key consultants. Key areas of discussion have included:
    - Planning updates on the Poplars Innovation Precinct, the Queanbeyan – Palerang Regional Sports Complex and the broader village precinct.
    - Discussions around service infrastructure, including expected design, timing and approvals process.
    - Transport and accessibility requirements from the school and surrounding land uses.
- Attendance at the Transport Working Group (TWG) meetings, as described below.

6.2.4 Transport for New South Wales

Consultation with TfNSW has occurred through the TWG. The TWG is attended by representatives from TfNSW, Council and SINSW. The TWG has met twice between June 2021 and September 2021. Key areas of discussion have included:

- The proposed access arrangements to the new school, including bus operations and parking provisions.
- The expected impact of traffic movement on the surrounding road network in Jerrabomberra.
- Management of safe pedestrian and traffic access to the site facilitated by pedestrian crossings and pathways.
- Review of the draft Transport Assessment for input before finalising.

6.2.5 Canberra Airport

SINSW and GHD consulted with Canberra Airport in response to Item 10 of the project SEARs. This consultation occurred via email and phone from December 2020 to February 2021. This consultation primarily focussed on obtaining the relevant data sets from Canberra Airport to help inform the acoustic and vibration modelling for the school.

6.2.6 Commonwealth Department of Agriculture, Water and the Environment (DAWE)

SINSW were required to consult with DAWE to determine if the proposal required approval under the Commonwealth EPBC ACT. This consultation primarily occurred via email and phone from June 2021 – July 2021.

As discussed at section 5.3 of the EIS, EPBC Act matters are being dealt with under the overall Poplars development area and are subject to a separate approval process outside of this EIS.

7 Assessment of key issues

This section contains an assessment of the key issues identified in the project SEARs. It is informed by, and should be read in conjunction with, the specialist reports and drawings appended to the EIS.

7.1 Built form and urban design

An Architectural Design Report by TKD Architects is attached at Appendix 3. The report explains the proposal's design rationale based on analysis of the site and context, and provides comment on the proposal's consistency with relevant guidelines and principles. Key points from the report are outlined below.

It is noted that section 3.3 of this EIS contains a description of the proposal's' layout, height; bulk and scale; density; setbacks; facade and articulation; external finishes and materials; relationship to surrounding development, topography and streetscape; and access to daylight, ventilation and acoustic separation.

7.1.1 Existing environment

The site is located in a setting marked by transition from rural to business, innovation, retail, sport industrial and education uses, as well as areas of conservations. The uses in the immediate vicinity of the site are primarily residential.

The uses in the immediate vicinity of the site are primarily residential. Retail and commercial uses are located on the opposite side of Tompsitt Drive to the north and along Edwin Land Parkway to the north east. Jerrabomberra Public School is located to the east, while land to the west is undeveloped and features grasslands and Jerrabomberra Creek.

As a cleared site forming part of the greater Poplars development site, the context of the school is expected to change rapidly over the coming years.

7.1.2 Impacts

The proposal will contribute positively to the built form of the area as follows:

- The proposal features a high-quality contemporary design that fit for purpose and complementary to the existing and emerging local character.
- The bulk and scale of the proposed buildings respond to the natural topography, with the buildings stepping down the slope towards the west and south.
- The proposal's layout frames the high point of the site and responds to the street corner.
- The design of finishes, including external screening and sunshades, create a visual rhythm on the facades that divides up the length of the buildings.

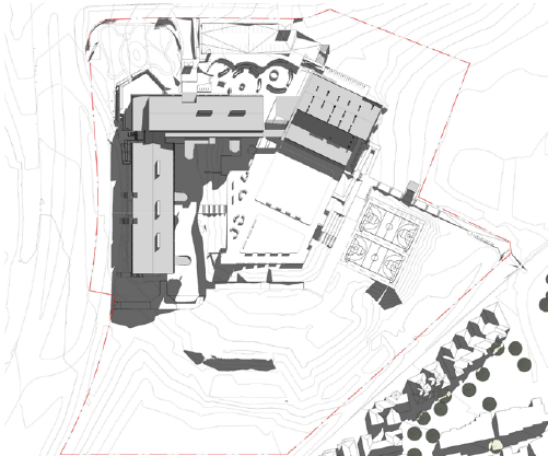
- The buildings provide for large setbacks to the south and east, providing significant green buffers to the neighbouring low density residential development and wetlands.

7.2 Environmental amenity

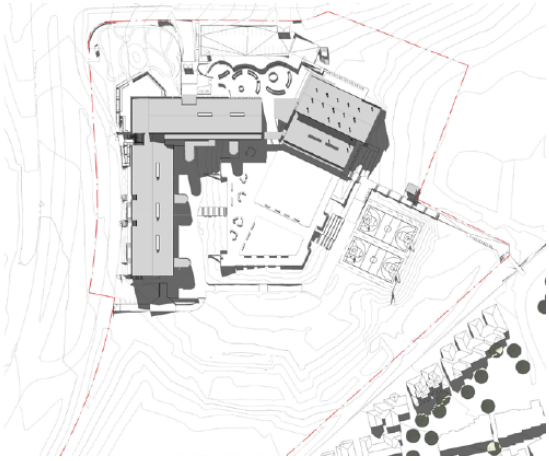
7.2.1 Overshadowing

Shadow diagrams have been prepared for the proposed development. The diagrams demonstrate that the proposal will have no notable adverse shadow impact to neighbouring development throughout the year.

At the winter solstice (worst case scenario), the shadow will stay within the site until after 2pm. By 3pm, the shadow of Building B will extend slightly into the area of the dam to the east. This impact is acceptable given it is minor in extent, does not affect a protected area and occurs only for a small portion of the day.



June 21 – 9am



June 21 – 12pm

June 21 – 3pm

Figure 7-1 Shadow diagrams
Source: TKD Architects

7.2.2 Visual privacy

The proposal will result in no notable privacy impacts to surrounding sensitive uses. The new buildings are located well away from neighbouring residential properties (i.e., more than 100m). Additionally, new timber lap and cap fencing to the adjoining residential boundaries, and a landscape buffer will be provided.

Views out from the building focus on the grasslands to the west and southwest, and on the school playgrounds to the east and southeast.

The land to the north of the site rises up, and so the fall of the land limits the distance of views possible in that direction.

The buildings are expected to reflect the setbacks and scale of future surrounding commercial buildings associated with the Poplars development area.

7.2.3 View impacts

The proposal will result in no unacceptable view impacts. The proposal will introduce new built form on the site that will be compatible with the emerging urban character of the area. No notable view corridors will be affected.

TKD Architects have prepared 3D views to show the proposed buildings in context. These views, provided below, show the proposed buildings as viewed from each publicly accessible site boundary.

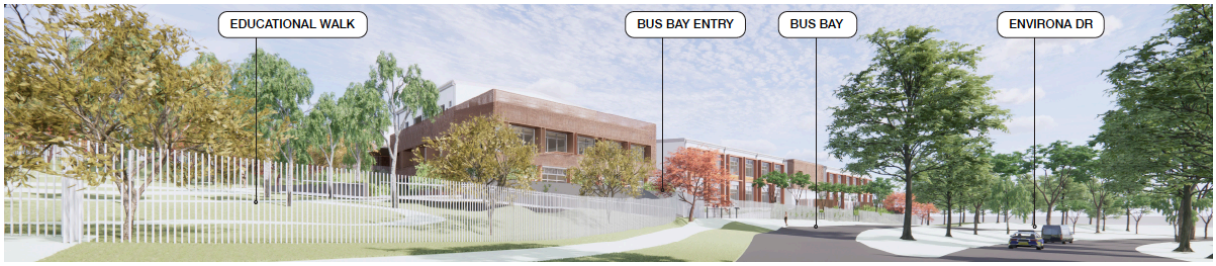


Figure 7-2 View from Environa Dr looking SW
Source: TKD Architects

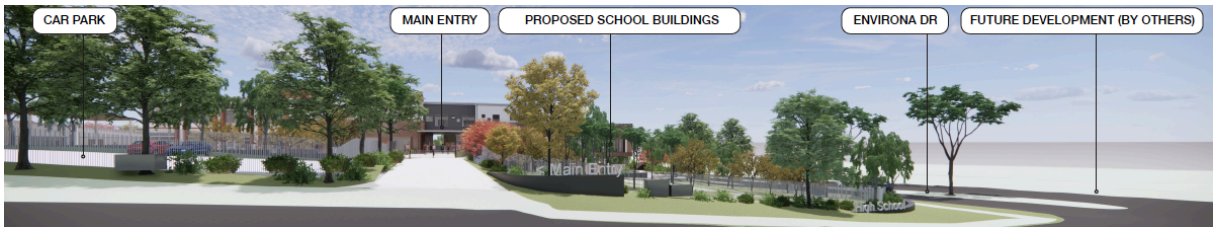


Figure 7-3 View from north road looking S
Source: TKD Architects

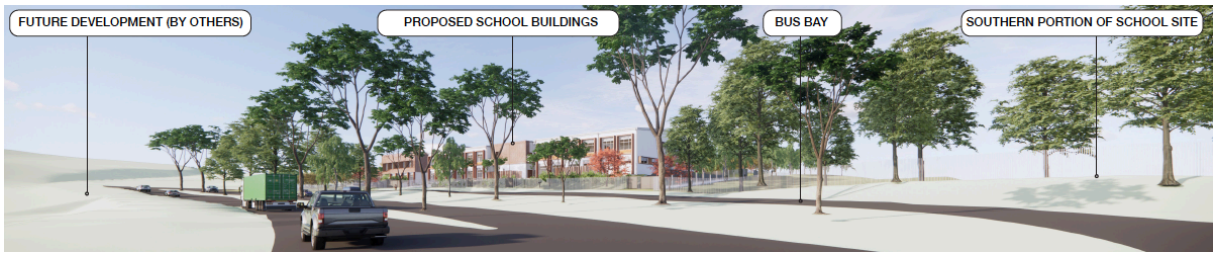


Figure 7-4 View from Environa Dr looking NE
Source: TKD Architects

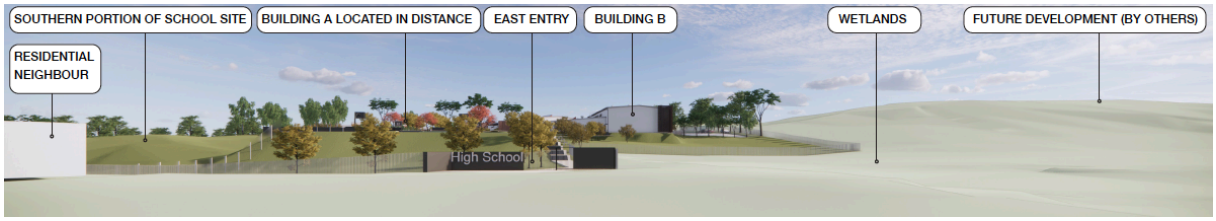


Figure 7-5 View from David Madew Regional Park
Source: TKD Architects

When viewed from Environa Drive, the buildings relate well to the topography, with the Lower Ground and Ground Floors in the foreground, and the first floor set back so that it visually recedes.

The setback from the north road provides a generous green forecourt to the school. The building mass recedes with the pedestrian entrance and landscape response being the main focus

When viewed from Environa Drive, looking northeast, the buildings respond to the alignment of the road, setting up a new urban edge that is likely to be in keeping with future development of the business park along the road.

Looking at the school from David Madew Regional Park and from the existing residential neighbourhood, the sense of green open space is not only maintained but enhanced by the rehabilitated landscape proposed on site. Building A, the main school building, is not visible from this location, but Building B and identification signage are visible and provides a respectful presence and a legible connection.

7.2.4 Lighting

External lighting will be provided to illuminate external spaces and avoid dark shadows. Lighting shall generally be low height, low intensity and discreetly positioned to avoid spill lighting and compliance with AS1158.1 and AS4282. Obtrusive lighting will be carefully considered during the external lighting design to ensure compliance with AS4282 in order to minimise any spill onto neighbours or to the night sky.

7.2.5 Wind

Given large setbacks and general low scale, the proposal is not expected to have any wind impacts to the surrounding locality.

7.3 Transport (operations)

A Transport Assessment by GHD is attached at Appendix 5. The report analyses the existing transport network, assesses the suitability of the development's access arrangements and sets out a draft School Transport Plan (STP). Key points from GHD's report are outlined below.

Overall, it has been found that the proposal provides for suitable parking and access arrangements, subject to key upgrades to the local pedestrian network, and will have only a minor impact on the performance of surrounding key intersections. These surrounding intersections are expected to operate poorly in the future, but this is primarily due to population growth in the Jerrabomberra area rather than the traffic associated with the proposed school.

7.3.1 Existing environment

Road network

The surrounding road network is illustrated in the figure below. The school has frontages to two roads currently under construction, Environa Drive to the west and a cul-de-sac road to the north.

The north road cul-de-sac will intersect Environa Drive at a priority controlled intersection in a "seagull" arrangement and will provide direct access to the high school's main pedestrian entry, pick-up/drop-off facility, car park and waste collection facility.

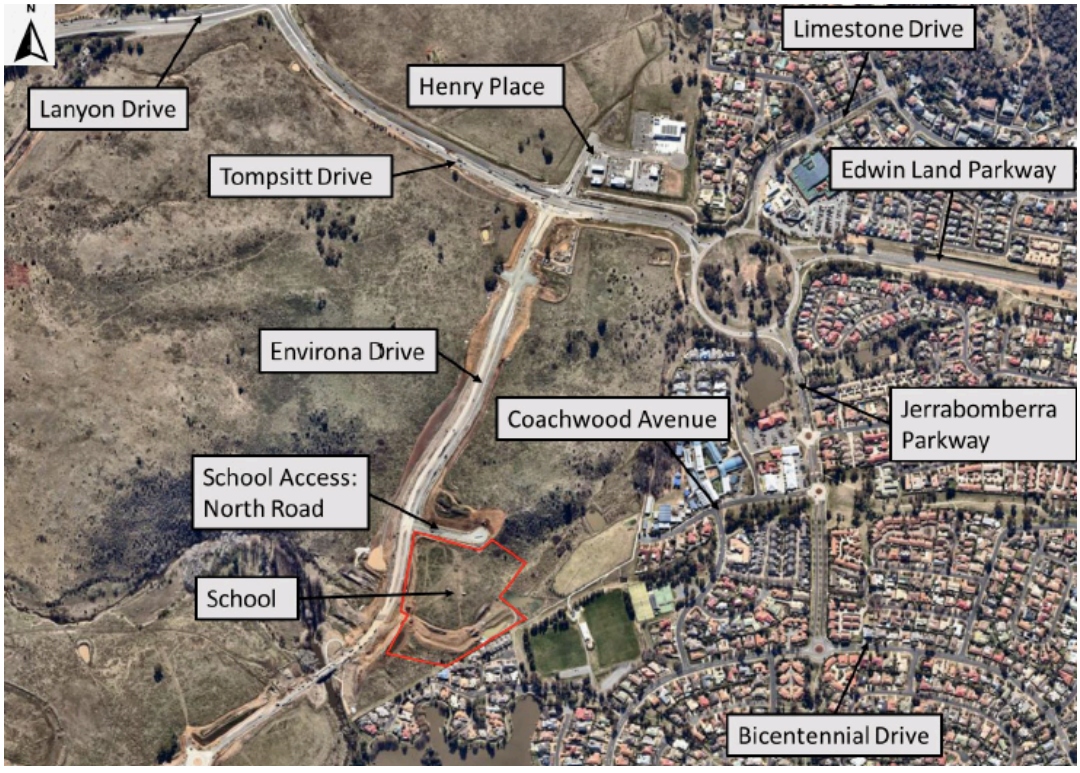


Figure 7-6 Surrounding road network
Source: GHD

Intersection performance

The operation of the surroundings intersections of interest has been assessed using SIDRA 9 to determine existing intersection performance. The assessed intersections include:

- Lanyon drive and Tompsitt Drive.
- Tompsitt Drive and Henry Place.
- Jerrabomberra Circle.

The SIDRA results show that all three intersections of interest operate with Level of Service (LoS) B (good) or better.

Active transport infrastructure

The local area includes the following active transport infrastructure:

- An on-road bicycle path on the northern side of Tompsitt Drive.
- Footpaths on the northern side of Coachwood Avenue.
- Footpaths are provided on the eastern side of Jerrabomberra Parkway.
- Signalised pedestrian crossings at the intersection of Tompsitt Drive and Henry Place.
- School crossings at the frontage to Jerrabomberra Public School on Coachwood Avenue and Firethorn Place.
- A raised pedestrian crossing on Jerrabomberra Parkway, north of Coachwood Avenue.
- At the end of Coachwood Avenue, a pedestrian path with a width of approximately 1.2m that runs along the southern boundary of the school site, past David Madew Oval.

Existing public transport

Three public bus services and eight school services currently operate from the bus zone at the front of Jerrabomberra Public School on Coachwood Avenue. The S161, S189, S128 and S138 operate within Jerrabomberra, while S187, S217, S103 and S216 also provide access to nearby population centres, including Karabar, Googong and Queanbeyan. Information provided by Council indicates that the bus stop on Coachwood Avenue provides an interchange for students in Jerrabomberra travelling to private schools in Canberra.

Existing road safety

Crash data obtained from TfNSW's Centre for Road Safety indicates that in the last five years (2015 – 2019) there have been minimal crashes in the vicinity of the site.

There have been no crashes on Coachwood Avenue and Jerrabomberra Parkway, and four crashes on the Jerrabomberra Circle.

Travel patterns and travel demand

The residents of Jerrabomberra are highly reliant on their cars. The 2016 Journey to Work census data for Jerrabomberra indicates that:

- 77% of employed residents drove to work and 5% were car passengers.
- 3% of employed residents worked from home.
- 1% of employed residents walked to work.
- 1% of employed residents used public transport.

It is estimated that approximately 33% of future students of the high school reside within the (actual) 15-minute walking catchment from high school. The majority of these students reside south of Tompsitt Drive and Edwin Land Parkway. Significant portions also reside south of Bicentennial Drive.

It is also estimated that approximately 96% of students live within the 15-minute bike riding (actual) catchment of the new high school in Jerrabomberra.

7.3.2 Target mode share

GHD has developed the following target mode share (students) based on analysis of the similar schools and the characteristics of the local area:

- Walk (including scooter): 30%.
- Bicycle: 20%
- School bus: 15%.
- Kiss-and-drop: 25%.
- Drive themselves: 10%.

The target mode share for staff is as follows:

- Walk (including scooter): 10%.
- Bicycle: 10%
- Car as driver: 70%.
- Car as passenger: 10%.

7.3.3 Parking and access

Car parking

A total of 34 onsite car parking spaces are proposed, which fully meets staff requirements and student requirements based on the target mode share.

The car park will be accessed from the north road. Parking within the car park will be restricted to staff and students only. Visitors will utilise parking along the adjacent streets.

Active transport access

The proposal features the following two main entries for pedestrian, scooter and bicycle access:

- Main entry off the north road connecting to a future separated shared path along Environa Drive.
- Eastern entry off the existing shared path to the south of the site near David Madew Regional Park.

As described in section 3.12 of this EIS, the proposal includes a number of upgrades to the surrounding active transport network. These upgrades will ensure that pedestrian and bicycle/scooter access to the school is safe and convenient.

Bicycle parking and end-of-trip facilities

A total of 114 bicycle parking spaces will be provided for staff and students, located at the northern and eastern pedestrian entries of the school. The quantity of spaces is in accordance with the mode share targets detailed above. All bike parking will be provided within the secured, fenced boundary of the school.

Council's DCP contains no minimum rate for bicycle parking.

The high school will have 44 staff and will provide one unisex shower/change cubicle will be provided near the northern entry (for use of staff only).

Bus zone

Council is constructing a bus zone along the western frontage of the school separated from Environa Drive. Key advantages of this arrangement are:

- It minimises the impacts of buses drawing in and drawing out at the school on the through movement of traffic on Environa Drive.
- Students will not be required to cross a road to access the bus zone.

Pick-up and drop-off

Parents/guardians picking up or dropping off students will undertake a U-turn at the eastern end (at the turning head) of the north road, use the designated facility on the southern side of north road and exit onto Environa Drive.

Seven spaces will be provided in the kiss-and-drop zone, plus one dedicated space for students with special needs who do not require Assisted School Travel Plan (ASTP) services.

Vehicles will be able to queue within the north road before utilising the kiss-and-drop facility and exiting onto Environa Drive.

The pick-up/drop-off zone will be controlled by No Parking signage (8:00am – 9:30am and 2:30pm – 4:00pm school days) to encourage vehicle turnover. Outside of these periods, the kiss-and-drop zone will be used for visitor parking.

Special needs students

There will be opportunities for parents/guardians with special needs children and minibuses associated with the NSW's Government ASTP to pick up/drop-off these students within the staff parking.

Waste collection and deliveries

Waste collection will be undertaken within the school's car park by a private contractor.

Information on how waste collection vehicles are expected to access/egress the high school and layover locations will be conveyed upon engagement of contract services.

All waste collection will be scheduled to occur outside peak periods of school activity, prior to 7:30 am.

Deliveries (excluding the wood and metal store) will typically also occur within the Bus Zone adjacent to Environa Drive and be scheduled to occur outside peak periods of school activity.

A separate vehicle access will be provided from the bus zone for deliveries to the wood and metal store. This access will be fenced and physically separated from the high school.

7.3.4 Traffic impacts

Based on the target mode share identified at section 7.3.2 above, the proposal is expected to result in the following trip generation:

- 125 students will be picked-up/dropped-off.
- 50 students will drive.
- 30 teachers will access the school by car.

No reduction of trip generation has been applied associated with multiple students per vehicle occupancy.

SIDRA intersection analysis has been undertaken for:

- Commencement of operation (2023).
- A 10-year time period from the commencement of operation (2033).

For each year, analysis has been undertaken for two scenarios:

- A "no-build" scenario, accounting for background traffic growth.
- A "build" scenario, accounting for background growth plus trips associated with the proposed school.

Background growth was established based on discussions with Council to include consideration of five major developments that are proposed to be constructed in Jerrabomberra in the coming 20 years, namely North Poplars, South Poplars, North Tralee, South Tralee and South Jerrabomberra. For detailed discussion on the background growth methodology, refer to section 4.4.1 of the GHD's report.

The SIDRA outputs of the analysis are provided in section 4.5 of GHDs report. The table below provides a summary of the results.

Table 7-1 SIDRA analysis results

Year	Scenario	Results
2023	No build	• Signalised intersections (AM and PM school peaks) and Jerrabomberra Circle in the PM school peak are expected to operate within practical level of capacity with a LoS better than D. • Jerrabomberra Circle is expected to operate at LoS C in the AM school peak hour; however, the eastern approach at the roundabout (Edwin Land Parkway) fails with LoS F.
	Build	• The signalised intersections will operate similarly to the "no build" scenario during the AM and PM peaks, with a minor decreases in LoS at the intersection of Tompsitt Drive and Henry Place (Los B to C during the AM peak hour and Los C to D during the PM peak hour). • Jerrabomberra Circle is expected to operate at LoS A in the PM peak but LoS F in the AM peak. Similar to the "no-build" scenario, the issue is the eastern approach where large traffic volumes on Edwin Land Parkway are required to give way to the high right-turn volumes from Tompsitt Drive in the AM peak hour. This delay is primarily due to the wider growth of Jerrabomberra rather than the vehicle activity associated with the high school.
	Summary of 2023 analysis: Overall, the difference between the 2023 "no-build" and "build" SIDRA outputs indicates that the trips associated with the new high school in	

Year	Scenario	Results
	Jerrabomberra will have a minor impact on the operation of the intersections of interest.	
2033	No build	• The intersection of Lanyon Drive and Tompsitt Drive is expected to operate with an acceptable LoS (D or better) in the AM and PM school peak hours. • The intersection of Tompsitt Drive and Henry Place is expected to operate at LoS D (acceptable) in the AM school peak hour but LoS F (failure) in the PM peak hour. • Jerrabomberra Circle is expected to operate at LoS C (satisfactory) in the PM school peak hour but LoS F (failure) in the AM peak hour.
	Build	• Similar to the "no-build" analysis outputs, the "build" outputs indicate that the intersection at Lanyon Drive/Tompsitt Drive is expected to operate at LoS B in the AM peak hour. • The Tompsitt Drive/Henry Place intersection is expected to operate at LoS E (at capacity) in the AM peak hour, with a slight increase in delay when compared to "no-build" scenario. • Jerrabomberra Circle operation is consistent with the "no-build" scenario, operating with LoS F (failure) during the AM period. • In the PM peak period, both signalised intersections fail with LoS F.
	Summary of 2033 analysis: The SIDRA results indicate that the intersection operation in the "build" scenario is generally consistent when compared to "no-build" scenario. The nominal increase in traffic due to the high school will not have a significant impact on the surrounding intersections, which are already failing because of the significant background traffic growth in the south Jerrabomberra region by 2033.	

7.3.5 School Transport Plan

A draft STP is included in GHD's Transport Assessment**.** The key objectives of the draft STP are to:

- Achieve the transport mode shares (identified above).
- Proactively identify and meet school travel demand safely, efficiently and sustainably.

- Deliver transport infrastructure to meet school travel demand.
- Maximise the use of active and public transport modes to reduce car traffic before and after school day start and end times
- Decongest the road networks around schools.
- Increase active travel to and from school in a safe transport environment.
- Enhance connectedness to neighbourhood and community through safe travel to and from school.
- Empower students and young people to be safe road users now and into the future.

In order to achieve these objectives, the draft STP includes a range of measures including:

- Policies and procedures to encourage mode shift towards active forms of transport.
- Careful management of day-to-day operations.
- Communications plan to keep the school and community informed about ravel and transport initiatives.
- Transport Access Guide, which will be included in "welcome packs" provided to parents/guardians and areas as part of the Year 7 induction and for new enrolments throughout the year.
- Travel surveys, which will undertaken on an annual basis and used to refine mode share targets and inform policies and procedures.

7.3.6 Mitigation measures

The following mitigation measures have been identified:

- Finalise and implement STP.
- Advocate to Council and TfNSW for upgrades to the active transport network.

7.4 Transport (construction)

A Preliminary Construction Traffic and Pedestrian Management Plan (CTPMP) has been prepared by GHD and is provided at Appendix 6. The report outlines principles to be adopted by the appointed contractors to ensure the project has no unacceptable impacts on the surrounding road network during the construction phase. Key points from the report are outlined below.

7.4.1 Construction vehicles routes

It is expected that the majority of heavy vehicles and workers will access/egress the subject site to and from the nearby population/commercial centres of Queanbeyan and Canberra.

Access and egress to the construction compound, including delivery and worker vehicles, will be provided via Environa Drive and the north road.

All heavy vehicles will access the site from the north via the signalised intersection of Tompsitt Drive and Environa Drive. It is noted that Tompsitt Drive between Lanyon Drive and Jerrabomberra Parkway is authorised by Transport for NSW to accommodate vehicles up to the size of 19m B-doubles.

Can local road network accommodate?

7.4.2 Construction compound

Access to the construction compounds will be via three gates, which will be managed by authorised traffic controlllers:

- Gate 1 on the north road – the main site access/egress for staff/visitors and an entry only for construction vehicles.
- Gate 2 on the north road – for the egress of construction vehicles.
- Gate 3 from Environa Drive – additional access and egress for construction vehicles.

7.4.3 Heavy vehicles

Heavy vehicle activity (i.e., deliveries and waste collection) will occur within the construction compound.

The following heavy vehicle movements are anticipated:

- Cranes – likely to be required during the construction of the superstructure, approximately three cranes per week for a period of two months.
- Truck and dog trailer – likely to be required for the duration of the civil works, approximately four to six movements per day (inbound and outbound) for a period of two months.
- Material deliveries – likely to be multiple deliveries per day, in vehicles ranging from utes to pantecs.
- Waste – likely to be one movement every second day.

Heavy vehicle arrivals will be coordinated to avoid queuing of vehicles outside the site, as queuing of vehicles is not permitted on the public road network or in a position that will cause obstruction or safety issues to vehicles (or occupants), pedestrians or cyclists.

Vehicles are not to double park or queue to impact traffic and pedestrian thoroughfare and property access.

7.4.4 Light vehicles

It is expected that there will be a maximum workforce of approximately 150 workers.

The majority of workers are expected to reside in the nearby population centres of Queanbeyan and Canberra, offering opportunities for carpooling. For the purpose of analysis, it is assumed that there will be an occupancy rate of 1.5 workers per vehicle.

Application of this car driver rate to the assumed workforce yields a typical traffic generation in the order of 100 light vehicles per day, which are anticipated to access the subject site in the morning and depart the subject site in the afternoon/evening.

Short term parking can be made available for workers and deliveries on the north road cul-da-sac with application of a Works Zone with Council by the building contractor, prior to construction commencement. Longer term parking should be made available within the construction site boundary or within the David Madew Park car parking area in consultation with Council.

7.4.5 Construction traffic impacts

The number of construction vehicles to access the site will need to be confirmed by the contractor during the detailed construction planning stage. However, based on the preliminary estimates outlined above, it is expected that construction traffic volumes will be within typical daily traffic fluctuations and will not adversely alter the operation of the existing road network condition. Furthermore, it is estimated that construction activity will be less than the future operational activity of the developed site.

7.4.6 Mitigation measures

A Detailed CTPMP is to be developed by the engaged contractor prior to construction commencement in consultation with relevant public authorities.

The following list summarises the measures that will be in place prior to the commencement of and during the construction period:

- Key stakeholders, including operators of adjacent land uses (including the primary school), will be notified of any changed traffic management arrangements prior to the commencement of works and be provided updates throughout the construction period.
- Construction works will typically occur within the standard hours detailed by the NSW EPA.
- Deliveries will be during work hours and staged so as no delivery vehicles are causing large traffic disruption around the site or at the primary school.

- Truck drivers will be directed to follow the predetermined haulage routes (via Tompsitt Drive and Environa Drive) to provide direct access to the site and minimise the impact on the local road network.
- Traffic controllers will be located at the construction compound's three access/egress gates to assist in the safety of the site and public vehicles, pedestrians and cyclists.
- A Traffic Guidance Scheme will be developed in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and TfNSW Traffic Control at Worksites Technical Manual. It will identify appropriate signage (and location) to advise motorists of upcoming changes in the road network.
- Pedestrian access will be maintained for the bus stop on Coachwood Avenue.
- Suitable staff induction methods and environmental controls will be implemented prior to the commencement of construction works.

7.5 Ecologically sustainable design (ESD)

An Ecologically Sustainable Development Statement by Norman, Disney & Young is attached at Appendix 26. The report summarises the ESD initiatives adopted for the project, explains how the project has addressed the SEARs requirements and provides an overview of how the proposal responds to sustainable planning.

Subject to implementation of the measures identified in the report, it is considered that the project provides for a suitably sustainable development, consistent with the four ESD principles defined by clause 7(4) of Schedule 2 of the EP&A Regulation and responsive to future climate change.

7.5.1 Principles of ESD

There are four ESD principles defined by clause 7(4) of Schedule 2 of the EP&A Regulation that must be considered in the assessment of the proposal. These are addressed in the table below. The Green Star report card at Appendix A of the ESD report also identifies where specific project initiatives align with the four principles.

Table 7-2 ESD principles assessment

Principle	Comment
Precautionary principle	The design has been reviewed against holistic sustainability principles to ensure a high ESD outcome is achieved. The proposed ESD initiatives aim to reduce the environmental impacts typically associated with buildings during the construction and ongoing operation of the building. Sustainability measures have been incorporated, spanning across the project's design, construction and operations based on the core principles of:

Principle	Comment
	• Using resources (energy, water and materials) efficiently. • Enhancing indoor environment quality and occupant comfort. • Minimising ecological impacts. A climate change risk assessment has been completed to assess the anticipated impacts of climate change and implement design strategies to mitigate these impacts.
Intergenerational equity	Student and staff health has been considered through the incorporation of indoor environmental quality design features, including daylight and glare analysis for natural lighting, best-practice lighting design, indoor air quality, thermal comfort assessment, acoustic design, and responsible material selection to reduce internal pollutants and resource depletion for future generations.
Conservation of biological diversity and ecological integrity	The proposed design has considered design strategies to minimise the urban heat island effect and improve ecological value of the site, such as the use of light-coloured external finishes and landscaping including native vegetation. Access to views will be considered to increase student engagement with the natural environment.
Improved valuation, pricing and incentive mechanisms	Total cost of operation will be reduced through sustainable considerations to reduce energy, water and waste requirements, taking into consideration whole-of-life costing. The project will ensure sustainable principles are extended to include value for money, fit-for-purpose, long-term reliability/resilience and flexibility. Designing with the long-term operation of the building in mind will create further buy-in and cooperation from the operating stakeholders. Strategies to reduce operational waste have been considered, such as the development of an operational waste management plan and separation of waste streams.

7.5.2 ESD measures

The key ESD measures implemented as part of the project are summarised in the table below.

Table 7-3 Project ESD measures

Theme	Measures
Management	• Preliminary consideration of the proposed development to assess how the proposed design is responsive to future climate impacts by undertaking a climate change risk assessment • A Climate Adaptation Plan developed for the building to address specific climate risks of the design and how they might be mitigated to reduce risk.

Theme	Measures
	• Adopting Green Star management credits across the development where feasible.
Indoor environmental quality	• Passive design principles have been incorporated in the design, including high-performance building envelope, effective shading, and natural ventilation openings to support comfortable and low-energy indoor environment quality. • Preliminary daylight analysis to assess the level of natural lighting received in internal spaces, to further support high levels of daylight for building occupants as the design progresses • Best-practice lighting (typically LED) will be provided to improve lighting comfort. • High efficiency heating and cooling to improve thermal comfort. • Acoustic design to support the building's function as training, teaching and multi-purpose spaces for students, staff and community use. • Adopting Green Star IEQ credits across the development where feasible.
Energy	• Exceeding NCC 2019 Section J minimum deemed-to-satisfy (DtS) requirements. The EFSG Section DG02.03 requires the development to target a 10% reduction in energy consumption, compared to a minimum NCC 2019 DtS compliant building, excluding any contribution from renewable energy (e.g. rooftop solar PV). Final improvement will be demonstrated via energy modelling in detailed design; however, specific provisions currently include: o Exceeding the minimum building envelope R-values of Section J1.3, J1.5 & J1.6 where feasible. o Improving on the glazing performance requirements of Section J1.5. o Improving on the maximum illumination power densities of Section J6.2. • Effective shading devices which reduce solar heat gains to conditioned spaces. • High performance building sealing for conditioned spaces. • High performance building fabric, including high performance glazing. • Energy-efficient lighting (typically LED) will be provided throughout, and high efficiency heating and cooling. • Roof mounted solar photovoltaic (PV) system in accordance with EFSG requirements. • Adopting Green Star energy credits across the development where feasible.

Theme	Measures
Transport	• Traffic engineer has been engaged to carry out a transport assessment in line with the SINSW requirements to encourage active and public transport, bicycle parking for staff and students as well as change facilities for staff are provided to the development. • The STP will be carried out in accordance with the SINSW transport assessment process, which is guide by the following 8 principles: o Students achieve daily physical activity requirements through active travel to school. o Prioritise multi-modal transport planning and infrastructure provision to school. o Consult with transport stakeholders early and regularly. o Install supporting infrastructure to the school and on-site. o Minimise traffic disruption to the school and community during construction. o Implement and commit to a visible, funded, feasible STP. o Monitor and evaluate the School Transport Plan process to revise and improve the process to achieve outcomes.
Water	• Selection of water-efficient sanitary fittings and fixtures. • Rainwater harvesting and water reuse system (toilets, landscape irrigation). • No water-based heat rejection systems for air conditioning (cooling towers). • Adopting Green Star water credits across the development where feasible.
Materials	• A significant portion of construction waste generated from demolition will be reused or recycled, to limit the amount of waste going to landfill. • Low-VOC and low- or no-formaldehyde products specified where possible to improve the indoor environment quality for users. • Adopting Green Star materials credits across the development where feasible.
Land use and ecology	• Selection of locally indigenous native planting where feasible. • Adopting Green Star land use and ecology credits across the development where feasible.
Emissions	• Landscaping and rainwater harvesting to support Water Sensitive Urban Design and limit stormwater pollutants leaving the site. • Appropriate lighting design to reduce light pollution.

Theme	Measures
	• All heat-rejection systems to be waterless to eliminate risk of Legionella (no cooling towers). • External lighting to be designed such that the Upward Light output Ratio <5%. • Water detention or infiltration to native soils for management of stormwater peak flows. • Stormwater treatments to reduce pollutants in water leaving the site. • On-site detention (OSD) tank or rainwater tank to reduce peak discharge to the sewer. • Adopting Green Star emissions credits across the development where feasible.

7.5.3 Assessment against accredited rating scheme

The proposal seeks to achieve a 4 Star Green Star certification in line with Green Star Design and As Built v1.3 principles. A Green Star scorecard is included at Appendix A of the ESD report.

7.5.4 Climate change statement

A climate change risk assessment undertaken as per AS 5334-2013 and Green Star Design & As Built v1.3 requirements. Expected impacts from climate change were identified with reference made to both CSIRO projections for the East Coast (South) sub-cluster and the NSW Government's NSW and ACT Regional Climate Modelling (NARCliM) projections. The results showed the following:

- Extreme temperatures are projected to increase with very high confidence, and substantial increases in temperatures reached on hot days, as well as the frequency of hot days.
- Average temperatures will continue to increase in all seasons (very high confidence).
- Generally, less rainfall is expected in winter (medium confidence), but the intensity of extreme rainfall events is projected to increase (high confidence).
- There is high confidence that climate change will result in a harsher fire-weather climate in the future.
- Time spent in drought projected to increase (medium confidence) over the course of the century.

The design's responsivity to the above impacts was then assessed. The assessment identified no "High" or "Extreme" risks due to climate change impacts after design elements were considered for this project. All risks, including existing controls, were identified as being either "Low" or "Medium".

Several of the residual risks were selected and mitigation strategies were implemented into the building design to reduce these risks to increase building resilience to future climate change. Key mitigation strategies include:

- Design of mechanical heat rejection systems to operate above current peak ambient temperatures to accommodate increased likelihood of extreme temperatures.
- Spare capacity in electrical site substation to accommodate increased load as a result of extreme weather.
- Surge protection and best-practice earthing to mitigate risk of lighting strike as a result of increased intensity of storm events.
- Provision of landscaping, covered outdoor areas and selection of light-coloured materials to mitigate heat gains and heat island effect.
- Selection of endemic, local and native landscaping to accommodate increased risk of drought.
- Selection of high-efficiency air filtration and building sealing to accommodate increased risk of dust storms and bushfire smoke.

7.6 Aboriginal cultural heritage

An ACHA by Eco Logical is attached at Appendix 7. The ACHA has been prepared in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b) (the Code), The Burra Charter (ICOMOS 2013), Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) (the Guide) and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010). Key points from the report are outlined below. Overall, it has been found that the proposal will result in minor and acceptable impacts on Aboriginal cultural heritage, with no further investigation required, subject to ongoing consultation with Aboriginal stakeholders.

7.6.1 Existing environment

The earliest reliable date of Aboriginal occupation in the South Eastern Highlands region comes from the Birrigai Rock shelter in Tidbinbilla Nature Reserve in the ACT, which demonstrates sporadic occupation from the last glacial maximum 21,000 years ago (Flood et al 1987). Open artefact sites and artefact scatters are the most common site types identified within Jerrabomberra and the surrounding area.

Previous archaeological studies have identified the relationship between these sites and stone artefact density and their proximity to water sources.

The dominant raw material found in the lithic assemblages within the wider region is quartz. This would have been sourced from the Ordovician sedimentary rock formation, which consists of interbedded quartz-rich sandstone, siltstone, mudstone, and chert (Jenkins 2000). Fine-grained siliceous rock, including chert, tuff and hornfels

are abundant within the gravel beds of Jerrabomberra Creek. The regional archaeological landscape has been variably impacted by historical and current land use practices as well as by natural processes.

A search of AHIMS identified two Aboriginal sites within the site:

- Artefact scatter (AHIMS ID 57-2-0115) (PPS 5).
- Potential archaeological deposit (AHIMS ID 57-2-0977) (PAD 3).

The location of the AHIMS sites is shown in the image below.

Figure 7-7 AHIMS sites
Source: Ecological

7.6.2 Consultation

In accordance with consultation requirements, consultation was carried in four stages:

Stage 1: Notification of project proposal and registration of interest

Relevant bodies and known Aboriginal stakeholders were notified of the development, requesting registration of interest in the project. Additionally, advertisement was placed in the Regional Independent on 18 November 2020. A total of nine Aboriginal stakeholders registered their interest.

Stages 2 & 3: Presentation of information about the project and gathering information about cultural significance

A project information pack was sent to the nine registered Aboriginal parties (RAPs) on 16 April 2021. Two responses were received which indicated support for the proposed methodology.

Test excavations were conducted by Eco Logical and RAPs over a period of five days from 31 May 2021 to 4 June 2021. Three RAP groups participated in all aspects of the field program and undertook activities such as excavation, sieving and recording.

Stage 4: Review of draft ACHA report

The draft ACHA was sent to the RAPs on 27 August 2021 for a 28-day review and comment period. One response to the draft report was received. The respondent RAP expressed support for the report and request involvement in the salvage/surface collection of AHIMS ID 57-2-0115 and reburial of the Aboriginal objects collected.

7.6.3 Survey and archaeological investigations

Eco Logical carried out a field survey on 28 January 2021. AHIMS ID 57-2-0115 could not be relocated, and no further Aboriginal objects or PADs were identified during the survey.

Eco Logical undertook test excavations in accordance with the Code over a period of five days from 31 May 2021 to 4 June 2021. The excavations involved 26 test pits across the site. The excavations resulted in the recovery of 13 lithic artefacts. The distribution of the lithic material was focused on the highest point of the site and at the location of the previously identified surface artefact scatter AHIMS ID 57-2-0115. It is likely the artefacts are from the same occupation as they were all recovered from the top 200mm of the soil profile.

The recovered artefacts are predominantly small in size (15-40mm). The majority of the assemblage recovered is of poor quality and of tertiary reduction, with only one having cortex present. No cores were found amongst the assemblage nor any formal tools; many were broken flakes or angular fragments without distinguishable features. No lithic material had any evidence of modification, backing or use wear. A detailed analysis of the artefacts is provided in the Archaeological Technical Report at Appendix C of the ACHA at Appendix 7 of the EIS.

Based on the distribution of the recovered artefacts, AHIMS ID 57-2-0977 (PAD 3) has been defined as a low-density artefact scatter, and AHIMS ID 57-2-0977 has been updated to reflect the results. Enough information has been gathered following test excavations to understand the nature and extent of evidence present within the site

to understand Aboriginal activities within the site. No further archaeological investigations are required for AHIMS ID 57-2-0977.

7.6.4 Aboriginal cultural values assessment

Eco Logical has undertaken an Aboriginal cultural values assessment for the site as a whole and the two AHIMS sites. In summary:

- No social or cultural significance was identified through Aboriginal community consultation specific to the site. No social or cultural significance was provided for the AHIMS sites.
- The study area has been modified/disturbed, and no aesthetic value were identified through Aboriginal consultation. The site has low aesthetic significance.
- No historic associations with "place" were identified during the course of the background research, field survey or consultation with RAPs.
- The site has low scientific significance. The site has low research potential, low representative value in the regional context and low education value. Furthermore, the AHIMS sites within the site are not rare within the regional context.

7.6.5 Impacts

The proposed earthworks and landscaping will directly impact the two AHIMS sites, resulting in total loss of value for the sites.

The overall guiding principle for cultural heritage management is that Aboriginal sites should be conserved where possible. In this case, however, it is not practical to conserve the sites given their location in the middle of the site in most suitable area for building. The design of the school cannot be easily reconfigured to conserve the AHIMS sites. Notwithstanding, the overall impact of the proposal on the two sites is considered acceptable given that Eco Logical has identified the two sites as having low significance.

7.6.6 Mitigation measures

The ACHA recommends the following mitigation measures:

- It is recommended that the Aboriginal community are given the opportunity to salvage any surface artefacts associated with AHIMS ID 57-2-0115 to attempt to mitigate impacts on the cultural heritage.
- No further archaeological assessment is required for the study area. Although general measures will need to be undertaken, including further assessment if the site area changes and heritage induction for early demolition and construction workers.

- In accordance with Chapter 3 of the Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW (OEH 2011), the ACHA should be submitted for registration on the AHIMS register within three months of completion.

- If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, procedures outlined in the Code should be followed.

- Consultation with registered Aboriginal stakeholders should continue throughout the life of the project as necessary.

- Further consultation with registered Aboriginal stakeholders will take place regarding the appropriate strategy for future long-term management of the retrieved artefact assemblage from test excavation. Suitable long-term management of the retrieved artefact assemblage will be a reburial, following completion of works. A suitable place for reburial will be determined through consultation with Council and the Aboriginal community and will be undertaken accordance with requirement 26 "Stone artefact deposition and storage" in the Code.

7.7 Heritage

The site has no known (non-Aboriginal) heritage or archaeological significance. The site is not a listed heritage item, is not located in a heritage conservation area and is not located near a heritage item or conservation area.

Historical aerial photography suggests that the site has remained undeveloped and has likely been used as grazing land. That is, there is no known (non-Aboriginal) occupation the site that would have left archaeological artefacts. Accordingly, it is considered that the site's archaeological potentially is extremely low.

Given the above, it is considered that the proposal will have no notable heritage impacts and that no further heritage investigation is required.

7.8 Social impact

A Social Impact Assessment (SIA) prepared by Urbis is attached at Appendix 8. The report methodology was informed by the guidance contained within DPIE's SIA Guidelines for State Significant Projects (2021). Key points from the assessment are outlined below. Overall, the assessment has found that the proposal will create a positive impact on the community through provision of an accessible local school that is designed to respond to local and student needs. The assessment provides a number of recommendations that could be implemented to further enhance the impact of the proposal. These recommendations generally relate to ongoing consultation/communication with key stakeholders.

7.8.1 Existing environment

In 2020, there were 9,896 people estimated to living in Jerrabomberra. Key characteristics of this community include (based on 2016 census data from Profile id):

- Over half of Jerrabomberra households are couple families with children (53.3%), which is significantly higher than in the LGA (32.8% and Regional NSW (25.4%).

- A high proportion of people living in Jerrabomberra are aged between 10 – 19 years (17.3%) and 35 – 49 years (26.7%), reflecting the family nature of the suburb.

- Over 80% of employed Jerrabomberra residents travel to work by car. There is minimal public transport use, with fewer than 1% of employees travelling to work via public transport.

- Jerrabomberra is in the top 10% of NSW suburbs for socio economic advantage.

- By 2036, the population of Jerrabomberra is expected to decrease by 13.7% to 8,542 people. However, considerable population growth will be concentrated immediately next to the suburb boundary in the Tralee-Environa area, which is part of the South Jerrabomberra precinct.

High school students in Jerrabomberra currently travel to Queanbeyan or Canberra to access secondary education. Karabar High School is the only existing NSW government high school that includes Jerrabomberra in its catchment area. Karabar High School is also a partially selective high school.

7.8.2 Stakeholder engagement

DoE undertook the following activities as part of the proposal:

- An online community survey, from November 2020 – December 2020.

- Three in-person community engagement and information sessions, held in November 2020.

- Distribution of planning updates and frequently asked questions on the proposal to approximately 9,900 Jerrabomberra households from November 2020 – July 2021.

Most of the community appears to support the development of a new high school in Jerrabomberra, with 95% of the 695 survey respondents in support of the school. Other feedback received related to questions about the catchment area, integrating sustainable design features and ensuring students can safely walk and/or cycle to the school. Refer to the Consultation Outcomes Report at Appendix 23 for further detail.

Additionally, TKD Architects undertook two Walk on Country consultation sessions with representatives from the AECG and traditional landowners. The Walk on Country sessions provided an opportunity for the AECG and traditional landowners to provide feedback on the proposed design and operation of the school.

7.8.3 Impact assessment

The table below provides a summary of the key social impacts of the proposal.

Table 7-4 Key social impacts

Category	Impacts and mitigation
Engagement and integration of Aboriginal culture	The engagement with Aboriginal cultural values throughout the design process has contributed to a proposal that protects, enhances and integrates Aboriginal values on site. Overall, the engagement and integration of Aboriginal culture is likely to have a positive impact on the community.
Improved access to education	The proposal generates a very high positive impact by increasing access and capacity to local enrolments in an area of identified need. The location of the school will also reduce the need for students and parents to travel long distances to access education, generating positive health and wellbeing outcomes.
Access to facilities and open space	The proposal is likely to have a positive impact on student access to open space and recreation. Most student recreation needs can be met on site, with playing field access to be facilitated via a joint use arrangement of David Madew Oval. Given there are four playing fields at David Madew Oval, it is expected that the casual, daytime recreation needs of the community can still be met and are unlikely to be significantly impacted by the proposal.
Change to visual character	The proposal is unlikely to have a significant impact on the visual character of Jerrabomberra. The site is located in area suitable for development, and the design of the buildings to avoid overshadowing and visual impacts to surrounding residential properties. Also, the use of landscaping, setbacks and façade treatments to better integrate the proposal with the surrounding natural environment.
Pedestrian safety and access	The proposal is expected to facilitate high rates of student pedestrians and cyclists. The Transport Assessment undertaken by GHD estimates that, based on the expected catchment area and transport patterns for regional high schools, approximately 50% of incoming students will walk and/or cycle to school and 15% will catch the bus. Based on the information available within the Transport Assessment, the proposal is likely to have a neutral impact on student pedestrian safety and access.

Overall, it is likely the proposal will create a positive impact on the community. This is influenced by the provision of accessible, local education places and the design of the school to respond to local and student needs. The overall impact of this proposal could be further enhanced through the implementation of the SIA recommendations provided (see below).

7.8.4 Mitigation measures

The SIA recommends the following mitigation measures:

- Implement the recommendations outlined in the ACHA.
- Implement the recommendations provided by the AECG and traditional landowners where possible, as outlined in the Architectural Design Report and Walk on Country sessions.
- Maintain consultation with Aboriginal and Torres Strait Islander communities to keep them informed of the final design and to allow further opportunities for input as the proposal progresses.
- Consider the entire suburb of Jerrabomberra when determining the catchment areas for local schools.
- Clearly communicate the catchment area to all existing and prospective families in the broader Jerrabomberra area, and provide information around intake years as soon as readily available.
- Work with Council to develop and fund a maintenance schedule for David Madew Oval (in proportion to school use) to compensate any impact to playing field quality and ensure it is protected from overuse.
- Enable the joint use of the school's on-site learning and recreational facilities for community use outside of school use. Consideration should be given to use of the school hall and outdoor sports courts.
- Develop a maintenance schedule for the site to ensure that the grounds and external landscaped areas are cared for all year round.
- Enable the school to be part of the DoE "Share our Space" program to provide broad public benefit and invite people into the site. This reduces the potential for the site to become isolated from the community, particularly during long periods of inactivity during the school holidays, and helps to better integrate the site into the urban fabric.
- Implement the management measures and recommendations outlined in the Transport Assessment and STP.

7.9 Noise and vibration

An Environmental Noise and Vibration Assessment prepared by Acoustic Logic is attached at Appendix 11. The report assesses the impacts associated with noise emissions from the site during the operational and construction phases as well as noise intrusion to the site from surrounding noise sources. Key points from the assessment are outlined below. Overall, it has been found that the proposal will result in minor and acceptable noise impacts during the operation and construction phases and will achieve suitable internal noise amenity, subject to implementation of standard design and management mitigation measures.

7.9.1 Existing conditions

Surrounding noise receivers include a mix of existing and future low density residential and future business and industrial uses.

Surrounding noise sources include vehicle movement on the future Environa Drive and future north road, and aircraft noise associated with Canberra Airport.

Long term unattended noise logging was conducted between 27 April and 10 May 2021 to quantify the existing acoustic environmental at the site. The location of the monitoring is shown in the image below.

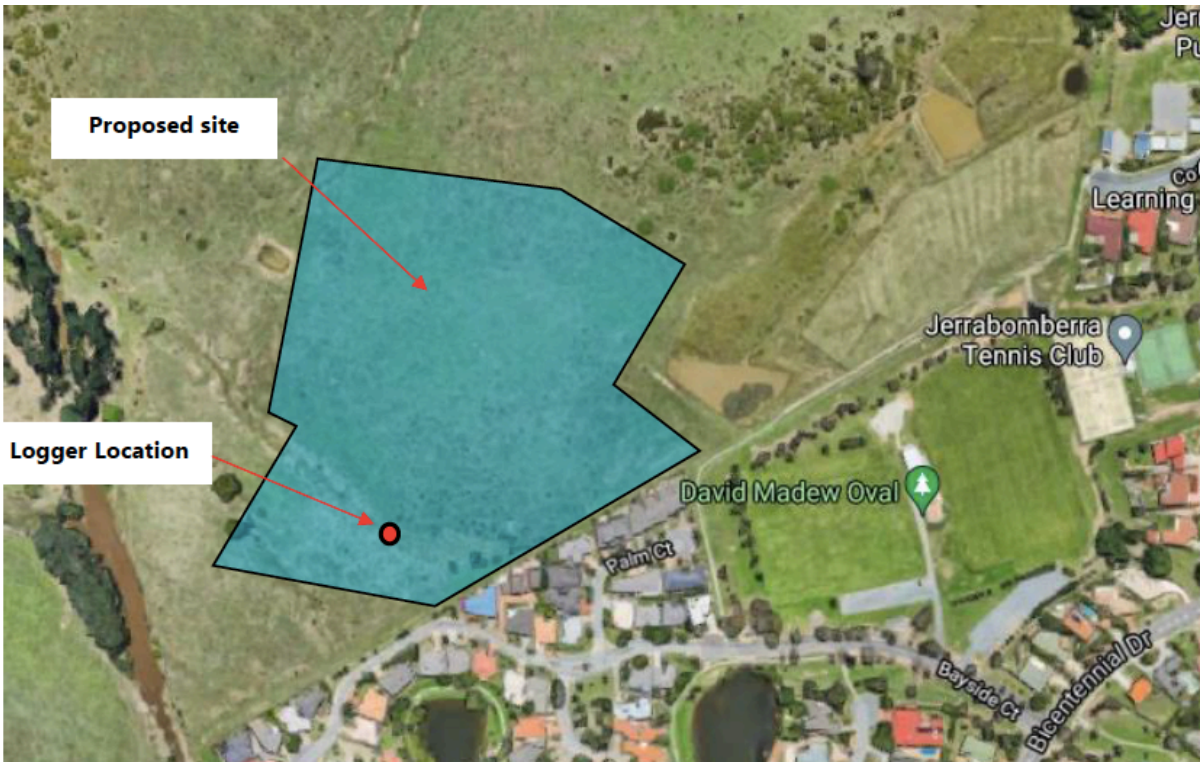


Figure 7-8 Noise monitoring location
Source: Acoustic Logic

7.9.2 Noise emission from school

Operational noise

Key sources of noise emissions from operation of the future school include:

- Noise from internal areas.
- Mechanical plant, public address (PA) system and school bells.
- Traffic generation.
- Waste removal.
- External activities.

Regarding indoor noise, the administration and teaching spaces in Building A are expected to generate low to medium levels of noise. Given these spaces will be typically at least 100m from any residential receiver, indoor noise emissions from Building A would not exceed the Education SEPP criteria.

Building B contains the school gym that may be used for presentations and performances. Calculations show that gym internal noise level during a music performance will not cause the background + 5dB(A) noise emissions criteria to be exceeded at the nearest residential receivers, even with the gym door open.

Regarding mechanical plant, PA system and school bells, detailed acoustic design of mechanical plant cannot be undertaken at approval stage, as plant selections and locations are not finalised. However, given the proposed buildings are remote from existing and future residential buildings, it is both possible and practical to treat noise from the operation of the proposed mechanical equipment to comply with the EPA Noise Policy for Industry (NPfI) criteria using standard acoustic treatments such as lined ductwork, silencers, screens and the like.

Regarding traffic generation, no significant noise from the car park or kiss-and-drop zone is anticipated.

Regarding waste removal, the waste removal truck will park approximately 200m from the nearest residential building, and this distance should adequately address noise impact from waste removal operations.

Regarding external activities, the predicted noise levels at the most affected residential receivers (to the south) exceed the rating background level by up to 13 dB(A). The level of impact at all other residences will be significantly lower due to the screening effects provide by the school buildings, and because of additional distance loss.

The 13 dB(A) exceedance of the rating background level is considered acceptable for the following reasons:

- When assessing school outdoor noise, it is typical to apply a less stringent indicator of noise impact than "background + 5 dB(A)" given it is present for short periods and is generally regarded as "community" noise.

- A playground located near a residential boundary is a common scenario in school developments. At the subject site, the main play areas are located well away from residential receivers.

- In *Meriden v Pedavoli* [2009 NSWLEC 183], the NSW Land and Environment Court noted, "All noise that emanates from the normal activities at a school is not offensive". In that case, the Court had regard to the fact that there was other school development in the local government area in which playgrounds adjoin residential development and the fact the proposed use was permissible in the zone. This is consistent with the proposed development.

- Given that there is already significant distance and barrier separation between the play areas and residences, the only way of minimising noise

impact is to erect noise barriers around the school, However, these barriers would have significant negative impacts, including impacts on views and visual character.

- The school is adjacent to Council-operated sporting fields (David Madew Regional Park), and therefore play noise is already part of the normal noise environment.

Overall, the proposal will have minor and acceptable impacts in regard to operational noise subject to implementation of standard mitigation measures in regard to plant and equipment selection, design and location.

Construction noise

Predicted noise levels from construction activities have been calculated, and the results are provided at table 17 of Acoustic Logic's report. The results show that the construction works will generally exceed the noise management levels at the residential receivers to the south but will be less than the highly noise affected level. This level of noise impact not uncommon for construction projects near residential areas and is considered acceptable subject to implementation of reasonable and feasible mitigation measures as per EPA guidelines. These measures are outlined at sections 12.8 to 12.11 of Acoustic Logic's report.

Construction vibration

There are no significant sources of vibration envisaged. Given the distance from nearby receivers, vibration impacts on all receivers are expected to be within the recommended levels detailed in section 11.3.1 of Acoustic Logic's report.

7.9.3 Noise intrusion into school

The primary source of noise intrusion into the school is aircraft noise. Acoustic Logic has determined aircraft noise levels at the site using AS 2021. The Standard gives aircraft noise levels for aircraft landing and taking off for locations near airports. The location of the runways was obtained from the Canberra Airport ANEF 2019.

Based on the distance from the site to the runways and an assessment of all the aircraft types listed in AS 2021 typically using the airport, the Standard predicts that the average loudest typical aircraft movement will be from a Boeing 737-800 landing on the main runway (based on typical flight paths and schedules provided by Canberra Airport). The noise level at the site as indicated by the Standard is 74dB(A).

To achieve acceptable internal amenity for internal school spaces, Acoustic Logic has provided recommendations regarding glazing thickness, acoustic seals for windows, external door construction, mechanical ventilation, external wall construction and roof/ceiling construction. These are outlined in section 11.1 of Acoustic Logic's report. The recommendations have been based on the predicted aircraft noise level and spectral characteristics of the aircraft noise, the area of building elements exposed to aircraft noise, the absorption characteristics of the rooms and the noise reduction performance of the building elements. Subject to the

implementation of these measures, the school will achieve the relevant internal noise amenity criteria.

7.9.4 Mitigation measures

Acoustic Logic recommends the following mitigation measures:

- Operation of the school should be limited to the activities and times of operation indicated in table 2 of Acoustic Logic's report, subject to additional mitigation of noise for certain activities and operating times as indicated below.
- Detailed acoustic review of all external plant items should be undertaken following equipment selection and duct layout design. All plant items should be capable of meeting noise emission requirements of Council and the EPA NPfI trigger levels, with detailed design to be done at construction certificate stage.
- External speakers for PA and bells should designed to minimise noise spill, be directional facing away from residential receivers to comply with EPA NPfI guidelines.
- Ground maintenance should only occur between 7am and 6pm, Monday to Friday.
- Where music practice occurs within a school classroom outside of normal hours, the windows of the rooms should be kept closed.
- Construction of the school buildings should be in accordance with the aircraft noise intrusion requirements in AS2021-2015 as per section 11 of Acoustic Logic's report.
- Construction noise impacts should be managed as outlined in section 12 of Acoustic Logic's report.

7.10 Biodiversity

A Biodiversity Development Assessment Report (BDAR) prepared by Capital Ecology is attached at Appendix 9. Key points from the BDAR are outlined below. Overall, it has been found that the proposal will result in a less-than-significant direct impact on the site's biodiversity as well as minor potential indirect impacts. The direct impacts will be effectively mitigated via Biobanking Agreements for the Poplars development (already in place) and payment of biodiversity credits under the Biodiversity Assessment Method (BAM) (already paid). The potential indirect impacts will be effectively managed via implementation of a Construction Environment Management Plan (CEMP) and other standard management measures.

7.10.1 Existing environment

The site's biodiversity characteristics are as follows:

- The site does not contain any tributaries or well-formed drainage lines.
- The nearby dams are fringed by largely exotic vegetation and are likely to be of limited value to the common native water birds, reptiles and amphibians which occur in the locality.
- The site does not contain any important wetlands.
- The site is unlikely to constitute or comprise part of an important biodiversity corridor or other notable habitat connectivity feature.
- The site does not contain any features of geological significance.
- The site does not support or occur near any declared area of outstanding biodiversity value.
- The site contains no remnant trees.
- The site supports the BC Act-listed ecological community White Box Yellow Box Blakely's Red Gum Woodland in the areas mapped as PCT1334 Zone 4 (see below map). This ecological community supports Golden Sun Moth habitat.

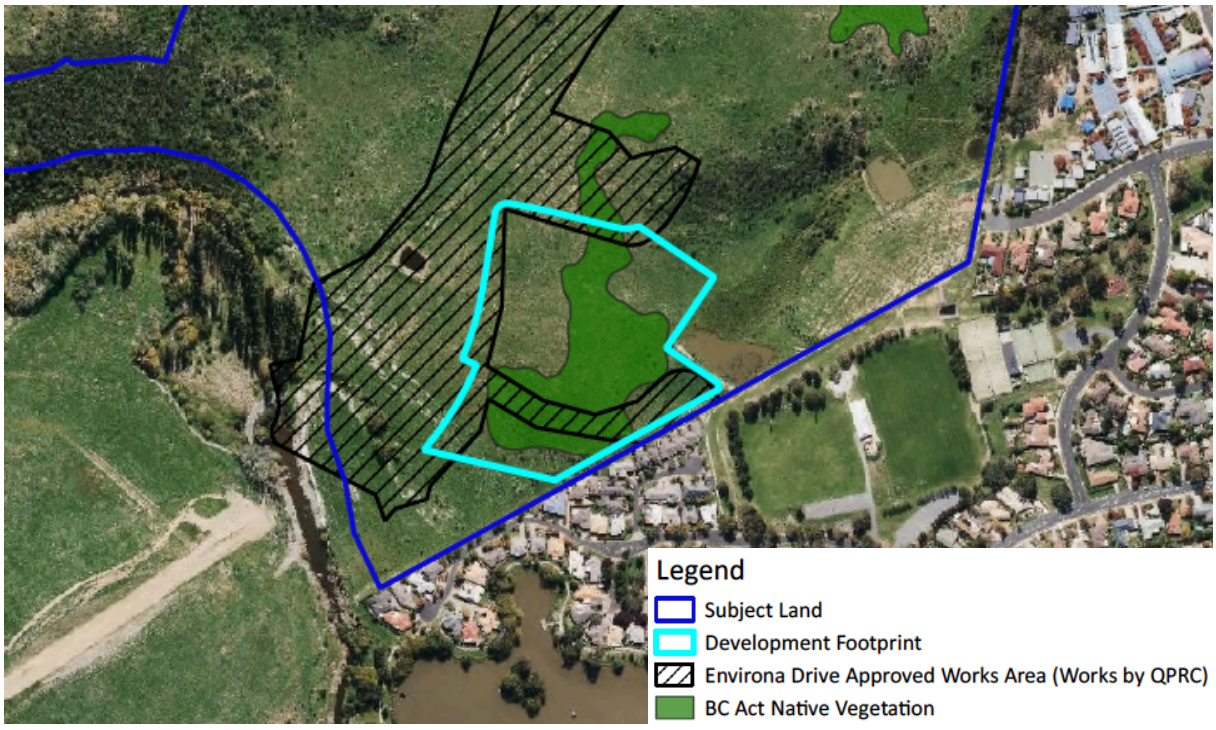


Figure 7-9 Vegetation map
Source: Capital Ecology

7.10.2 Impacts

Direct impacts

As shown in the figure below, the proposal will result in clearance of:

- 1.46ha of Plant Community Type (PCT) 1334 Zone 4 – low diversity native pasture (BC Act native vegetation, BC Act Box-Gum Woodland).
- 1.46ha of Golden Sun Moth habitat (BC Act endangered, EPBC Act critically endangered), located in PCT 1334 Zone 4.
- 1.79ha of PCT1334 Zone 5 – low diversity exotic pasture.

PCT1334 Zone 5 is dominated by exotic grasses and forbs, does not meet the definition of BC Act native vegetation, and is not identified as habitat for threatened species. Therefore, this PCT does not require further assessment with respect to ecosystem credits or species credits.

These direct impacts are considered acceptable given the site has been identified as suitable for development as part of the overall Poplars development area and given that the clearing is not expected to lead to a decrease in the viability of the local population (see serious and irreversible impacts discussion below).

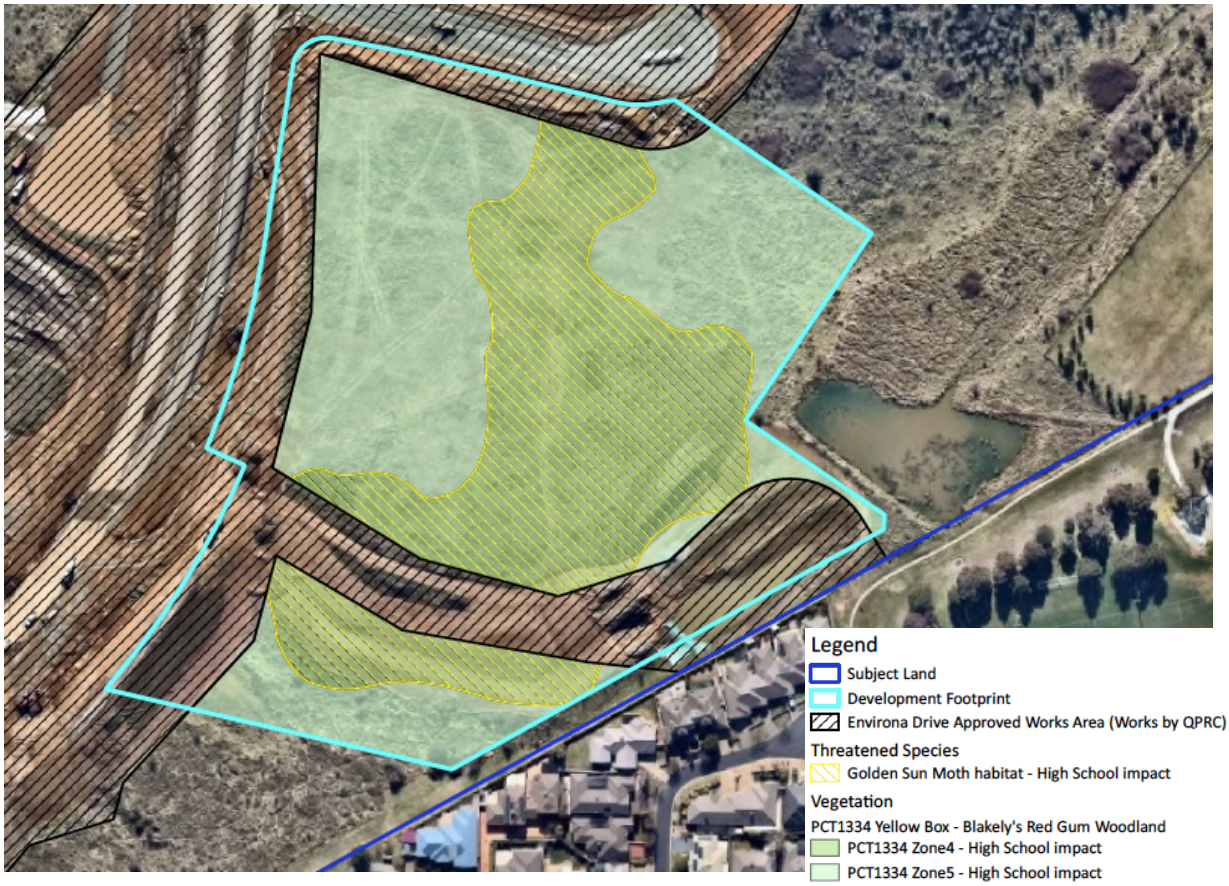


Figure 7-10 Biodiversity impact map
Source: Capital Ecology

Indirect impacts

The proposed development has the potential to indirectly impact retained or adjacent native vegetation and habitat. Potential indirect impacts are listed below:

- Increased sedimentation of receiving waterways (i.e., Jerrabomberra Creek) during construction.
- Increased noise, vibration and dust during construction.
- Weed introduction and/or spread during construction and occupation.
- Incidental damage or removal of retained native vegetation and habitat during construction and occupation.
- Increase in pest animal populations as a result of increased human activity during occupation.

These indirect impacts can be satisfactorily managed through the implementation of standard mitigation measures (detailed below), such as best practice weed management and sediment and erosion control.

Prescribed impacts

No prescribed biodiversity impacts have been identified.

Serious and irreversible impacts (SAIIs)

The subject land does not contain habitat of potential significance to any flora species listed as an SAII entity. However, the subject land does support the following biodiversity values, both of which are listed as SAII entities:

- Golden Sun Moth *Synemon plana*.
- PCT1334 – Yellow Box grassy woodland of the northern Monaro and Upper Shoalhaven area, South Eastern Highlands Bioregion (BC Act Box-Gum Woodland).

The proposed development will result in the removal of a total of 1.46 ha of Golden Sun Moth habitat (located entirely within PCT1334 Zone 4) and a total of 1.46 ha of BC Act Box-Gum Woodland (comprised entirely of PCT1334 Zone 4).

DPIE Biodiversity Conservation Division has advised that a decision has been made not to develop entity specific thresholds for SAII. Instead, decisions will be made on a case-by-case basis. Extended discussion on SAII is provided in section 3.4 of the BDAR. Key points from the discussion include:

- The proposal is unlikely to lead to an increase in threats and indirect impacts to the Golden Sun Moth that may in turn lead to a decrease in the viability of the local population. In fact, if the recommended mitigation measures are implemented (see further discussion below), it is likely that the proposed development will lead to an increase in the long-term viability of the local population.
- The proposal is unlikely to modify or destroy abiotic factors necessary for the long-term survival of the Box-Gum Woodland community or adversely alter the species composition.

7.10.3 Biodiversity offset requirements

The proposal generates the following biodiversity credit obligations under the BAM scheme:

- Zero ecosystem credits required for removal of PCT1334 Zone 4 given the vegetation zone in the development footprint does not have a sufficiently high vegetation integrity score.
- Nine species credits required for impacts to the Golden Sun Moth.

Importantly, the entire offset obligation of the proposed development has already been met. Consent 332-2015 for creation of the school lot (which has not yet been registered) includes a condition requiring evidence of 9 species credits for the Golden Sun Moth prior to issue of the subdivision certificate. The condition was addressed by The Village Building Co. Ltd on 21 April 2021 when the company purchased and tired the required nine Golden Sun Moth credits.

7.10.4 Mitigation measures

Section 3.3 of the BDAR outlines mitigation measures to address residential impacts on biodiversity values during and after the construction phase. The BDAR notes that implementation of these measures will reduce the risk of residual impacts to an acceptable level. The measures include:

- A CEMP to guide the proposed development from when construction commences until construction is completed.
- Best practice weed, sediment, and erosion control.
- BioBanking Agreements over the two BioBanking sites within the Poplars development area. These agreements are already in place, with no additional agreements required as part of the subject proposal.

7.11 Bushfire

A Bushfire Protection Assessment by Eco Logical is attached at Appendix 21. The report details fire protection measures and demonstrates compliance with Planning for Bush Fire Protection (NSW RFS, 2019) (PBP). Key points from the report are outlined below. Overall, it has been found that the proposal provides for a suitable response to bushfire risk subject to appropriate construction and implementation of standard mitigation measures.

7.11.1 Existing environment

The site is bounded by rural lands to the south-west to the east. There is strong evidence of historical grazing across this land; however, this land is conservatively assessed as a bushfire hazard and is classified as "grassland" in accordance with PBP, as shown in the figure below.

The area west of the site forms part of the Environa Drive infrastructure and is not considered a bushfire hazard.

The effective slope under the bushfire hazard adjoining the subject land range between "all upslopes and flat land" and ">5-10 degrees downslope" where the topography falls to Jerrabomberra Creek to the west.

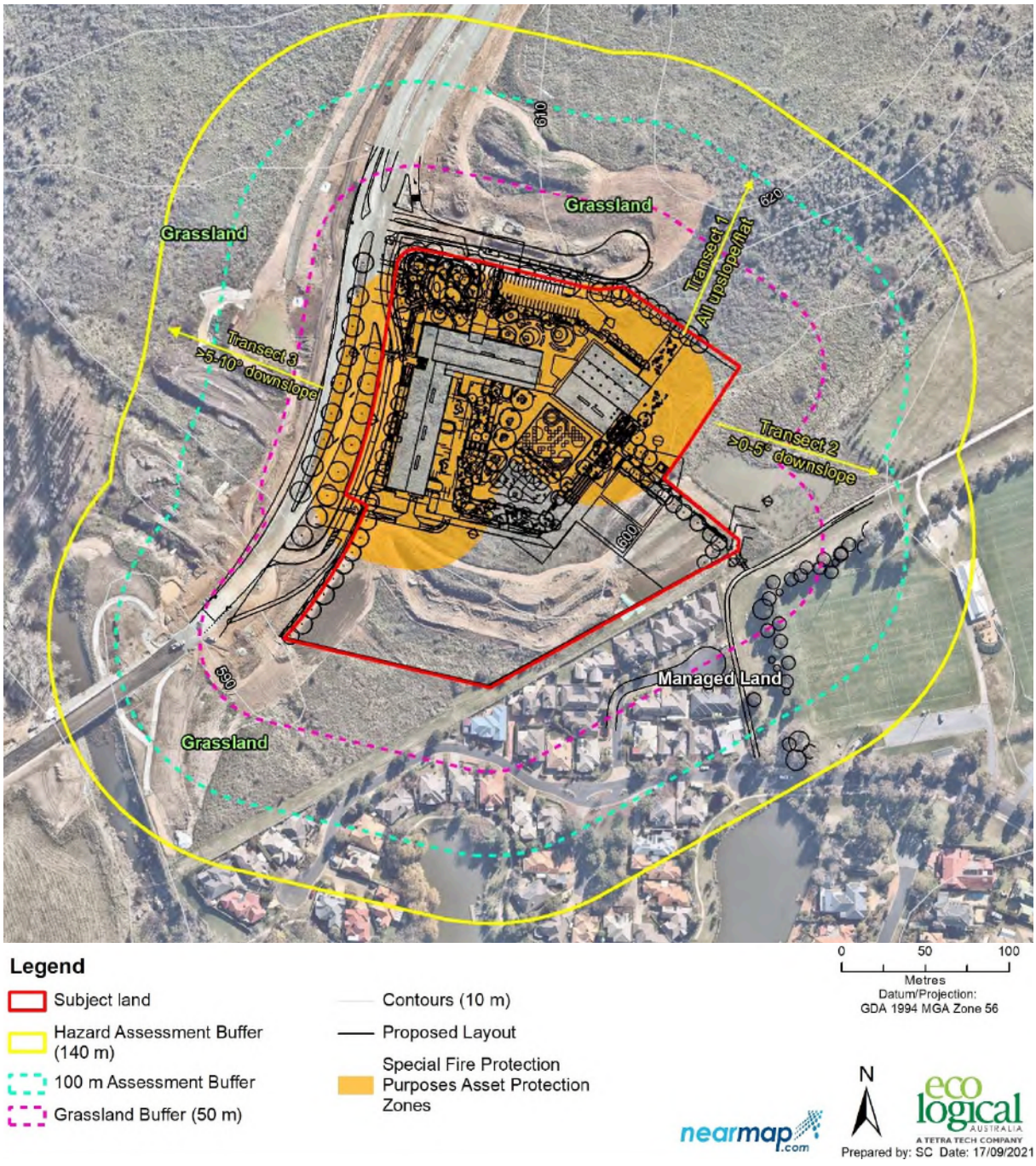


Figure 7-11 Bushfire hazard analysis and APZ
Source: Peterson Bushfire

7.11.2 Impacts

The proposal is expected to be acceptable from a bushfire risk perspective, subject to the implementation of standard mitigation measures (detailed below).

The required asset protection zones (APZs) for the surrounding bushfire threats are provided within the site and public road infrastructure. The proposal generates no requirement for additional clearing to accommodate an APZ.

The proposed buildings will need to be designed and constructed in accordance with the relevant bushfire attack level (BAL). In this case, the proposed development is exposed to BAL-12.5.

Eco Logical has assessed the proposal's landscaping, access, water supply, electricity services, gas services, and emergency and evacuation planning, and has found that the proposal complies/can comply with the relevant requirements of PBP.

7.11.3 Mitigation measures

The following mitigation measures are recommended based on the findings of Eco Logical's report:

- Any proposed landscaping is to satisfy the standard of an inner protection area as listed in PBP.
- Construction shall comply with sections 3 and section 5 (BAL-12.5) of AS 3959:2018 (SA 2018) or NASH Standard 1.7.14 (NASH 2014) as appropriate.
- The access drive is to be designed to comply with the Acceptable Solutions of PBP.
- Water supply is to be designed and installed in accordance with PBP requirements.
- Gas and electricity services are to be installed and maintained in accordance with PBP requirements.
- A Bushfire Emergency Management and Evacuation Plan is to be prepared in accordance with RFS guidelines prior to occupation of the school.

7.12 Stormwater management

A Civil Schematic Design Report including stormwater drawings by M+G Consulting is provided at Appendix 14. Key points from the report are outlined below. Overall, the stormwater strategy provides a suitable framework for the effective management of stormwater flows at the site in terms of quantity and quality, with no adverse impacts anticipated.

7.12.1 Drainage strategy

The existing site is mostly grassed, while the proposed site is approximately 50% impervious based on the proposed concept design details. An underground onsite detention (OSD) tank will be required to limit the post-development flows to the pre-development conditions as outlined in Table D5.5 of Council's Drainage Design guidelines.

Preliminary analysis undertaken using DRAINS software indicates a volume of approximately 100m^3 of detention storage is required onsite to maintain non-worsening of post-development flows to pre-development flow conditions based on the architectural concept design.

In accordance with Council's Development Design Specification D5 – Stormwater Drainage Design, the proposal will provide a stormwater major/minor system. The "major" system shall provide safe, well-defined overland flow paths for rare and extreme storm runoff events while the "minor" system shall be capable of carrying and controlling flows from frequent runoff events.

Additionally, as outlined in the EFSG, the proposed development is required to install/upgrade the minor stormwater drainage system including pits, underground pipes and kerb and gutter to cater for storm events up to the 20-year Average Recurrence Interval (ARI).

A major system is also required for the proposed development in the form of overland flow paths. The major system should be designed to convey flows surcharged from the underground drainage system for storm events up to 100-year ARI. The overland flow will be directed away from the buildings and carparks and towards the public road kerb and gutter provided that no adverse impact on the downstream properties.

7.12.2 Quality management strategy

To protect the existing ecology, the development will satisfy the water quality requirements over the full range of rainfall events to maintain the long-term protection of the pre-determined environmental values.

Proprietary water quality treatment products including Litter Baskets and Filtration cartridges within the OSD tank are proposed for the site as water quality treatment devices.

MUSIC software will used to assess the performance of the treatment devices in achieving the pollution reduction targets outlined in the Council's DCP.

7.13 Flooding

A Flood Assessment by Martens is attached at Appendix 15. Key points from the report are summarised below. Overall, it has been found that the proposed floor levels are above the PMF level, and the proposal will not notably affect the flood flow characteristics at the site.

7.13.1 Existing environment

Jerrabomberra Creek runs from the southeast to the northwest approximately 150m to the west of the site. A drainage depression runs from northeast to southwest along the south-eastern boundary and discharges to Jerrabomberra Creek. A sediment control basin is located within the southern area of the site.

Martens identifies that the site is likely affected by the following flood mechanisms:

- Overland flows from the site itself and the local upstream catchment (refer Section 2.1).
- Martens understands that, under extreme events, constriction due to the Environa Drive bridge and road embankments may cause floodwaters to back up onto the site.

7.13.2 Impacts

Martens carried out modelling using DRAINS software to assess the 1% AEP flood and PMF at the site. Marten's modelling has concluded that:

- Proposed flood characteristics are largely consistent with existing conditions, and differences due to the proposed development are negligible.
- Flooding on the school site is limited to lower areas for the 1% AEP and PMF events. All school building finished floor levels are above the PMF levels.
- The proposed buildings are outside of flood extent in the 1% AEP (with and without climate change) and PMF events. All building finished floor levels are above the Flood Planning Level and PMF level.

7.13.3 Mitigation measures

While the proposed development is not affected by flood hazards during all floods up to and including the PMF event, Martens recommends that the school management subscribe to the relevant flood warning systems and maintain communication with SES and local police at all times with respect to flood emergency response.

7.14 Soils and water

7.14.1 Groundwater

As noted in DP's Preliminary Site Investigation (Appendix 17), groundwater quality at the site tends to be variable. The likely yield of the groundwater aquifer is indicated to be less than 0.5 L/s with total dissolved solids greater than 1000 mg/L. Anticipated groundwater flow direction is inferred to be towards the south-west Jerrabomberra Creek.

A search of the publicly available registered groundwater bore database indicated that there are two registered groundwater bores within 1km of the site (500m northeast and 920m north).

The proposal is not anticipated to have any adverse impacts on groundwater. Impacts will be avoided through the following strategies:

- Minimisation of paved surfaces and use of native species in the landscape design (see Landscape Report at Appendix 4), which will help to increase groundwater recharge.
- Connection to Council's sewer system, minimising the potential for contamination of groundwater. Connection details are provided in the Infrastructure Management Plan at Appendix 12.
- Proper disposal of cleaning supplies and other potentially hazardous products as part of ongoing waste management. Waste management measures are provided in the Operational WMP at Appendix 20.

7.14.2 Sediment and erosion control

Sediment and erosion control measures will be applied prior to the commencement of construction and maintained throughout construction. The measures will be in accordance with Council's requirements and the NSW Department of Housing Manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book). Refer to the sediment and erosion control plan in the civil engineering package at Appendix 14 for further detail. Provided that these measures are in place prior to construction, no adverse sediment and erosion impacts are anticipated.

7.14.3 Acid sulphate soils and salinity

As noted in the Preliminary Site Investigation at Appendix 17, CSIRO's Atlas of Australian Acid Sulfate Soils online mapping portal indicates there is an extremely low probability of acid sulfate soils being present at the site. Accordingly, an acid sulfate soils management plan is unnecessary.

Soil salinity at the site has been tested as part of the Report on Limited Contamination Assessment at Appendix 18. The report identified no issues relating to soil salinity.

7.15 Watercourse and riparian impacts

A Watercourse and Riparian Impact Assessment by Eco Logical is attached at Appendix 28. Key findings from the report are summarised below. Overall, it has been found that the proposal will have no direct impacts and minor potential indirect impacts (e.g., soil instability and sediment runoff) on surrounding watercourses. The indirect impacts can be effectively mitigated through measures such as vegetation buffers, water quality improvement devices and permeable paving, which can be incorporated into the proposal's landscape design and stormwater drainage strategy.

7.15.1 Existing environment

An unnamed second-order tributary of Jerrabomberra Creek is mapped to the east of the site. It flows in a south westerly direction through a dam and sedge land before ending in a dam located to the immediate east of the site. The watercourse is classified as a second-order creek, and therefore the applicable vegetated riparian zone (VRZ) is 20m (on either side of the creek). As shown in the figure below, the inner VRZ for this watercourse is located outside of the site boundary, while the outer VRZ extends slightly into the site boundary.

Field investigations confirmed that the watercourse and riparian corridor is a broad, low-lying, sedge-dominated floodplain with a narrow, incised, meandering channel. The bank is firm in most places but is held mainly by grasses and herbs.

Figure 7-12 Watercourse map
Source: Eco Logical

7.15.2 Impacts

The proposal includes a footpath along the eastern boundary as shown in Figure 7-13 below. This footpath is located in the outer VRZ. Eco Logical has recommended design treatments for this footpath to mitigate impacts on the watercourse (see further detail below).

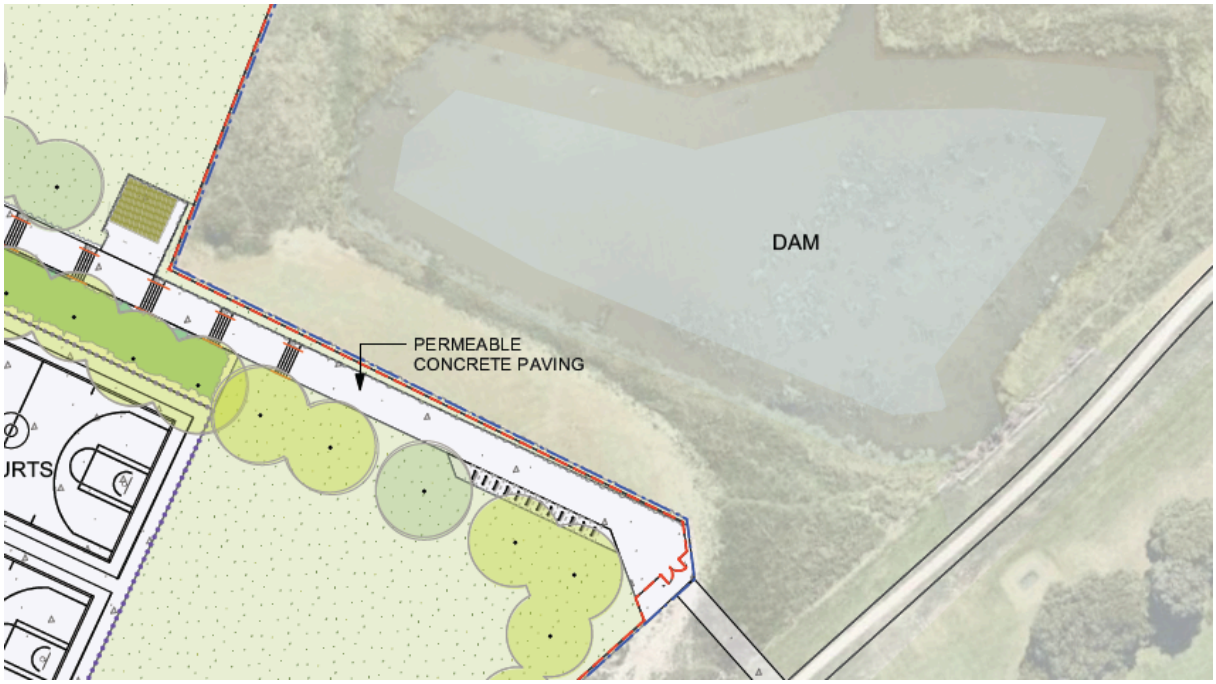


Figure 7-13 Landscaping elements near watercourse
Source: Context

The proposal will result in no direct impacts to the adjacent and downstream watercourses.

The proposal will result in the following potential indirect impacts on the riparian zones:

- Any clearing of vegetation or earthworks within the existing riparian zones could result in lack of soil stability. This may cause surface erosion (sheet and gully erosion) and transportation of sediment overland into the downstream waterway of Jerrabomberra Creek.
- There is the potential for sediment and waste material generated as part of the construction activities to enter the downstream waterway or adjacent waterway. This would increase the turbidity of the water and potentially introduce chemicals to the creek, and ultimately degrade water quality not only in the immediate works area but also in downstream environments.
- Where disturbance from construction associated with the proposed development results in bare ground or increased sunlight penetration into currently vegetated areas, there is the potential for invasion of exotic flora

species. The movement of construction vehicles in and around the riparian area can also act as a vector for weed propagules.

- In areas where the proposed development includes the construction of impervious surfaces, there is an increased risk of motor vehicle oils, litter and warmer surface water entering the creek.

Overall, these indirect impacts are considered minor and acceptable subject to implementation of mitigation measures (outlined below).

7.15.3 Mitigation measures

Eco Logical recommends the following mitigation measures:

- A vegetated buffer 5-10m wide is to be created on the north eastern edge of the site where the outer vegetation riparian zone overlaps with the site, east of Building B. The buffer should be comprised of native groundcovers and grasses and would provide a barrier between the proposed high school and the dam and riparian area, with the aim of filtering runoff before it leaves the site.

- The footpath proposed along the eastern boundary should be made of permeable paving to aid in infiltration of overland flow before leaving the site. Between this footpath and the site boundary, a biofiltration swale is recommended to be installed to provide filtering of runoff before it leaves the site.

- A CEMP is to be prepared prior to commencement of any construction works to address measures required to be implemented prior to, during and after works to minimise impacts on the environment.

- Water quality improvement devices are to be integrated into the development to ensure that water quality in the adjacent and downstream habitats is protected from the impacts of the operation of the school, such as increased impervious surfaces. The volume and velocity of flows from the development site should be detained so that post development flows are characteristic of what is currently leaving the site.

7.16 Waste

7.16.1 Construction waste

A Construction Waste Management Plan prepared by Hindmarsh is attached at Appendix 19. The report outlines the estimated quantity and type of waste that will be generated during the construction stage and provides details on servicing arrangements, and roles and responsibilities.

The expected waste volumes during construction stage are identified in the table below. As seen in the table below, the majority of construction waste will be recycled, with less a third to be transferred to a landfill.

Table 7-5 Construction waste generation

Material type	Estimated volume (m^3)		
	Reuse	Recycling	Disposal
Concrete brick blockwork and tile	-	165	-
Metals	-	85	-
Timber off-cuts	-	175	-
Cardboard	-	142	-
Plasterboard	-	165	-
Plastics, plastic packaging, paint drums, containers	-	75	30
Pallets and reels	65 units	-	-
Liquid waste	-	-	20
General waste	-	-	151
Subtotal	65 units	807	201
Total	670m^3		

7.16.2 Operational waste

An Operational WMP by EcCell is attached at Appendix 20. The plan considers the proposal's waste generation, bin requirements, waste rooms and collection arrangements.

Waste generation

The proposal's predicted waste generation and bin requirements are outlined in the table below.

Table 7-6 Operational waste generation

Waste type	Weekly volume (L)	Required bins	Collection frequency
Paper cardboard	742	1 x 1100L	Once per week
Comingled	831	1 x 1100L	Once per week

Waste type	Weekly volume (L)	Required bins	Collection frequency
Soft plastic	801	1 x 1100L	Once per week
Organics	148	1 x 240L	Once per week
Return and earn	89	1 x 120L	Once per week
General	1050	1 x 1100L	Once per week

Waste storage pad

The waste storage pad is located at the easternmost side of the car park in the northern end of the site, as shown in the figure below. The pad is sized to accommodate the required quantity of bins outlined in the table above.

The waste storage pad is able to be accessed by a front-loading HRV and rear-loading MRV.

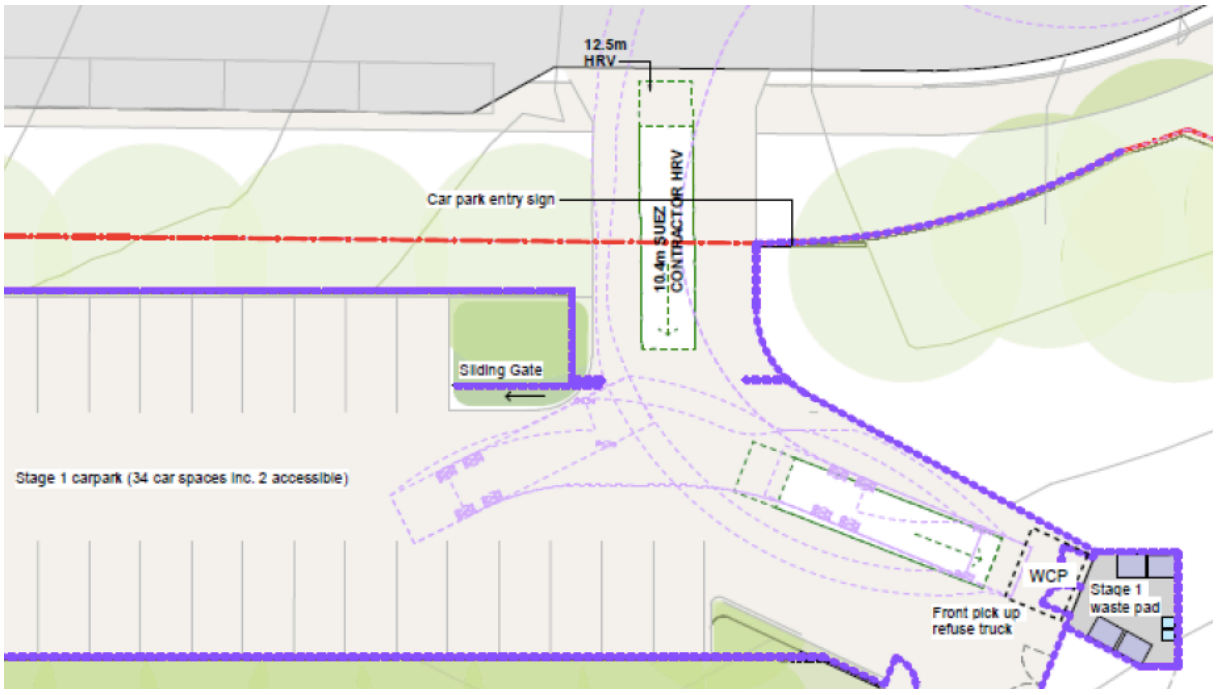


Figure 7-14 HRV swept path to waste storage area
Source: EcCell

Waste movement

Staff, students and visitors will place general waste and recycling into small waste and recycling bins (paper and comingled) located in the offices, canteen, classrooms and open space playground. Waste will be then transported by cleaning contractors via the nominated egress corridors/pathways to the waste storage area and placed in the correct waste stream bins.

Either a rear lifting MRV or front lifting HRV will collect the bins from the waste storage area collection days. Swept paths are provided at Appendix B of EcCell's report.

7.17 Contamination

A Preliminary Site Investigation (PSI) by Douglas Partners (DP) is attached at Appendix 17, and a Report on Limited Contamination Assessment by Douglas Partners is attached at Appendix 18. Key findings from the reports are summarised below.

The Report on Limited Contamination Assessment includes involved limited subsurface investigation including the drilling of 14 boreholes with sampling and laboratory testing for contaminants of concern.

Overall, the investigations and analysis have found that the site is suitable for the proposed use subject to further investigation (of a soil stockpile if the stockpile is to remain on site) and implementation of standard mitigation measures.

7.17.1 Existing environment

The historical aerial photographs indicate that the site has remained undeveloped open land. It is likely the site may have been used for grazing. Aerial photography from 2020 indicates that the western and northern boundaries of the site have been disturbed as part of road construction. The photograph also indicated ground disturbance associated with trench excavation, an unsealed access road and stockpile placement within the southern area of the site.

A site walkover was undertaken by an environmental scientist on 3 March 2021. The site layout appears to have remained unchanged from the 2020 aerial photograph. The site walkover identified no evidence of staining or odorous soils, underground fuel storage tanks or above fuel storage tanks, and no evidence of potential asbestos containing materials.

7.17.2 Impacts

DP's intrusive investigation and laboratory analysis has identified the following:

- Analytical results of soil samples were all within the adopted health-based (i.e., HIL-C / HSL-C), ecological (i.e., EIL / ESL) criteria, and management limits for urban open space (high school) land use.
- All soil results for TRH, BTEX, PAH, OCP, OPP, PCB and phenols were below the laboratory's practical quantitation limit (PQL). All soil results for metals were above the PQL but below the Site Assessment Criteria (SAC) with the exception of arsenic in samples BH01 / 0.1m, BH04 / 0.1m, BH06 / 1.0m, BH09 / 0.5m, BH13 / 0.5m and BH14 / 1.0m and soil results for all cadmium and mercury results, which were all below the PQL.
- Reported concentrations of metals, TRH, BTEX, PAH, OCP, OPP, PCB and phenols were below the CT1 criteria for General Solid Waste (non-putrescible). Based on the natural material observed from the boreholes and chemical

analysis of select samples, the material could also be classified as Virgin Excavated Natural Material (VENM).

- A VENM classification would be voided should the natural material be mixed with any fill or potential contaminants (i.e. mixed with the stockpile located within the site).

Based on the above findings, DP considers that the site can be made suitable for the proposed school, subject to a number of mitigation measures (detailed below).

7.17.3 Mitigation measures

DP recommends the following site-specific mitigation measures:

- Should the stockpile remain within the proposed school site, an intrusive investigation should be undertaken to delineate the extent and quality of the stockpile.

- An intrusive investigation should be undertaken across the site where excavations are likely to occur, which will provide preliminary waste classification and/or VENM advice. (Note; This investigation has already occurred, and the results are provided in DP's Report on Limited Contamination Assessment at Appendix 18).

DP also recommends the following general mitigation measures:

- A CEMP should also be prepared including an "unexpected finds protocol" and implemented during the works (i.e. hydrocarbon staining and/odours observed during works).

- An asbestos finds protocol should be prepared and implemented during construction work (to be included in the CEMP).

- Should suspected asbestos be encountered at the site, the affected area should be fenced off and assessed by an NSW licensed asbestos assessor.

- Should any fill material (i.e., the stockpile located on site) be required to be disposed off-site, the material must be assessed in accordance with NSW EPA Waste Classification Guidelines Part 1 Classifying Waste (2014) and assigned a waste classification prior to off-site disposal.

7.18 Utilities

An Infrastructure Management Plan prepared by Norman Disney & Young is provided at Appendix 12. The existing site infrastructure and need for upgrades are summarised in the table below. Overall, it is evident that the proposal will be provided with adequate connections to utilities.

Table 7-7 Utility infrastructure details

Utility	Existing infrastructure	Proposed supply
Potable water	The site has frontage to the following private water main: • DN-150 authority water main in Environa Drive. These works are currently under construction. As-built documentation will need to be provided once complete to inform the design.	A new potable water connection shall be made to the newly extended authority water traversing the under-construction north road, which will provide water for domestic and fire use. Final confirmation of the connection location shall be made during detailed design based on the survey output.
Sewer	The site has access to the following authority sewer mains: • 25 dia PVC authority sewer main in Environa Drive to the west of the site (see Figure 4). These works are currently under construction. As-built documentation will need to be provided once complete to inform the design.	The sewer drainage from the proposed buildings is proposed to be connected to the currently under-construction authority sewer main. Demands, depths and locations have been provided to the site developer; however, once constructed, a Section 68 application must be lodged with Council to confirm the connection into the Council main. A separate sanitary plumbing and drainage system will be provided to connect all fittings and fixtures in the canteen to the trade waste system. All wastewater from the food technology and canteen (subject to equipment types) will be conveyed to a 2000L grease arrestor and the treated effluent will discharge into the new gravity sewer line.
Natural gas	The site will have access to the following authority gas main: ▪ Gas main running in Environa Drive to the west of the site. These works are currently under construction, as-built documentation will need to be provided once complete to inform the design.	Gas will be extended up the north road and into the school. The regulator and meter will be provided at the boundary of the site.
Electrical high voltage (HV) services	There is currently no HV supply to the site.	It is proposed that the electricity supply to the campus will be from a new Essential Energy Kiosk Substation

Utility	Existing infrastructure	Proposed supply
		located on the north-western corner of the development. Substation location is to be adjacent to the roadway outside the school fence line because it is a utility requirement to have direct and unimpeded access to the substations 24/7.
Communication services	There is currently no supply to the site.	Communications infrastructure will extend from the north road.

7.19 Aviation

An Aviation Assessment by GHD is attached at Appendix 10**.** The report identifies which ANEF contours apply to the site and provides details of any flight paths associated with Canberra Airport that may be impacted by the development. Key points from the report are outlined below. Overall, it has been found that the proposal will have no impacts on the operations of Canberra Airport, with no mitigation measures required. The proposal will be affected by aircraft noise (i.e., 20-25 ANEF contour), and therefore the buildings will need to be designed to achieve adequate internal amenity.

7.19.1 Impacts

The proposal is expected to result in no major impacts in regard to aircraft noise or aircraft operations as outlined below.

ANEF investigation

A shown in the mapping below, the proposed school is between the 20 to 25 ANEF contour, approximately 200m from the 25 ANEF contour.

The acceptability of a development in relation to aircraft noise is dependent upon the type the type of development proposed combined with the ANEF contour in which the development is located. For school sites, 20 ANEF is "acceptable", 20 to 24 ANEF is "conditionally acceptable" and greater than 25 ANEF is "unacceptable" (as per Table 2.1 of AS 2021).

Being between the 20 and 25 ANEF contours, the proposed school is "'conditionally acceptable". As such, the school must incorporate appropriate noise control features to ensure adequate noise amenity. These measures have been identified in the submitted Noise and Vibration Assessment (Appendix 11).

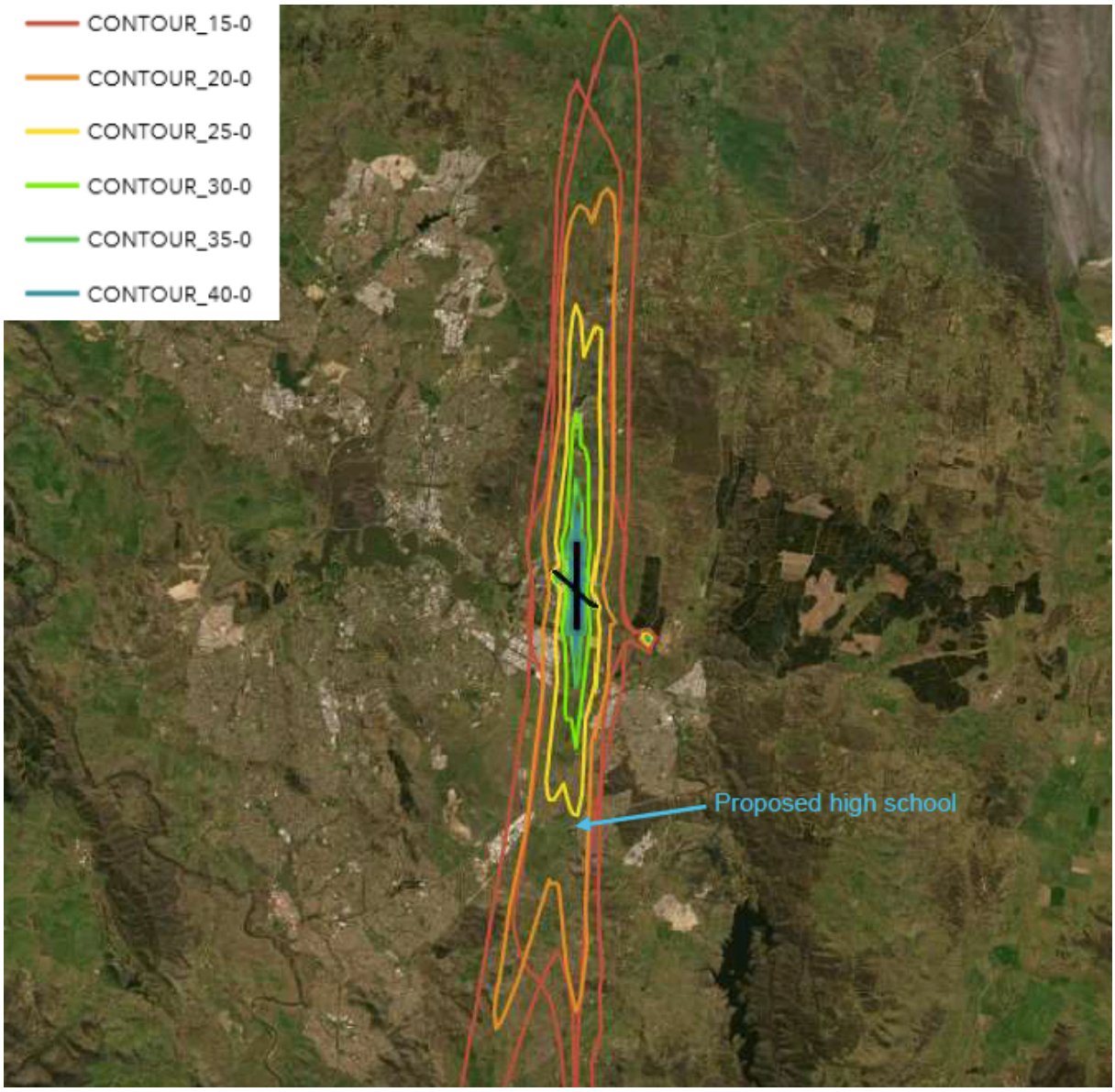


Figure 7-15 Canberra Airport ANEF contours
Source: GHD

OLS investigation

The school site is located approximately 7.5km from the southern runway end. As shown in the figure below, the OLS at this location is some 109m above the existing ground surface level so it is well above the projected development works. The adjacent terrain will also provide partial or full shielding of the approach and take off surfaces.

Furthermore, the school site is located outside the 4.5km distance from the end of the runway and therefore is outside the zone in which lighting restrictions apply.

Figure 7-16 Location of school and Canberra Airport OLS
Source: GHD

7.19.2 Mitigation measures

As per AS 2021:2015, the building should be designed such that the Aircraft Noise Reduction (ANR) is achieved for all internal spaces.

Section 4.4 of the Aviation Assessment outlines the process to be carried out as part of the acoustic assessment to ensure internal spaces meet the required ANR. This process has been considered during preparation of the Noise and Vibration Assessment at Appendix 11, and appropriate acoustic treatments have been recommended as part of that report.

8 Assessment of other issues

8.1 Geotechnical

A Report on Geotechnical Investigation has been prepared by Douglas Partners and is attached at Appendix 16. The report provides the results of subsurface investigations to inform the structural design of the proposal. The report indicates that the site is geotechnically suitable for the proposed development and provides comments regarding site preparation, likely reactivity site classifications, retaining wall design parameters, foot design parameters and drainage.

8.2 Structural

A Structural Schematic Design Report by M+G Consulting is attached at Appendix 13. The report outlines the required structural design criteria for the school and the proposed structural systems. Based on the report, it is expected that generally standard structural techniques and methodologies will be utilised.

8.3 BCA and accessibility

A BCA & Access Assessment Report by Blackett Maguire + Goldsmith is attached at Appendix 24. The report provides an assessment of the proposal against the deemed-to-satisfy provisions of the BCA and identifies matters that are to be addressed by design amendments or performance solutions.

Based on the report, it is expected that the proposal can comply with relevant accessibility provisions, either by meeting the deemed-to-satisfy requirements or via a performance-based approach.

9 Environmental risk assessment

The table below provides a summary risk assessment of the proposal's potential environmental impacts as well as a consolidated list of recommended mitigation measures.

Table 9-1 Environmental risk assessment

Item	Potential impact	Level of impact	Mitigation measures	Residual Impact
Transport and accessibility	Construction: Heavy and light construction vehicles will access the site throughout the construction phase. The construction workforce will generate approximately 100 light vehicles per day.	Low	Detailed construction traffic and pedestrian management plan is to be prepared and implemented. Workers will park on the north road, within the site or at David Madew Regional Park (subject to agreement with Council).	Low
	Operation: The school will generate approximately 205 vehicle trips in the peak hours (including students and staff). SIDRA modelling shows that the school will have only minor impacts on the performance of the surrounding key intersections. Some of the intersections will operate at LoS F in the future, but this is generally attributable to background growth rather than the school.	Low	School Transport Plan is to be implemented. DoE to advocate to Council for upgrades to the surrounding active transport network.	Low
Noise and vibration	Construction: Residential receivers will experience noise greater than the	Medium	Reasonable and feasible noise management measures are to be implemented as recommended in the	Low

Item	Potential impact	Level of impact	Mitigation measures	Residual Impact
	noise management level.		Noise and Vibration Assessment.	
	Operation: Outdoor activity is expected to exceed the "background + 5dB(A)" level at the nearest residential receivers. All other aspects of school operations, including PA system, bell, mechanical plant, indoor noise, waste collection and traffic, are expected to comply with the relevant noise levels.	Low	PA system, bell and mechanical plant are to be selected and designed to meet the noise level identified in the Environmental Noise and Vibration Assessment. No mitigation measures required to attenuate noise from outdoor activity given it will only occur for short periods and is generally not considered offensive.	Low
	Operation: The site is located in the 20 – 25 ANEF contours for Canberra Airport.	Low	Implement the construction requirements specified in the Noise and Vibration Assessment to ensure adequate internal noise amenity.	Low
Aboriginal cultural heritage	Construction: Construction works will directly impact two AHIMS sites. Only one of these sites was identified during field investigations. Based on the results of the investigations, no further archaeological assessment is required.	Low	Aboriginal community should be given the opportunity to salvage any surface artefacts associated with AHIMS ID 57-2-0115. Heritage induction is required for early construction workers. The AHCA should be submitted for registration of the AHIMS register within three months of completion.	Low
Contamination	The site is suitable for the proposed use subject to mitigation measures.	Low	CEMP is to be prepared including an unexpected finds protocol.	Low

Item	Potential impact	Level of impact	Mitigation measures	Residual Impact
			An asbestos finds protocol should be prepared and implemented during works (to be included in CEMP). Should fill material be required to be disposed off-site, the material must be assessed in accordance with NSW EPA Waste Classification Guideline.	
Biodiversity	The proposal will remove 1.46ha of Golden Sun Moth habitat and Box-Gum Woodland, generating an offset obligation of nine species credits.	Low	CEMP is to be prepared to guide construction. Best practice weed, sediment and erosion control management measures are to be implemented during construction. The required nine offset credits have already been paid.	Low
Watercourse and riparian zone	The site is located adjacent to a watercourse, and a portion of the site is within the outer VRZ.	Low	Vegetated buffer is to be provided on the north-eastern edge of the site where the outer VRZ overlaps with the site, east of Building B. Footpath along the south-eastern boundary should be made of permeable paving, and a biofiltration swale should be provided between the footpath and site boundary. CEMP is to be prepared to minimise impacts to the riparian corridor. Water quality improvement devices are to be integrated into the stormwater strategy.	Low

Item	Potential impact	Level of impact	Mitigation measures	Residual Impact
Sediment and erosion	Construction activities have the potential to cause sediment and erosion impacts.	Low	Standard sediment and erosion control measures are to be implemented in accordance with the sediment and erosion control plan.	Low
Social impacts	The engagement and integration of Aboriginal culture is likely to have a positive impact on the community.	Low	Implement the recommendations outlined in the ACHA and those provided by the AECG.	Low
	There are key deficiencies in the surrounding active transport network.	Medium	Advocate to Council to implement the upgrades identified in the Transport Assessment.	Low
Aviation	The development works will be well below the OLS for Canberra Airport, and the site is well outside of the zone to which lighting restrictions apply.	Low	No mitigation measures have been identified in regard to airspace operations. Acoustic attenuation measures will be required to achieve adequate internal amenity as described above.	Low

10 Mitigation measures

The table below provides a consolidated list of recommended mitigation measures.

Table 10-1 Mitigation measures

Item	Potential impact	Mitigation measures
Transport and accessibility	Construction: Heavy and light construction vehicles will access the site throughout the construction phase. The construction workforce will generate approximately 100 light vehicles per day.	Detailed construction traffic and pedestrian management plan is to be prepared and implemented. Workers will park on the north road, within the site or at David Madew Regional Park (subject to agreement with Council).
	Operation: The school will generate approximately 205 vehicle trips in the peak hours (including students and staff). SIDRA modelling shows that the school will have only minor impacts on the performance of the surrounding key intersections. Some of the intersections will operate at LoS F in the future, but this is generally attributable to background growth rather than the school.	School Transport Plan is to be implemented. DoE to advocate to Council for upgrades to the surrounding active transport network.
Noise and vibration	Construction: Residential receivers will experience noise greater than the noise management level.	Reasonable and feasible noise management measures are to be implemented as recommended in the Noise and Vibration Assessment.
	Operation: Outdoor activity is expected to exceed the "background + 5dB(A)" level at the nearest residential receivers. All other aspects of school operations, including PA system, bell, mechanical plant, indoor noise, waste collection and traffic, are expected to comply with the relevant noise levels.	PA system, bell and mechanical plant are to be selected and designed to meet the noise level identified in the Environmental Noise and Vibration Assessment. No mitigation measures required to attenuate noise from outdoor activity given it will only occur for short periods and is generally not considered offensive.

Item	Potential impact	Mitigation measures
	Operation: The site is located in the 20 – 25 ANEF contours for Canberra Airport.	Implement the construction requirements specified in the Noise and Vibration Assessment to ensure adequate internal noise amenity.
Aboriginal cultural heritage	Construction: Construction works will directly impact two AHIMS sites. Only one of these sites was identified during field investigations. Based on the results of the investigations, no further archaeological assessment is required.	Aboriginal community should be given the opportunity to salvage any surface artefacts associated with AHIMS ID 57-2-0115. Heritage induction is required for early construction workers. The AHCA should be submitted for registration of the AHIMS register within three months of completion.
Contamination	The site is suitable for the proposed use subject to mitigation measures.	Should the stockpile remain within the site, an intrusive investigation should be undertaken to delineate the extent and quality of the stockpile. CEMP is to be prepared including an unexpected finds protocol. An asbestos finds protocol should be prepared and implemented during works (to be included in CEMP). Should fill material be required to be disposed off-site, the material must be assessed in accordance with NSW EPA Waste Classification Guideline.
Biodiversity	The proposal will remove 1.46ha of Golden Sun Moth habitat and Box-Gum Woodland, generating an offset obligation of nine species credits.	CEMP is to be prepared to guide construction. Best practice weed, sediment and erosion control management measures are to be implemented during construction. The required nine offset credits have already been paid.

Item	Potential impact	Mitigation measures
Watercourse and riparian zone	The site is located adjacent to a watercourse, and a portion of the site is within the outer VRZ.	Vegetated buffer is to be provided on the north-eastern edge of the site where the outer VRZ overlaps with the site, east of Building B. Footpath along the south-eastern boundary should be made of permeable paving, and a biofiltration swale should be provided between the footpath and site boundary. CEMP is to be prepared to minimise impacts to the riparian corridor. Water quality improvement devices are to be integrated into the stormwater strategy.
Sediment and erosion	Construction activities have the potential to cause sediment and erosion impacts.	Standard sediment and erosion control measures are to be implemented in accordance with the sediment and erosion control plan.
Social impacts	The engagement and integration of Aboriginal culture is likely to have a positive impact on the community.	Implement the recommendations outlined in the ACHA and those provided by the AECG.
	It is imperative that safe pedestrian and cycle access be provided to the school.	Implement the active transport upgrades identified in the Transport Assessment.
Aviation	The development works will be well below the OLS for Canberra Airport, and the site is well outside of the zone to which lighting restrictions apply.	No mitigation measures have been identified in regard to airspace operations. Acoustic attenuation measures will be required to achieve adequate internal amenity as described above.

11 Conclusion and justification

This EIS is submitted to the Minister for Planning to accompany an SSD application for establishment of a new high school in Jerrabomberra.

This EIS has considered the relevant statutory instruments and strategic documents and has provided an assessment of the potential impacts of the proposal on the built and natural environments as well as an assessment of social impacts.

This EIS fulfils the requirements of the EP&A Act and Regulation, addresses all relevant matters prescribed by the SEARs and demonstrates that the potential impacts of the proposal can be satisfactorily managed or mitigated.

In summary, the development is justified and should be approved for the following reasons:

- The proposal will meet identified demand and deliver on the announcement of a public school in Jerrabomberra.
- The proposal will provide for a contemporary, purpose-built facility that will optimise educational outcomes.
- The proposal will generate jobs, both short-term and ongoing.
- The proposal's design is the result of detailed analysis of the site and consultation with the community, DoE and GANSW.
- The potential environmental impacts of the proposal can be satisfactorily mitigated subject to the recommendations of the technical supporting documentation accompanying this EIS.
- The site is suitable for the proposal as it is relatively unconstrained and forms part of a broader redevelopment area.
- The proposal is in the public interest in that is provides for an important piece of infrastructure to meet the needs of the local community while resulting in no unacceptable environmental impacts.

Suite 1204B, Level 12, 179 Elizabeth Street
Sydney, New South Wales 2000

info@mecone.com.au
mecone.com.au