

ENVIRONMENTAL IMPACT STATEMENT

ALEX AVENUE PUBLIC SCHOOL



FEBRUARY 2019
SA6418
PREPARED FOR NSW DEPARTMENT OF EDUCATION



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Project Code	SA6418_Alex Avenue PS_EIS
Report Number	Final

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SIGNED DECLARATION


This Environmental Impact Statement (EIS) has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulations 2000*.

Environmental Assessment Prepared by:	
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In respect of:	NSW Department of Education

Applicant and Land Details:	
Applicant:	NSW Department of Education C/- Urbis Pty Ltd
Applicant Address:	Urbis Pty Ltd Level 23, Darling Park Tower 2, 201 Sussex Street Sydney NSW, 2000
Land to be developed:	Proposed Lots 1 and 2 being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646
Project:	The development of the new Alex Avenue Public School.

I certify that the contents of the Environmental Impact Statement, to the best of my knowledge, has been prepared as follows:

- In accordance with Schedule 2 of the *Environmental Planning and Assessment Regulations 2000*;
- In accordance with the requirements of the *Environmental Planning and Assessment Regulations 2000*; and *State Environmental Planning Policy (State and Regional Development) 2011*;
- The statement contains all available information that is relevant to the environmental assessment of the proposed development; and
- The information contained in this report is neither false nor misleading.

Name:	Alaine Roff, Associate Director
Signature / Date:	

EXECUTIVE SUMMARY

PURPOSE OF THIS REPORT

This Environmental Impact Assessment (EIS) has been prepared on behalf of the NSW Department of Education (DoE) and Schools Infrastructure NSW (SINSW) in support of State Significant Development Application SSDA_9368. The application is for a new school to be known as Alex Avenue Public School located at the corner of Farmland Drive and the future realignment of Pelican Road, Schofields (the 'site'). This EIS should be read in conjunction with the *Secretary's Environmental Assessment Requirements* (SEARs) attached at **Appendix A**, and the supporting technical documents provided at **Appendix B – EE**.

THE PROPOSAL

The new Alex Avenue Public School reflects the significant need for additional public education infrastructure in this precinct. Across New South Wales, the DoE is funding new schools, upgrades to existing schools and improved facilities as public school enrolments are anticipated to be 40,000 students higher in 2019-20 than 2015-16. The Schofields area is a location where significant residential growth will result in a concentration of new student enrolments. To meet the future demand, DoE is required to provide a school at this location with the modern facilities required for a contemporary teaching and learning environment.

Alex Avenue Public School will cater for students from Kindergarten to Year 6. The school will accommodate approximately 1,000 students and 70 full-time staff upon completion and will assist in alleviating pressure on existing school enrolments in the area and cater for future population growth. To meet this future demand, the proposal seeks consent for:

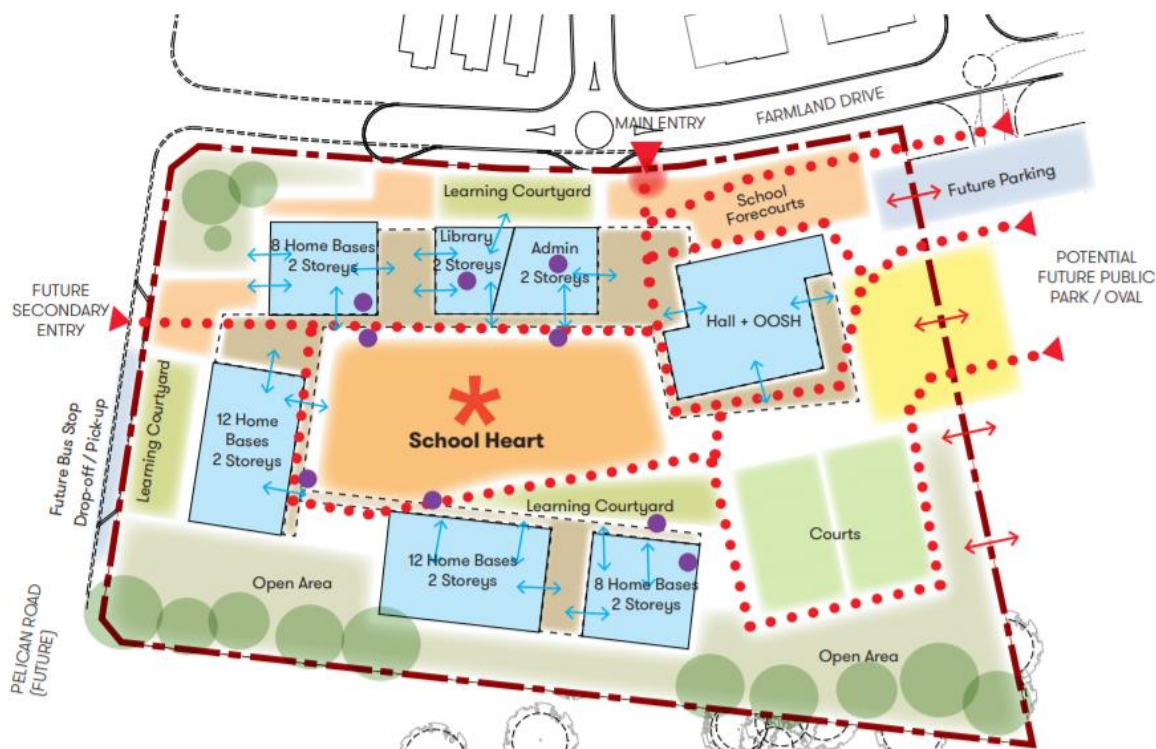
- Construction of a 2-storey library, administration and staff building (Block A) comprising:
 - School administrative spaces including reception;
 - Library with reading nooks, makers space and research pods;
 - Staff rooms and offices;
 - Special programs rooms;
 - Amenities;
 - Canteen;
 - Interview rooms; and
 - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
 - Collaborative learning spaces;
 - Learning studios;
 - Covered outdoor learning spaces;
 - Practical activity areas; and
 - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

Early works (including earthworks and services) will be subject to a separate approval.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park during school hours for the adjacent sports fields pursuant to a Joint Use agreement. Correspondence with Council can be found at **Appendix EE**. The proposed School pick up and drop off zone will also be contained within this future shared car park and will be accessed via Farmland Drive.

Figure 1 below illustrates the concept master plan for the proposal.

Figure 1 – Concept master plan



Source: Group GSA Architects

THE SITE

Alex Avenue Public School is to be located at the corner of Farmland Drive and the future realignment of Pelican Road and is legally described as proposed Lots 1 and 2 being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646. The site has since been subdivided however is yet to be registered and has an area of approximately 2 hectares. The site has an existing frontage to Farmland Drive to the north and a future frontage to Pelican Road (proposed road) to the west. The site is currently vacant rural land consisting of predominately of open pasture with a few trees clustered in the south-eastern portion of the lot.

SITE SUITABILITY

The site is considered highly suitable for the proposal for the following reasons:

- The land is zoned 'SP2' under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*. The proposal is permissible with consent and is consistent with the land use objectives of the zone;
- The proposal is consistent with the objectives of all relevant planning controls and achieves a high level of planning policy compliance;
- There are no significant environmental constraints limiting development on the site;

- Schofields, the suburb in which the site is located, is a rapidly developing predominantly residential suburb, focused around a core of mixed use residential, commercial and retail premises. The proposal is considered compatible with this context.
- The surrounding infrastructure and road network can support a new school on the site; and
- The proposal will not generate unreasonable impacts on the surrounding locality.

COST OF WORK AND PLANNING FRAMEWORK

The proposal is for the purpose of a new school. Pursuant to Schedule 1 Clause 15(1) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), development for the purposes of a new school is state significant development, regardless of cost of works. Accordingly, the proposal will be submitted to the *Department of Planning and Environment* (DPE) for assessment and determination.

ASSESSMENT

The proposal has been assessed against all items contained to the SEARS reissued for the project on 2 October 2018. In summary:

- **The proposal satisfies the applicable local and state planning policies:** The proposal satisfies the objectives of all relevant planning controls and achieves a high level of planning policy compliance.
- **The design positively responds to the site conditions and future urban context:** The design of the School was carefully considered to ensure it has good connections to adjacent external space, is generally located away from residential neighbours and is located on a primary street address with a good street presence.
- **The proposal is highly suitable for the site:** The site is zoned 'SP2' as per the Growth Centres SEPP and envisages the school use. There are no significant environmental constraints limiting development on the site and the proposal will not generate unreasonable impacts on the surrounding locality.
- **The proposal is in the public interest:** The proposal will take substantial pressure off existing schools in the surrounding locality and ensures more children have access to high quality school facilities, learning spaces and equipment. The proposal will also create temporary job opportunities in manufacturing, construction and construction management during the project's construction phase of works, and significant job opportunities in teaching and administration at the project's completion.
- **The proposal appropriately satisfies each item within the Secretary's Environmental Assessment Requirements:** The proposal satisfies the SEARs as demonstrated within this EIS.

Considering the above and the content contained to this EIS, it is recommended that the DPE approve this SSDA, subject to appropriate conditions.

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

A request was made to the Minister for the Secretary's Environmental Assessment Requirements (SEARs), pursuant to Clause 3, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*. SEARs were issued on 22 June 2018. Following further correspondence with DPE, the SEARs was subsequently amended and reissued by DPE on 2 October 2018 and then again on 30 January 2019.

The revised SEARs are addressed within this report and included in full at **Appendix A**.

Table 1 below provides a summary of the reissued SEARs and identifies the section of the report where the relevant requirement is addressed and/or the appendix reference for the specialist consultant's report associated with that requirement.

Table 1 – SEARs

Item/ Description	Document Reference
A. General Requirements	
<p>The Environmental Impact Statement (EIS) must be prepared in accordance with and meet the minimum requirements of clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> (the Regulation).</p> <p>Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.</p> <p>Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include:</p> <ul style="list-style-type: none"> • Adequate baseline data; • Consideration of potential cumulative impacts due to other development in the vicinity (complete, underway or proposed); and • Measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment. 	<p>The EIS has been prepared in accordance with the Secretary's Requirements and meets the minimum form and content requirements specified in Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>The EIS includes a comprehensive assessment of the environmental risks and impacts associated with the development.</p>
<p>The EIS must be accompanied by a report from a qualified quantity surveyor providing:</p> <ul style="list-style-type: none"> • A detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; • An estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and • Certification that the information provided is accurate at the date of preparation. 	Refer to Appendix D

Item/ Description	Document Reference
B. Key Issues – The EIS must address the following specific matters:	
<p>1. Statutory and Strategic Context</p> <p>Address the statutory provisions contained in all relevant environmental planning instruments, including:</p> <ul style="list-style-type: none"> • <i>Biodiversity Conservation Act 2016;</i> • <i>State Environmental Planning Policy (State & Regional Development) 2011;</i> • <i>State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;</i> • <i>State Environmental Planning Policy No. 64 – Advertising and Signage;</i> • <i>State Environmental Planning Policy No.55 – Remediation of Land;</i> • <i>Draft State Environmental Planning Policy (Remediation of Land);</i> • <i>Draft State Environmental Planning Policy (Environment);</i> • <i>Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No. 2 1997); and</i> • <i>State Environmental Planning Policy (Sydney Growth Centres) 2006.</i> <p><i>Permissibility:</i></p> <p>Detail the nature and extent of any prohibitions that apply to the development.</p> <p><i>Development Standards:</i></p> <p>Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.</p>	Refer to Section 5 of the EIS
<p>2. Policies</p> <p>Address the relevant planning provisions, goals and strategic planning objectives in the following:</p> <ul style="list-style-type: none"> • <i>NSW State Priorities;</i> • <i>The Greater Sydney Regional Plan, A Metropolis of three cities;</i> • <i>NSW Future Transport Strategy 2056;</i> • <i>State Infrastructure Strategy 2018 – 2038 Building the Momentum;</i> • <i>Sydney's Cycling Future 2013;</i> • <i>Sydney's Walking Future 2013;</i> • <i>Sydney's Bus Future 2013;</i> • <i>Crime Prevention Through Environmental Design (CPTED) Principles;</i> • <i>Healthy Urban Development Checklist, NSW Health;</i> • <i>Greater Sydney Commission's Central City District Plan; and</i> 	Refer to Section 6 of the EIS

Item/ Description	Document Reference
<ul style="list-style-type: none"> • <i>Blacktown City Growth Centre Precincts Development Control Plan 2014.</i> 	
<p>3. Operation</p> <ul style="list-style-type: none"> • Provide details of the proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities. • Provide a detailed justification of suitability of the site to accommodate the proposal. 	Refer to Section 4.5 of the EIS
<p>4. Built Form and Urban Design</p> <ul style="list-style-type: none"> • Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. • Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles. • Provide details of any digital signage boards, including size, location and finishes. • Provide a design report that establishes design guidelines and development parameters, and includes diagrams, illustrations and drawings to clarify the design intent of the proposal and which clearly demonstrates how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017. • Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development. • Provide detailed site and context analysis to justify the proposed site planning and design approach. • Provide a detailed site-wide landscape strategy. 	Refer to Appendix E and Section 4.3 of the EIS
<p>5. Environmental Amenity</p> <ul style="list-style-type: none"> • Assess amenity impacts on the surrounding locality, including solar access, visual privacy, overshadowing and acoustic impacts. • View analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development). • Lighting strategy and measures to reduce spill into the surrounding sensitive receivers. 	Refer to Section 7.1 of the EIS

Item/ Description	Document Reference
<ul style="list-style-type: none"> Identify any proposed use of the school outside of school hours (including weekends) and assess any resultant amenity impacts on the immediate locality and proposed mitigation measures. 	
<p>6. Staging</p> <ul style="list-style-type: none"> Provide details regarding the staging of the proposed development (if any). 	The proposal will be developed in one stage.
<p>7. Transport and Accessibility</p> <p>Include a transport and accessibility impact assessment, which details, but is not limited to the following:</p> <ul style="list-style-type: none"> Accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development; Details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area; The adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development; Measures to integrate the development with the existing/future public transport network; The impact of trips generated by the development on nearby intersections, particularly Schofields Road and Pelican Road, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years); The identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e minimum 3.5 m wide travel lanes), additional bus stops or bus bays; Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site; The proposed walking and cycling access arrangements and connections to public transport services; 	Refer to Appendix G, Appendix H, Appendix I and Section 7.2 of the EIS

Item/ Description	Document Reference
<ul style="list-style-type: none"> • The proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones; • Proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance; • Proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site; • An assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development; • An assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED; • Emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); and • The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: <ul style="list-style-type: none"> ○ assessment of cumulative impacts associated with other construction activities (if any); ○ an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; ○ details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; ○ details of anticipated peak hour and daily construction vehicle movements to and from the site; ○ details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; and ○ details of temporary cycling and pedestrian access during construction. <p>→ <u>Relevant Policies and Guidelines:</u></p> <ul style="list-style-type: none"> • <i>Guide to Traffic Generating Developments (Roads and Maritime Services)</i> 	

Item/ Description	Document Reference
<ul style="list-style-type: none"> • <i>EIS Guidelines – Road and Related Facilities (DoPI)</i> • <i>Cycling Aspects of Austroads Guides</i> • <i>NSW Planning Guidelines for Walking and Cycling</i> • <i>Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development</i> • <i>Standards Australia AS2890.3 (Bicycle Parking Facilities)</i> 	
<p>8. Ecologically Sustainable Development (ESD)</p> <ul style="list-style-type: none"> • Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development. • Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance. • Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy. • Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change. Specifically: <ul style="list-style-type: none"> ○ hotter days and more frequent heatwave events; ○ extended drought periods; ○ more extreme rainfall events; ○ gustier wind conditions; and ○ how these will inform material selection and social equity aspects (respite/shelter areas). 	<p>Refer to Appendix J and Section 7.9 of the EIS</p>
<p>9. Social Impacts</p> <ul style="list-style-type: none"> • Include an assessment of the social consequences which considers the proposed development's location, surrounding context and strategic planning for the area and how the school would serve the existing and future community. 	<p>Refer to Section 7.12 of the EIS</p>
<p>10. Aboriginal Heritage</p> <ul style="list-style-type: none"> • Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to 	<p>Refer to Appendix K, Appendix AA, Appendix CC and Section 7.6 and Section 7.7 of the EIS</p>

Item/ Description	Document Reference
<p>investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011).</p> <ul style="list-style-type: none"> • Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR. • Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH. 	
<p>11. Noise and Vibration</p> <ul style="list-style-type: none"> • Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. • Identify and assess 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, and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. <p>→ <u>Relevant Policies and Guidelines:</u></p> <ul style="list-style-type: none"> • <i>NSW Noise Policy for Industry 2017 (EPA)</i> • <i>Interim Construction Noise Guideline (DECC)</i> • <i>Assessing Vibration: A Technical Guideline 2006</i> • <i>Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008)</i> 	<p>Refer to Appendix L and Section 7.8 of the EIS</p>
<p>12. Contamination</p> <ul style="list-style-type: none"> • Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. <p>→ <u>Relevant Policies and Guidelines:</u></p> <ul style="list-style-type: none"> • <i>Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP)</i> 	<p>Refer to Appendix M, Appendix N and Section 5.5 of the EIS</p>

Item/ Description	Document Reference
<p>13. Utilities</p> <ul style="list-style-type: none"> • Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. • Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design. 	<p>Refer to Appendix O and Section 4.9 of the EIS</p>
<p>14. Contributions</p> <ul style="list-style-type: none"> • Address Council's "Section 94/94A Contribution Plan" and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development. 	<p>Refer to Section 5.12 of the EIS</p>
<p>15. Drainage</p> <ul style="list-style-type: none"> • Detail measures to minimise operational water quality impacts on surface waters and groundwater. • Provide stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties. <p>→ <u>Relevant Policies and Guidelines:</u></p> <ul style="list-style-type: none"> • <i>Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)</i> 	<p>Refer to Appendix P, Appendix Q and Section 4.10 of the EIS</p>
<p>16. Flooding</p> <ul style="list-style-type: none"> • Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation. 	<p>Refer to Appendix R and Section 7.4 of the EIS</p>
<p>17. Biodiversity</p> <ul style="list-style-type: none"> • Identify and address the requirements of the <i>Biodiversity Conservation Act 2016</i> relevant to the State significant development application. • Where a Biodiversity Development Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal. • Where the land is subject to a Biodiversity Certification Order, evidence of this Order and the terms is to be provided. 	<p>Refer to Appendix T and Section 7.3 of the EIS</p>

Item/ Description	Document Reference
<ul style="list-style-type: none"> Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report. 	
18. Bushfire <ul style="list-style-type: none"> Address bushfire hazard and, if relevant, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 guidelines. 	Refer to Appendix S and Section 7.5 of the EIS
19. Sediment, Erosion and Dust Controls <ul style="list-style-type: none"> Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. <p>→ <u>Relevant Policies and Guidelines:</u></p> <ul style="list-style-type: none"> <i>Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)</i> <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)</i> <p><i>Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)</i></p>	Refer to Appendix Q and Section 7.10 of the EIS
20. Waste <ul style="list-style-type: none"> Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site. 	Refer to Appendix U , Appendix V and Section 4.8 of the EIS
21. Construction Hours <ul style="list-style-type: none"> Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours. 	Refer to Section 4.11 of the EIS
C. Plans and Documents – The EIS must include the following:	
<p>The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following:</p> <ul style="list-style-type: none"> Architectural drawings including but not limited to the following requirements: 	Refer to Appendix B

Item/ Description	Document Reference
<ul style="list-style-type: none"> ○ dimensioned including RLs; ○ plans, sections and elevation of the proposal at no less than 1:200 showing furniture layouts and program; ○ site and context plans that demonstrate active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links; and ○ detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality. <ul style="list-style-type: none"> • Artist impressions/architectural renders of the proposal; • Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries; • Site Plans and operations statement demonstrating the afterhours and community use strategy; • Site Analysis Plan; • Stormwater Concept Plan and Stormwater Management Plan; • Sediment and Erosion Control Plan; • Shadow Diagrams; • View Analysis / Photomontages, including those from public vantage points; • An integrated Landscape Plan/Strategy (including identification of any trees to be removed and trees to be retained or transplanted); • Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures; • Geotechnical and Structural Report; • Accessibility Report; • Arborist Report; • Schedule of materials and finishes including a physical material sample board (no larger than A3) with correct proportional representation of materials; • Acoustic Report; • Waste Management Plan; • Fire Safety Measures Schedule; • Green Travel Plan; • Draft Construction Environmental Management Plans and relevant sub plans. 	

Item/ Description	Document Reference
D. Consultation	
<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners. In particular, you must consult with:</p> <ul style="list-style-type: none"> • Blacktown City Council; • Government Architect NSW (through the NSW State Design Review Panel process) (GANSW); • NSW Rural Fire Service (NSW RFS); • Office of Environment and Heritage (OEH); • Roads and Maritime Services (RMS); and • Transport for NSW (TfNSW). <p>Consultation with GA, NSW RFS, OEH, RMS and TfNSW should commence as soon as practicable to agree the scope of investigation.</p> <p>The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>	<p>Refer to Appendix Z and Section 8 of the EIS</p>

1. INTRODUCTION

1.1. OVERVIEW

This EIS has been prepared on behalf of the DoE and SINSW in support of State Significant Development Application SSD_9368 for a new school to be known as Alex Avenue Public School. Specifically, this EIS seeks development consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
 - School administrative spaces including reception;
 - Library with reading nooks, makers space and research pods;
 - Staff rooms and offices;
 - Special programs rooms;
 - Amenities;
 - Canteen;
 - Interview rooms; and
 - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
 - Collaborative learning spaces;
 - Learning studios;
 - Covered outdoor learning spaces;
 - Practical activity areas; and
 - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

Early works (including earthworks and services) will be subject to a separate approval.

1.2. REPORT STRUCTURE

This EIS provides the following:

- **Section 1:** Executive summary, background information and introduction of the proposal.
- **Section 2:** A description of the site and surrounding context; including identification of the site, existing development on the site, and surrounding development.
- **Section 3:** A description of the master plan options.

- **Section 4:** A detailed description of the proposal.
- **Section 5:** An assessment of the proposal against the relevant statutory planning controls.
- **Section 6:** An assessment of the proposal against the relevant strategic planning policies.
- **Section 7:** An assessment of the key issues and impacts generated by the proposal.
- **Section 8:** A detailed description of the consultation undertaken with respect to the proposal.
- **Section 9:** Recommendations and mitigations and measures.
- **Section 10:** Summary and conclusions.

This EIS should be read in conjunction with the *Secretary's Environmental Assessment Requirements* attached at **Appendix A**, and the supporting technical documents provided at **Appendix B – EE**.

1.3. PROJECT TEAM

Specialist consultants were engaged to assist in the preparation of this SSDA, including:

Table 2 – Project Team

Deliverable	Consultant	Appendix
Architectural Plans	Group GSA	Appendix B
Site Survey Plan	Lockley Registered Surveyors	Appendix C
Quantity Surveyor's Report	MBM	Appendix D
Urban Design Report	Group GSA	Appendix E
Landscape Plans	Group GSA	Appendix F
Traffic Impact Assessment	Bitzios Consulting	Appendix G
Green Travel Plan	Bitzios Consulting	Appendix H
Construction Traffic Management Plan	Bitzios Consulting	Appendix I
Ecologically Sustainable Design (ESD) Report	WSP	Appendix J
Aboriginal Cultural Heritage Assessment Report	Biosis	Appendix K
Environmental Noise and Vibration Assessment	Acoustic Logic	Appendix L
Stage 1 Preliminary Environmental Site Assessment	Environmental Investigation Services	Appendix M
Stage 2 Detailed Environmental Site Investigation	Green Cap	Appendix N
Site Infrastructure Overview Report	WSP	Appendix O
Stormwater Management, Hydrology and Water Quality Report	WSP	Appendix P
Civil Plans	Northrop	Appendix Q
Flood Risk Assessment	WSP	Appendix R

Deliverable	Consultant	Appendix
Bushfire Impact Assessment	Peterson Bushfire	Appendix S
Flora and Fauna Assessment	Alphitonia	Appendix T
Construction Waste Management Plan	EcCell	Appendix U
Operational Waste Management Plan	The MACK Group	Appendix V
Accessibility Report	Certis Access Consultancy	Appendix W
Arboricultural Impact Assessment	Paul Shearer Consulting	Appendix X
BCA Assessment Report	Modern Building Certifiers	Appendix Y
Consultation Outcomes Report	TSA Management	Appendix Z
Archaeological Report	Biosis	Appendix AA
Preliminary Construction Management Plan	Richard Crookes	Appendix BB
Statement of Heritage Impact and Historical Archaeological Assessment	Biosis	Appendix CC
Geotechnical and Salinity Investigation	JK Geotechnics	Appendix DD
Council Correspondence	Blacktown Council	Appendix EE

2. THE SITE AND SURROUNDING CONTEXT

2.1. SUBJECT SITE

Alex Avenue Public School is to be located at the corner of Farmland Drive and the future realignment of Pelican Road, Schofields (outlined in red in Figure 2). The site is legally described as proposed Lot 1 and 2 being part of existing Lot 4 DP1208329 & Lot 121 DP1203646.

The site is irregular in shape and has a total area of approximately 2 hectares. The site has an existing frontage to Farmland Drive to the north and a future frontage to Pelican Road to the west (proposed road). The site is currently vacant rural land consisting of grassland and several trees in the south-eastern portion of the lot. The north of the subject site is generally flat whilst the southern half of the site slopes gently to the south.

Figure 2 – Aerial image of site



Source: Near Map

2.2. EXISTING DEVELOPMENT

The site contains no buildings or structures and is currently vacant land except for a patch of trees concentrated in the south-east corner of the site. An overhead electronic transmission line passes over the north-west corner of the site.

2.3. CONTEXT AND SURROUNDING DEVELOPMENT

The site is in the Blacktown Local Government Area (LGA) in the suburb of Schofields. Schofields is located 38km north-west of Sydney Central Business District and the area is accessible via major arterial roads, in particular Schofields Road and Alex Avenue.

The site is in the North-West Growth Centre and the surrounding area is in transition, reflecting a shift from rural landscape to low and medium density residential. The desired future character of the surrounding area

according to the Alex Avenue Indicative Layout Plan contained in the Blacktown City Growth Centre Precincts DCP is described as follows:

- Directly to the north of the site is R3 Medium Density Residential zoned land currently under construction.
- Directly to the east is a parcel of land zoned RE1 Public Recreation currently under construction. Further east is a collection of new low-density residential dwellings as part of the R2 Low Density Residential zoning.
- To the west and south is largely vacant undeveloped land zoned R3 Medium Density Residential and earmarked for future residential development.
- To the south west is a proposed commercial/ mixed use precinct.

An extract of the Alex Avenue ILP is provided in Figure 4. Images of the site and surrounding development are provided in Figure 3 – Pictures 1 to 6.

2.4. TRANSPORT CONTEXT

The proposed School catchment area is anticipated to be the adjacent residential area, which is located within a short walking distance from the development. Notwithstanding, the site is well connected to public transport links and is easily accessible via Schofields Road, the main arterial road in the area. A summary of public transport links in proximity of the site is provided below and shown in **Figure 5**.

Bus:

The school is located close to multiple bus stops operating State Transit bus services:

- Routes 749, 751: Blacktown - Colebee, Marsden Park, Schofields & Rouse Hill; and
- Routes 752, T72, T74: Blacktown - Quakers Hill, The Ponds, Schofields, Rouse Hill & Riverstone.

Train:

The site is located approximately 1.3km north east of Schofields Train Station which provides services to Richmond, Blacktown and Parramatta on the Western Line and the Cumberland Line.

Sydney Metro Northwest:

The site is located approximately 2.5km to the proposed Tallawong Metro Station located between Cudgegong Road and Tallawong Road on Schofields Road. The station forms part of the Sydney Metro Northwest development that will extend from Epping to Cudgegong and connect with the Epping to Chatswood Rail Link and Sydney's wider rail network. It is a \$9 billion-dollar infrastructure investment in a high intensity rail transport system that will provide trains at four-minute intervals resulting in the capacity to move people far in excess of any other mode of transport ever seen before in this area. The metro line is planned to be operational in 2019.

Active Transport:

A continuous off-street shared path is provided on the southern side of Schofields Road, providing a cycle link between Schofields Station and Alex Avenue. While existing footpaths and cycling routes immediately adjacent to the school site are limited, on-going development in the area will likely supplement existing footpaths and pedestrian and cycle connectivity with new links.

Figure 3 – Proposed site for the new Alex Avenue Public School and surrounding development



Picture 1 – Looking west down Farmland Drive with the site on the left.

Source: Google Earth



Picture 2 – View looking south from Farmland Drive.

Source: Google Earth



Picture 3 – View looking east from the north-west corner of the site.

Source: Google Earth



Picture 4 – View from within the site looking east.

Source: Google Earth



Picture 5 – View looking east from north-west site corner.

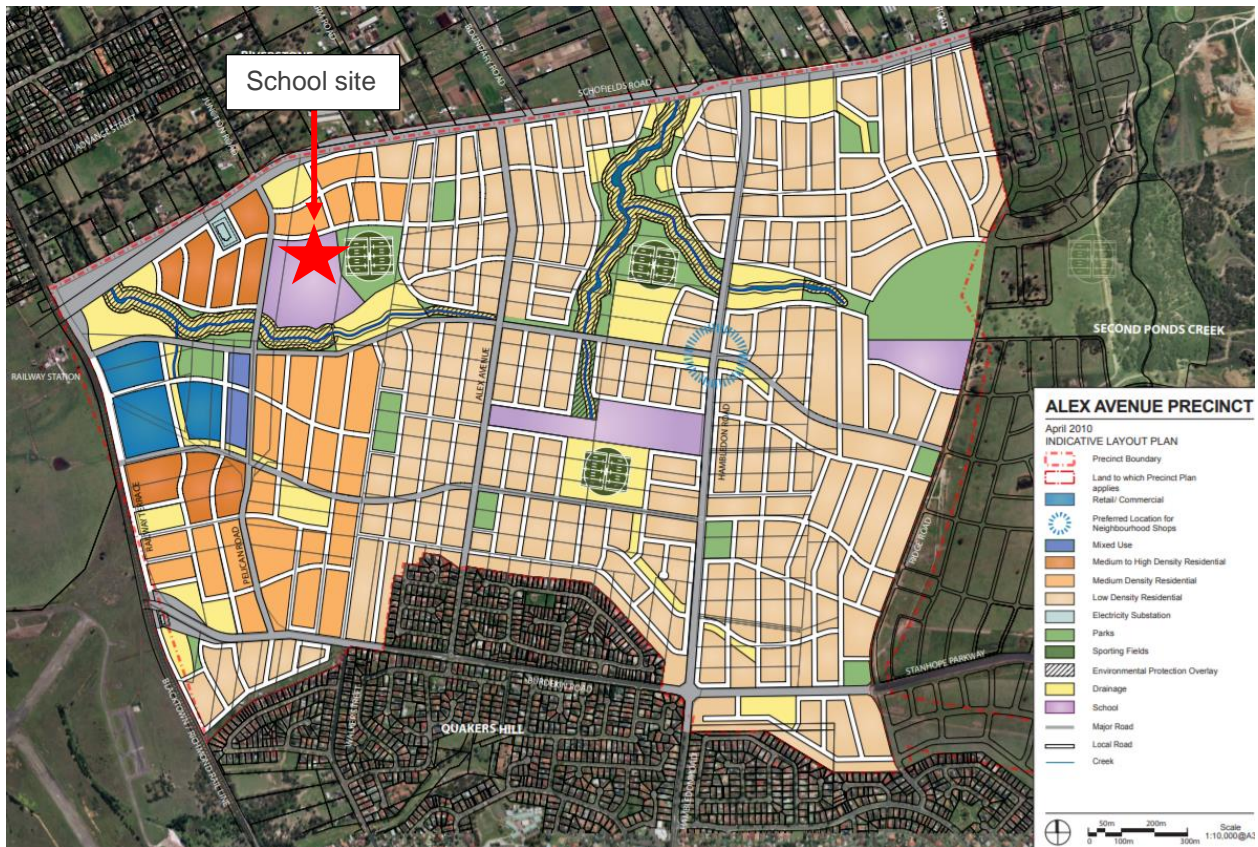
Source: Google Earth



Picture 6 – View from within the site looking south.

Source: Google Earth

Figure 4 – Alex Avenue Indicative Layout Plan (approximate location of subject site marked with red star)



Source: Blacktown City Growth Centre Precincts Development Control Plan, July 2018

Figure 5 – Site context map

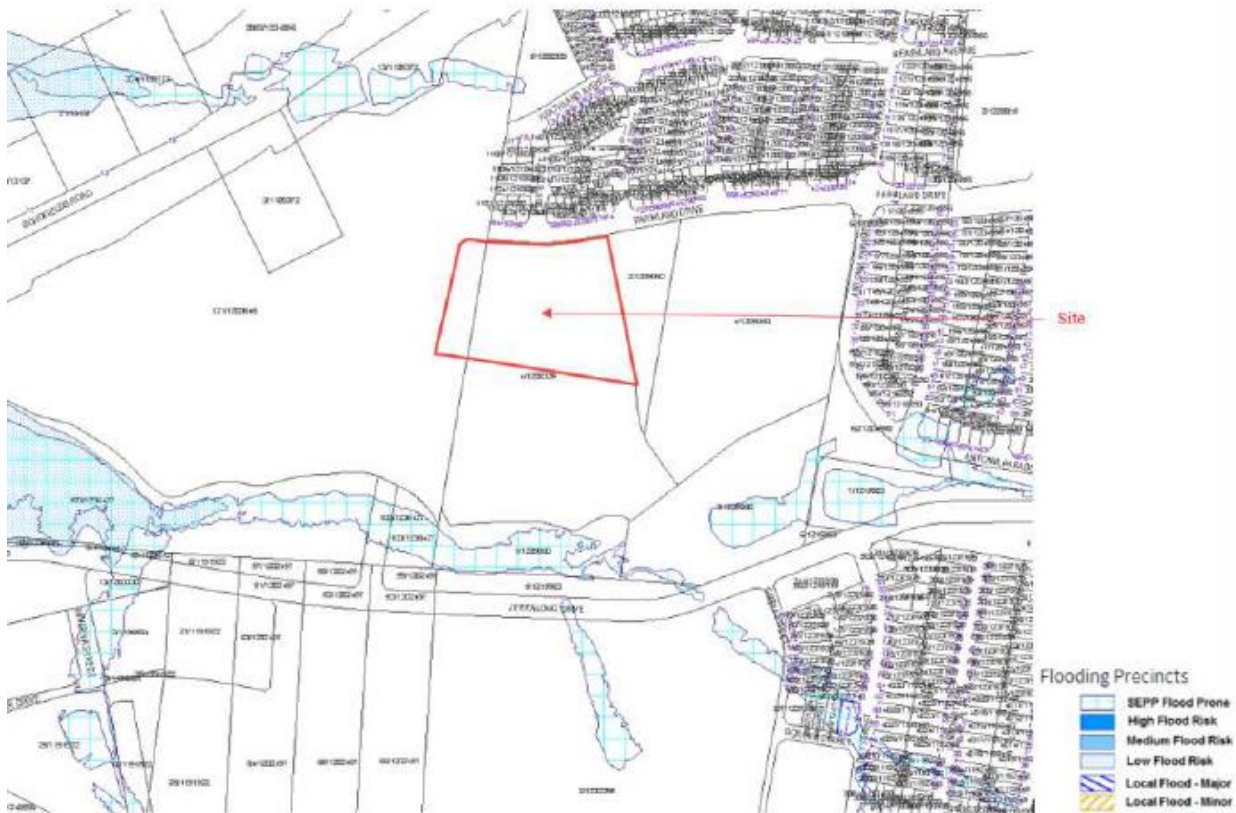


Source: Group GSA Architects

2.5. FLOODING AND TOPOGRAPHY

The site generally slopes downwards to the south and drains into an unnamed creek at the southern boundary of the site. This creek then drains to Eastern Creek and then into South Creek as part of the Hawkesbury-Nepean catchment. As identified in the Flood Risk Assessment prepared by WSP at **Appendix R**, the site is not identified as flood prone land within any planning instrument. Notwithstanding, the site is located immediately north of an unnamed creek which is identified as flood prone land under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (refer to Figure 6).

Figure 6 – Flood risk map



Source: WSP

2.6. FLORA AND FAUNA

A Flora and Fauna Assessment has been prepared by Alphitonia which identified 15 threatened flora species and 43 threatened and/or migratory fauna species (two frogs, 25 birds, two invertebrates, 14 mammals) within a 5km radius of the study area (**Appendix U**). The site also contains Shale Plains Woodland, a sub-community of the critically endangered ecological community Cumberland Plain Woodland (listed under the *Biodiversity Conservation Act*) and Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest (listed under the *Environmental Protection and Biodiversity Conservation Act*). A field survey of the site confirmed the presence of a small patch of Shale Plains Woodland near the southern boundary of the site, with exotic pasture over the remainder of the site (refer **Figure 7**).

The site has been subject to a biocertification process, notwithstanding a total of 34 flora species were identified within the study area, of which ten were native species, however no threatened species were recorded during the survey. The survey confirmed that the site contains limited fauna habitat with some mature trees providing potential foraging, roosting, breeding and nesting for local fauna. It identifies potential foraging habitat for the following threatened fauna species:

- *Pteropus poliocephalus* (Grey-headed Flying-fox) – *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999*– vulnerable
- *Miniopterus schreibersii oceanensis* (Eastern Bentwing-bat) – *Biodiversity Conservation Act 2016* – vulnerable

None of the trees recorded on the site were hollow bearing, however it identifies that remnant trees may provide occasional foraging habitat for some microbats and mega bats.

Figure 7 – Vegetation map



Source: Eco Planning

2.7. HERITAGE AND ARCHAEOLOGY

2.7.1. European Heritage and Historical Archaeology

The site does not contain any items of heritage significance nor is it located adjacent to any items or within a conversation area. Notwithstanding, a Historical Archaeological Impact Assessment (HAIA) has been prepared by Biosis and is contained at **Appendix CC**. Refer to **Section 7.7** of this EIS for further discussion.

2.7.2. Aboriginal Heritage and Archaeology

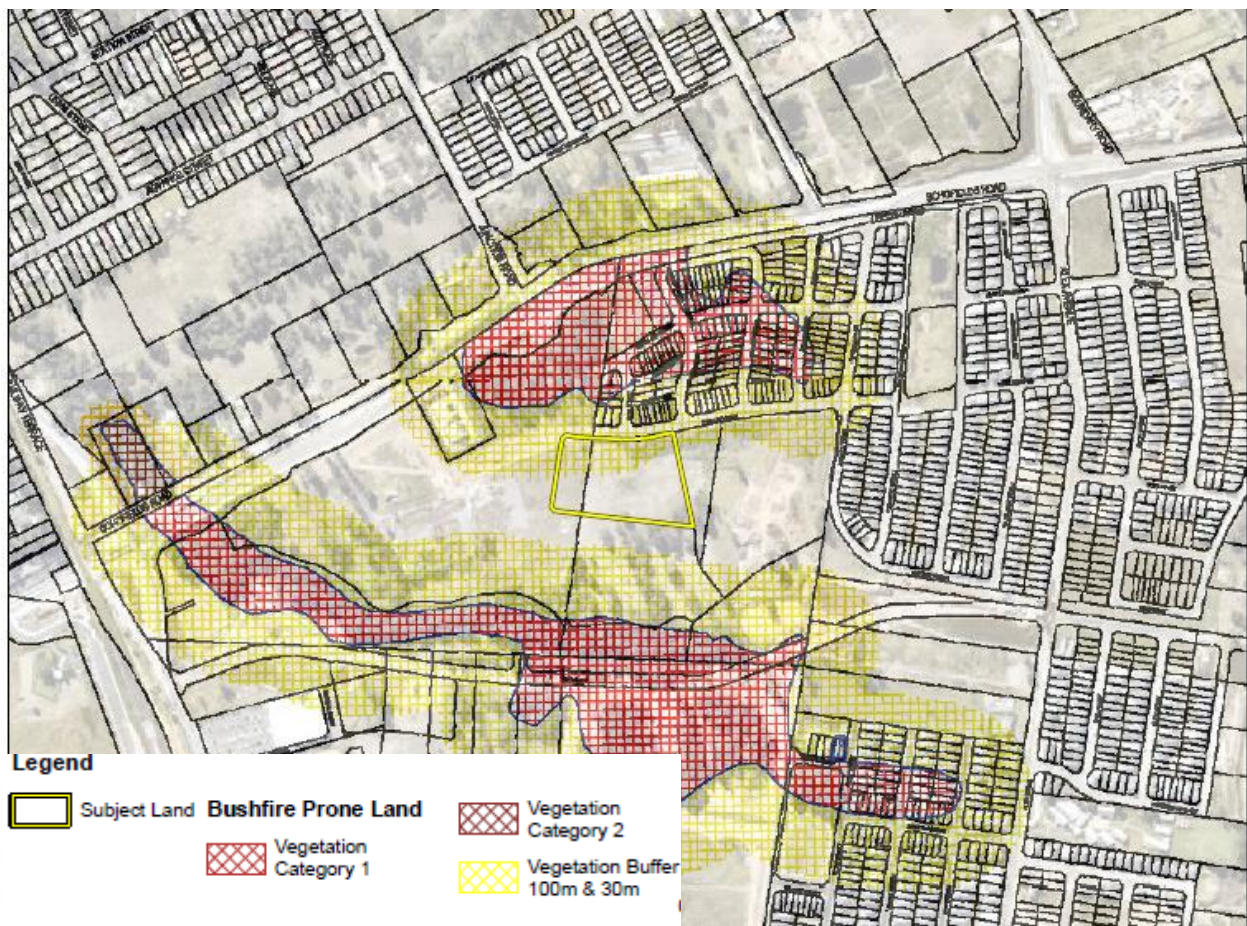
An Aboriginal Cultural Heritage Assessment Report (ACHAR) and an Archaeological Report have been prepared by Biosis, and are contained at **Appendix K** and **Appendix AA** respectively.

Biosis confirmed a total of 94 Aboriginal cultural heritage sites are registered with the Aboriginal Heritage Information Management System (AHIMS) within vicinity of the study area. The registered AHIMS sites near the site are either isolated artefacts or artefact scatters. The sites are primarily located adjacent to higher order creeks and slopes with sporadic sites occurring on elevated areas. Refer to **Section 7.6** of this EIS for further discussion.

2.8. BUSHFIRE

A Bushfire Impact Assessment has been prepared by Paterson Bushfire and is attached at **Appendix S**. Paterson Bushfire confirm that the northern portion of the site is 'bushfire prone land' as shown in Figure 8. Part of the 100m vegetation buffer zone extends within the site from a remnant of woodland located to the north-west. The riparian corridor to the south does not impact on the proposal.

Figure 8 – Bushfire prone land map



Source: Paterson Bushfire

3. MASTER PLAN OPTIONS

In developing the preferred concept design strategy for the site, a series of master plan options were explored. The master plan options tested a range of site and building orientation layouts. All options are dependent upon the shared use agreement with Council in place for car parking and drop off/ pick up on the neighbouring site.

3.1. OPTION A

Master Plan Option A is characterised by the School's Core Facilities being clustered around the main entry to the school along the future Pelican Road and learning buildings along the site's secondary frontage to Farmland Drive and to the south east of the site.

Due to the Hall's operational requirements, a dedicated car park is proposed off Pelican Road to be used for delivery vehicles, refuse collection and accessible car parking for visitors. The on-site basketball courts are located in the centre of the site, separated from the future Council sporting grounds to the immediate east.

Figure 9 – Master Plan Option A



Source: Group GSA Architects

3.2. OPTION B

Similarly, to Option A, Master Plan Option B is characterised by the School's Core Facilities along the main entry to the site along Pelican Road and learning buildings along the site's secondary frontage to Farmland Drive and to the south east of the site.

Due to the location of the hall in the north-western portion of the site, a dedicated car park is proposed on the corner of Farmland Drive and Pelican Road to be used for delivery vehicles, refuse collection and accessible car parking for visitors. The on-site basketball courts are located toward the site's frontage to Farmland Drive near the secondary entry.

Figure 10 – Master Plan Option B



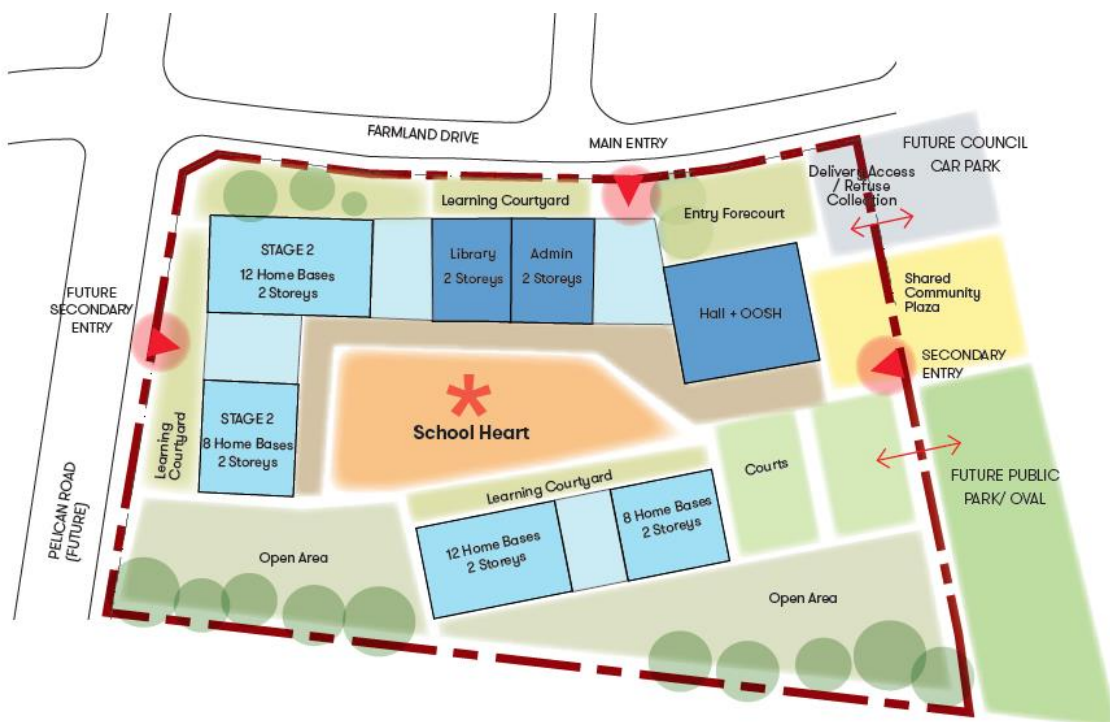
Source: Group GSA Architects

3.3. OPTION C

Master Plan Option C seeks to locate the School's Core Facilities in the north-eastern portion of the site along Farmland Drive, and near the shared car park and future Council sporting grounds. The School's learning buildings are proposed to be located along Pelican Road and to the south of the site. This layout means Farmland Drive becomes the primary frontage and entry to the site and creates an opportunity for the delivery/ refuse and accessible car parking for the Hall to be undertaken in a consolidated location in the north-east corner of the site, adjacent to the shared car park.

The on-site basketball courts are located in the south-eastern portion of the site, directly adjacent to Council's sporting grounds.

Figure 11 – Master Plan Option C – Preferred option



Source: Group GSA Architects

3.4. OPPORTUNITY AND CONSTRAINTS ANALYSIS

An opportunity and constraints analysis of the three options has been undertaken and discussed in the following table. The analysis demonstrates Option C results in a better urban design and school operation outcome compared to Options A and B. Option C is the preferred option and has been developed as the proposal for this EIS.

Table 3 – Master Plan Options Opportunities and Constraints Analysis

Option	Opportunities	Constraints
Option A	<ul style="list-style-type: none"> Location of the Core Facilities creates street presence on the future Pelican Road. Focuses vehicle movements to primary street rather than secondary street. Convenience of direct access to main school entrance on Pelican Road for students travelling via the future local collector road. School Hall is located next to on-site parking area for ease of deliveries and other service vehicle movements. Administration building near main entrance and parking allows ease of access and direction by visitors to the school. 	<ul style="list-style-type: none"> Pelican Drive is to be delivered by others, not SINSW. The timing of the road is not confirmed and could be some time away. The dedicated service vehicle and accessible parking area for the Hall results in a reduction of area that can be used for critical school facilities and open space. While Pelican Road realignment is under construction, vehicle access to the dedicated school hall car park will require an additional service road being constructed alongside Pelican Road. The lack of co-location between the Hall and Council's sporting complex constrains any shared use opportunities as well as passive surveillance between the public spaces and school site. The location of the main learning building and learning courtyard along Farmland Drive may pose acoustic concerns given

Option	Opportunities	Constraints
		<p>the proximity to low density residential housing.</p> <ul style="list-style-type: none"> Locating the main school entry on a potentially busy road 'Pelican Road' creates safety concerns for pedestrians.
Option B	<ul style="list-style-type: none"> Convenience of direct access to main school entrance on Pelican Road for students travelling via the future local collector road. Improved visibility of primary and secondary pedestrian entry points from school administration building. 	<ul style="list-style-type: none"> Relies on completion of the Pelican Road link before the functionality of the school layout can be fully realised. Vehicle access to the School Hall is required for delivery vehicles, refuse collection and accessible car parking for visitors. This creates a vehicle zone on the prominent corner of Pelican Road and Farmland Drive. A large turn-around facility must be provided to accommodate service vehicle turning movements at the end of the temporary Farmland Drive cul-de-sac. No on-site car parking is provided.
Option C	<ul style="list-style-type: none"> Spatial efficiencies are created due to the shared use arrangement of the council car parking location which also provides drop-off/ pick up locations and access for delivery vehicles and refuse collection. Locating the Core Facilities adjacent to Council's sporting grounds creates a community presence and welcoming entry for the school hall. Creates shared-use opportunities between the council assets and the school, including; shared use of the school hall after hours, the school basketball courts, the council oval and the council car park. Opportunity to create a shared community 'plaza' between the school hall and the council park/ sporting grounds. Opportunity to create an integrated 'community sports precinct' on the eastern boundary of the site which includes the school sports hall, school basketball courts, council oval, council change-rooms and amenities, shared car park between all facilities. Limited interface of School learning buildings along Farmland Drive and thus reduced impact to surrounding residential dwellings. Proximity of the shared-use carpark to the staff and administration building is 	<ul style="list-style-type: none"> There is a slight reduction in convenience of main school access in its repositioning onto Farmland Drive. Distance from the train station is increased slightly. However, a future secondary entry is to be located on Pelican Road, which mitigates the negative aspects of the relocation. Minimal on-site car parking is provided. However, the relocation of the core facilities to the eastern side of the site enables a potential shared use of the Council's playing field car park. Location of the main school entry is removed from the future Pelican Road (which is closest to the train station). Focuses vehicle movements to secondary street rather than primary street. Potential for noise impacts on residential street with school related traffic. However, the school would be using a car park being installed by Council regardless of the school. Noise impacts can be managed as per the Noise Assessment submitted with this EIS.

Option	Opportunities	Constraints
	desirable in regard to way-finding for visitors and convenience for staff.	

4. THE PROPOSAL

4.1. DEVELOPMENT OVERVIEW

Alex Avenue Public School will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

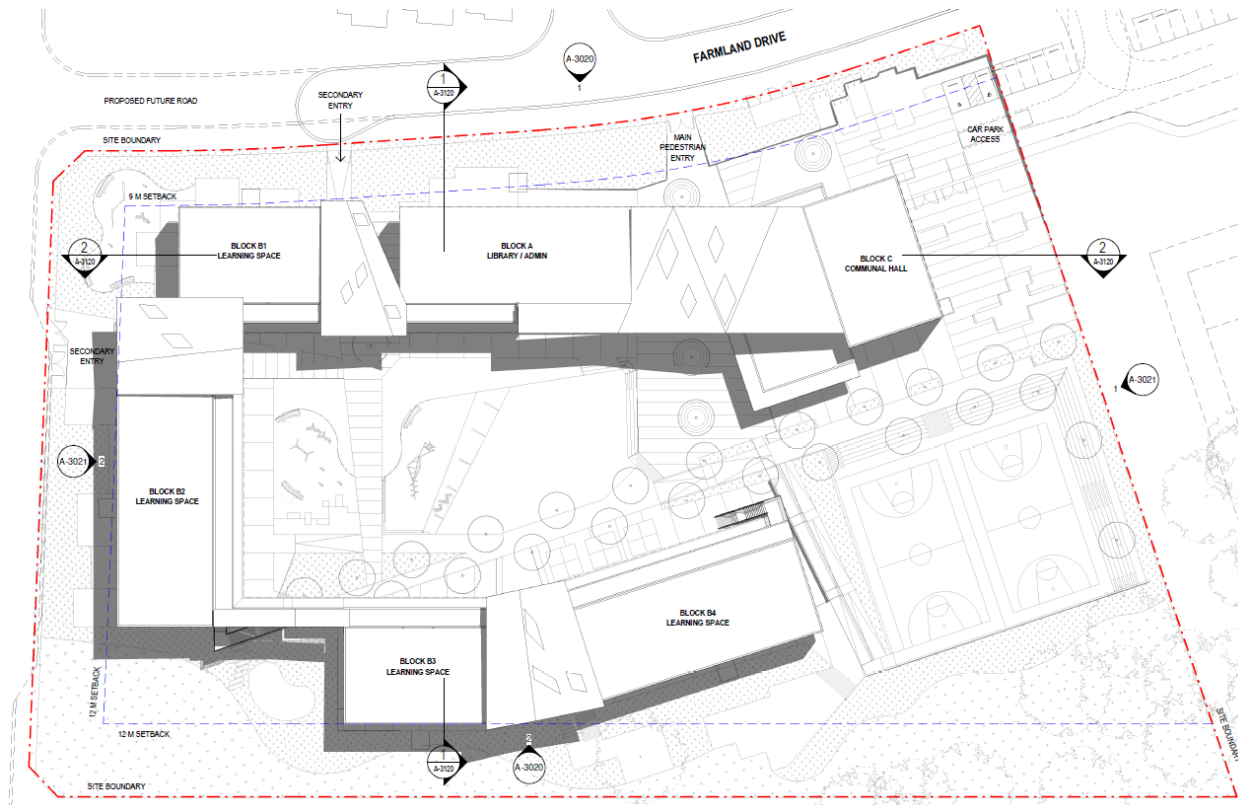
- Construction of a 2-storey library, administration and staff building (Block A) comprising:
 - School administrative spaces including reception;
 - Library with reading nooks, makers space and research pods;
 - Staff rooms and offices;
 - Special programs rooms;
 - Amenities;
 - Canteen;
 - Interview rooms; and
 - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
 - Collaborative learning spaces;
 - Learning studios;
 - Covered outdoor learning spaces;
 - Practical activity areas; and
 - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

All proposed school buildings will be connected by a double storey covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

Further details of the proposal are provided in the following subsections and within the architectural plans and supporting documentation contained at **Appendix A – EE**. A site plan of the proposal can be seen in Figure 12.

Early works (including earthworks and services) will be subject to a separate approval.

Figure 12 – Proposed site plan



Source: Group GSA Architects

4.2. DESIGN PHILOSOPHY

An Urban Design Report has been prepared by Group GSA and is attached at **Appendix E**. The proposal incorporates the following urban design considerations:

- The main school pedestrian entry is to be accessed from Farmland Drive, with a secondary pedestrian access point also located off Farmland Drive. A future third entry point is proposed off Pelican Road once the road is constructed.
- The new School is to utilise the future adjacent Council car park for staff car parking and a student pick up and drop off zone through a Joint Use agreement.
- The School buildings are located to the perimeter of the site as a visual and acoustic buffer to the schools play areas and to provide a visual presence for this important community facility.
- The buildings are arranged around a central school heart with connected outdoor areas and teaching spaces.
- The proposed buildings are interconnected and linked by covered pathways that have been deemed suitable for the current educational planning principles.
- The school buildings are two storeys in scale, which is in keeping with the predominate emerging scale of the surrounding development;
- Covered outdoor play areas (COLAs) will provide a transition zone between indoor and outdoor spaces.
- The built form is broken into smaller components to allow permeability between buildings for pedestrians, natural light and ventilation.
- The built form provides a well-defined public face to the School along Farmland Drive.
- The proposed buildings are kept distant from residential neighbours, reducing the chance of overshadowing and privacy issues;

- Play space is maximised in area; and
- Solar access is maximised to play areas and teaching spaces.

The proposed design appropriately responds to the urban design opportunities and constraints of the site and will provide the best educational outcomes for future students, teachers and staff.

4.3. BUILT FORM AND URBAN DESIGN

The built form and urban design of the proposal has been appropriately developed to:

- Complement the existing and emerging surrounding built and natural character of Schofields.
- Minimise amenity impacts on surrounding development and residences.
- Provide a superior educational environment that encourages collaborative learning, knowledge and play.

A detailed analysis of each of the above considerations is provided below and 3D perspectives of the proposed school buildings are provided in **Figure 13** and **Figure 14**.

4.3.1. Complements Surrounding Built and Natural Character

Schofields is a rapidly developing suburb located to the north of Blacktown. The suburb is predominantly comprised of developing low to medium density residential areas and contains a neighbourhood centre and a variety of open parklands and nature reserves. The proposal has been specifically designed to integrate with the adjoining park and Council car park to foster shared use. The proposal has been specifically designed to complement the surrounding built and natural character. This has been achieved by:

- Providing a range of native flora, turfed areas, swales, bush play areas and gardens into the proposed landscaped design, which is characteristic of the surrounding parks and reserves;
- Designing the school to include a range of bright and colourful external materials and finishes that are representative of the surrounding area;
- Designing the school to ensure it does not interfere, respects and capitalises on the use and views into the adjacent public recreation park and sports fields;
- Integration of the future adjacent public recreational park, sport oval and carparking facilities was considered throughout the design consultation, proposing diverse design solutions to facilitate both integration and partial separation when required.
- The new built form takes up a simple language of monopitch metal deck roofs, masonry and light weight cladding that is familiar to the neighbourhood surrounds;
- The character of the neighbourhood is improved by providing a carefully designed frontage with communal use facilities which create a new needed sense of belonging and identity to the area.
- Proposing to construct a range of sporting facilities at the site, including multiple sports courts; complementing the adjacent future public recreation reserve which will contains various sports fields; and
- Designing the school to have a maximum building height that is consistent with the surrounding two storey buildings to the north.

4.3.2. Minimises Amenity Impacts on Surrounding Residents

This building form and arrangement of buildings:

- Maximises visual privacy, as the proposed new school buildings are kept distant from surrounding dwellings to the north;
- Provides an acoustic buffer, as outdoor play and announcement noises will be concealed within the proposed internal courtyard space created by the U-shape configuration of the school buildings;
- Maximises solar access to the school and surrounding neighbours, as the buildings are low scale and arranged to ensure sun access planes are not obstructed; and

- Does not result in any view loss impacts.

The proposed built form, design and placement of the new school buildings will aid in minimising various amenity impacts. Further discussion is provided in **Section 7.1** of this EIS.

4.3.3. Provides a Superior Educational Environment for Students and Staff

The proposal has been designed to provide a superior educational environment for students. The proposal provides interconnected learning spaces and classrooms that encourage active learning and play. The proposed pedestrian circulation system is highly permeable and representative of an inclusive built environment. The centre of the site is proposed to contain a central courtyard that provides direct access to the outdoor areas. This arrangement will encourage collaborative learning, knowledge and play amongst students and staff.

4.3.4. New School Buildings

The proposal has multiple double-storey, multi-purpose school buildings to provide new school facilities, spaces and equipment for future students and teachers. The buildings will be connected by awnings and a continuous roof and will provide weather protection to the users. New school buildings proposed include:

- Collaborative learning spaces and classrooms;
- School hall;
- Specified toilets for males, females and staff;
- Private office space for teaches and administrative staff;
- Library;
- School canteen; and
- Utilities/ services rooms.

Figure 13 – 3D perspectives of proposal from streetscape



Picture 7 – View from the north east corner of site, Farmland Drive

Source: Group GSA Architects



Picture 8 – View from north west corner of site, Farmland Drive

Source: Group GSA Architects

Figure 14 – 3D perspectives of proposal



Source: Group GSA Architects



Source: Group GSA Architects

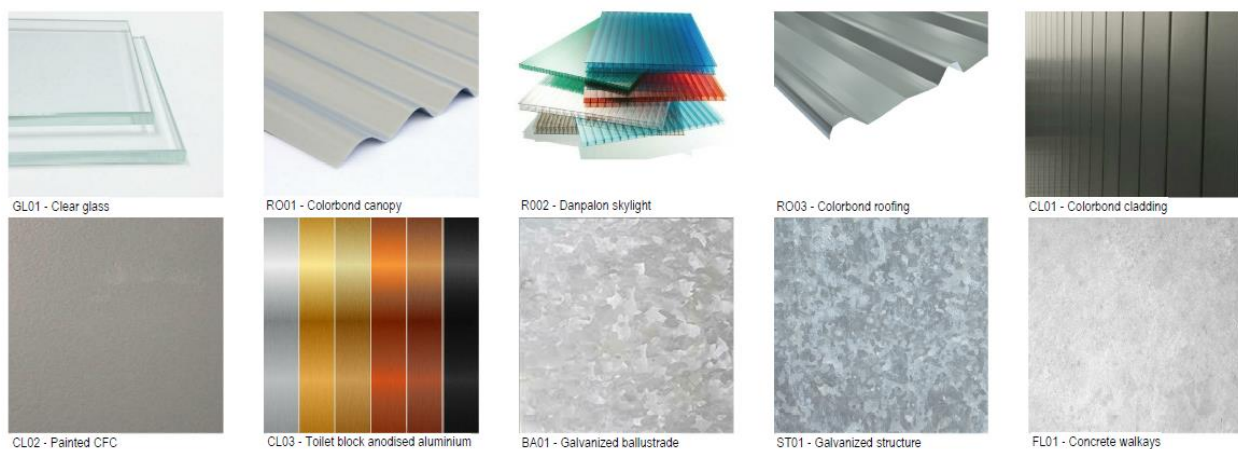
4.4. EXTERNAL MATERIALS AND FINISHES

The proposal has been appropriately designed with external materials and finishes that complement the surrounding natural and built environment of Schofields. The building materials are durable, hardwearing, low maintenance and evoke smart building design. Refer to Figure 15. The proposed external materials include:

- Clear glass;
- Colourbond canopy;
- Danpalon skylights;
- Colourbond roofing;
- Colourbond cladding;
- Painted CFC;
- Toilet block – anodised aluminium;
- Galvanised balustrades;
- Galvanised structures; and
- Concrete walkways.

For more details, refer to the elevations in the Architectural Plans provided in **Appendix B** and the Urban Design Report attached at **Appendix E**.

Figure 15 – Proposed external materials palette – admin and library building



Picture 9 – Admin and library building external facades

Source: Group GSA Architects

4.5. SCHOOL OPERATIONS

Alex Avenue Public School will cater for students K- Year 6. The school will have the following capacity following completion of the development:

- 70 full time staff
- 1,000 students

General operating hours for the school will be Monday – Friday 8am - 5pm. The proposed out of school hours use of the school facilities is outlined in **Table 4**.

Table 4 – Out of Hours Use of School Facilities

Use	Proposed
Hall	<ul style="list-style-type: none"> • Intended use by school during school hours. • Occasional evening use for music performance, presentations, parent/teacher nights. • Hall to be made available to the community through a booking system arranged by the school. • Operating times - until 10pm
OOSH	<ul style="list-style-type: none"> • Out of school hours (OOSH) use of the school facilities will operate during weekdays at Mornings 6.30am – 9am and Afternoons 3pm – 6.30pm.
Library	<ul style="list-style-type: none"> • Intended use by school only. • School hours only. • Occasional weeknight evening use for presentations, parent/teacher nights.
Community Use	<ul style="list-style-type: none"> • At this point, there are ongoing discussions with Blacktown City Council regarding shared use of school facilities by the community, and shared use of the adjacent council park facilities by the school. These include: <ul style="list-style-type: none"> ○ School basketball courts, ○ School shared plaza, ○ School hall (TBC), ○ Council sports field, and ○ Council parking and pickup/drop off facilities.

4.6. PARKING AND SITE ACCESS

A Traffic Impact Assessment has been prepared by Bitzios Consulting and is contained at **Appendix G**. The report summarises the proposed parking and access provisions for the new Alex Avenue Public School. A summary is provided below.

4.6.1. Parking

The proposal does not include any onsite car parking. Staff car parking for the school will be accommodated on Council car park to be built directly adjacent to the site as shown in Figure 17. Council will develop sporting facilities for community use and a car park containing 100 spaces to the east of the school along with access from Farmland Drive. The car park is intended to be shared between school staff and the community. The proposed parking arrangement will be reached through a Joint Use agreement with Blacktown City Council. Council has provided in principle support for the shared use of the car park in a letter dated 14 January 2019 (**Appendix EE**). Two (2) disabled parking spaces will be provided within the School site boundary with access via the proposed shared car park and Farmland Drive.

4.6.2. School bus zone

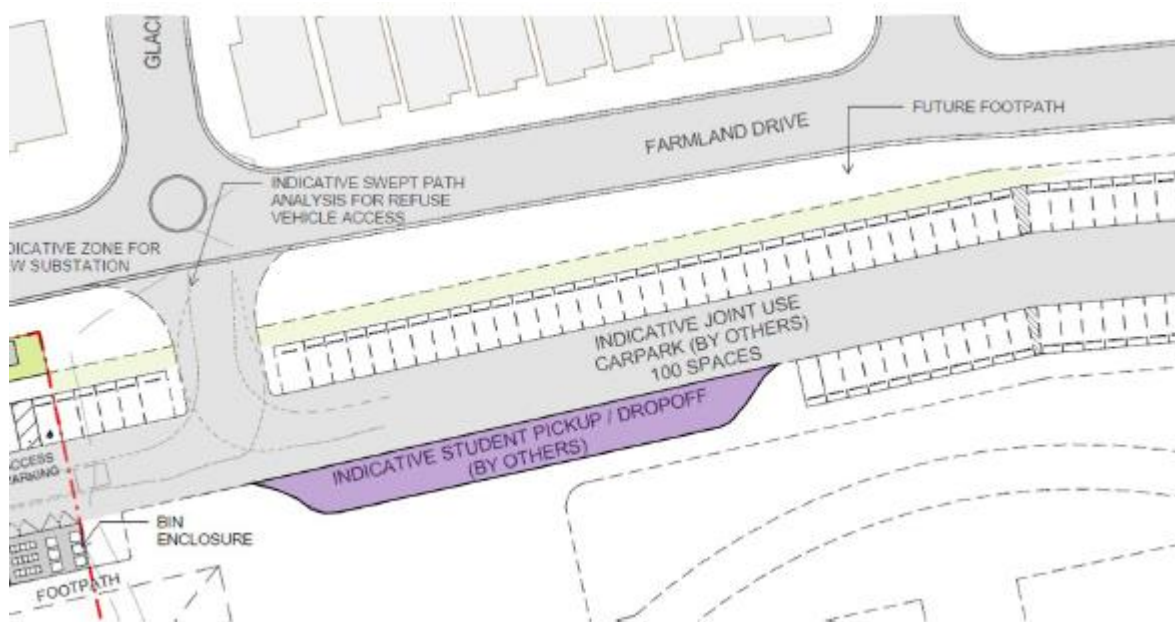
The proposal includes a bus zone along Pelican Drive, following the construction of the new road. Prior to the completion of Pelican Drive, buses are not proposed to access Farmland Drive. An alternative travel option for students in lieu of a school bus service is proposed as a 'Walking School Bus'. Due to the unfinished nature of the street network near the school site, bus vehicles accessing Farmland Drive cause traffic issues in their need to turn around and manoeuvre back towards Alex Avenue. Blacktown City Council

has therefore restricted the use of buses on Farmland Drive prior to the construction of Pelican Drive, when a corresponding future bus zone on the western side of the site will be constructed.

4.6.3. Drop-off and Pick-up Zone

A drop-off / pick-up zone is to be provided in adjacent car park to be shared with Council as shown in Figure 16. The zone is proposed to be approximately 50 metres long, allowing for simultaneous usage by 8 to 9 vehicles. The zone is located completely off-road, within the body of the shared car park. The zone will allow for students disembarking from vehicles to step directly onto the adjacent footpath and continue to the school via a shared plaza. Not requiring students to cross any roads will enhance student safety and facilitate smoother vehicle flow by reducing pedestrian-vehicle conflict zones.

Figure 16 – Indicative student pick up/drop off zone



Source: Bitzios Consulting

A secondary drop-off / pick-up zone is provided along the school frontage on Farmland Drive, specifically for Person with Disability (PWD) use. The zone is proposed to be approximately 35m long and is located immediately adjacent to the main entrance of the school (closer than the main drop-off / pick-up zone in the shared car park), allowing for more direct and unimpeded access for any PWD students, staff or visitors.

4.6.4. Vehicular Access

Vehicle access to the site (to the drop off and pick up zone and to the waste loading area) will be via Council's shared car park to the east of the site and accessed via Farmland Drive. No driveway access is provided to the school site itself.

4.6.5. Pedestrian Access

The main pedestrian entrance to the site will be along Farmland Drive opposite Hyde Street, and will provide access to the main entry plaza. A secondary pedestrian entrance is located further to the west of the main entrance on Farmland Drive between the library and classroom buildings. A third pedestrian entrance is on the western frontage of the site, allowing access and egress onto Pelican Road (pending future construction). Aside from these three entry points, students and staff will also be able to enter the site from the shared car park and drop-off/pick-up zone via a shared plaza on the eastern side of site. This shared plaza will provide connections directly onto the School forecourt and covered outdoor terrace spaces.

4.6.6. Pedestrian Access to Bus Stops

The closest existing bus stop is located on Alex Avenue, approximately 750 metres away via Farmland Drive, a walk of around ten to fifteen minutes. It services the T72 bus route between Blacktown and Rouse Hill. At present, there are no footpaths along this route, and links along Farmland Drive are still under construction.

4.6.7. Bicycle Parking

The proposal includes two areas for bicycle parking for use by staff and students. These areas are to be located:

- Adjacent to the main pedestrian entrance on Farmland Drive; and
- Adjacent to the future pedestrian entrance off Pelican Drive.

The parking areas are positioned near pedestrian access points, which allows for easier parking upon arriving to the site via bicycle. A total of 56 bicycle parking spaces will be provided. A shower/change facility is provided on-site as an end-of-trip facility for staff members cycling to work.

Figure 17 – Proposed shared-use car park/access arrangement



Source: Group GSA Architects

4.6.8. Temporary Access Arrangements

The construction of Pelican Drive is planned to occur at a future date post-commencement of the School. In the interim period between the start of School and the opening of Pelican Drive to the public, some temporary arrangements will be required traffic and access. These are summarised in the sections below.

4.6.8.1. Farmland Drive Cul-de-sac

A cul-de-sac is proposed to be constructed at the end of Farmland Drive west of Hyde Street to facilitate westbound vehicles to perform a U-turn to turn around and return along Farmland Drive in an eastbound direction. As the drop-off / pick-up zone is accessed to the east of site and egress from the shared car park will allow for a right turning movement; the number of vehicles expected to travel the full length of Farmland Drive is not expected to be significant. The cul-de-sac is to be removed once Pelican Drive is constructed to allow Farmland Drive to connect through. This will also restore pedestrian footpath connectivity.

4.6.8.2. Temporary Roundabout at Glacier Street and Shared Car Park

A temporary roundabout is proposed to be constructed at the intersection of Glacier Street / Farmland Drive / shared car park, as part of the shared car park works. This will improve traffic flow due to the large volumes of inbound and outbound vehicles during school peak hours utilising the drop-off/pick-up zone.

4.6.8.3. Walking School Bus

Blacktown City Council has restricted the use of buses on Farmland Drive prior to the construction of Pelican Drive until a future permanent school bus zone can be established on the western frontage of the site along Pelican Road. In the interim period, a 'Walking School Bus' is proposed for pedestrian (student) journeys to the school. A Walking School Bus (WSB) is an initiative involving a group of primary school students walking to and from school together as a group, guided by a minimum of two supervising adults. Supervisors can be staff members, volunteers and parents, and they usually guide the 'bus' with one leading and one bringing up the rear. During the program, supervisors are expected to model, teach and encourage safe walking habits, including crossing the road at safe locations, stopping at kerbs and doing safety observation checks (look left-right-left).

4.7. LANDSCAPING

A Landscape strategy and plans have been prepared by Group GSA Architects and is attached at **Appendix F**. New landscaped areas, open space and sports facilities will be provided throughout the school. These spaces will enhance the learning experience. The key aspects driving the landscape design include promoting social interaction, connecting indoor and outdoor learning spaces, providing safe and flexible outdoor spaces, creating a range of multi-sensory play experiences, providing diverse visual interest, and creating an environment of learning that incorporates the ecologically sustainable features of the built form as learning tools. A key element of the landscape strategy is to ensure the seamless integration of the school with the adjacent shared car park and Council sporting facilities.

Key elements of the overall landscape strategy include:

- A focus on a central gathering space containing a central lawn, open outdoor learning areas, COLAs, a sensory garden, a kitchen garden, nature play areas, passive communal areas and active play areas.
- A shared plaza to the east of the school hall will provide access and allow for integrated landscaping between the school and the adjacent shared car park and Council sporting facilities.
- A pedestrian promenade will provide access throughout the school site and provide further connections to the adjacent Council site in the east and to the future Pelican Road in the west.
- A signature sculpture display and art trail to be provided at the main pedestrian entrances to the school.
- The existing native trees in the southern portion of the site to be retained and the surrounding turf to be cultivated and restored.
- A rainwater garden with native plantings and swales also to act as a bioretention area.
- Seating, play equipment, drinking fountains and shade structures.
- Covered walkways and covered and open outdoor learning spaces throughout.
- Small group learning zones.
- Nature play areas with play equipment.
- Active outdoor place space including:
 - 2 x basketball court with concrete surface
 - 3 x handball courts in with soft fall surface
- Native buffer planting beds throughout.
- Natural and synthetic turf areas throughout.
- Various active outdoor play and learning areas.
- Various passive communal gathering spaces with seating.

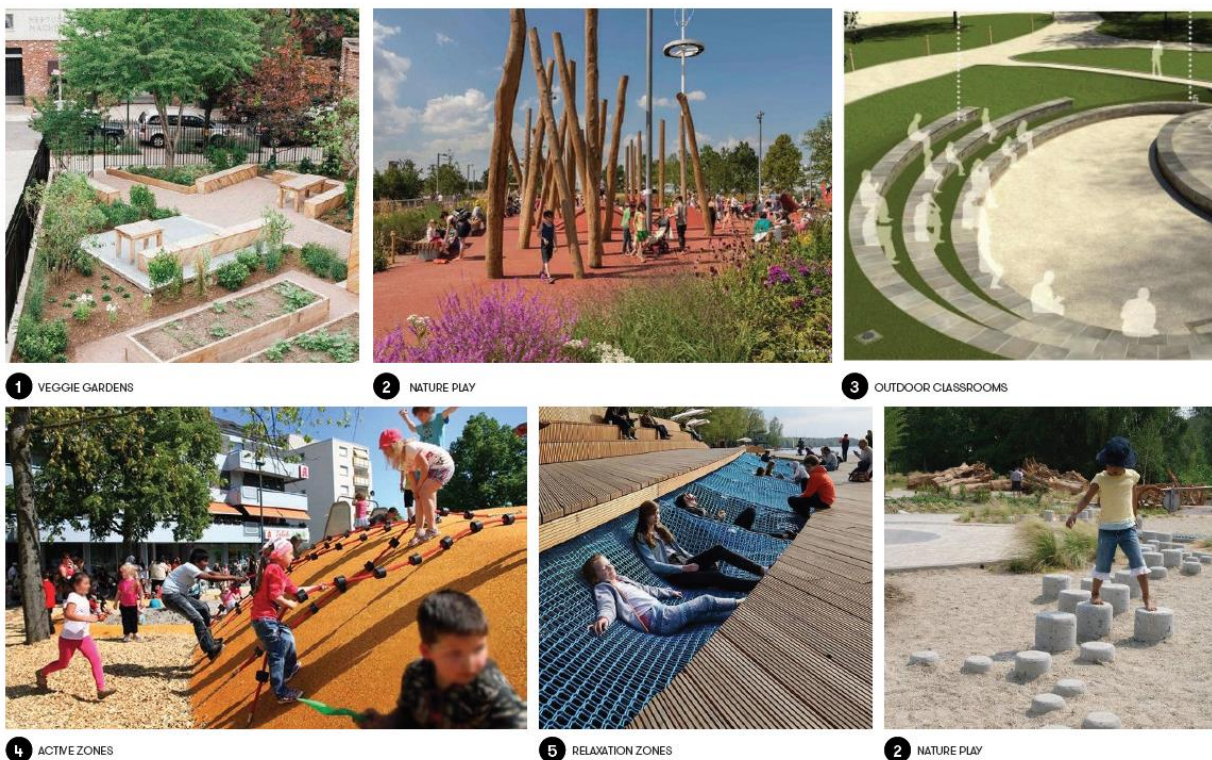
All new flora species proposed to be planted at the site have been chosen to ensure they are safe within a school environment.

Figure 18 - Landscape concept master plan



Source: Group GSA Architects

Figure 19 - Landscape concept design strategy



Source: Group GSA Architects

4.8. WASTE

4.8.1. Construction Waste

A Construction Waste Management Plan has been prepared by EcCell Environmental Management and is attached at **Appendix U**. The objective of this plan is to ensure all waste generated during the construction stage is carefully removed, packaged and transported from the site to an appropriate waste facility. This will minimise potential contact with the waste and reduce environment risk from an accidental release. Where appropriate, waste will be reused or recycled. Construction waste mitigation measures have been provided for the excavation and construction phases in **Section 9** of this EIS.

4.8.2. Operational Waste

An Operational Waste Management Plan has been prepared by The MACK Group and is attached at **Appendix V**. This report describes the waste management system proposed for the project, including:

- Estimates of waste quantity;
- Waste space allocation and equipment;
- Management of waste;
- Waste segregation and minimization procedures; and
- Access.

Based on the information provided and benchmark data from similar developments, the primary waste streams expected to be generated in the ongoing operation of the School would be:

- Cardboard/paper recycling;
- Comingled recycling;
- Food organics recycling; and
- General waste.

Additional smaller waste streams may include toner cartridge recycling, fluoro tube/globe recycling and battery recycling.

Accordingly, the following recommendations have been provided in relation to waste:

Waste equipment and access

- General waste estimate = 2 x 3000L skips + 3 x 1100L bins, collected 1 x per week;
- Recyclable waste estimate = 15 x 240 L bins collected 1 x per week;
- Other waste (e.g. yearly clean up) = Large 3000L bin. Collected on request.

Waste (general and recyclable/ comingled waste) will be initially collected in small bins placed throughout the school. The caretaker will collect and transport this waste to the central storage/collection area located within the school grounds towards the eastern boundary near the shared car park as shown in **Figure 20**. The bin parking area will be designed in line with Council requirements. Waste will then be collected from there by a private collection contractor on a regular basis.

The garbage truck will enter the site via Council's shared car park with vehicle access provided off Farmland Drive. A swept path analysis provided in **Appendix G** using a 12.5 metre Heavy Rigid Vehicle (HRV) was undertaken which indicates that an HRV vehicle will have to manoeuvre within the shared car park in order to exit the site onto Farmland Drive in a forward manner. Accordingly, it is recommended that waste collection services should occur outside the hours of 8.30am and 3.30pm on school days, to minimise impact on school traffic during peak hours and reduce school children exposure to large waste vehicles.

Refer to **Section 9** of this EIS for further mitigation measures in relation to operational waste.

Figure 20 – Waste collection area



Source: Bitzios Consulting

4.9. SITE SERVICES

Inground servicing of the site will be subject to a separate approval. Notwithstanding, a Site Infrastructure Overview Report has been prepared by WSP for information purposes and is contained at **Appendix O**. The report provides an overview of existing and required infrastructure services (electrical, mechanical, hydraulic and fire protection) for the proposal. As the site is located in a greenfield location, there are no known services. Accordingly, service and infrastructure upgrades required to the site as part of this SSDA are summarised below:

- A new 1,000kVA Endeavour Energy Pad Mounted substation will be installed along Farmland Drive adjacent to the new carpark area to provide power to the site.
- A new telecommunications fibre connection will be provided to the school. The main communications room will be provided in the Library building and will provide telecommunication services to the various site buildings using a star topology. Each site building will be provided with a local building communication room for termination of field data outlets.
- Internal access lighting to illuminate circulation areas such as foyers, entry vestibules, corridors and stairs. Functional lighting to illuminate classroom, office, library and communal hall. Illumination level to comply with AS1680 and Department of Education design guide.
- LED light source is proposed to achieve energy saving targets. External lighting to illuminate building entrances, footpaths, sheltered walkways, roadways and car park. Illumination level to comply with AS1158.3.1.
- Split type air-conditioning system is provided to the communications and building distribution rooms in each block as applicable.
- Heating is to be provided to learning and administration areas by way of free-standing gas heating units with a low surface temperature.
- Homebases and learning areas ventilation is achieved by naturally ventilating the spaces, with cross flow assistance measures where applicable, ceiling fans are also to be provided.
- Portable fire extinguishers will be provided throughout the school in accordance with AS2441 and BCA requirements. Further confirmation for fire protection services will be confirmed during detail design phase in consultation with the project Principle Certifying Authority (PCA) and Fire Safety engineer in

order to establish minimum requirements for compliance to the relevant Australian Standards and *Building Code of Australia*.

4.10. STORMWATER MANAGEMENT

Inground stormwater servicing of the site will be subject to a separate approval. A Stormwater Management, Hydrology and Water Quality Report and associated Civil Plans have been prepared by WSP and are attached at **Appendix P** and **Appendix Q** respectively. The report has been developed to integrate the existing system and accommodate the new works required for the proposal, as well as comply with Council's requirements. As the site slopes downwards to the south, it is likely excess surface water flows drain to the unnamed creek at the southern boundary of the site. There is potential for impacts to the receiving waterway during construction to increase sediment and pollutant laden run-off from the construction activities.

Stormwater will therefore be managed through a series of controls to ensure the proposal does not adversely impact on stormwater flows and the water quality of the receiving waterways downstream of the site. During the construction stage, erosion and sediment control measures will need to be implemented. During operations, a piped stormwater drainage system will be provided to collect all concentrated flows from the proposed buildings and hardstand surfaces. The site will drain to a bioretention basin located in south west of the site, which will be sized for the 1 in 20 ARI event as per the requirements of the Blacktown Development Control Plan 2015, with provision for overflow in the event of a 100 year ARI event. The bioretention basin will then discharge to the creek at the southern boundary of the site. On-site detention (OSD) is not required for the proposal as the site is catered for in a regional basin downstream as part of development of the North West Growth Centre.

A series of stormwater treatment devices have been provided in the design including:

- Construction of a series of stormwater pipes, drains and inlet pits to drain stormwater through the site;
- Planting of swales and retaining walls throughout to control movement and quality of stormwater;
- Gross pollutant traps installed on surface inlet pits and grated drains;
- Installation of a 65m³ rainwater tank to collect water from the roof catchment for re-use on site;
- Construction of a 200sqm bioretention basin in the south-western portion of the site; and
- Sediment and erosion controls including sediment fencing, inlet filters, haybales and catch drains to reduce the amount of sediment laden runoff leaving the site.

Implementation of these measures would mitigate off-site impacts to the downstream water quality.

For further discussion relating to stormwater and erosion and sediment control measures, refer to **Section 9** of this EIS.

4.11. CONSTRUCTION MANAGEMENT

A number of reports have been prepared which detail the proposed construction management of the new School site. These include:

- A Preliminary Construction Management Plan (CMP) prepared by Richard Crookes and contained at **Appendix BB**; and
- A Construction Traffic Management Plan (CTMP) prepared by Bitzios Consulting and contained at **Appendix I**.

The Preliminary Construction Management Plan (CMP) provides a high-level overview of the overall construction program, and details stakeholder management, site security, establishment and storage as well as access to the site during the construction stage. The CMP also provides a Neighbourhood Communications Plan, and provides construction traffic, sediment, dust, noise and vibration plans to mitigate any potential impacts to surrounding development during construction of the school which are discussed in further detail in **Section 9** of this EIS. The Construction Traffic Management Plan (CTMP) provides a high-level overview of the construction traffic and pedestrian impacts and management works associated with the development. The plan identifies the impacts associated with construction on the local traffic network and outlines potential solutions or mitigating methods which are discussed in further detail in **Section 9** of this EIS.

Construction Program

In principle, the construction program will progress based on the following timeline.

- Site Establishment: 1 week (max)
- Main Works: 48 weeks (max)
- Handover: 1 week (max)

The main works will be completed as one stage and will include the construction of the new school. Note as this is a greenfield site, no demolition works are required. Following the appointment of the Contractor, a detailed Project Program and Construction Management Plan will be produced and issued to the Council prior to site establishment.

Construction Work Hours

The proposed works will be undertaken during the following hours:

- Monday to Friday, 7am to 6pm
- Saturday 7:30am to 3:30pm
- Sundays / Public Holidays – No work

If required, after hours permits will be sought from the relevant authorities.

Construction Noise

To minimise impacts and disturbances caused by construction work for the proposal, on-site processes should comply to the *Interim Construction Noise Guideline*. The *Interim Construction Noise Guideline* provides five categories of works that might be undertaken outside the recommended standard hours. They are:

- The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads;
- Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm;
- Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours;
- Public infrastructure works that shorten the length of the project and are supported by the affected community; and

Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours. The Noise Impact Assessment prepared by Acoustic Logic and contained at Appendix L provides an assessment of the impacts of construction noise to surrounding development. Refer to **Section 7.8** of this EIS for further discussion and **Section 9** for recommendations and mitigation measures.

Delivery Plan

The construction methodology is based on the principles of efficiency, safety and sustainability. Proposed construction will aim to reduce machinery, waste and transport requirements. The benefits will be reduced disruption to residents from noise, air pollution and construction and delivery vehicles travelling to and from the site.

Construction Traffic

Access to the site for construction vehicles is proposed to be via the local streets of Schofields, based on the expected site access point on Farmland Drive (refer to Figure 21).

The approach route involves the following:

- Travel east/west on Schofields Road;
- Turn left/right onto Alex Avenue;
- Turn right onto Farmland Drive;

- Turn left onto Prairie Street;
- Turn right onto Antonia Parade; and
- Turn left into the site (for Farmland Drive access).

The exit route involves the following:

- Exit routes for the above routes are the reverse of the proposed access routes.
- For vehicles that do not enter the site (e.g. concreting vehicles for kerbside works), the exit haulage route is to include a detour via Hyde Street, Heathland Avenue and Glacier Street to return to the main haulage routes.
- Where possible, vehicles are to turn around and return to Farmland Drive to minimise construction vehicle impacts on the local streets.

Work Zones

It is expected that the construction site access points will be located on Farmland Drive. As such, a temporary Works Zone may be necessary on the southern side of Farmland Drive to control parking in the area. The construction area will be closed off using perimeter fencing. This will assist in mitigating issues associated with site safety, security, theft and vandalism.

Figure 21 – Proposed construction vehicle access



Source: Bitzios

4.12. ACCESSIBILITY AND BCA

An Access Report has been prepared by Certis Access Consultancy and is attached at **Appendix W** of this EIS. This report represents a review of all aspects of access to, and within, the new building work, with respect to Disability Discrimination Act 1992 (DDA), the Building Code of Australia (BCA), Disability (Access to Premises – Building) Standard 2010, AS1428.1:2009 and other relevant Australian Standards as applicable to this project.

The report confirms accessibility has been appropriately addressed in the associated architectural documentation and confirms the Client's commitment to the development of an equitable and accessible environment for all.

The following scheme is proposed in relation to accessibility:

- Accessible doors, stairs, ramps, walkways and lifts are proposed to provide paths of travel within the site.
- Accessible toilets, ambulant cubicles and showers are proposed to provide sanitary facilities within the site.
- Common facilities including accessible car parking, signage, hearing augmentation, and lighting are proposed within the site.

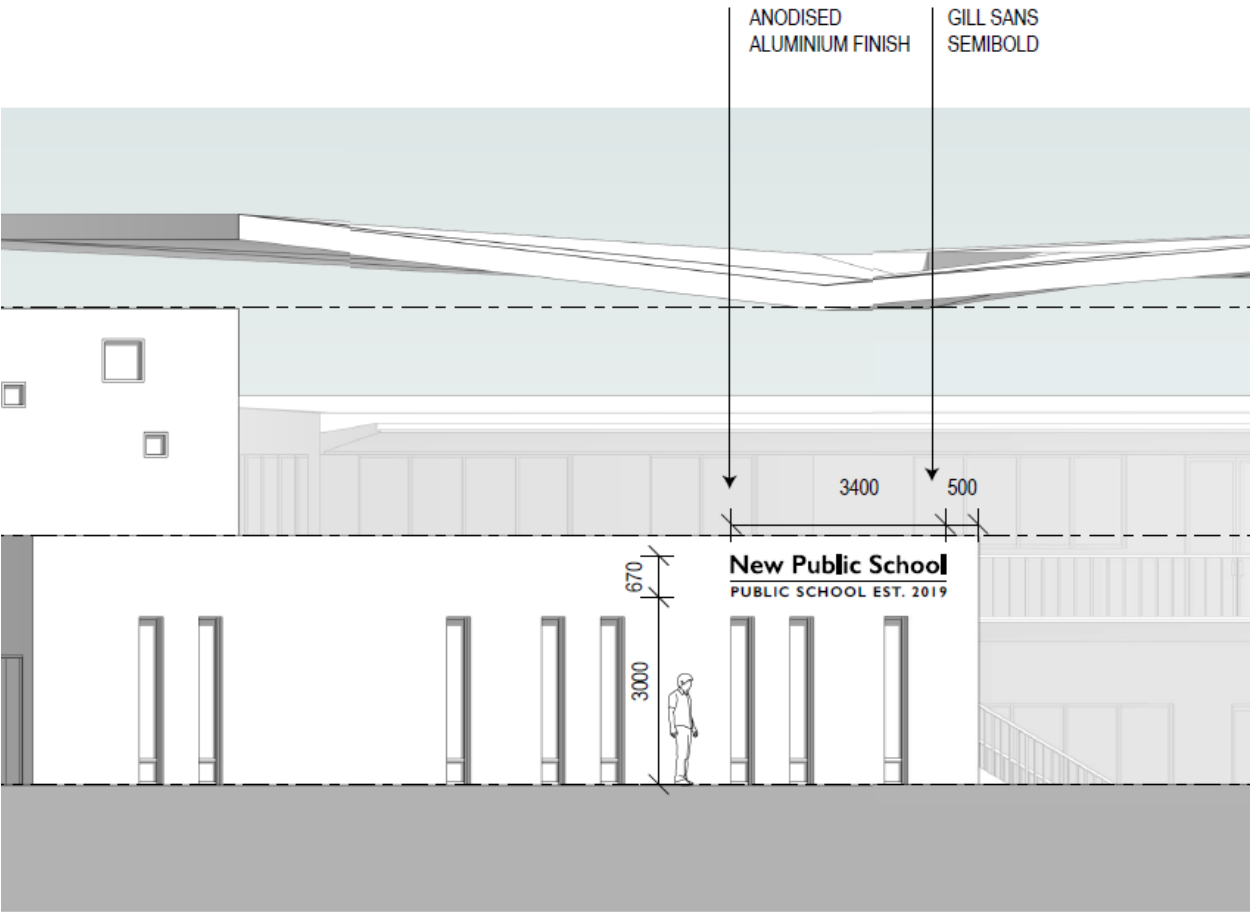
Certis will therefore work with the project team as the scheme progresses to ensure appropriate outcomes are achieved in building design and external domain design. On this basis, Certis believe that the development at present is capable of attaining the required compliance(s) without any major concern and that the buildings can achieve a reasonable level of access and meet statutory requirements once the items outlined within the report have been addressed.

A BCA Assessment Report has also been prepared by Modern Building Certifiers and is attached at **Appendix X** which confirms the design is capable of achieving compliance with the BCA.

4.13. SCHOOL SIGNAGE

The proposal seeks consent for the main school entrance sign as shown in Figure 22 below. The sign will be located on the northern elevation of Block C (the School hall), adjacent to the primary entrance of the school off Farmland Drive. The sign will display the following generic content – 'New Public School Est. 2019' and will be made from an anodised aluminium finish. The proposed wording of the sign will be updated following the formal naming of the school. The signage zone will the following dimensions - it will be 4.1 meters wide and 1.1 metres in height. The signage zone is located on the upper level of the building elevation which ensures that the school sign is clearly visible to approaching pedestrians. Refer to Section 4.8 of this EIS for an assessment against the provision of SEPP 64.

Figure 22 – Proposed school signage



Source: Group GSA Architects

5. STATUTORY POLICY CONTEXT

In accordance with SEARs, the following statutory planning policies have been considered in the assessment of the proposal:

- *Biodiversity Conservation Act 2016*;
- *Rural Fires Act 1997*;
- *State Environmental Planning Policy (State & Regional Development) 2011*;
- *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*;
- *State Environmental Planning Policy No. 64 – Advertising and Signage*;
- *State Environmental Planning Policy No.55 – Remediation of Land*;
- *Draft State Environmental Planning Policy (Remediation of Land)*;
- *Draft State Environmental Planning Policy (Environment)*;
- *Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No. 2 1997)*;
- *State Environmental Planning Policy (Sydney Growth Centres) 2006*; and
- *Blacktown Growth Centre Precincts Development Control Plan 2018*.

Compliance with the relevant controls contained within the above statutory planning policies is discussed below.

5.1. BIODIVERSITY CONSERVATION ACT 2016

The *Biodiversity Conservation Act 2016 (BC Act)* requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report (BDAR).

As identified in the attached statement prepared by Alphitonia at **Appendix T**, the site is situated on biodiversity certified land, and accordingly, there is no requirement to prepare a Biodiversity Development Assessment Report (BDAR), nor is there a requirement to apply to the Office of Environment and Heritage (OEH) for a waiver for a BDAR. Biodiversity certification was conferred on the Growth Centres SEPP, which includes large parts of the Alex Avenue precinct in the North West Growth Centre. Potential impacts to threatened species, populations and ecological communities have therefore already been assessed and offset as part of the biocertification process.

Nevertheless, the potential impacts of this proposal have been considered and opportunities to reduce the potential impacts on the ecology of the subject site have been recommended in **Section 9** of this EIS.

Accordingly, the proposal satisfies the provisions of the BC Act.

5.2. RURAL FIRES ACT 1997

The *Rural Fires Act 1997* applies to the proposal on land identified as bush prone that is defined as a 'Special Fire Protection Purpose' (SFPP). Section 100B of the Act identifies a School as a SFPP. The site is identified on the Blacktown Bushfire Prone Land Map as bushfire prone land, which triggers an assessment under Section 100B in accordance with the NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection 2006*.

A Bushfire Impact Assessment has been prepared and is submitted at **Appendix S** of this EIS. As the site is surrounded by rapidly developing subdivisions, bushfire prone land located adjacent to the site is limited. As development of surrounding lands in Alex Avenue Precinct continues, it is expected that the bushfire hazard within 100m of the site will be removed. Until such time however, the site will remain impacted by bushfire hazards. Accordingly, the assessment recommends a number of mitigation measures to ensure the proposal is considered acceptable and suitable from a bushfire protection perspective including the provision of Asset Protection Zones (APZs) and the implementation of appropriate construction standards (BALs).

For further discussion relating to bushfire protection mitigation measures, refer to **Section 9** of this EIS.

5.3. STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

State Environmental Planning Policy (State and Regional Development) 2011 identifies development types that are of state significance, or infrastructure types that are of state or critical significance. Under the *State Environmental Planning Policy (State and Regional Development) 2011*:

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

The proposal is for a new school and is therefore a State Significant Development. Accordingly, an SSD application is to be lodged with the Department of Planning and Environment (DP&E).

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

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP) aims to make it easier for child-care providers, schools, TAFEs and universities to build new facilities and improve existing ones by streamlining provisions and the approval processes so to deliver greater consistency across NSW. The Education SEPP balances the need to deliver additional educational infrastructure with a focus on good design.

In accordance with Clause 35(6) of the Education SEPP, the following must be considered for the assessment of a school development permitted with consent:

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

5.4.1. Schedule 4 – Design Quality Principles

Schedule 4 of the Education SEPP outlines the design quality principles that are to be considered for applications for school developments. The proposal responds to these design quality principles as follows:

- **Principle 1 – context, built form and landscape:** The new school will be two storeys in scale, which is in keeping with the predominant scale of surrounding residential development. The site does not have a building height limit as outlined in the Growth Centres SEPP 2006. Notwithstanding this, the proposal is considered an appropriate scale for the surrounding residential context. The proposal also provides a landscape concept plan which includes landscaped gardens, outdoor play areas and sporting facilities that will complement the existing character and future character of Schofields.
- **Principle 2 – sustainable, efficient and durable:** The proposal will adopt a range of ESD initiatives and an ESD Report accompanies the EIS at **Appendix J**. The proposal provides positive social and economic benefits for the local community particularly in terms of job creation and reducing pressure of surrounding public schools. The new school will be constructed using durable and sustainable materials as outlined in the Urban Design Report contained at **Appendix E**.
- **Principle 3 – accessible and inclusive:** The proposal is capable of complying with relevant provisions for accessibility, and an Accessibility Report and BCA Report accompany the EIS at **Appendix W** and **Appendix Y** respectively.
- **Principle 4 – health and safety:** CPTED measures have been incorporated into the design and management of the site to ensure a high level of safety and security for students and staff, such as appropriate fencing, access control measures, adequate lighting and wayfinding signage as well as the

use of resistant and durable building materials. A range of open spaces and sports facilities are proposed for students to encourage passive recreation.

- **Principle 5 – amenity:** The proposal will provide high quality facilities, spaces and equipment for use by students and staff. These areas will provide students with an enhanced learning environment.
- **Principle 6 – whole of life, flexible and adaptive:** The proposal involves the construction of new school buildings, these will be designed to ensure flexibility and longevity.
- **Principle 7 – aesthetics:** The proposal will have high quality external finishes, which will be aesthetically pleasing. The proposal is an appropriate scale and form for the residential context.

5.4.2. Traffic Generating Development

This EIS addresses Part 7 - Clause 57 of the Education SEPP which stipulates that development for the purposes of an 'educational establishment' with 50 or more students and with access to any road will be referred to the RMS. The RMS have been consulted during the SEARs stage and in the preparation of this EIS. The Traffic Impact Assessment prepared by Bitzios Consulting, submitted at **Appendix G**, addresses the matters raised by the RMS in the SEARs. A referral to the RMS will be undertaken during the assessment of the EIS in accordance with Clause 57 of the Education SEPP.

5.5. STATE ENVIRONMENTAL PLANNING POLICY NO. 55 - REMEDIATION OF LAND

State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55) provides a state-wide planning approach for the remediation of land and aims to promote in the remediation of contaminated land to reduce the risk of harm to human health or the environment. Clause 7(1) requires the consent authority to consider whether land is contaminated prior to consent of an application.

A Preliminary Stage 1 Environmental Site Assessment was undertaken by Environmental Investigation Services and is attached at **Appendix M**. Results of the Stage 1 assessment indicated that there is a low to moderate potential for site contamination. Environmental Investigation Services identified the following potential contamination sources/AEC:

- Fill material;
- Former agricultural land use in the northern section of the site; and
- General use of pesticides.

In addition, the site appears to have been used for agricultural and grazing purposes which is listed in Table 1 of the *SEPP55 Planning Guidelines* as an activity that may cause contamination.

Parts of the northern section of the site (i.e. the former grazing land) that are currently unpaved and are likely to be excavated for the proposal are likely to pose a low to moderate risk to the site receptors as there is an increased risk of exposure to soil.

On this basis and considering the sensitivity of the proposed land use (i.e. a primary school), Environmental Investigation Services recommended the following:

- A preliminary investigation to make an initial assessment on the soil contamination conditions at the site; The findings of the preliminary investigation will be used to design the sampling strategy for a Stage 2 investigation at the site; and
- A Stage 2 Detailed Environmental Site Investigation should be undertaken following a review of the findings from the preliminary investigation.

Considering the above, and based on the scope of work undertaken for the preliminary assessment, a Stage 2 Detailed Environmental Site Investigation was undertaken by Greencap and is provided at **Appendix O**. The Stage 2 investigation included:

- Identifying potential sources of contamination and contaminants of concern on the site;
- Evaluating the presence of contamination in the identified areas of concern;

- Close out any data gaps specified in the Preliminary Site Investigation (PSI) report for the site;
- Assess site suitability for its intended use as a Primary School; and
- Providing any required recommendations or remediation actions.

To achieve the above, the DSI involved a desktop study and a review of the stage 1 contamination assessment, a site walkover, soil sampling and a laboratory analysis of the soils.

The results of the investigation indicated the surface soil quality on the site satisfies the land use standards for its intended use as a public school. This DSI did not identify any unacceptable human health or ecological risk associated with the surface soil quality. The investigation did not reveal any analysis or results that require further investigation and an analysis of the results for the contaminants of potential concern were below the applicable criteria for the site. Furthermore, the findings of the soil salinity analysis identified no evidence of any current existing significant salinity hazard/risk on the site.

Greencap recommend that any material to be taken off-site must be classified in accordance with the NSW EPA Waste Classification Guidelines (2014).

Accordingly, based on the above assessment, the proposal is considered to comply with provisions of SEPP 55 and is suitable for the intended land use as a School.

5.6. DRAFT STATE ENVIRONMENTAL PLANNING POLICY (REMEDIATION OF LAND)

As part of the NSW Government's review program for existing State Environmental Planning Policies (SEPPs), DPE publicly exhibited the draft *Remediation of Land SEPP* and draft planning guidelines (the draft Remediation of Land SEPP) between 31 January and 13 April 2018.

The draft Remediation of Land SEPP presents proposed changes to SEPP 55 and relates to remediation of contaminated land as well as matters to be addressed in a plan of remediation. It is proposed the new land remediation SEPP will:

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

Notwithstanding the above draft amendments SEPP 55, the contamination assessments carried out and summarised in **Section 5.6** of this EIS remain valid and consistent with the objectives of the proposed amendments.

5.7. SYDNEY REGIONAL ENVIRONMENTAL PLAN NO 20 – HAWKESBURY-NEPEAN RIVER (NO.2 – 1997)

The *Sydney Regional Environmental Plan No 20 – Hawkesbury- Nepean River (No. 2 – 1997)* (SREP) aims to protect the environmental of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in the regional context; the SREP applies to the Blacktown Local Government Area.

The proposal will not have any adverse environmental impacts on any riparian corridors, environmentally sensitive areas, areas of high scenic quality, wetland areas, areas of high cultural heritage or impact on the water quality of the Hawkesbury Nepean River. The proposal contributes to improved water quality by employing stormwater and sediment and erosion mitigation measures as described in the Stormwater Management, Hydrology and Water Quality Report contained at **Appendix P** and outlined in **Section 9** of

this EIS. The development controls outlined in Part 3 of the SREP have been reviewed and do not relate to this development application as there are no controls for educational establishments.

5.8. DRAFT STATE ENVIRONMENTAL PLANNING POLICY (ENVIRONMENT)

The draft *State Environmental Planning Policy (Environment) 2017* (Environment SEPP) aims to consolidate seven environmental existing SEPPs including the *Sydney Regional Environmental Plan No 20 – Hawkesbury- Nepean River*. The consolidation will modernise provisions to remove duplication, respond to new evidence, changed circumstances and better align with community expectations.

The draft SEPP will result in a new Ministerial 117 Direction for preparing LEPs including for the Hawkesbury-Nepean River catchments. The Explanation of Intended Effect (EIE) for the Environment SEPP was on exhibition from 31 October 2017 until 31 January 2018. The EIE explains that the consolidated SEPP proposes to simplify the planning rules for a number of water catchments, waterways, urban bushland, and Willandra Lakes World Heritage Property.

The proposal is consistent with the draft SEPP (Environment) as it provides a Stormwater Management, Hydrology and Water Quality Report and Civil Plans contained at **Appendix P** and **Appendix Q** which address methods to minimise water consumption, reduce stormwater runoff and improve water quality to ensure impacts to the Hawksbury-Nepean River system are minimised.

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

State Environmental Planning Policy No.64 – Advertising and Signage (SEPP64) aims to ensure signage is compatible with the desired amenity and visual character of an area, provides effective communication in suitable locations and is of a high-quality design and finish.

SEPP 64 applies to the proposed development as content is sought for the main school signage which will be visible to the surrounding road network. Clause 8 and Clause 13 of SEPP 64 prevents development consent from being granted to signage unless the consent authority is satisfied that it is consistent with the objectives of the SEPP and has satisfied the assessment criteria specified in Schedule 1.

An assessment of the proposed main school signage against the SEPP 64 assessment criteria has been undertaken and summarised in **Table 5** below. This assessment demonstrates that the proposed signage satisfies the relevant provisions of SEPP 64, including achieving the aims and objectives of the policy.

Table 5 – SEPP 64 Schedule 1 Assessment Criteria

Assessment Criteria	Comment	Compliance
Clause 3- Aims and Objectives		
(a) to ensure that signage (including advertising): is compatible with the desired amenity and visual character of an area, and provides effective communication in suitable locations, and is of high quality design and finish, and	The scale of the sign proposed is compatible with existing signage structures in the Alex Avenue Precinct. The signage is also consistent with that of typical signs for schools. The location of the sign on the upper level elevation of Block C (school hall) ensures that the sign will be clearly visible from the Farmland Drive frontage of the school, allowing for effective legibility of the site. The sign incorporates quality materials and finishes and provides a coherent and integrated colour theme consistent with the school development.	Yes
(b) to regulate signage (but not content) under Part 4 of the Act, and	Noted.	Yes

Assessment Criteria	Comment	Compliance
(c) to provide time-limited consents for the display of certain advertisements, and	The sign is proposed for the life of the development.	Yes
(d) to regulate the display of advertisements in transport corridors, and	The sign will be restricted to the location indicated on the plans provided in Appendix B .	Yes
(e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.	The proposed sign will be located at main pedestrian entry/exit point to the school off Farmland Drive and will appropriately identify the school to the community.	Yes
Schedule 1- Assessment Criteria		
<u>Character of the Area</u> Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located? Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	The proposed sign is compatible with the existing and future character of the area for the following reasons: <ul style="list-style-type: none"> The scale and location of the structure is consistent with existing signage along Farmland Drive. It is commensurate to other school signage for new schools in NSW. 	Yes
<u>Special Areas</u> Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The site is not located in a special area. The sign will not detract from the amenity or visual quality of nearby residential land uses. The sign is of a scale and appearance that is compatible with the future built form of the school.	Yes
<u>Views and Vistas</u> Does the proposal obscure or compromise important views? Does the proposal dominate the skyline and reduce the quality of vistas? Does the proposal respect the viewing rights of other advertisers?	The sign will not obscure any views and will sit flush against the upper elevation of school hall building. It has been sited and designed to ensure the sign sits below the future roof line of the school buildings. The sign is also not of a bulk or scale that would impede any view from the street. The sign is of a scale and height consistent with existing signage in the locality and the proposed buildings within the site. The signage will not adversely impact on views or vistas from other properties, nor will it impede the visibility of any other existing signage.	Yes
<u>Streetscape, setting and landscape</u> Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape? Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	The proposed sign is compatible with the scale of surrounding streetscape, setting and character of the nearby Alex Avenue Town Centre. The sign will therefore complement the existing signage in the wider precinct, with no adverse impacts to the streetscape. The proposal does not screen unsightliness and will not contribute to visual clutter as the	Yes

Assessment Criteria	Comment	Compliance
<p>Does the proposal reduce clutter by rationalising and simplifying existing advertising?</p> <p>Does the proposal screen unsightliness?</p> <p>Does the proposal protrude above buildings, structures or tree canopies in the area or locality?</p>	<p>signage panels are unified. The sign will not protrude above any structures or tree canopies.</p>	
<p><u>Site and building</u></p> <p>Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?</p> <p>Does the proposal respect important features of the site or building, or both?</p> <p>Does the proposal show innovation and imagination in its relationship to the site or building, or both?</p>	<p>The sign is appropriately sized and sited with consideration to the existing and proposed built form of the school and surrounds.</p> <p>The proposed sign will not protrude above the building line and will utilise modern technology and be built with contemporary materials that are consistent with the current and future context of the site.</p>	Yes
<p><u>Associated devices and logos with advertisements and advertising structures</u></p> <p>Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?</p>	<p>All required safety devices will be concealed within the signage structure.</p>	Yes
<p><u>Illumination</u></p> <p>Would illumination result in unacceptable glare?</p> <p>Would illumination affect safety for pedestrians, vehicles or aircraft?</p> <p>Would illumination detract from the amenity of any residence or other form of accommodation?</p> <p>Can the intensity of the illumination be adjusted, if necessary?</p> <p>Is the illumination subject to a curfew?</p>	<p>The proposed sign will not be internally lit and will therefore comply with the relevant codes to ensure there is no interference with driver or pedestrian sight lines.</p>	Yes
<p><u>Safety</u></p> <p>Would the proposal reduce the safety for any public road?</p> <p>Would the proposal reduce the safety for pedestrians or bicyclists?</p> <p>Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?</p>	<p>The proposed sign will not interfere with pedestrian or vehicular sight-lines as it will comply with all relevant Australian Standards and codes. The sign will not distract motorists as will be located well away from the street verge and won't resemble a traffic sign or contain a facsimile of a traffic sign.</p>	Yes

5.10. STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY GROWTH CENTRES) 2006

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Growth Centres SEPP) is the principle environmental planning instrument applying to the site. The Growth Centres SEPP identifies the site within the Alex Avenue and Riverstone Precinct Plan 2010 (Appendix 4 of the Growth Centres SEPP). As such, development controls relating to the site are outlined in this Precinct Plan.

5.10.1. Zoning and Permissibility

Under the Growth Centres SEPP, the site is zoned SP2 'Educational Establishment'. Educational establishments are specifically identified as being permitted with consent in the SP2 zone on the subject site:

Permitted without consent

Nil.

Permitted with consent

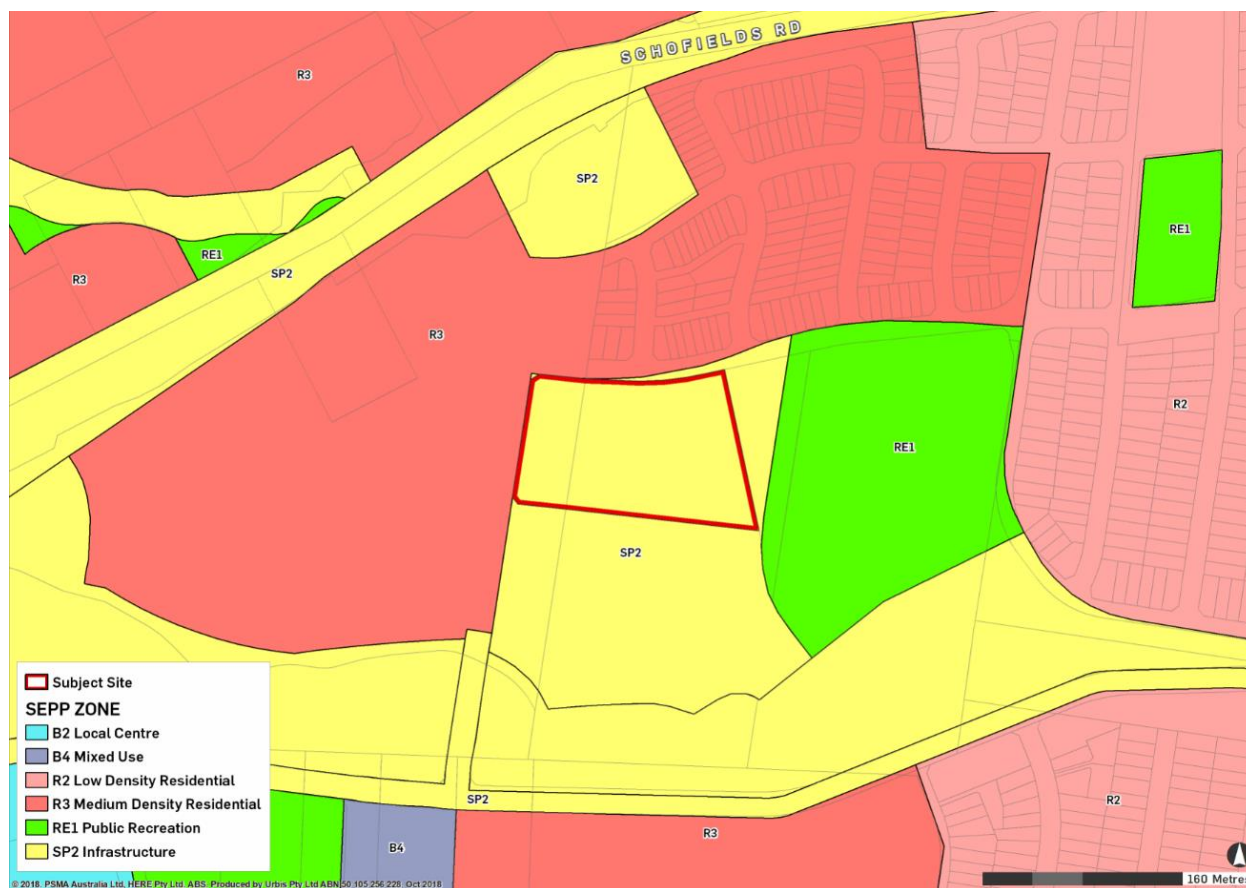
The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Drainage; Earthworks; Environmental protection works; Flood mitigation works; Roads; Water recycling facilities; Waterbodies (artificial).

The proposal is therefore permitted with development consent. The relevant objectives of the SP2 zone are:

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

The proposal will provide a new school, which is important social infrastructure for the growing population of Schofields. The proposal is therefore consistent with the objectives of the SP2 zone.

Figure 23 – Zoning map



Source: Growth Centres SEPP

5.10.2. Other Growth Centres SEPP Provisions

An assessment against the relevant controls contained within Appendix 4- Alex Avenue and Riverstone Precinct Plan 2010 of the Growth Centres SEPP has been undertaken in the table below.

Table 6 – Growth Centres SEPP Compliance Table

Consideration	Control	Proposal	Complies
Clause 5.9 - Preservation of trees or vegetation	Preserve the amenity of the area through the preservation of trees and other vegetation	No trees are proposed to be removed as part of this application - refer to Appendix X for more details.	Yes
Clause 5.10 - Heritage conservation	<p>The objectives of this clause are:</p> <p>(a) to conserve the environmental heritage of the Alex Avenue and Riverstone Precincts, and</p> <p>(b) to conserve the heritage significance of heritage items and heritage conservation areas including</p>	The site is not a heritage item or within a heritage conservation area.	N/A

Consideration	Control	Proposal	Complies
	<p>associated fabric, settings and views, and</p> <p>(c) to conserve archaeological sites, and</p> <p>(d) to conserve places of Aboriginal heritage significance.</p>		
Clause 6.1 - Public utility infrastructure	The consent authority must not grant development consent to development on land to which this Precinct Plan applies unless it is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when required.	The proposal incorporates essential infrastructure provisions as outlined in the Site Infrastructure Report contained at Appendix O . Refer to Section 4.9 of this EIS for further discussion.	Yes
Clause 6.4 - Development controls—native vegetation retention areas	The objective of this clause is to prevent the clearing of certain native vegetation.	The site is not identified as an area of native vegetation protection and therefore this clause does not apply. This is confirmed in the Flora and Fauna assessment contained at Appendix T . Refer to Section 7.3 of this EIS for further discussion.	N/A
Part 5, Clause 19 - Development on flood prone and major creeks land—additional heads of consideration	The objective of this clause is to control development that is carried out on flood prone land.	The site is not flood affected, however, an area of land to the south is identified as 'flood prone and major creeks land'. A Flood Risk Assessment has been prepared and is submitted at Appendix R of this EIS. Refer to Section 7.4 of this EIS for further discussion.	N/A

5.11. BLACKTOWN GROWTH CENTRE PRECINCTS DEVELOPMENT CONTROL PLAN 2018

The site is located within the North West Growth Centre and is therefore subject to the provisions outlined in the Blacktown Growth Centre Precincts Development Control Plan. For educational establishments, Parts 1, 2 and 4 of the DCP apply. Furthermore, the site is identified as being located within the Alex Avenue Precinct and is therefore subject to additional controls under Schedule 1 of this DCP.

In accordance with clause 11 of the State and Regional Development SEPP, Development Control Plans do not apply to state significant development. Notwithstanding, the proposal has been assessed against the relevant controls of the DCP in **Table 7**.

Table 7 – Blacktown Growth Centre Precincts DCP 2018 Compliance Table

Provision	Proposal	Compliance
2. Precinct Planning Outcomes		
2.2 The Indicative Layout Plan	The proposal is generally in accordance with the Indicative Layout Plan. The site had been identified and zoned for the purposes of an educational establishment and is therefore considered an appropriate location for Alex Avenue Public School.	Yes
2.3.1 Flooding and water cycle management	The site is not identified as flood prone land under the DCP, however land to the south is identified as flood prone land comprising a water course/ creek line. Accordingly, a Flood Risk Report accompanies this EIS at Appendix R which demonstrates the proposal will not be impacted by flooding, subject to the adoption of recommendations contained in the report. An overland flow strategy for the site will be confirmed during the detailed design phase and will be designed to maintain flow direction and cater for the 100-year ARI storm event.	Yes
2.3.2 Salinity and soil management	A portion of the site is identified as an area of 'potential salinity risk' and 'aggressive soils'. The Detailed Site Investigation includes a Salinity Assessment (Appendix N). Results of the salinity assessment identified no evidence of any existing significant salinity hazard/risk on the site. The investigation did not reveal any results that require further investigation, nor any significant soil salinity contamination or sources of salinity on the site. Therefore, the site is considered suitable for the development and is unlikely to require significant salinity-specific management. Greencap recommend maintenance of	Yes

Provision	Proposal	Compliance
	efficient drainage controls on the site during site development/construction.	
2.3.3 Aboriginal and European heritage	<p>A portion of the site is identified as an area with 'potential Aboriginal heritage constraints'. Accordingly, an Aboriginal Cultural Heritage Assessment Report (ACHAR) and an Archaeological Report accompanies this EIS at Appendix K and Appendix BB respectively. A total of 94 Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register within vicinity of the study area. The registered AHIMS sites are either isolated artefacts or artefact scatters and are primarily located adjacent to higher order creeks and slopes with sporadic sites occurring on elevated areas. A field survey identified one Aboriginal heritage site within the study area, an area of potential archaeological deposit (PAD). The PAD consists of a crest and ridgeline which runs through the northern portion of the study area and continues south along the slope.</p> <p>For further discussion relating to Aboriginal cultural heritage and archaeology mitigation measures, refer to Section 9 of this EIS.</p>	Yes
2.3.4 Native vegetation and ecology	<p>No trees are proposed to be removed. As identified in the Arboricultural Impact Assessment at Appendix X, 15 trees either on or adjacent to the site will be impacted by the proposed works. As such, the assessment provides a number of mitigation measures to ensure the ongoing health of trees on the site during construction. Refer to Section 9 of this EIS for further discussion.</p> <p>The EIS is also accompanied by a Flora and Fauna Assessment contained at Appendix U. No threatened species were recorded on site during surveys and there is limited fauna habitat. Some mature trees provide potential foraging, roosting, breeding and nesting for local fauna. None of the trees recorded on the site were hollow bearing, however remnant trees may</p>	Yes

Provision	Proposal	Compliance
	<p>provide occasional foraging habitat for some microbats and mega bats.</p> <p>Given that the proposal seeks to retain this habitat with predominantly exotic pasture being removed, the proposal is not likely to impact on any threatened species. For further discussion relating to flora and fauna mitigation measures, refer to Section 9 of this EIS.</p> <p>A Landscape Concept Plan and Strategy is submitted at Appendix F of this EIS which demonstrates that the selection of trees and other landscaping plants is appropriate for a School setting.</p>	
2.3.5 Bushfire hazard management	<p>A portion of the site is identified 'bushfire prone land'. The Bushfire Impact Assessment at Appendix T confirms that part of the 100m vegetation buffer zone extends within the site from a remnant of woodland located to the north-west. The riparian corridor to the south does not impact on the proposal. As the proposed School site is surrounded by rapidly developing subdivisions, bushfire prone land located adjacent to the site is limited. Over time, bushfire hazard within 100m of the site will be removed with future development. Until such time, the site will remain impacted by bushfire hazards. An Asset Protection Zones (APZ) is proposed and appropriate construction standards (BALs) will be implemented. For further discussion relating to bushfire protection mitigation measures, refer to Section 9 of this EIS.</p>	Yes
4. Development in the residential zones		
4.4.3 Educational Establishments and Places of Worship		
<p>Controls</p> <p>Places of public worship and educational establishments are preferably to be located on land with frontage to a collector road. Corner sites are preferred.</p>	<p>The School site is a corner site with multiple frontages. The main entrance will be oriented towards Farmland Drive with future secondary entrances provided off the Pelican Road once it has been constructed.</p>	Yes

Provision	Proposal	Compliance
A traffic and transport report/statement is to accompany the Development Application.	The EIS is accompanied by a Traffic Impact Assessment contained at Appendix G , a Construction Traffic Management Plan at Appendix J and a Green Travel Plan at Appendix H .	Yes
A landscape plan and associated documentation is to be submitted with the Development Application.	A Landscape Concept Plan has submitted with the EIS at Appendix F .	Yes
Car parking spaces shall be provided on site in accordance with the following rates – 1 space per staff member plus 1 space per 100 students	Based on the DCP requirements and the proposed School population, the proposal requires a total of 70 spaces for staff and an additional 10 spaces for students. The proposal provides a total of 100 spaces on the neighbouring lot to be used by the School through a Joint-Use agreement with Council. The proposal complies.	Yes
For certain uses, the provision of overflow parking may be necessary particularly where such developments incorporate halls used for social gatherings. Overflow parking areas could be provided on open grassed areas and need not be formally sealed or line-marked. Proposed overflow parking areas are to be clearly shown on plans submitted with the Development Application.	No overflow parking areas are proposed.	N/A
Development must be designed to minimise the possibility of noise disturbance to the occupants of adjoining or neighbouring dwellings. Where it is likely that a development may cause an adverse noise impact on nearby residential areas, an acoustic report will be required to be submitted to council with the Development application,	The EIS is accompanied by a Noise Impact Assessment at Appendix L which demonstrates the proposal will not cause adverse acoustic disturbance to neighbouring dwellings subject to the adoption of mitigation measures outlined in Section 9 of this EIS.	Yes
The general hours of operation for places of public worship and educational establishments are between 7am and 9pm.	The School will have the following complying operating hours: General operating hours for the school will be Monday – Friday 8am - 5pm. Out of school hours (OOSH) use of the school facilities will operate during	Yes

Provision	Proposal	Compliance
	weekdays at Mornings 6.30am – 9am and Afternoons 3pm – 6.30pm.	

5.12. CONTRIBUTIONS

Blacktown Council's Section 94 Contributions Plan No.20 – Riverstone & Alex Avenue Precincts applies to the development. There are no specific exemptions within the Section 94 Plan, meaning the school development would be levied to fund:

- Water Cycle Management Facilities
- Traffic & Transport Management Facilities
- Open Space and Recreation Facilities
- Community Facilities & Combined Precinct Facilities

Water cycle management facilities and traffic and transport management is being undertaken by Council and the landowners within the Alex Avenue Precinct. Development of residential lots will fund this. The proposal includes open space and recreation facilities to meet the demands of the school. The school does not need to rely on open space or community facilities within the precinct. The school will have open space and facilities on site and should therefore not have to contribute towards delivery of works in the broader precinct. The proposal does not generate a demand for Council's infrastructure and facilities. The proposal includes facilities that may be able to be used by community, such as a hall and library.

The proposal provides important social and community infrastructure that would have otherwise have to be provided by Council. The new school provides essential community services and employment opportunities, which results in economic and non-economic benefits to the local Council and its community. The benefits far outweigh any additional costs that it might cause for the Council. An exemption for a monetary contribution is therefore requested.

Section 4.33 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) sets out specific provisions relating to the determination of Crown DAs. It states:

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

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

On this basis, the consent authority has no power to issue a refusal or issue an approval subject to conditions of consent to which the DoE does not agree. The limitation on the power to impose a condition of consent extends to the consent authority's ability to require contributions to be paid, including contributions pursuant to Section 7.11 and 7.12. Contributions occur by way of conditions of consent. Therefore, neither Council or DPE can impose conditions relating to contributions without the DoE's consent.

The following planning policies support the best practice of exempting community infrastructure from paying contributions:

Circular D6 – Crown Development Applications and Conditions or Consent

Exemption from contributions is supported by Planning Circular (Circular D6) relating to Crown Development Applications, issued by the then Department of Urban Affairs and Planning. Circular D6 sets out the circumstances in which it is appropriate for a consent authority to seek the approval of the applicant or the Minister to impose conditions of consent. Circular D6 notes that where a consent authority intends to levy contributions on Crown Development, they must be justified, and consideration should be given to the Crown's role in providing a community service, the cost of which is accountable to all taxpayers in the State.

The currency of Circular D6 is confirmed in the Draft Development Contributions Practice Note – July 2005, which states “the current limitation on imposition of levies on Crown Developments as outlined in Circulate D6...remain in force.”

Draft Local Development Contributions Guidelines

The Guidelines outline the best practice approach to developer contributions on the public sector:

8.3 Public sector development

The current limitations on the imposition of development contributions on public sector developments as outlined in Circular D6 – Crown Development Applications and Conditions of Consent remain in force.

Public sector development generally falls into the following 2 categories:

- *Development that is carried out with an underlying philosophy of community service such as a courthouse, school, hospital or social housing; or*
- *Development that is carried out on a profit-making basis*

Council can, in its contribution plan, identify those types of developments that are exempt from contributions.

Council can, in its contribution plan, identify those types of developments that are exempt from contributions. In this regard it is considered best practice to exempt those developments provided by the Crown with an underlying philosophy of community service, such as a courthouse, school or community centre, should not be levied a contribution as the material public benefit that is derived from the development exceeds any demand that it creates on existing infrastructure.

Where development is carried out by the public sector on a profit-making capacity they should pay a level of contribution equal to that applicable to the private sector.

DPE must acknowledge that to impose a contribution on this project, it would need to have the agreement of the Minister. Planning Circular D6 notes that consideration should be given to the Crown's role in providing a community service (not provided for by Council).

6. STRATEGIC PLANNING CONTEXT

In accordance with SEAR's, the following strategic planning policies have been considered in the assessment of the proposal:

- *NSW State Priorities;*
- *The Greater Sydney Regional Plan, A Metropolis of three cities;*
- *NSW Future Transport Strategy 2056;*
- *State Infrastructure Strategy 2018 – 2038 Building the Momentum;*
- *Sydney's Cycling Future 2013;*
- *Sydney's Walking Future 2013;*
- *Sydney's Bus Future 2013;*
- *Crime Prevention Through Environmental Design (CPTED) Principles;*
- *Healthy Urban Development Checklist, NSW Health; and*
- *Greater Sydney Commission's Central City District Plan.*

Consistency with the relevant goals contained to the above strategic policies is discussed below.

6.1. NSW STATE PRIORITIES

NSW State Priorities is the State Government's plan to guide policy and decision making across the State. The proposed redevelopment at the site is consistent with key objectives contained within the plan, including:

- *Creating Jobs: Create 150,000 new jobs by 2019*

The proposal will create temporary job opportunities in manufacturing, construction and construction management during the project's construction phase of works, and job opportunities in teaching and administration at the project's completion.

- *Building Infrastructure: Infrastructure projects to be delivered on time and on budget across the state.*

The proposal provides a significant development opportunity for the State that will create jobs, stimulate the economy and deliver a vital service for the community. Significant population growth within Sydney's outer west has placed substantial pressure on public schools within the area. The proposal will provide a high-quality facility to the community and take enrolment pressure off existing schools in the area.

- *Improving Education Results: Increase the proportion of NSW students in the top two NAPLAN bands by eight per cent.*

The proposal will contain high quality facilities, spaces and equipment for use by students and staff. This will provide students with learning difficulties with greater opportunities to learn and improve their numeracy and literacy skills.

Overall, it is considered that the proposal is consistent with the goals and objectives set out within the *NSW State Priorities*.

6.2. THE GREATER SYDNEY REGIONAL PLAN, A METROPOLIS OF THREE CITIES

The *Greater Sydney Regional Plan, A Metropolis of Three Cities* was released by the NSW Government in March 2018 and includes a range of goals, directions, objectives and actions that aim to support the strategic growth of Sydney over the long term and assist in delivering the vision where most residents will live within 30 minutes of their jobs, education and health facilities, and services. The following key directions contained in the Plan are relevant to the proposal:

‘A city supported by infrastructure’

Providing adequate infrastructure to support population growth is essential to creating strong communities. In accordance with the Plan, this SSDA will ensure that a new public school can be delivered to meet Sydney’s growing educational needs, particularly in rapidly growing locations such as Schofields. The proposal will take enrolment pressure off other schools in the locality currently exceeding student capacity and ensure a high-quality educational facility is provided for the future population of Blacktown LGA.

‘A city for people’

A growing Greater Sydney presents an opportunity to build social and cultural networks and to enhance individual and community health outcomes. The changing demographics of neighbourhoods across Greater Sydney will influence local demand for social infrastructure. The proposal will deliver a sustainable, well-designed school that promotes the use of public and active transport for staff. The redevelopment of the site will make a valued contribution to economic growth in Sydney and provide increased learning opportunities for students with employment opportunities for teachers. The proposal delivers a new school in an accessible and walkable location that will contribute to the social and cultural identity of the locality and improve the health outcomes of the children living in the area. The new school has been designed to embrace the surrounding natural and built environments and includes the provision a variety of sporting facilities to encourage students to participate in active outdoor activities.

The proposal is also consistent with the underlying objectives that support the wider goals and directions contained within the Plan, including:

- ***Objective 1: Infrastructure supports the three cities***

The proposal will deliver a vital piece of educational infrastructure in western Sydney that will take enrolment pressure off existing schools.

- ***Objective 2: Infrastructure aligns with forecast growth – growth infrastructure compact***

Schofields is a rapidly growing residential suburb and the surrounding area is forecast to experience significant residential and employment growth. The new school will accommodate the growing student population and take enrolment pressure of existing schools in the area. The proposal will provide contemporary facilities to meet future educational standards and provide increased jobs and growth for Blacktown LGA.

- ***Objective 3: Infrastructure adapts to meet future needs***

DoE estimates that an extra 270,000 students will need to be accommodated in government and non-government schools in Greater Sydney by 2036. The proposal has been designed to be adaptable to meet the future needs of the community, with innovative contemporary design, flexible learning spaces and a more efficient use of land that will be essential in responding to growth and changing demands.

- ***Objective 6: Services and infrastructure meet communities’ changing needs***

Joint and shared use of facilities is encouraged to make school assets available to the community outside school hours and to give schools access to community facilities. At this point in time, there are no shared use or joint use arrangements in place. DoE will continue to explore opportunities for shared and joint use of its facilities.

- ***Objective 7 Communities are healthy, resilient and socially connected***

The proposal provides for a more socially connected community and will help to create and support an inclusive and vibrant neighbourhood. The site is in the heart of an emerging walkable neighbourhood and will increase opportunities for students and staff to walk and cycle to school resulting in a school that is well

connected with its surrounding community. The proposal also includes a range of open spaces, playgrounds and sports facilities to encourage active and passive recreation.

- **Objective 14: A Metropolis of Three Cities – integrated land use and transport creates walkable and 30-minute cities**

The proposal provides safe walking and cycling links to the new school and encourages young people to be more active. The site is close to bike paths, established residential neighbourhoods and multiple bus routes. Future employees and students will be encouraged to access the site via public transport, cycling or walking. This will reduce reliance on cars, decrease road congestion and generally create a healthy built environment.

6.3. CENTRAL CITY DISTRICT PLAN

The *Central City District Plan* includes a range of priorities and actions to appropriately support the strategic growth of Sydney's Central District. The Plan identifies the following:

- The NSW Department of Education estimates an extra 89,360 students will need to be accommodated in both government and non-government schools in the Central City District by 2036;
- Blacktown and Parramatta local government areas will each take up 32 per cent of the District's increase in school-aged children, followed by The Hills (23 per cent) and Cumberland (14 per cent) local government areas; and
- Blacktown local government area will therefore have to accommodate approximately 28,595 additional school-aged children by 2036.

These figures demonstrate there is a demand for school places which has necessitated planning for new and more innovative use of existing school sites. If no additional classrooms are provided until 2036 there will be significant shortfalls. In response, the District Plan notes that DoE is funding the construction of new government schools and upgrades to existing government schools to provide additional classrooms to the Western District to address issues of supply. Accordingly, this SSDA is consistent with the District Plan, as it supports the DoE's substantial investment in the development of Alex Avenue Public School.

6.4. NSW FUTURE TRANSPORT STRATEGY 2056

Future Transport 2056 is an update of NSW's *Long-Term Transport Master Plan* which seeks to promote the use of public transport as an effective travel option. The site benefits from being located:

- Within walking distance of Schofields Train Station (approximately 1.3km);
- Near dedicated cycleways and bicycle friendly roads;
- Within an area well serviced by buses; and
- Within an existing residential neighbourhood containing appropriate footpaths.

Future employees and students can easily cycle, walk or catch the bus or train to the School. This will reduce reliance on cars, decrease congestion and promote sustainable outcomes. A Green Travel prepared by Bitzios Consulting and attached at **Appendix H** proposes a range of strategies aimed at encouraging public and active transport use, which will further reduce reliance on private vehicle use.

6.5. STATE INFRASTRUCTURE STRATEGY 2018 – 2038 BUILDING THE MOMENTUM

The Strategy outlines a 20-year strategy for infrastructure development in NSW to address a number of key challenges and opportunities, including population growth, demographic change, climate change and an emerging fiscal gap. The Strategy identifies that the NSW economy is expected to grow from \$539 billion to \$1.4 trillion over the next 40 years. The projected economic growth will increase the demand for economic and social infrastructure.

The proposal will deliver state of the art educational infrastructure to meet the educational needs of a growing population and a growing economy.

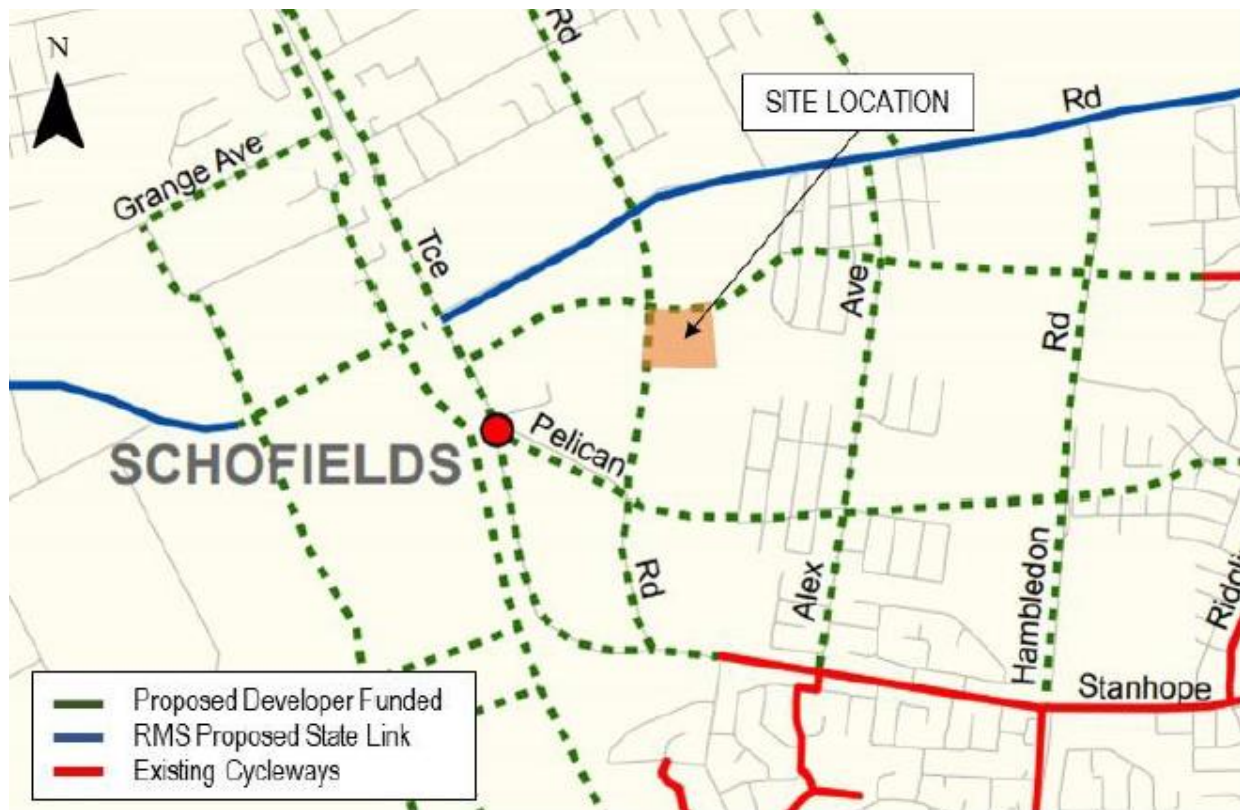
6.6. SYDNEY'S CYCLING FUTURE 2013

Sydney's Cycling Future (2013) seeks to make bicycle riding a feasible transport option within Sydney by encouraging the use of Sydney's existing bicycle network.

The proposal provides two areas for bicycle parking for future students and employees of the new School to be located conveniently adjacent to the main entrance to the School along Farmland Drive and adjacent to the future entrance off Pelican Road. While existing cycling routes immediately adjacent to the school site are limited, on-going development in the area promises to supplement the region's existing cycle connectivity with new links. Blacktown City Council's 2016 Bike Plan proposes future cycling routes within the Alex Avenue Precinct. Figure 24 below shows the proposed routes near the site. Proposed cycle routes are located adjacent to the site on Pelican Road and Farmland Drive. These cycle routes connect to the existing cycleways southeast of the site and further develop the Blacktown Cycle Network.

Parents, students and employees of the school will therefore be able to use these routes to access the site via bike. This will reduce reliance on cars, decrease congestion and promote sustainable outcomes.

Figure 24 - 2016 Bike Plan Existing and Future Proposed Routes



Source: Blacktown City Council

6.7. SYDNEY'S WALKING FUTURE 2013

Sydney's Walking Future (2013) aims to promote walking as a means of effective transport within Sydney by encouraging investment in safe, permeable walking networks.

Existing footpaths immediately adjacent to the site are limited. However, on-going development in the area promises to supplement the region's existing footpaths and pedestrian connectivity with new links. Students, teachers and parents will be able to access the site easily by walking which will promote healthy practise and decrease vehicular use.

6.8. SYDNEY'S BUS FUTURE 2013

Sydney's Bus Future (2013) outlines the NSW Government's long-term plan to deliver fast and reliable bus services within Sydney to meet current and future customer needs.

The site is located within walking distance of several bus stops:

- Routes 749, 751: Blacktown - Colebee, Marsden Park, Schofields & Rouse Hill; and
- Routes 752, T72, T74: Blacktown - Quakers Hill, The Ponds, Schofields, Rouse Hill & Riverstone.

The closest bus stop is located within a walking distance of approximately 1.3km east of the proposed site. Students, teachers and parents will therefore be able to easily access the site via bus, deterring the need to drive.

6.9. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) PRINCIPLES

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

The main aims of the policy are to:

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

The guidelines provide four key principles to limit crime. These are outlined in **Table 8** below.

Table 8 – CPTED Principles

	Principle	Definition
1	Natural Surveillance	Natural surveillance is a by-product of well-planned, well-designed and well-used space. It involves maximising opportunities for passers-by and users to observe what happens in an area (the 'safety in numbers' concept). Higher risk locations can also benefit from organised surveillance, which involves the introduction of formal measures such as on-site security guards or CCTV.
2	Access Control	Control of who enters an area so that unauthorised people are excluded, for instance, via physical barriers such as fences, grills etc.
3	Territorial Reinforcement	People are more likely to protect territory they feel they own and have a certain respect for the territory of others. This can be expressed through installation of fences, paving, signs, good

	Principle	Definition
		maintenance and landscaping. Territoriality relates to the way in which a community has ownership over a space.
4	Space Management	Ensures that space is appropriately utilised and cared for. Space management strategies include activity coordination (i.e. having a specific plan for the way different types of activities are carried out in space), site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out lighting and the removal or refurbishment of decayed physical elements.

The proposal will incorporate natural surveillance, access control, territorial reinforcement and space management design principles to deter crime. A summary of these recommendations, informed by best-practice CPTED principles for schools, is provided within the subsections below:

6.9.1. Natural Surveillance

- Incorporate an open palisade fence around the perimeter of the site to allow for passive surveillance both into the site and onto surrounding streets.
- Provide adequate lighting throughout the site, including at footpaths, entrances and at the proposed staff carpark.
- Orientate the proposed buildings to ensure they do not conceal passive surveillance to the school's entrance and exit points off Farmland Drive and future Pelican Road.
- The upper levels of the proposed school buildings should be designed with balconies and windows to ensure passive and informal surveillance is available onto the surrounding open space and streets.

6.9.2. Access Control

- High quality fencing should be contained to the entire perimeter of the site to restrict access to the school.
- During school hours, visitor access to the school should only be able to occur once visitors sign-in at the main reception. Accordingly, internal signs should be installed to direct visitors to report at reception before accessing school buildings.
- Landscaping should be designed to respond to pedestrian movement paths help guide people to entries and public spaces.
- All doors to be used at the site should be built from resistant materials to prevent break-ins and vandalism.
- Proposed school rooms with valuable equipment should be made physically secure and locked when not in use.
- Wayfinding signage should be provided throughout the site to mark school buildings. Signs should also be provided at the staff carpark to appropriately manage vehicles entering and exiting.

6.9.3. Territorial Reinforcement

- Signs depicting the name of the school should be displayed at the vehicular site entrance (Farmland Drive).
- Proposed school entry and exit points should be monitored by staff and/or CCTV and be locked after-hours as appropriate.
- An open palisade fence should be provided around the perimeter of the site to allow views into the site from the surrounding streets.
- A strong teacher presence should be felt throughout the school to encourage safety and security among students.

6.9.4. Space Management

- All outdoor lighting fixtures, equipment and furniture should be sturdy and designed to be 'vandal-proof'.
- Break-resistant materials should be used for windows and access points where appropriate to limit the potential for building damage.
- The proposed school buildings should be regularly maintained and monitored for potential graffiti or damage.
- A rapid removal of graffiti strategy should be developed by the school to ensure the prompt removal of graffiti and/or tags.
- A School Plan of Management should be developed by the school that includes maintenance and repairing strategies, complaint management measures, emergency procedures, waste removal procedures, evacuation procedures, safety procedures for large events and monitoring measures.

The above recommendations have been or can be incorporated into the final school design. Accordingly, the proposal will provide a high level of security and be designed to deter criminal behaviour.

6.10. HEALTHY URBAN DEVELOPMENT CHECKLIST, NSW HEALTH

Prepared by NSW Health, the *Healthy Urban Development Checklist* seeks to ensure built environments are created within New South Wales that are sustainable and promote healthy habits. The proposal satisfies a range of items contained to the checklist, including:

- *Encourage incidental physical activity;*
- *Promote opportunities for walking, cycling and other forms of active transport;*
- *Promote access to usable and quality public open spaces and recreational facilities;*
- *Reduce car dependency and encourage active transport;*
- *Improve location of jobs to housing;*
- *Provide access to a range of facilities to attract and support a diverse population; and*
- *Respond to existing (as well as projected) community needs and current gaps in facilities and/or services.*

The proposal aids in promoting a healthy and sustainable built environment.

7. ASSESSMENT OF KEY ENVIRONMENTAL ISSUES

The following issues as per the SEARs have been assessed, with the impacts noted and mitigation measures proposed where necessary in this report:

- Environmental Amenity;
- Transport and Accessibility;
- Ecologically Sustainable Development (ESD);
- Social and Economic Impacts;
- Noise and Vibration;
- Biodiversity (refer **Section 5.1**);
- Flora and Fauna;
- Heritage and Archaeology;
- Contamination (refer **Section 5.6**);
- Flooding;
- Bushfire;
- Sediment, Erosion and Dust; and
- Out of Hours Community Use.

7.1. ENVIRONMENTAL AMENITY

7.1.1. Solar Access and Overshadowing

The Site:

The proposal has been appropriately designed to provide maximum solar access to all school buildings and open spaces. Importantly, the classrooms and open space areas receive sunlight during winter and are appropriately screened for sun in summer.

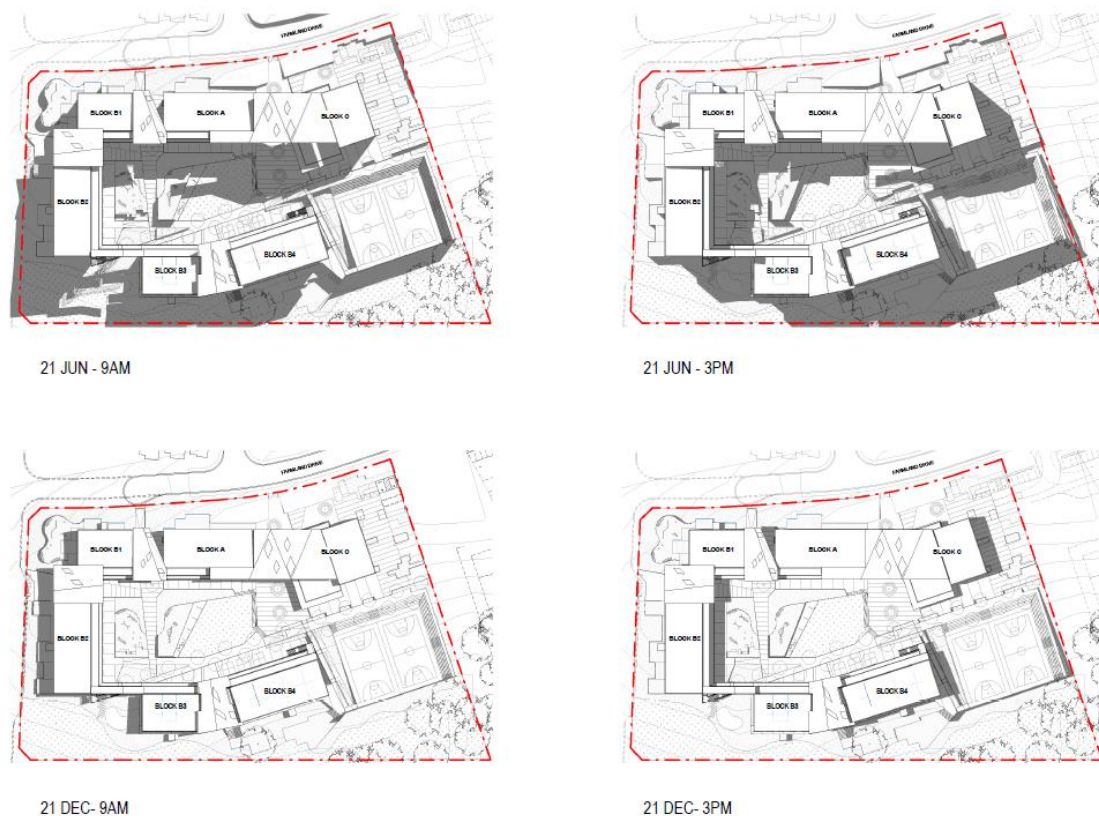
The proposal will result in only minimal overshadowing during the winter solstice with overshadowing occurring to a portion of the central part of the site. Notwithstanding the above, the overshadowing will occur primarily before 9am and after 3pm when most school activities would have already concluded. Overshadowing therefore does not significantly impact on any open spaces or proposed school buildings.

Adjoining Sites:

Shadow diagrams for 9am, 12pm and 3pm during the winter solstice (refer to Figure 25) have been prepared by Group GSA Architects and are attached at **Appendix B**. The shadow diagrams demonstrate that there are no overshadowing impacts to neighbouring residential properties or to the future Council sports' reserve to the east. Very minor overshadowing occurs to the south in the morning and afternoon. However, the shadow impact is negligible.

The proposal will not impact adjacent residential properties ability to receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice, as per the Blacktown DCP.

Figure 25 – Shadow diagrams



Source: Group GSA Architects

7.1.2. Privacy

There will be no unreasonable privacy impacts from the proposal because:

- The proposal is setback behind the two frontages i.e. Farmland Drive and the future Pelican Road. A minimum 9 metres setback is provided to Farmland Drive whilst a minimum setback of 12 metres is provided to the Pelican Road.
- Both street frontages therefore provide a high level of separation between the school buildings and any existing or new residential properties constructed to the north or west of the site.
- To the east of the site, the future Council sports fields and the staff carpark separates the School from existing dwellings along Antonia Parade.
- Remnant bushland exists to the south of the site providing a visual buffer to future residential.
- The school will operate standard school hours, when most residents will be at work. This will maintain privacy in the morning, evenings and night time, which are the primary times residents will be home.

Accordingly, the proposal is appropriate in terms of visual privacy given the distance to residential properties and the separation between the proposed school buildings and other land uses.

7.1.3. View Impacts

There are no views across the site. Therefore, there is no view loss from the proposal.

7.2. TRANSPORT AND ACCESSIBILITY

7.2.1. Vehicle Parking

The Traffic Impact Assessment (TIA) prepared by Bitzios Consulting and contained in **Appendix G** provides an assessment of parking requirements and the proposed vehicular and pedestrian access points to and from the proposed school.

The Blacktown Growth Centre Precincts DCP stipulates specific vehicle parking requirements for a primary school, requiring the following parking provision:

- 1 space per 100 students
- 1 space per staff member

Based on the above rate, and given the proposed capacity of the school, a total of 80 car spaces is required by the DCP. The rate is to provide each staff member with their own parking space, with an additional amount based on the number of students.

The proposal does not provide any onsite car parking apart from two (2) disabled parking spaces which are provided within the school's boundary. These spaces will be accessed by vehicles via the shared car park, with no direct driveway access provided to the school site. A total of 80 vehicle spaces in the shared car park will be provided to the school staff during operating hours through a Joint Use agreement with Council. This complies with the numeric requirement. The school pick up and drop off zone is also intended to be used as an additional 20 vehicle spaces for the public out of the main pick up and drop off times.

There are a number of public transportation options near the school site suitable for staff members, including the Schofields Train Station and bus services on Alex Avenue. There is also the potential in the future for an expansion of services on Pelican Road. Therefore, it is expected that the mode share of staff members will not be entirely private vehicles and not all parking spaces will be occupied. This is reinforced by mode share data for primary school staff in the Blacktown LGA, analysed from 2016 Census data, which shows that around 86.5% of staff members travel to school via private vehicle. Of the 70 staff members, around 61 are expected to occupy a parking space, leaving a surplus in parking supply of 19 spaces.

During weekdays, the shared car park should have sufficient parking spaces for normal use by visitors to the playing fields. Larger events are likely to occur on the weekends, where there will be a minimal number of staff vehicles parked (if any). During weekdays the shared car park will have sufficient parking spaces for normal use by visitors to the playing fields. Larger events are likely to occur on the weekends, where there will be a minimal number of staff vehicles parked.

7.2.2. Joint Use Agreement

Discussions are currently underway to establish a Joint Use Strategy with Blacktown City Council for the proposed shared use of the car park (refer **Appendix EE**). A preliminary parking management scheme has been prepared to suggest operational guidelines for the shared use. The considerations are outlined below.

- A total of 100 parking spaces are proposed to be provided in the shared car park, with a central aisle and two access locations. To meet the parking demand of the school, parking spaces should be allocated for specific use by school staff members.
- As a preliminary number, the 80 spaces required by the BCC Growth Centre Precincts DCP should be dedicated to staff members during the general operating hours of the school (Monday – Friday, 8:00AM to 5:00PM).
- Clear signage and/or line marking is to be installed to identify the school-allocated spaces, as well as the hours within which the parking restrictions apply.
- It is recommended to commence the parking restrictions slightly prior to school hours in the morning (around 6:00 or 7:00AM), to ensure teachers will have a parking space if travelling early to school.
- During school hours, management of the car park should be the responsibility of the Alex Avenue Public School administration. A staff member should be present at the car park during the school peak periods (immediately before and after school) near the drop-off / pick-up zone to oversee car park operations and safety of students.

- Compliance with the allowed stopping times should be enforced to facilitate smoother traffic operations during the busy peak period, minimising the traffic impact on the surrounding roads.
- As a preliminary number, 20 of the parking spaces are free for standard usage by public (visitors to the park, etc), with any timed parking restrictions as identified by Blacktown City Council.

7.2.3. Bicycle Parking

Bicycle parking provision rates were adapted from the *NSW Planning Guidelines for Walking and Cycling*, which recommends the number of spaces be based a percentage of staff journey-to-work trips. For this assessment, this value (calculated at 8-15% of staff) has also been supplemented by the number of students in Year 4 to 6 (assumed to be around 3/7ths of the school population).

Based on the above, and given the proposed capacity of the school, a total of between 40 to 75 bicycle spaces are required. The proposal includes two areas of bicycle parking with a maximum of 56 spaces provided which complies the numeric requirement.

7.2.4. Pedestrian Access

An assessment of pedestrian circulation and connectivity between the proposed school and the surrounding road network has undertaken by Bitzios. Pedestrians and students will be able to access the school via three main entrances. Of the three entry locations, two are located on the north side of the site along Farmland Drive, and one is located on the west side of the site along the proposed Pelican Road.

The main entrance to the school is opposite Hyde Street, and overlooks the main entry plaza. The other pedestrian entrance on Farmland Drive is located to the west of the main entrance, entering the site between the library and classroom buildings. A third pedestrian entrance is proposed to be positioned on the west side of the site, allowing access and egress onto Pelican Road (pending future construction).

Aside from these three entry points, students and staff can also enter the school site from the shared car park and drop-off/pick-up zone via a shared plaza on the east side of site. This will connect directly to the school forecourt and covered outdoor terrace spaces.

To facilitate safe pedestrian movement to the proposed school, warning signs and school speed zones should be implemented on Farmland Drive and Pelican Drive. A pedestrian crossing is proposed on the southern approach to the Glacier Street intersection, spanning the egress roadway from the shared car park. This is intended to provide connectivity for pedestrians walking to school from the east and enhances pedestrian safety especially during the peak hours where there are large volumes of vehicles passing through the shared car park to access the drop-off / pick-up zone.

A future pedestrian access and school bus zone is planned to be provided on Pelican Drive, pending completion of construction of the road. Until such time, the establishment of a Walking School Bus program is recommended in lieu of a school bus service to encourage active modes of transportation to the school amongst the student body.

7.2.5. Refuse Vehicle Access

A waste collection zone is proposed on the eastern side of the site within the School boundary and will be accessed via Council's shared car park on the adjacent site. Waste vehicle access and egress to and from the site was assessed via swept path analysis using a 12.5m Heavy Rigid Vehicle (HRV) – refer to **Appendix G**. The analysis indicated that service vehicles can:

- *From the parking aisle, pull up alongside the proposed bin enclosure, perform duties, reverse back along the parking aisle and turn right to exit the site towards the roundabout in a forward direction; OR*
- *From the parking aisle, turn right towards the roundabout, reverse left towards the bins, perform duties, and turn left to exit the site towards the roundabout in a forward direction.*
- *For the site exit manoeuvre, due to the length of the vehicle, it was required to mount the temporary roundabout island to navigate the intersection.*

As the vehicle will be required to reverse in the parking aisle during on-site manoeuvres, it is recommended that waste collection services attend the site during times with minimal pedestrian and vehicular traffic within the shared car park. At minimum, waste vehicle access should occur outside the hours of 8.30am and 3.30pm on school days, to minimise impact on school traffic during peak hours and reduce school children exposure to large waste vehicles.

7.2.6. Active Transport Options

Walk only trips are likely to be generated by both students and staff given the surrounding residential context. Walking and cycling infrastructure is available to and from the site, and future additional pedestrian and bicycle routes are proposed as per the Alex Avenue ILP, which will provide links to multiple local areas. There is good potential for cycle only trips given the broader connectivity of the School to the sub-regional cycle network, but cycle trips may also be part of a mixed public transport trip, noting that the School will provide secure bicycle parking on-site as well as shower and locker facilities.

A continuous off-street shared path is provided on the southern side of Schofields Road, providing a cycle link between Schofields Station and Alex Avenue. While existing footpaths and cycling routes immediately adjacent to the school site are limited, on-going development in the area promises to supplement the region's existing footpaths and pedestrian and cycle connectivity with new links. Proposed cycle routes are located adjacent to the school site on Pelican Road and Farmland Drive. These cycle routes connect to the existing cycleways southeast of the proposed school and further develop the Blacktown Cycle Network.

To further achieve connectivity between cycle and pedestrian networks, proposed bike routes and pedestrian footpaths can be converted to shared paths.

7.2.7. Traffic Generation

The proposed new school is estimated to generate the following total trips in the peak periods:

Table 9 – Trip generation of proposal

Trips	Trip Generation Rate	Total Trip Generation
AM Peak		
Trips per student*	1.59 trips per student	1,590
Vehicle trips per student	0.67 vehicle trips per student	670
PM Peak		
Trips per student*	1.80 trips per student	1,800
Vehicle trips per student	0.53 vehicle trips per student	530

Based on these trip generation rates, the school would ultimately generate 1,590 trips in the morning peak and 1,800 trips during the afternoon peak. Of these trips, 670 trips are vehicle trips during the morning peak, and 530 in the afternoon.

7.2.8. Traffic Distribution

The TIA assessed the traffic impact of the proposal on the surrounding road network. The traffic assessment considered the ultimate future scenario for generation and distribution purposes (following the construction of Pelican Drive to the west of site and the corresponding extension of Farmland Drive to adjoin the new North-South link).

The trip distribution for the proposal is assumed, taking into consideration the existing local catchment area, the road network to and from the development, and nearby primary schools. The estimated trip distribution is estimated as follows:

Table 10 – Trip distribution to proposal

Location	% of trip distribution
Within the Alex Avenue Precinct	78%
Schofields Road / Junction Road / Pelican Drive	20%
Schofields Train Station	2%

A combination of public and private schools are located to the north, east and south of the site, whilst land to the west the site remains largely undeveloped. As such, most of the trip distribution is likely to come from within Alex Avenue precinct itself.

Given the proximity to Schofields Road, a portion of the trip distribution is also estimated to come from the north. A small portion of students were considered to travel from the Schofields Train Station. However, this is a notably small percentage given the unlikelihood that students and parents would travel via public transport with a number of schools available in the surrounding area.

As such, the stated trip distribution from the train station is likely to be overestimated.

The majority of the trips that originate within Alex Avenue Precinct are assumed to be either chain trips or internal to the precinct. In this situation, chain trips are trips which would occur even without the school development, where drivers stop by on their way to their ultimate destination. For example, parents dropping their children off to school before continuing to Schofields Train Station where they commute to work. In the case that parents return home after sending their children to school, the trips within the Alex Avenue Precinct would be largely self-contained, with travel routes mainly on local streets or on Alex Avenue itself. These trips are not expected to impact traffic operations on Schofields Road.

Bitzios Consulting conclude that the proposal is supportable on traffic planning grounds and will operate satisfactorily.

7.2.9. Intersection Analysis

A SIDRA intersection analysis was undertaken for the future signalised intersection at Schofields Road / Junction Road / Pelican Drive post-upgrades to determine the traffic impact of the proposal on the key intersection. Due to the locality of the expected trip origins and destinations, as well as many of the trips involving chain trips, Bitzios assumed that only 20% of the development traffic will pass through the Schofields Road / Junction Road / Pelican Drive intersection. The results of the analysis indicated that there will be minimal impact to the intersection during both the morning and afternoon peak periods, with increases in delays of 3 and 4 seconds respectively.

Based on the above analysis, traffic generated from the proposal will be able to be accommodated within the future road geometry and network.

7.2.10. Green Travel Plan

A Green Travel Plan (GTP) has been prepared by Bitzios and is provided at **Appendix H** of this EIS. The GTP proposes a range of strategies aimed at encouraging public and active transport use. The following GTP initiatives are proposed:

- A travel information pack will be provided to staff, parents and students to provide easily accessible information on alternative transport modes to all stakeholders;
- Explore strategies and measure interest levels for a Walking School Bus program;
- Implement parking restrictions during school zone hours to reduce reliance of on street parking and long-term parking and queueing during school drop-off and pick-up periods;
- Provide a travel survey to inform the school on different travel methods and transport issues;
- Investigate installing extra bicycle rails or racks onsite if proposed bicycle parking is insufficient so to reduce car trips, congestion and emissions and encourage bicycle use;
- Support Council in establishing additional off-street and on-street pedestrian/cycling infrastructure in the local area to reduce car trips, congestion and emissions; and
- Support Council and Transport for NSW in establishing more public transport options.

7.2.11. Construction Traffic

The Construction Traffic Management Plan provided in **Appendix I** outlines traffic management impacts during the construction of Alex Avenue Public School. A summary is provided below:

Construction Hours

It is expected that construction would only be undertaken during 'standard' construction hours, likely 7:00am to 6:00pm Monday to Friday, and 7:30am to 3:30pm Saturdays; no construction work would be undertaken on Sundays or public holidays.

Traffic Generation and Impacts

At this stage, details on truck and delivery schedules have not been confirmed, therefore construction vehicles traffic volumes cannot be quantitatively assessed. Notwithstanding, a high-level assessment confirms that construction traffic volumes will have significant impacts on the operation and efficiency of the surrounding road network.

The sub-arterial, collector and local streets of Schofields are not heavily trafficked streets, with intersections performing at acceptable levels of service with minimal delays and moderate degrees of saturation. Consequently, it is also not expected that the introduction of construction traffic will significantly affect traffic operations of Schofields' local intersections.

Furthermore, it is expected that construction staff (and heavy vehicle) trips would largely be generated outside of commuter peak periods. As such, construction traffic will not have a significant impact on the operation of the local road network.

Site access

It is expected that the bulk of the construction traffic will access Alex Avenue Public School from Schofields Road, traveling towards the site from the east. It is expected that the construction site access points will be located on Farmland Drive. As such, a Temporary Works Zone will be required along the northern frontage of Farmland Drive to control parking in the area.

Impacts to pedestrians

Due to construction vehicle traffic to and from the site via the access locations, construction activities that are expected to impact pedestrian movements near the site include:

- Excavation;
- Removal of spoil;
- Material delivery;
- Bulky equipment delivery (pile drivers); and
- Concrete pouring.

During these works, temporary closures of the path on the southern side of Farmland Drive may be necessary. Furthermore, during the associated construction stages, full closures of the path may be necessary on Farmland Drive to facilitate construction of the access driveways, proposed roundabout and the drop-off / pick-up zone or indented parking area (depending on which plan will be approved for construction). The streets bordering the proposed construction site (Hyde Street, Glacier Street and Heathland Avenue) are not relatively wide and given Farmland Drive will be a cul-de-sac in the interim, it is likely that construction works may require partial/full closure of the roadways in order for trucks to turn around.

Impacts to cyclists

The shared cycle/pedestrian paths on Schofields Road and Railway Terrace are not expected to be impacted by any construction works for the proposal due to their distance and restricted access from the site. Furthermore, it is highly unlikely that any construction equipment or vehicles will infringe upon the shared paths. Furthermore, it is expected that the bulk of the construction traffic will access Schofields from Schofields Road, travelling towards the site from the east and west. As such, there should be minimal interaction between construction traffic entering and exiting the work site and cyclists on shared paths.

On-street Parking

On-street kerbside parking is currently largely unrestricted in the vicinity of the site along Farmland Drive and surrounding roads. Temporary restrictions to car parking in these areas may be required for areas immediately adjacent to the site to allow access and egress of construction vehicles to and from the site.

Nearby Residential Dwellings

There are a number of residential properties in close proximity to the proposal site with the majority of these located on Hyde Street and Glacier Street and accessed via driveways. To the north of the site, two residential properties are still under construction. Access to these properties must be maintained at times during all construction stages to allow for unimpacted operation of their respective functions. To minimise interaction between traffic, construction vehicles should be scheduled to arrive outside of the morning and afternoon commuter peak periods.

7.3. FLORA AND FAUNA

As discussed in **Section 2.5** of this EIS, the Alex Avenue Precinct of the North West Growth Centre has been Biocertified. Notwithstanding, this section assesses the proposals' likely impacts to biodiversity and opportunities to reduce and manage impacts on biodiversity within the site. The proposal will require vegetation clearing to construct the new Alex Ave Public School. However, the proposal will not remove any native vegetation communities (e.g. the Shale Plains Woodland). The proposal will remove predominantly exotic pasture which has limited value for ground dwelling fauna. While development throughout the precinct will substantially reduce the amount of this type of habitat, it is of low-conservation value and the habitat removal is therefore likely to have a negligible impact on local fauna.

Indirect impacts, such as noise and/or erosion and stormwater runoff associated with the construction and operational phase of the project, are likely to result from the proposal. Some indirect impacts, such as light and noise, are less likely to affect nocturnal species at a school site, given the restricted hours the school is in use.

Whilst the site has already been Biocertified, the Flora and Fauna Assessment contained at **Appendix T** also assesses the potential impact to threatened species and their habitat. The school will be constructed in a paddock of exotic pasture that has been subject to a history of grazing. The proposal will not remove trees located near the southern boundary of the School that have been identified as a degraded form of Shale Plains Woodland. The exotic pasture to be cleared or modified by the proposal is not habitat for threatened species that could potentially occur in the area. Consequently, the proposal is not likely to affect the habitat of threatened species that have been recorded within a 5km radius of the site.

Therefore, whilst flora and fauna are not likely to be affected by the proposal, recommendations to manage the indirect impacts of the proposal are provided in **Section 9** of this EIS.

7.4. FLOODING

A Flood Risk Assessment has been prepared by WSP and is contained at **Appendix R**. The report confirms that the site is not identified as flood prone land as per Council's flood planning mapping. As such no further flood modelling for the site was carried out.

Notwithstanding, the site is located immediately north of an unnamed creek which is identified as flood prone land under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*. This land is subject to the 100-year ARI flood extent and WSP have therefore recommended that ongoing design avoids this area. Furthermore, WSP confirm that an overland flow strategy for the site will be confirmed during the detailed design phase and will be designed to maintain flow direction and cater for the 100-year ARI storm event.

The site is unlikely to be impacted by flood events. Mitigation measures relating to stormwater management and flooding are provided in **Section 9** of this EIS.

7.5. BUSHFIRE

A Bushfire Impact Assessment has been prepared and is submitted at **Appendix S** of this EIS. Despite ongoing development within Alex Avenue precinct, the site will remain impacted by bushfire hazards for the foreseeable future.

Accordingly, the assessment recommends a number of mitigation measures to ensure the proposal is considered acceptable and suitable from a bushfire protection perspective. These are provided in **Section 9** of this EIS.

7.6. ABORIGINAL CULTURAL HERITAGE

An Aboriginal Cultural Heritage Assessment Report (ACHAR) and an Archaeological Report have been prepared by Biosis, and are contained at **Appendix K** and **Appendix AA** respectively.

The western portion of the study area has been subject to previous assessment and was included within AHIP C000550, issued to Landcom, and commencing on 11 September 2014. The AHIP is for a period of five years and is due to expire on 11 September 2019. There are no sites listed on the AHIP or in AHIMS which are located within the study area.

Biosis undertook a field survey which identified one Aboriginal heritage site within the study area, an area of potential archaeological deposit (PAD). Alex Avenue PAD 1 consists of a crest and ridgeline through the northern part of the study area, continuing south into the simple slope. The presence of third and first order streams to the south and north suggest that this portion of the study area could have been a suitable location for a temporary camp site associated with resource gathering.

Accordingly, the assessment recommends a number of mitigation measures to ensure the proposal is considered acceptable from an Aboriginal cultural heritage perspective. These are provided in **Section 9** of this EIS.

7.7. EUROPEAN HERITAGE AND HISTORICAL ARCHAEOLOGY

A Historical Archaeological Assessment has been prepared by Biosis and is contained at **Appendix CC** which provides an assessment of any impacts to potential historical heritage and archaeological items within the study area.

The historical research undertaken for the assessment indicates that the study area has been largely used for farming and animal management activities. The study area formed part of the Pye family farm for over a century from 1831, and likely continued to be used for agricultural or grazing purposes, as well as horse training, during the 20th century. The assessment identified that there may be archaeological material present within the study area related to the historical use of the land for pastoral and agricultural purposes, such as paddock and stockyard fencing, informal farm outbuildings and historical ploughing. However, these archaeological materials have been assessed as not holding heritage significance.

The impacts to the study area for the proposed works associated with the SSD application are therefore considered acceptable, as there are no items of heritage significance within the study area that will be impacted by these activities, provided that an unexpected finds policy is implemented to identify and record any archaeological material that may be encountered during the proposed works.

For further discussion relating to historical archaeological mitigation measures, refer to **Section 9** of this EIS.

7.8. NOISE AND VIBRATION

A Noise Impact Assessment has been prepared by Acoustic Logic and is attached at **Appendix L**.

6.6.2. Operational Noise

The report identifies nearby sensitive receivers and operational noise sources with the potential to adversely impact nearby development. To quantify the existing acoustic environment at the site, long term unattended and attended noise measurements were conducted. The logging locations are illustrated in **Figure 26**.

The noise emission assessment identifies that the learning and administration spaces are setback on average 30m from any residential receiver, generate low to medium levels of noise and therefore do not exceed the noise criteria set by Education SEPP.

The most potentially impacted receivers from noise emissions from the Hall in Block C will be the potential future residential noise receivers to the south. The assessment confirms that the noise emission criteria is not exceeded under a door open and closed scenario. However, recommendations are included that the door is closed when amplified music is proposed to be played to mitigate impacts.

The report identifies that noise emission from the mechanical plant will be assessed at construction certificate stage once equipment items are selected and location is finalised. The report identifies that it is both possible and practical to treat noise from the operation of the proposed mechanical equipment to

comply with the EPA NPfI criteria using standard acoustic treatments. Similarly, the report provides recommendations relating to the speaker positioning and selection of the school bell/ PA system.

The waste collection point is located some 35m from the nearest residential receiver. The noise emission assessment concludes that provided waste is collected between 7am and 6pm, the distance separation and the proposed time restrictions adequately address noise impact from waste removal operations.

It is anticipated that shared use carpark will be used during the evening for uses relating to the sporting fields. Notwithstanding, the occasional use of the carpark for school up until 10pm will not adversely impact the nearest residential receivers. A school drop off bay is proposed within the carpark on the adjacent property, however given the distance to the nearest residential receiver is approximately 40m, no significant impact from the drop off bay is anticipated.

The noise intrusion assessment identifies that the school is only impacted by local traffic on the surrounding streets. Therefore, specific measures to control noise intrusion are not required.

The report addresses the recommended approach for managing the operational and likely noise to be generated by the proposed Alex Avenue Public School, these recommendations are outlined in **Section 9** of the EIS.

Figure 26 – Noise Measurement Locations



6.6.1. Construction Noise and Vibration

An assessment of the likely construction noise impacts has also been undertaken by Acoustic Logic. There is potential for noise and vibration impacts during construction of the proposal, due to the proximity of surrounding residences. The greatest noise impact will be at the residences immediately to the north of the site.

Without mitigation measures, noise at the sensitive receivers around the site will exceed the noise affected level, and in some cases the highly noise affected level when operating near the northern boundary. Accordingly, careful management will be required to minimise acoustic impacts on the nearby residences.

These measures should be determined in detail when a contractor has been engaged. Notwithstanding, project-specific mitigation measures have been recommended in **Section 9** of this EIS.

The report identifies that there are no significant sources of vibration envisaged. It states that given the distance from nearby receivers, vibration impacts on all receivers is expected to be within the recommended levels.

7.8.1. Out of Hours Community Use

After hour school activities would largely relate to use of the school hall. There could also be other “quiet” activities that may occur externally or within the buildings that would not result in significant emissions. This would include parent/teacher nights, election activities etc. Where music practice occurs within a school classroom outside of normal hours, the windows of the rooms should be kept closed.

External activities by non-school uses may include use of the external spaces and the hall as described in the table below. The recommendations regarding the use of the hall by the school should also be adopted for these uses. Use of the plaza and basketball courts should be limited to between 7am to 9pm, or in-line with any restrictions applied to the adjacent sporting fields.

Figure 27 – Proposed school uses and operating times

Item	Use	Times
GENERAL	The proposed Alex Avenue Public School will cater for students K- Year 6. The school will have the following capacity following completion of the development: <ul style="list-style-type: none"> • 70 full time staff • 1,000 students 	General operating hours for the school will be Monday – Friday 8am - 5pm.
HALL	Intended use by school during school hours. Occasional evening use for music performance, presentations, parent/teacher nights. Hall to be made available to the community through a booking system arranged by the school.	Maximum Operating time till 10pm
OOSH	Out of school hours (OOSH) use of the school facilities.	Weekdays at Mornings 6.30am – 9am and Afternoons 3pm – 6.30pm.
LIBRARY	Intended use by school only. School hours only.	Occasional weeknight evening use for presentations, parent/teacher nights.
SHARED USE / COMMUNITY USE	At this point in time, there are ongoing discussions with Blacktown City Council regarding shared use of school facilities by the community, and shared use of the adjacent council park facilities by the school*. These include: <ul style="list-style-type: none"> - School Basketball courts - School shared plaza - School hall - Council Sportsfield - Council parking# and pickup/dropoff facilities. <p>#Note. Council parking will provide 100 spaces.</p>	

Source: Acoustic Logic

7.9. ECOLOGICALLY SUSTAINABLE DEVELOPMENT

An Ecologically Sustainable Development (ESD) Report has been prepared by WSP and is attached at **Appendix J**. The report outlines that the proposal will include the following ESD initiatives:

ESD Principles

- Design is consistent with the requirements of Blacktown City Council Development Control Plan 2015 (DCP)

Best practice

- The proposed design has been benchmarked against the Green Star Performance v1.2 tool.

NCC Section J Compliance

The architectural scheme provided in earlier project stages has been assessed for compliance with the thermal performance requirements of Section J of the NCC 2019. GSA architects are in the process of amending the design to allow for modular building construction. The proposed construction materials of the modular building construction exceed the thermal performance requirements of the early stage Section J assessment. The proposed design alterations by GSA therefore have the potential to meet Section J requirements under Part J1 Fabric and Glazing of the NCC 2019 provided the ratio of glass to shading and solid wall is not exceeded. The compliance of the design against the requirements of Part J1 of the NCC 2019 will be assessed at the construction certificate stage of the project.

ESD measures

Resources

- Use of certified/best practice materials for steel, timber and permanent formwork.
- Consideration of characteristics including durability, recycled content, location, embodied carbon and toxicity where feasible for other materials selection such as plasterboard, AFS or FSC certified timber and concrete with supplementary cementitious materials.

Energy

- Building envelope performance – efficient building fabric and glazing selection to reduce thermal comfort demands
- Efficient systems selection to reduce operational energy consumption
- Effective control strategies
- Reduction in peak demand and grid electricity consumption through onsite renewable energy generation

Water

- Rainwater harvesting for use in irrigation and toilet flushing, to reduce use of drinking water in non-potable applications.
- Selection of high efficiency fittings and fixtures to reduce operational consumption of potable water.
- Air cooled heat rejection system has been designed for the new development.
- Implement water sensitive urban design (WSUD) initiatives to improve the water quality of stormwater and reduce peak flow and runoff
- Plant species selected for the site will be native or have a low irrigation demand.

7.10. SEDIMENT, EROSION AND DUST CONTROLS

An erosion and sediment control plan are contained in the civil plans attached at **Appendix Q**. This plan has been prepared for the proposal to reduce the amount of sediment laden runoff leaving the site. It details measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles into the adjacent watercourse.

Accordingly, the proposal is considered acceptable from a sediment and erosion perspective, subject to the adoption of recommendations outlined in **Section 9** of this EIS.

7.11. GEOTECHNICAL AND SALINITY

A Geotechnical Report prepared by JK Geotechnics is provided and attached at **Appendix DD**. The investigation reveals a generalised subsurface profile comprising fill and/or residual clayey silt and silty clay, then extremely weathered sandstone bedrock at relatively shallow depths. Neither groundwater nor bedrock were encountered within the investigating depth.

The site is located in an area where soil and groundwater salinity may occur. Salinity can affect the longevity and appearance of structures as well as causing adverse horticultural and hydrogeological effects. The local council has guidelines relating to salinity issues which should be checked for relevance to this proposal.

Accordingly, the proposal is considered acceptable from a geotechnical and salinity perspective, subject to the adoption of construction recommendations outlined in **Section 9** of this EIS.

7.12. SOCIAL AND ECONOMIC IMPACTS

The proposal will generate numerous beneficial social and economic impacts for Alex Avenue and the wider Blacktown LGA. The anticipated social and economic impacts include:

- The proposed new school will provide significant job opportunities. These include temporary job opportunities during demolition and construction, and ongoing teaching and administration jobs at the project's completion. It is anticipated that 70 staff members will be required following the completion of the school;
- The proposed new school will alleviate pressure off other school enrolments and cater for future population growth;
- The new school will have sufficient areas for indoor and outdoor recreation to improve the health and wellbeing of future students;
- The design will create a series of teaching spaces which are flexible and promote increased social interaction among students and teachers;
- The proposal will provide future students with learning difficulties new facilities and spaces, enabling high-quality teaching;
- The proposal will create a safe and nurturing environment to cater for student's education needs and foster learning in an appropriate setting;
- The proposed built form has been designed to ensure residential amenity will be maintained to surrounding residential dwellings;
- The proposal delivers a new School that is sustainable and efficient; incorporating positive environmental measures including PV panels, rainwater tanks and WSUD initiatives;
- The external materials and finishes to be used complement the surrounding built and natural environment of Schofields. Accordingly, no negative impacts on the existing character of the area will be generated; and
- The proposal has been designed in accordance with CPTED design principles to deter crime. Accordingly, the proposal will positively activate the site, provide opportunities for passive surveillance and be designed of materials that are 'vandal-proof'.

7.13. TREE IMPACTS

An Arboricultural Impact Assessment (AIA) has been prepared by Paul Sherer Consulting and is attached at **Appendix X**. The purpose of the report is to identify all trees which may be impacted by the proposed works. The AIA identifies 15 trees which may be impacted by the proposed works. Of the 15 trees identified, eight trees (T1, T2, T3, T4, T5, T6, T7 and T12) are located within the south east portion of the site and seven trees (T8, T9, T10, T11, T13, T14 and T15) are located adjacent to the southern boundary of the site. None of the trees identified were considered Significant Trees under any planning instrument.

The AIA concludes that the proposed works will result in a major TPZ incursion on the tree T1 and a major TPZ/SRZ incursion on the tree T12. T12 exhibits reduced vigour and proposed works within the TPZ of this tree is not ideal. The incursion on T1 is from a proposed batter and the incursion on T12 is from a proposed batter and hard landscaping. As such, the AIA has recommended that the proposed batter to the south of the basketball courts and Block B4 is be reconfigured to negate incursions within the TPZs of both trees. Whilst the installation of hard landscaping within the TPZ of T12 is not ideal, the AIA provides a sensitive construction methodology for the hard landscaping area to ensure the health of the tree is maintained. The AIA also provides a sensitive construction methodology for construction of the site's southern boundary fence which impacts the TPZ of T6, T7, T8, T10 and T11.

Furthermore, a tree protection plan in accordance with AS4970-2009 shall be prepared and a project arborist should be engaged to oversee the implementation of this tree protection plan.

It is therefore concluded that all 15 trees may be retained if the recommendations contained in the report and **Section 9** of this EIS are strictly adhered to.

8. CONSULTATION

A Consultation Outcomes Report has been prepared by TSA and provided at **Appendix Z**. The report has been prepared to document engagement activities undertaken to date. Key stakeholders relevant to the project are:

- Local community;
- Service providers;
- Government Architect NSW (GANSW);
- NSW Rural Fire Service (RFS);
- Office of Environment and Heritage (OEH);
- Roads and Maritime Services (RMS);
- Transport for NSW (TfNSW);
- Blacktown City Council; and
- Aboriginal stakeholders.

The following sections provide a summary of the consultation undertaken to date.

8.1.1. School Engagement Activities

Project Reference Group meetings

The project established a Project Reference Group (PRG) which includes the School Director, Principle's Representative, Asset Management Unit representative, Architect, and Project Manager. It should be noted that as this is a new School, there are no current teacher or P&C representatives. Meetings with the PRG have been held on a regular basis, noting the project was on hold from December 2017 to May 2018. To date, 11 PRG meetings have been held.

Key issues raised by the PRG include:

- Landscape maintenance;
- Sufficiency of parking provision and kiss and drop facilities;
- Provision of shade in play areas;
- Accuracy of forecast student numbers;
- Ensuring all areas of the school are accessible.

A summary of the outcomes of the meeting can be found in the Urban Design Report at **Appendix E**.

Educational Consultant engagement

During the design phase of the School educational workshops were held to discuss the appropriate learning model and pedagogy for the proposed learning space. These workshops were facilitated by Dr Julia Atkin, Educational Consultant. Key issues raised which have been incorporated into the design, include:

- Design adapts to students with a disability, accessible design;
- Open area access to WIFI to facilitate indoor-outdoor learning;
- Quality of fixtures – durability and maintenance;
- Visibility – line of sight from teachers to students for safety;
- Lighting to be natural and adequate;
- Noise to be managed at a design level.

Further details about the workshops and the design response can be found in the Urban Design Report at **Appendix E**.

8.1.2. Community Engagement Activities

As project funding has only recently been approved by Treasury, community information sessions are yet to be undertaken. Community consultation (such as Information booths) will be scheduled for early 2019 and advertised on the SINSW website and in a local newspaper.

8.1.3. Service Providers

Infrastructure providers were consulted via the Civil sub-contractor to confirm the existence and capacity of infrastructure such as electricity, waste, water, and gas. Further engagement is anticipated in the later stages of design.

8.1.4. Government Architect NSW

The project team have consulted with the Government Architect's Office and it has undergone a review with the State Design Review Panel. The SDRP advised they were generally happy with the design and further review with the panel was not required for the Concept Design.

a summary of the outcomes and the design response can be found in the Urban Design Report contained at Appendix E and in the table below.

Table 11 – Response to GANSW

GANSW Comment	Response
The location of the school sporting fields and the connection to the neighbouring public park/ oval is supported and a focus on the treatment of gradients to ensure a seamless connection is encouraged.	Further investigations have been undertaken to understand the level changes between the council land and the school site. This information has been integrated into the landscape design strategy to ensure a seamless transition between the two sites. Where there is a level difference, the opportunity has been taken to create terraced seating for viewing of basketball games and an interesting landscape weaved throughout the level change.
A review of the bicycle storage numbers, locations and shelters is strongly recommended- as the panel thought the current allocation of 25 bicycle racks was inadequate.	The location of the bike storage areas have been considered to ensure that storage is available at both school entrances. The bicycle racks will be increased in numbers to 60 racks in line with EFSG standards. Further investigation will also be completed on the possibility of located some storage racks under cover to ensure bicycles can be safely stored during wet weather days.
The panel felt the location of the carpark as the public face of the hall and school generally is not ideal. The school hall should have an address and a presence to the street.	The comments from the panel have been considered and a joint-use agreement has been reached with the council which allows for a significant reduction of carparking required on the school site. All staff carparking will now be located on council land (during school hours) which will also be used as a public car park for the public park/ oval after school hours. Accessible parking will remain on the school site to ensure proximity to the administration building. Reducing the car-parking on the school site has created a more welcoming entry

GANSW Comment	Response
	zone in front of the school hall and a engaging street presence.
The fence should be designed to ensure the school site well in its' context, creates a welcoming contribution to the area.	The landscape design and the school fence has been considered in detail to be integral to the character of the school. Landscaping has been used to reduce the visual impact of the school fence and large opening gates have been created to enable large open sections and a welcoming feel for students and the community.
The depth and orientation of the building blocks' needs to be considered to allow for improved solar access, cross ventilation and views to outdoor areas.	The environmental design of the learning spaces have been considered in depth along with the ESD consultant. Shading devices have been located on the North and West facades and louvered windows have been designed throughout to ensure adequate cross-ventilation. The locations of the outdoor learning spaces have been considered to enable visual connection as well as a number of opportunities to learn outdoors through outdoor working benches and seats.

8.1.5. NSW Rural Fire Service

The NSW Rural Fire Service were contacted on the 15 January 2018. No response has been provided.

8.1.6. Office of Environment and Heritage

The Office of Environment and Heritage were contacted on the 23 October 2018. A response was received on the 13 November 2018 advising that there are no particular issues OEH wishes to discuss at this stage of the project.

8.1.7. Roads and Maritime Services

Bitzios Consulting provided the RMS with a copy of their draft Traffic Impact Assessment, Construction Traffic Management Plan and Green Travel Plan on Wednesday 5th December to ensure open lines of communication prior to the official submission of documentation. In their correspondence with the RMS, Bitzios confirmed that the project has undergone substantial changes to the layout and new parking and drop-off/pick-up zone arrangements have been introduced. Bitzios therefore informed the RMS that the TIA, GTP and CTMP will be updated accordingly to reflect these changes in terms of matters related to traffic and transport.

The RMS provided a response on 14th December 2018 stating that they have no further comment at this stage regarding the documentation provided. RMS advised that they review the proposed material following the formal submission of the SSDA to the DP&E at the EIS stage.

Full details of the correspondence can be found in **Appendix K**.

8.1.8. Transport for NSW

Bitzios Consulting provided TfNSW with a copy of their draft Traffic Impact Assessment, Construction Traffic Management Plan and Green Travel Plan on Wednesday 5th December to ensure open lines of communication prior to the official submission of documentation. In their correspondence with TfNSW, Bitzios confirmed that the project has undergone substantial changes to the layout and new parking and drop-off/pick-up zone arrangements have been introduced. Bitzios therefore informed TfNSW that the TIA, GTP and CTMP will be updated accordingly to reflect these changes in terms of matters related to traffic and transport.

At this point in time TfNSW has not responded to the proposal.

Full details of the correspondence can be found in **Appendix K**.

8.1.9. Blacktown City Council

Blacktown City Council have been consulted throughout the design process with regular meetings held to discuss the project as well as potential synergies between the new school, the adjacent council reserve and the wider community. A joint use agreement is currently in negotiations, with a focus on the parking, traffic, shared use of the school hall and school use of the reserve.

A letter prepared by Blacktown Council (dated 14 January 2019) has been submitted as part of the Consultation Outcomes Report and outlines Council's in principle support for the shared use of the car park.

Reference is made to the Consultation Outcomes Report for a summary of the key outcomes of the meetings held with Blacktown Council.

8.1.10. Aboriginal Stakeholders

Consultation with the Aboriginal community has been undertaken by Biosis in compliance with the consultation requirements. In accordance with the guidelines, Biosis notified the following bodies regarding the proposal:

- Blacktown City Council;
- OEH;
- NSW Native Title Services Corporation Limited (NTSCORP Limited);
- Office of the Registrar, Aboriginal Land Rights Act 1983 of Aboriginal Owners;
- National Native Title Tribunal (NNTT);
- Greater Sydney Local Land Services; and
- Deerubbin Local Aboriginal Land Council (DLALC).

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW) listed no Aboriginal Owners with land within the study area. A search conducted by the NNTT also listed no Registered Native Title Claims, Unregistered Claimant Applications or Registered Indigenous Land Use Agreements within the study area.

In accordance with the guidelines, a public notification was placed in the following newspaper:

- *Rouse Hill Times* (10 October 2018); and
- *Rouse Hill Times* (28 November 2018).

A copy of the public notice is contained within **Appendix K**. The advertisements invited Aboriginal people who hold cultural knowledge to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. Aboriginal groups were also sent a letter inviting them to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. In response to the letters and public notice, a total of 13 groups registered their interest in the project. Full responses to registration from Aboriginal parties are provided in **Appendix K**.

A full list of Aboriginal parties who registered for consultation is provided below:

- Deerubbin Local Aboriginal Land Council (DLALC)
- Aboriginal Archaeology Service
- Barking Owl Aboriginal Corporation
- Butucarbin Aboriginal Corporation
- Darug Aboriginal Land Care

- Darug Boorooberongal Elders Aboriginal Corporation
- Darug Land Observations
- Darug Tribal Aboriginal Corporation
- Didge Ngunawal Clan
- Merrigarn Indigenous Corporation
- Muragadi
- Murra Bidgee Mullangari Aboriginal Corporation
- Phil Khan.

On 5 November 2018 Biosis provided RAPs to all registered parties with details about the proposal works including the project methodology (project information pack). A copy of the project information pack is provided in **Appendix K**. RAPs were given 28 days to review and prepare feedback on the proposed methodology.

The following feedback was received in relation the proposed methodology and the wider proposal:

- Murra Bidgee Mullangari Aboriginal Corporation, Darug Aboriginal Land Care, Darug Land Observations, Merrigarn, Butucarbin Aboriginal Corporation, and Aboriginal Archaeology Service all agreed with and supported the methodology.
- Darug Land Observations suggested that any artefacts recovered during test excavations should be reburied on site.
- Aboriginal Archaeology Service suggested that any artefacts collected could be displayed in a museum, local library or local government building or reburied in close proximity of the area.

9. RECOMMENDATIONS AND MITIGATION MEASURES

A range of mitigation measures are proposed to reduce any potential environmental and social impact of the proposal. **Table 12** below provides a summary of the environmental management measures proposed.

Table 12 – Mitigation Measures

Item	Potential Impact	Mitigation Measure
Overshadowing	Overshadowing of adjoining residential properties.	<ul style="list-style-type: none"> The chosen orientation, bulk and scale of the proposed School buildings minimise overshadowing impacts.
Privacy	Adverse visual and acoustic privacy impacts on surrounding residents and childcare centre.	<ul style="list-style-type: none"> Proposed buildings achieve minimum setback distances. Implementation of recommendations outlined within the Noise Impact Assessment provided at Appendix L.
Biodiversity and Flora & Fauna	Vegetation clearing, loss of fauna habitat, threatened species	<p>Implementation of measures outlined in the Flora and Fauna Assessment including:</p> <ul style="list-style-type: none"> Tree protection measures, in accordance with AS 4970 – 2009 protection of trees on development sites, are to be installed around mature trees along the southern margin of the construction footprint to ensure the protection of trees associated with the area of Shale Plains Woodland. Minimise the disturbance footprint as much as practicable. Do not store plant and equipment in Shale Plains Woodland area during construction. Prepare a sediment and erosion control plan so that Shale Plains Woodland downslope of the construction site is not impacted. Rehabilitate and revegetate disturbed areas following the works, including weed management. Lighting (either temporary during construction or permanent school lighting) should not be directed into remnant trees to avoid impact to any nocturnal species.
Transport and Accessibility	Traffic impacts, demand for on-site staff car parking.	<p>Implementation of measures outlined within the Traffic Impact Assessment and Green Travel Plan including:</p> <ul style="list-style-type: none"> All parking spaces should be delineated with line marking and symbols as required by AS2890.1 and AS2890.6 requirements. During the interim period prior to the construction of Pelican Drive, bus services have not been permitted to access Farmland Drive, therefore the establishment of a Walking School Bus program is recommended in lieu of a school bus service to encourage active modes of transportation to the school amongst the student body. Due to distance and safety reasons, it is recommended to restrict the route to the south side of Schofields Road

Item	Potential Impact	Mitigation Measure
		<p>such that the WSB is not required to cross the higher volume arterial road. At maximum, the route should be no longer than 2km, preferably within a 30 minute journey.</p> <ul style="list-style-type: none"> It is recommended to engage waste collection services to attend the site during times with minimal pedestrian and vehicular traffic within the staff car park. At minimum, waste vehicle access is recommended to be banned between the hours of 8.30am and 3.30pm on school days, to minimise impact on school traffic during peak hours and reduce school children exposure to large waste vehicles. Due to the relative narrowness of Farmland Drive (approximately 9m), it is also recommended to install No Parking restrictions on the south side of Farmland Drive along the school frontage. The following strategies will be employed by DoE to manage demand for on-site staff carparking: Provision of 64 on-site staff car parking spaces. Implementation of Green Travel Program including: <ul style="list-style-type: none"> Provide travel information pack Explore strategies and measure interest levels for a Walking School Bus program. Implement parking restrictions during school zone hours. Provide travel survey. Investigate installing additional bicycle rails or racks onsite. Support Council in establishing additional off-street and on-street pedestrian/cycling infrastructure in the local area. Support Council and Transport for NSW in establishing more public transport options.
Construction Vehicles	Adverse construction vehicle impacts on surrounding residents.	<p>Implementation of measures outlined within the Construction Traffic Management Plan including:</p> <ul style="list-style-type: none"> Traffic Control Plans (TPCs) are to be prepared as necessary for the site-specific CTMP once the aforementioned information is available. To minimise parking impact on the local streets near the development site, it is recommended to implement restrictions on parking areas for construction workers. Where possible, workers should be encouraged to avoid parking their vehicles on local residential streets to minimise impacts on resident parking. Any changes (including temporary relocations) of bus stops must be communicated with Transport for NSW. •

Item	Potential Impact	Mitigation Measure
		<p>Safety barriers and/or hoarding should be implemented to protect pedestrians near the work site.</p> <ul style="list-style-type: none"> • A dilapidation survey is to be undertaken for the roads along the proposed haulage route to the site. • In all cases where the construction activities require an obstruction, deviation or otherwise interfaces with pedestrian facilities and public spaces, hoarding or fencing must be installed to maintain separation of the construction work site.
Crime and Safety	Crime risk to safety of students, staff and visitors.	<p>The proposal incorporates CPTED principles to deter crime. Incorporated principles include:</p> <ul style="list-style-type: none"> • Incorporating an open palisade fence around the perimeter of the site. • Providing adequate lighting throughout the site. This includes at footpaths and entrances. • Installing identification signs depicting the name of the School at the site entrances to reinforce the School presence. • Ensuring that a strong teacher presence will be felt throughout the School. • Incorporating sturdy and well-designed outdoor lighting fixtures, equipment and furniture; and • Providing balconies and windows at the upper levels of the proposed School buildings to ensure passive and informal surveillance is available onto surrounding streets.
Shared use carpark	Impacts to shared use carpark	<p>Implementation of measures contained in the Traffic impact Assessment including:</p> <ul style="list-style-type: none"> • The shared use of the car park acts to expand the borders of the area traversed by the primary school students. As such, all care should be taken to ensure the security and amenity of the car park in line with Crime Prevention Through Environmental Design (CTPED) principles. Some of the steps to take include: • An enhancement of the natural surveillance of the area. Landscaping within and around the car park should be restricted to low shrubs and flower beds to ensure that natural sight lines are maintained. This includes visibility from the nearby school core facilities, shared plaza space and also the public Council playing fields. • The installation of lighting within the car park to ensure maximum visibility during low-light conditions. While relevant throughout the entire car park, this should especially focus on the areas near the drop-off / pick-up bay, refuse bin enclosure, bicycle parking space, and the entry and exits on Farmland Drive. This improves visibility and hence safety of pedestrians during evening out of school hours activities (weekdays 3:00PM to

Item	Potential Impact	Mitigation Measure
		<p>6:30PM) and any shared usage of school facilities (school hall, basketball courts, etc).</p> <ul style="list-style-type: none"> • Access control should be highlighted and made clear to all visitors to the car park, in the form of signage and line marking delineating staff allocated spaces and school drop-off / pick-up bay. The bin enclosure and bicycle parking areas should also be visibly separate from the public car park space (with additional security measures such as locking gates to prevent unauthorised access to the bins). • Upgrades, cleaning and maintenance of the car park should be undertaken as necessary to ensure amenity and hygiene of the space. Responsibility for any such works should be identified with Blacktown City Council under the finalised parking management scheme.
Acoustics and Vibration	Noise generation during operation of the School.	<p>Implementation of measures outlined within the Environmental Noise Assessment including:</p> <ul style="list-style-type: none"> • Operation of the school should be limited to the activities and times of operation indicated in Table 2 of this 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 will be capable of meeting noise emission requirements of Council and the EPA Noise Policy for Industry (2017), with detailed design to be done at CC stage. • External speakers for PA and bells should be designed to minimise noise spill, be directional facing away from residential receivers to comply with EPA Noise Policy for Industry (2017) guidelines (refer Sections 6.2.1 and 7.2). • Waste removal times should be scheduled between 7am and 6pm. • The school hall doors and other large ventilation openings should be closed after 6pm where the activity involves amplified music. Use of the covered outdoor terrace outside the hall for significant noise producing activities should be limited to normal school hours. • Where music practice occurs within a school classroom outside of normal hours the windows of the rooms should be kept closed. • For external activities by non-school uses, the recommendations regarding the use of the hall by the school should also be adopted for these uses. Use of the plaza and basketball courts should be limited to 7am to 9pm, or in-line with any restrictions applied to the adjacent sporting fields. • The proposal would not produce adverse vibration impacts on nearby structures or impact the amenity of the surrounding properties.

Item	Potential Impact	Mitigation Measure
		<ul style="list-style-type: none"> The glazing to teaching spaces directly facing the future Pelican Drive should have a minimum Rw 22 transmission loss.
Construction Noise and Vibration	Noise and vibration generation during construction of the School.	<p>Implementation of measures outlined within the Environmental Noise Assessment including:</p> <ul style="list-style-type: none"> Operation of large earthmoving equipment (bulldozers and excavators) between 7am and 8am within 10m of the site boundary should be avoided. Quiet work methods/technologies: <ul style="list-style-type: none"> The primary noise generating activity at the site will be the ground work period. As much as practicable, use of quieter methods is adopted. Concrete pump trucks should be located within the bounds of the site (rather than on nearby roads at the perimeter of the site) where possible. Materials handling/vehicles: <ul style="list-style-type: none"> Trucks and bobcats to use a non-tonal reversing beacon (subject to OH&S requirements) to minimise potential disturbance of neighbours. Avoid careless dropping of construction materials into empty trucks. Trucks, trailers and concrete trucks (if feasible) should turn off their engines during idling to reduce noise impacts (unless truck ignition needs to remain on during concrete pumping). In respect of pneumatic/hydraulic hammering (if required) noise impacts should be addressed via the imposition of respite periods, typically limiting operation to: <ul style="list-style-type: none"> 9am – 12pm, Monday to Friday 3pm – 5pm Monday to Friday; and 9am to 12pm, Saturday Noisy activities should not be carried out after 1pm Saturdays. Complaints handling - In the event of complaint, the procedures outlined in Sections 8.9, 8.10 and 8.11 of the report should be adopted. A detailed noise management plan should be developed by the main contractor that describes in detail the construction phases, programme, processes and equipment used, noise impact assessment and proposed mitigation and management. Site Induction: <ul style="list-style-type: none"> A copy of the Noise Management Plan is to be available to contractors. The location of the Noise

Item	Potential Impact	Mitigation Measure
		<p>Management Plan should be advised in any site induction.</p> <ul style="list-style-type: none"> – Site induction should also detail the site contact is to be notified in the event of noise complaint.
Contamination	Disturbance of Asbestos materials.	<p>Implementation of measures contained in the Detailed Site Investigation including:</p> <ul style="list-style-type: none"> • Any material to be taken off-site must be classified in accordance with the NSW EPA Waste Classification Guidelines (2014).
Bushfire	Impacts from bushfire	<p>Implementation of measures outlined in the Bushfire Assessment including:</p> <ul style="list-style-type: none"> • Proposed landscaping should comply with the principles listed within Appendix 5 of PBP. • It is recommended that the three buildings within the north-western portion of the site are designed and constructed to comply with BAL-12.5 of AS 3959-2009 Construction of buildings in bushfire-prone areas. The NSW variation to AS 3959 is to be applied in addition to the BAL specifications. The variation is listed within <i>Planning for Bushfire Protection Addendum</i> Appendix 3 May 2010. The BAL can be revised to BAL-LOW once the woodland hazard to the north-west of the school site has been removed to a distance of at least 100 m from the proposed school buildings. • Hydrants are to be installed to achieve compliance with AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning (AS 2419). • Where overhead electrical transmission lines are installed no part of a tree should be closer to a powerline than the distance specified in ISSC 3 Guideline for Managing Vegetation Near Power Lines (Industry Safety Steering Committee 2005). • Any gas services are to be installed and maintained in accordance with AS/NZS 1596-2008 The storage and handling of LP gas (Standards Australia, 2008).
Water Management, erosion and sediment control	Impacts from stormwater, erosion and sediment runoff into adjacent watercourse.	<ul style="list-style-type: none"> • Implementation of proposed stormwater management strategies and erosion and sediment control plan. • In terms of stormwater management, the following measures are recommended: <ul style="list-style-type: none"> – Construction of a system of downpipes, roof water drainage, stormwater pits including grated and junction pits, installation of gross pollutant traps, and connection to a 650m³ rainwater tank. – All pipes are to be concrete encased if cover is less than 450mm.

Item	Potential Impact	Mitigation Measure
		<ul style="list-style-type: none"> Hydraulic connections are to be designed at later stage. Turnouts are to be incorporated to prevent concentration of flows. All buildings are to be connected to the downpipe locations and the stormwater pits as shown in the civil plans. <ul style="list-style-type: none"> In terms of sediment, erosion and dust, the following measures are recommended: <ul style="list-style-type: none"> Use of sediment fences, stockpiles, haybale barriers, geotextile inlet filters, mesh and gravel inlet filters, and portable gravel kerb inlet sediment traps to filter stormwater runoff. Construction of a bioretention sedimentation basin to treat and store stormwater runoff. Construction of a perimeter security fence with wind barrier and silt fence. Stabilised site entry/exit points must be established. Sediment fences should be constructed as close as possible to being parallel to the contours of the site, but with small returns to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the 10-year flood event. A 150mm deep trench should be cut along the upslope line of the fence for the bottom of the fabric to be entrenched. 1.5 metres long star pickets should be inserted into the ground at 2.5 metre intervals at the downslope edge of the trench. Ensure that all star pickets are fitted with safety caps. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties. Stockpiles should be placed more than 2 metres from existing vegetation. Stockpiles should be constructed on the contours as low, flat, elongated mounds. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
Operational Waste	Excessive waste generation.	Implementation of Construction Waste Management Plan and Operational Waste Management Plan including:

Item	Potential Impact	Mitigation Measure
		<ul style="list-style-type: none"> • Truck must be able to enter and exit the site in a forward direction. • Waste compound to be suitably screened from view. • The bin and truck parking area to be level. • General waste and recyclable waste collected by separate trucks. • Skips are too heavy to move by hand and need to be located to suit the truck, parking space with easy truck access to the skip has been provided. • The path of travel from the compound to the truck needs to be level. • If a ramp is required, then gradient must be maximum 1:14 for 240L bins. • If a ramp is required, then use will need to be made of a bin tow able to negotiate ramps. Skips and bins cannot be placed on a ramp. • Access to be designed to suit the collection trucks – to be verified by the traffic consultant. • School to be encouraged to adopt recycling practices. • Separate colour coded bins to be provided at strategic locations for waste. • Caretaker to collect waste on a regular basis and transport it on a trolley to the main waste compound. • Other general recommendations include: <ul style="list-style-type: none"> – Waste generated during construction for disposal to be removed by a licensed waste contractor and disposed of in a licensed landfill facility if/as required. – Segregate and recycle solid wastes generated by construction activities. – Reduce wastes by selecting, in order of preference, avoidance, reduction, reuse and recycling. – Make purchasing decisions that consider recycled products. – Consider measures and performance based targets for reduction, reuse and recycling.
Construction Waste	Waste generated during construction.	<p>Implementation of Construction Waste Management Plan including:</p> <ul style="list-style-type: none"> • In terms of design: <ul style="list-style-type: none"> – Use of modular components in design – Use of prefabricated components in design

Item	Potential Impact	Mitigation Measure
		<ul style="list-style-type: none"> – Design for materials to standard sizes – Design for operational waste minimisation • In terms of procurement: <ul style="list-style-type: none"> – Select recycled and reprocesses materials – Components that can be reused after deconstruction • in terms of onsite construction: <ul style="list-style-type: none"> – Use the avoid, reuse, reduce, recycle principles – Minimisation of recurring packaging materials – Returning packaging to the supplier – Separation of recycling of materials off site – Audit & monitor the correct usage of bins and the waste contractor.
Geotechnical	Structural impact to soils	<p>Implementation of recommendations contained within the Geotechnical Investigation including:</p> <ul style="list-style-type: none"> • JK strongly recommend that prior to finalising the structural design, eight additional boreholes be completed with a drilling rig to confirm the subsurface conditions. We can provide a fee proposal for this additional work, if requested to do so. • Space permitting, temporary batter slopes through the soil/extremely weathered bedrock and through fill embankments are feasible and should be cut no steeper than 1 Vertical (V) on 1 Horizontal (H), provided surcharge loads are kept well clear from the crests of the batters. Retaining walls can then be constructed along the toes of the temporary batter slopes and subsequently backfilled. • Due to the potential for the subgrade to soften in the presence of water particularly where the clayey silts are exposed, consideration should be given to the provision of a select subgrade ('working platform') layer comprising a well graded, durable granular material such as crushed sandstone or processed sandstone. • If soil softening occurs after rainfall periods, then the subgrade should be over-excavated to below the depth of moisture softening and replaced with engineered fill. If the subgrade exhibits shrinkage cracking, then the surface must be moistened and rolled until the shrinkage cracks are no longer

Item	Potential Impact	Mitigation Measure
		<p>evident. Care must be taken not to over-water the subgrade as this will result in softening.</p> <ul style="list-style-type: none"> Where site levels are to be raised, then engineered fill must be used. If there is a short fall in site-won material, then all imported material must be classified as Virgin Excavated Natural Material (VENM) and our preference would be for a select well graded, granular material such as crushed sandstone or processed sandstone, free of organic matter or other deleterious substances, with a maximum particle size not exceeding 100mm. Backfilling of service trenches must be carried out using engineered fill to reduce post-construction settlements. Backfilling behind retaining walls must also be carried out using engineered fill to reduce post-construction settlements. Density tests should be carried out on all engineered fill to confirm the above compaction specifications are being achieved. JK recommend that the footing excavations be cleaned out, inspected and poured with minimum delay to avoid deterioration. Due to the potential for swell pressures from the clay soils, we recommend that ground beams or slabs between piles be designed as suspended and poured over void formers, which can tentatively accommodate heave movements of at least 50mm so as to isolate the structural members from the underlying clays.
Salinity	Impacts from high levels of salinity	<ul style="list-style-type: none"> Salinity on the site appears to generally increase with depth. Deeper structures (including footings, piles and service trenches) should have salinity resistant materials incorporated into their design.
Flooding	Impacts from flooding	<ul style="list-style-type: none"> Overland flow strategy for the site will be confirmed during the detailed design phase and will be designed to maintain flow direction and cater for the 100-year ARI storm event.
Aboriginal heritage	Impacts to Aboriginal cultural heritage and archaeological sites	<p>Implementation of recommendations contained in the Aboriginal Cultural Heritage Assessment and Archaeological Report including:</p> <ul style="list-style-type: none"> <u>Conditions of AHIP C000550</u>. Although SSD projects are not required to comply with Part 6 of the National Parks and Wildlife Act 1974 (NPW Act), the Office of Environment and Heritage (OEH) advises that conditions

Item	Potential Impact	Mitigation Measure
		<p>of valid AHIPs are followed by SSDs in order to reduce the risk of impacting Aboriginal heritage values. OEH also advises that the holder of the AHIP should be contacted to confirm the works that are intended on the area covered by the AHIP.</p> <ul style="list-style-type: none"> • <u>No further archaeological works required for Alex Avenue PS 01 and Alex Avenue PS 02.</u> It is recommended that no further archaeological works are required for Alex Avenue PS 01 and Alex Avenue PS 02 prior to development impacts. • <u>Preparation and lodgement of AHIMS site cards for Alex Avenue PS 01 and Alex Avenue PS 02.</u> It is recommended that AHIMS site cards are prepared and lodged with AHIMS for newly identified sites Alex Avenue PS 01 and Alex Avenue PS 02, and that the site numbers are included in the final version of this report. Following development impacts it will be necessary to update these AHIMS records with AHIMS site impact recording forms for Aboriginal sites Alex Avenue PS 01 and Alex Avenue PS 02. This should occur within four months following completion of development impacts or as otherwise stated in SSD approval conditions. • <u>Long term care and control of artefacts.</u> In consultation with TSA Management on behalf of SINSW, it has been determined that there are a number of areas within the study area which will not be subject to development or landscaping as part of the proposed works and will be maintained as a natural ground areas in the south-eastern portion of the study area. It is proposed that the artefacts will be reburied on site somewhere within this location. • <u>Discovery of unanticipated heritage items Aboriginal objects.</u> All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the OEH. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders. <p><u>Aboriginal ancestral remains</u> - Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary</p>

Item	Potential Impact	Mitigation Measure
		<p>soils. If any suspected human remains are discovered during any activity you must:</p> <ul style="list-style-type: none"> • immediately cease all work at that location and not further move or disturb the remains • notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location • not recommence work at that location unless authorised in writing by OEH. • <u>Continued consultation with registered Aboriginal stakeholders.</u> As per the consultation requirements, it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project. • <u>Lodgement of final report.</u> A copy of the final report will be sent to the RAPs, the client, OEH and the AHIMS register for their records.
European heritage	Impacts to potential European heritage and archaeological sites	<p>Implementation of recommendations contained in the Statement of Heritage Impact and Historical Archaeological Assessment including:</p> <ul style="list-style-type: none"> • No further assessment required. This assessment has identified no items of heritage significance or archaeological potential within the study area, and no negative heritage impacts to surrounding heritage items. As such, no further assessment is required prior to the approval of the SSD application. Prior to any ground disturbance occurring within the study area, an unexpected finds procedure should be implemented as outlined below. • Development of an Unexpected Finds Procedure. Relics are historical archaeological resources of local or State significance and are protected in NSW under the Heritage Act 1977. Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. The Heritage Council will require notification if the find is assessed as a relic.

Item	Potential Impact	Mitigation Measure
Arboricultural	Tree impacts	<p>Implementation of all recommendations contained in the Arboricultural Impact Assessment including:</p> <ul style="list-style-type: none"> • All trees identified (T1 – T15) should be retained and protected throughout the development process. <p>The contractor selected to carry out tree removals, pruning or grinding works should be a member of The Tree Contractors Association or Arboriculture Australia.</p> <p>Recommended tree works must only be carried out by a minimum Cert III Arborist.</p> <ul style="list-style-type: none"> • A risk assessment of the subject trees should be completed by a DEC pre-qualified consulting arborist panel member in accordance with DEC Tree Management Guidelines (2015) prior to the opening of the school. • The client may wish to revise the proposed batter on the southern side of the basketball courts and Black B4 to negate incursions within the TPZs of the two trees T1 and T12. • If hard landscaping is to occur within the PAZ of T12, the construction must be carried out as specified within section 3.12 of the AIA. • If any part of a tree needs pruning for construction site access, the following generic guidelines must be followed – pruning must not alter the height or shape of a tree and no more than 10% of the overall tree canopy should be removed unless approved by Council. • Landscaping should comply with the principles listed within Appendix 5 “planning for Bushfire Protection (2006. • Where practical, the planting of species endemic to the Cumberland Plain Woodland vegetation community should be utilised for tree replenishment if required. • The use of provenance stock on this site is preferred. • The landscape plan must clearly show the location, number of species of trees. the landscape plan should be produced by a suitably qualified landscape architect. • The Tree Protection Plan should be included as part of the site induction process for construction workers. The Tree Protection Plan is to be kept on site at all times. An AQF level 5 project Arborist is to be engaged to oversee

Item	Potential Impact	Mitigation Measure
		<p>the management of trees throughout the site development process.</p> <ul style="list-style-type: none"> • Protection of the eleven trees (T1, T2, T3, T4, T5, T6, T7, T8, T10, T11 and T12 shall consist of protective fencing, silt fencing and ground protection. • The installation of irrigation within the TPZ of trees should be carried out to avoid damaging exposed roots.

10. SUMMARY AND CONCLUSIONS

The proposal has been assessed against all items contained to the SEARs and we conclude that:

- The proposal satisfies the applicable local and state planning policies;
- The design positively responds to the site conditions and future urban morphology;
- The proposal is highly suitable for the site;
- The proposal is in the public's best interest; and
- The proposal appropriately satisfies each item within the Secretary's Environmental Assessment Requirements.

The site is considered highly suitable for the proposal for the following reasons:

- The land is zoned SP2 under the Growth Centres SEPP. The proposal is permissible with consent and consistent with the land use objectives of this zoning;
- The proposal is consistent with the objectives of all relevant planning controls and achieves a high level of planning policy compliance;
- There are no significant environmental constraints limiting development on the site; and
- The proposal will not generate unreasonable impacts on the surrounding locality.

The proposal is in the public interest because:

- The works are permissible with consent and have been prepared having regard to Education SEPP, Growth Centres SEPP and Blacktown Precincts DCP;
- It has been prepared having regard to Council's planning policies and generally complies with the aims and objectives of the controls for the site;
- It is suitable for the site as evidenced by the site analysis and various site investigations, including geotechnical, bushfire, site contamination and biodiversity;
- Subject to the various mitigation measures recommended by the specialist consultants, the proposal does not have any unacceptable impacts on adjoining or surrounding properties or the public domain in terms of traffic, social and environmental impacts;
- The site is well serviced by public transport and walking and cycling routes. The proposal encourages non-private vehicle options for staff to access the site.
- The proposal will result in a high-quality educational environment for staff and students with learning difficulties that:
 - Provides expanses of open space for students;
 - Enables an excellent academic programme;
 - Supports a fulfilling and diverse extra-curricular experience;
 - Provides an inclusive, supportive and secure pastoral environment; and
 - Provides efficient and environmentally sustainable facilities.
- The proposal will make a positive contribution to the built form of the Alex Avenue Precinct and create an attractive streetscape along Farmland Drive; and
- The proposal will contribute positively to energy efficiency and environmental sustainability. The design has incorporated many ESD features to reduce energy consumption during the life of the proposal.

Considering the above and the content contained to this EIS, it is recommended that this SSDA be approved, subject to appropriate conditions.

DISCLAIMER

This report is dated 12 March 2019 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of NSW Department of Education (**Instructing Party**) for the purpose of Environmental Impact Statement (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

APPENDIX B ARCHITECTURAL DRAWINGS

APPENDIX C SITE SURVEY PLAN

APPENDIX D QUANTITY SURVEYORS REPORT

APPENDIX E URBAN DESIGN REPORT

APPENDIX F LANDSCAPE PLAN/STRATEGY

APPENDIX G TRAFFIC IMPACT ASSESSMENT

APPENDIX H GREEN TRAVEL PLAN

APPENDIX I CONSTRUCTION TRAFFIC MANAGEMENT PLAN

APPENDIX J ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD) REPORT

APPENDIX K ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

APPENDIX L ENVIRONMENTAL NOISE AND VIBRATION IMPACT ASSESSMENT

APPENDIX M PRELIMINARY ENVIRONMENTAL SITE INVESTIGATION

APPENDIX N DETAILED ENVIRONMENTAL SITE INVESTIGATION

APPENDIX O SITE INFRASTRUCTURE REPORT

APPENDIX P STORMWATER MANAGEMENT, HYDROLOGY AND WATER QUALITY REPORT

APPENDIX Q CIVIL ENGINEERING PLANS

APPENDIX R FLOOD RISK ASSESSMENT

APPENDIX S BUSHFIRE IMPACT ASSESSMENT

APPENDIX T FLORA AND FAUNA ASSESSMENT

APPENDIX U CONSTRUCTION WASTE MANAGEMENT PLAN

APPENDIX V OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX W ACCESS REPORT

APPENDIX X ABORICULTURAL IMPACT ASSESSMENT

APPENDIX Y BCA ASSESSMENT REPORT

APPENDIX Z CONSULTATION OUTCOMES REPORT

APPENDIX AA

ARCHAEOLOGICAL REPORT

APPENDIX BB PRELIMINARY CONSTRUCTION MANAGEMENT PLAN

APPENDIX CC STATEMENT OF HERITAGE IMPACT AND HISTORICAL ARCHAEOLOGICAL ASSESSMENT

APPENDIX DD

GEOTECHNICAL INVESTIGATION

APPENDIX EE

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