ENVIRONMENTAL IMPACT STATEMENT

MAINSBRIDGE SCHOOL FOR SPECIAL PURPOSES, WARWICK FARM

MARCH 2018
PREPARED FOR NSW DEPARTMENT OF EDUCATION

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	SA6418

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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:	
Names:	Alaine Roff (Associate Director) *Bachelor of Arts, University of Newcastle, NSW* *Master of Town Planning, University of New South Wales*
Address:	Urbis Pty Ltd Level 23, Darling Park Tower 2, 201 Sussex Street Sydney NSW, 2000
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:	Lot 22 in Deposited Plan 715287
Project:	Relocation and development of Mainsbridge School for Special Purposes for approximately 120 students, including new classrooms, open spaces, sports fields and associated facilities.

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:	 01/03/2018

EXECUTIVE SUMMARY

PURPOSE OF THIS REPORT

This Environmental Impact Assessment (EIS) has been prepared by Urbis Pty Ltd on behalf of the NSW Department of Education (DoE) in support of State Significant Development Application SSD 17_8792 for the relocation and development of Mainsbridge School for Special Purposes (Mainsbridge SSP) at 95 Lawrence Hargrave Road, Warwick Farm (the 'site').

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

THE PROPOSAL

The proposed development by the NSW Department of Education (DoE) will facilitate the relocation of the Mainsbridge SSP from 118 Flowerdale Road, Liverpool to underutilised land at Warwick Farm Public School. The proposal will accommodate approximately 120 students, 60 full-time staff, resulting in an overall increase of approximately 14 students and 8 staff to Mainsbridge SSP. The existing school caters for students with moderate and severe intellectual disabilities in the Liverpool Network of schools, providing educational programs for students from Kindergarten to Year 12. The proposal will alleviate pressure on existing aged school facilities and cater for future population growth. Across New South Wales, public school enrolments are anticipated to be 40,000 students higher in 2019-20 than 2015-16.

To meet future demand, the school will provide new teaching facilities and maximise outdoor learning. The proposal seeks consent for the following works:

- Removal of eighteen (18) existing trees;
- Construction of a new 2-storey admin building (Block A);
- Construction of a new 2-storey building containing library and shared hall (Block B);
- Construction of two (2) new learning buildings being 1-storey and 2-storeys in height respectively (Block C and D);
- Construction of a new building containing storage facilities (Block E);
- Associated site landscaping and open space improvements including covered outdoor learning areas (COLAs), a new sports field (50m x 40m), associated fences and pathways throughout;
- Construction of a separate entry and exit vehicular driveway including 19 car parking spaces, five (5) mini-bus spaces and a porte cochere;
- Provision of two (2) separate pedestrian access points along Williamson Crescent; and
- A new substation fronting Williamson Crescent;

School signage will be dealt with via a separate development application to Council.

THE SITE

The site for the new Mainsbridge SSP is located at 95 Lawrence Hargrave Road, Warwick Farm. The site is legally described as Lot 22 in DP 715287 and Lot 3 in DP 570696 and has an area of approximately 31,120m^2. The site contains frontages to Williamson Crescent to the west and Lawrence Hargrave Road to the south (see Figure 1). Brickmakers Creek is located to the east of the site.

The site is currently occupied by Warwick Farm Public School, including school buildings clustered in the southern portion of the site with open space to the north.

Vehicular and pedestrian access is available from the primary entry along Lawrence Hargrave Drive. A separate pedestrian access point is located further along Williamson Crescent to the open space.

The new school development is proposed within the northern portion of the school grounds of Warwick Farm Public School.

SITE SUITABILITY

Warwick Farm Public School occupies 3.1 Ha (the largest in the Liverpool School cluster). However, as there are currently only 230 students the school is operating under design capacity, and is not forecast to grow at the same rate as other schools in the Liverpool cluster. Even with the proposed development taking up 1.06 Ha, the school will remain one of the larger schools in the cluster and have sufficient play space for students. The school has frontages to Williamson Crescent and Lawrence Hargrave Drive; facilitating a separate entry point for the proposed development. The north-western part of the site is currently undeveloped, and not subject to any planning constraints (noting that the eastern boundary has flood and ecology constraints). Warwick Farm Public School does not currently have an adequate hall space, the proposed development includes a large hall which will be shared between the two schools. The sports field which will be removed due to the proposed development will be replaced adjacent to the school COLA.

COST OF WORK AND PLANNING FRAMEWORK

Pursuant to Schedule 1 Clause 15 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), development for the purposes of educational establishments (including schools) with a CIV more than $20 million is state significant development for the purposes of the SRD SEPP.

This development has a capital investment value (CIV) of more than $20 million. This is detailed in the Quantity Surveyors Cost Assessment at **Appendix C**. As the cost of works exceeds $20 million, the EIS will be submitted to the New South Wales Department of Planning and Environment (DPE) for assessment and determination.

ASSESSMENT

The proposal has been assessed against all items contained to the Secretary's Environmental Assessment Requirements (SEARS) issued for the project on 25 October 2017 and reissued on the 22 November 2017. 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 morphology:** 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 proposal continues the education use and is suitable for the site. The increase in students and staff is not significant and will not generate unreasonable traffic impacts.
- **The proposal is in the public's best interest:** The proposal will take substantial pressure off existing special purpose schools within the surrounding locality and ensure more children with special requirements 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.* The SEARs issued on 25 October 2017 are addressed within this report and included in full at Appendix B.

Table 1 below provides a summary of the 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	
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 *Environmental Planning and Assessment Regulation 2000* (the Regulation). Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development. Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: • Adequate baseline data; • Consideration of potential cumulative impacts due to other development in the vicinity (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.	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 *Environmental Planning and Assessment Regulation 2000*. The EIS includes a comprehensive assessment of the environmental risks and impacts associated with the development.
The EIS must be accompanied by a report from a qualified quantity surveyor providing: • A detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the *Environmental Planning and Assessment Regulation 2000*) 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.	**Appendix C**

Item/ Description	Document Reference
B. Key Issues – The EIS must address the following specific matters:	
1. Statutory and Strategic Context Address the statutory provisions contained in all relevant environmental planning instruments, including: • *State Environmental Planning Policy (State & Regional Development) 2011;* • *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;* • *State Environmental Planning Policy (Sydney Region Growth Centres) 2006;* • *State Environmental Planning Policy No.55 – Remediation of Land;* • *State Environmental Planning Policy No. 64 – Advertising and Signage;* and • Liverpool Local Environmental Plan 2008. *Permissibility:* Detail the nature and extent of any prohibitions that apply to the development. *Development Standards:* Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	**Section 4**
2. Policies Address the relevant planning provisions, goals and strategic planning objectives in the following: • *NSW State Priorities;* • *A Plan for Growing Sydney;* • *NSW Long Term Transport Master Plan 2012;* • *Sydney's Cycling Future 2013;* • *Sydney's Walking Future 2013;* • *Sydney's Bus Future 2013;* • *Crime Prevention Through Environmental Design (CPTED) Principles;* • *Healthy Urban Development Checklist, NSW Health;* • *Greater Sydney Commission's Draft West Central District Plan; and* • *Liverpool Council Development Control Plan 2008.*	**Section 5**
3. Operation • 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.	**Section 3.11**

Item/ Description	Document Reference
• Provide a detailed justification of suitability of the site to accommodate the proposal and increase in student and staff capacity. • Provide details of how Warwick Farm Public School will continue to operate during construction activities of Mainsbridge School for Special Purposes, including proposed mitigation measures.	
4. Built Form and Urban Design • Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. • 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. • Demonstrate in consultation with and to the satisfaction of the Government Architect NSW that design excellence 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.	**Section 3 and Appendix K**
5. Environmental Amenity • Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. • Detail any proposed use of the school grounds out of school hours (including weekends) and any resultant amenity impacts on the immediate locality and proposed mitigation measures.	**Section 6.1 and Section 6.5**
6. Transport and Accessibility Include a transport and accessibility impact assessment, which details, but not limited to the following: • Accurate details of the current daily and peak hour vehicle, public transport, pedestrian and cycle movement and existing traffic and transport facilities provided on the road network located adjacent to the proposed development; • An assessment of the operation of existing and future transport networks including public transport networks, and their ability to accommodate the forecast number of trips to and from the development;	**Section 6.2, Appendix I, Appendix J** and **Appendix BB.**

Item/ Description	Document Reference
• 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 public transport, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development; • The impact of the proposed development on existing and future public transport infrastructure within the vicinity of the site in consultation with Council, Roads and Maritime Services and Transport for NSW and identify measures to integrate the development with the transport network; • 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; • 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 and the provision of facilities to increase the non-car mode share for travel to and from the site; • The impact of trips generated by the development on nearby intersections, 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 proposed walking and cycling access arrangements and connections to public transport services; • Details of any proposed school bus routes along bus capable roads (i.e. travel lanes of 3.5 m minimum) and infrastructure (bus stops, bus layovers etc.); • 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; • Measures to maintain road and personal safety in line with CPTED principles; • 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;	

Item/ Description	Document Reference
• 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; • Details of emergency vehicle access arrangements; • An assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures; • Service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); In relation to construction traffic: – 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; – Details of temporary cycling and pedestrian access during construction; and – Traffic and transport impacts during construction, including cumulative impacts associated with other construction activities, and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport. → Relevant Policies and Guidelines: • *Guide to Traffic Generation Developments (Road and Maritime Services)* • *EIS Guidelines – Road and Related Facilities (DoPI)* • *Cycling Aspects of Austroads Guides* • *NSW Planning Guidelines for Walking and Cycling* • *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development* • *Standards Australia AS2890.3 (Bicycle Parking Facilities)*	
7. Ecologically Sustainable Development (ESD)	**Section** Error! R eference source not

Item/ Description	Document Reference
• Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development. • Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice. • Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.	found. **and Appendix Q**
8. Social Impacts Include an assessment of the social consequences of the schools' relative location.	**Section 6.5**
9. Noise and Vibration Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction and operation, 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. → Relevant Policies and Guidelines: • *NSW Industrial Noise Policy (EPA)* • *Interim Construction Noise Guideline (DECC)* • *Assessing Vibration: A Technical Guideline 2006* • *Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008)*	
10. Sediment, Erosion and Dust Controls Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. → Relevant Policies and Guidelines: • *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)* • *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)*	**Section 6.7,Appendix P and Appendix V**
11. Contamination	**Section 4.4, Appendix S and Appendix T**

Item/ Description	Document Reference
• *Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.* • *Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works.* → Relevant Policies and Guidelines: • *Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP)*	
12. Utilities • Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. • Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	**Section 3.9 and Appendix G**
13. Contributions Address Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	**Section 4.7**
14. Drainage • Detail drainage associated with the proposal, including stormwater and drainage infrastructure. • Detail measures to minimise operational water quality impacts on surface waters and groundwater. → Relevant Policies and Guidelines: • *Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)*	**Section 3.12 and Appendix P**
15. Flooding Assess any 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.	**Section 4.5.3**
16. Bushfire Address bush fire hazard and if required, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 guidelines.	**Section 6.9 and Appendix F**

Item/ Description	Document Reference
17. Waste Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	**Section 3.8, Appendix N and Appendix O**
18. Construction Hours Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	**Section 3.11**
19. Biodiversity Biodiversity impacts related to the proposal and the preparation of a Biodiversity Assessment are to be addressed in accordance with the requirements of the Biodiversity Conservation Act 2016.	**Section 2.4, Section 6.3 and Appendix E**
C. Plans and Documents – The EIS must include the following:	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following: • Architectural drawings (dimensioned and including RLs); • Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries; • Site Analysis Plan; • Stormwater Concept Plan; • Sediment and Erosion Control Plan; • Shadow Diagrams; • View Analysis / Photomontages, including from public vantage points; • Landscape Plan (identifying 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;	**Appendix A - AA**

Item/ Description	Document Reference
• Arborist Report; • Salinity Investigation Report (if required); • Acid Sulphate Soils Management Plan (if required); and • Schedule of materials and finishes.	
D. Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners. In particular, you must consult with: • Liverpool Council; • Government Architect NSW; • Transport for NSW; and • Roads and Maritime Services. 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.	**Section 7** and **Appendix Z**

1. INTRODUCTION

1.1. OVERVIEW

This EIS has been prepared by Urbis Pty Ltd on behalf of the NSW Department of Education (the 'Applicant') in support of State Significant Development Application SSD 17_8792 for the development of Mainsbridge SSP. Specifically, this EIS seeks development consent for the following works at the site:

- Removal of eighteen (18) existing trees;
- Construction of a new 2-storey admin building (Block A);
- Construction of a new 2-storey building containing library and shared hall (Block B);
- Construction of two (2) new learning buildings being 1-storey and 2-storeys in height respectively (Block C and D);
- Construction of a new building containing storage facilities (Block E);
- Associated site landscaping and open space improvements including a new covered outdoor learning area (COLA), new sports field (50m x 40m), associated fences and pathways throughout;
- Construction of a separate entry and exit vehicular driveway including 19 car parking spaces, five (5) mini-bus spaces and a porte cochere;
- Provision of two (2) separate pedestrian access points along Williamson Crescent; and
- A new substation fronting Williamson Crescent.

School signage will be dealt with via a separate development application to Council.

This is shown in the Architectural Drawings prepared by Hayball at **Appendix A.**

1.2. PROJECT CONTEXT AND BACKGROUND

Across NSW, 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 2019-2020 than in 2015-16. Accordingly, substantial pressure is being placed on existing public schools throughout NSW, causing them to become overcrowded beyond capacity.

Sydney's South West is a location where population growth has placed substantial pressure on existing public schools within the area, including Mainsbridge SSP. In response, DoE is proposing to relocate Mainsbridge SSP to a new site in Warwick Farm and construct a brand-new school to provide additional capacity and new state of the art facilities.

On 25 October 2017, SEARs were issued by the DPE for SSD 17_8792 'Relocation and development of Mainsbridge School for Special Purposes'. They were reissued on the 22 November 2017 to include biodiversity considerations. The SEARs are contained within this EIS and provided at **Appendix B.**

1.3. REPORT STRUCTURE

This EIS provides the following:

- **Section 1:** Executive summary, background information and introduction of the proposed development;
- **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 detailed description of the proposed development;
- **Section 4**: An assessment of the proposed development against the relevant statutory planning controls;
- **Section 5:** An assessment of the proposed development against the relevant strategic planning controls;

- **Section 6**: An assessment of the key issues and impacts generated by the proposed development; and
- **Section 7**: A detailed description of the consultation undertaken with respect to the proposal.
- **Section 8**: Recommendations and mitigations and measures.
- **Section 9**: Summary and conclusions.

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

1.4. PROJECT TEAM

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

Table 2 – Project Team

Deliverable	Consultant	Appendix
Architectural Plans	Hayball Architects	Appendix A
Quality Surveyors Cost Assessment	Aquenta Consulting Pty Ltd	Appendix C
Preliminary Tree Assessment Report	Paul Shearer Consulting Pty Ltd	Appendix D
Flora and Fauna Assessment	Alphitonia	Appendix E
Bushfire Assessment	Peterson Bushfire Consulting Services	Appendix F
Site Infrastructure Overview Plan	WSP	Appendix G
Site Survey	Lockley Registered Surveyors	Appendix H
Traffic Impact Assessment	Arc Traffic and Transport	Appendix I
Green Travel Plan	Arc Traffic and Transport	Appendix J
Urban Design Report	Hayball Architects	Appendix K
Construction Noise and Vibration Management Plan	Acoustic Logic	Appendix L
Landscape Plans	Tract Landscape Architects	Appendix M
Construction Waste Management Plan	EcCell Environmental Management	Appendix N
Operational Waste Management Plan	The MACK Group	Appendix O
Stormwater Management Report and Plans	WSP	Appendix P
Ecologically Sustainable Development (ESD) Report	Hayball Architects	Appendix Q
Access Report	Morris Goding Accessibility Consulting	Appendix R
Stage 1 – Environmental Site Assessment	Environmental Investigation Services	Appendix S
Stage 2 – Environmental Site Investigation	Environmental Investigation Services	Appendix T
Geotechnical Report	JK Geotechnics	Appendix U

Deliverable	Consultant	Appendix
Preliminary Construction Management Report	GHD	Appendix V
Salinity Assessment Report	Environmental Investigation Services	Appendix W
Noise Impact Assessment Report	Acoustic Logic	Appendix X
Wind Impact Assessment Report	SLR Consulting Pty Ltd	Appendix Y
Consultation Outcomes Report	GHD	Appendix Z
BCA Report	Steve Watson and Partners	Appendix AA
Preliminary Construction Traffic Management Plan	PDC Consultants	Appendix BB

2. THE SITE AND SURROUNDING CONTEXT

2.1. SUBJECT SITE

The proposed site for the relocated Mainsbridge SPP is located at 95 Lawrence Hargrave Road, Warwick Farm. The site is legally described as Lot 22 in DP 715287 and Lot 3 in DP 570696 and has an area of approximately 31,120m^2. The site has frontages to Williamson Crescent to the west and Lawrence Hargrave Road to the south (see Figure 1).

Figure 1 – The Site

Source: Near Map

2.2. EXISTING DEVELOPMENT

The site is currently occupied by Warwick Farm Public School, including school buildings clustered in the southern portion of the site and open space to the north.

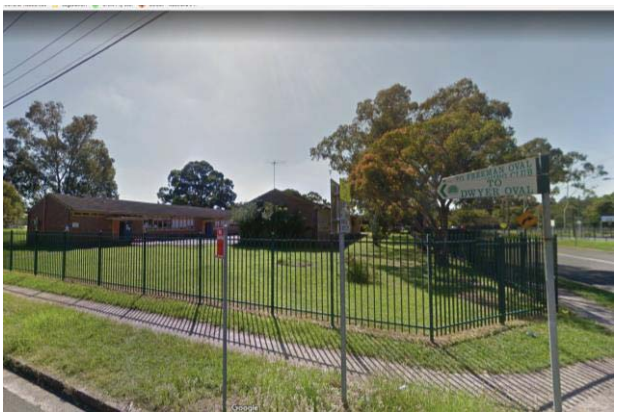
Vehicular and pedestrian access is available from the primary entry along Lawrence Hargrave Drive. A separate pedestrian access point is located further along Williamson Crescent to the open space.

Images of the existing Warwick Farm Public School and the proposed site for Mainsbridge SSP are identified in Figure 2 **- Pictures 1 to 4**.

Figure 2 – Existing Warwick Farm Public School site and the proposed site for Mainsbridge SSP

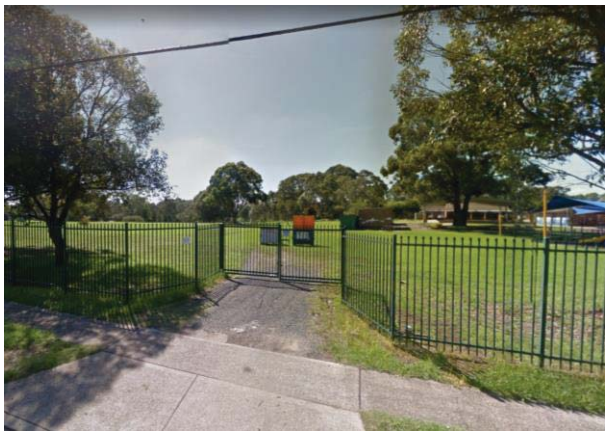
Picture 1 – Looking North from Lawrence Hargrave Road towards Warwick Farm Public School

Source: Urbis



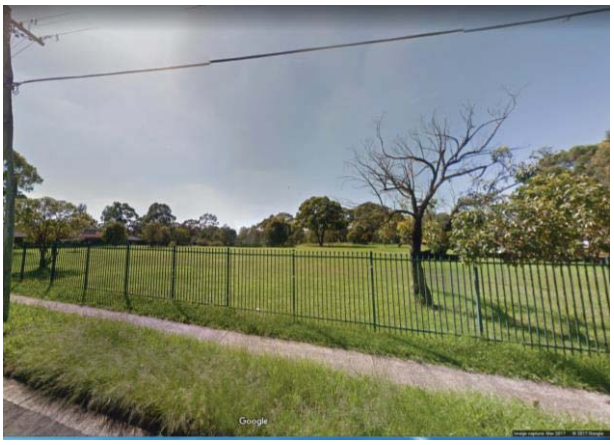
Picture 2 – Looking East from Williamson Crescent towards Warwick Farm Public School

Source: Urbis



Picture 3 – Looking East from Williamson Crescent towards existing toilet block to be demolished at Warwick Farm Public School

Source: Urbis



Picture 4 – Looking East from Williamson Crescent towards proposed site for Mainsbridge SSP (northern end of site)

Source: Urbis

2.3. SITE ACCESS

2.3.1. Vehicular Access

The site currently contains one two-way vehicular access point to a parking area that serves the existing Warwick Farm Public School. The vehicular access point is provided off Lawrence Hargrave Road near the existing administration block, and connects to the on-site staff car park.

2.3.2. Pedestrian Access

The site currently contains two pedestrian access points that serve Warwick Farm Public School:

- Off Lawrence Hargrave Road, to the south of the school
- Off Williamson Crescent, to the west of the school

2.4. FLORA AND FAUNA

An Preliminary Tree Assessment Report has been prepared by Paul Shearer Consulting and is attached at **Appendix D.** A Flora and Fauna Assessment was also prepared by Alphitonia and is attached at **Appendix E.** These reports identified the following flora and fauna at the site:

2.4.1. Flora

- 18 trees protected under Clause 5.9 of Liverpool Council's LEP 2008 are located within 15m of proposed works, of which 3 were assessed as having High Retention Value, 11 as Medium Retention Value and 4 as Low Retention Value.
- Most vegetation present at the site consists of grassed open space, and landscaped areas containing exotic and commonly planted urban native vegetation.
- The site is located adjacent to Brickmakers Creek to the east which contains Sydney Coastal River-flat Forest.
- A portion of the site is classified as Environmentally Significant Land under the Liverpool LEP 2008.
- A total of 36 flora species were identified within the study area during field survey, of which seven were native species, 18 were exotic and 11 which were native but are likely to have been planted.
- No threatened species were observed during the survey.
- No hollow-bearing trees were recorded at the site.

2.4.2. Fauna

Limited habitat is present on site for threatened fauna. The trees on site are potential foraging habitat for Grey-headed Flying-fox and Eastern Bentwing-bat. Grey-headed Flying-fox is listed under the TSC Act and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), while Eastern Bentwing-bat is only listed under the *Threated Species Conservation Act 1995* (TSC Act).

2.5. BUSHFIRE

The site is identified as containing bushfire prone land as mapped on the Liverpool Bushfire Prone Land Map. The school is shown to have part of the '100m Vegetation Buffer' within its site extending from a remnant of forest. A Bush Fire Assessment Report has been prepared by Peterson Bushfire and is provided at Appendix F. Refer to Section 6.9 of this EIS for more details.

2.6. FLOODING

The site is subject to flooding from Brickmakers Creek that runs adjacent the site. An application for flood levels was made to Council which ascertained the 1 in 100-year Average Recurrence Interval (ARI) flood level adjacent the creek is 7.6mAHD and the PMF is 12.0mAHDRefer to Section 6.8 of this EIS for more details.

2.7. SERVICES

Warwick Farm Public School is connected to all necessary services including water, gas, electricity, communications and sewage. These services will be upgraded and extended to connect Mainsbridge SSP. A Site Infrastructure Overview Plan prepared by WSP has been attached at **Appendix G.**

2.8. TOPOGRAPHY

The site is generally flat and falls by approximately 3.5m from west to east, with an even gradient to the low point along the eastern boundary. A Site Survey prepared by Lockley Registered Surveyors has been attached at **Appendix H.**

2.9. SITE CONTEXT AND SURROUNDING DEVELOPMENT

The site is in the Liverpool Local Government Area (LGA) in the suburb of Warwick Farm. Warwick Farm is located 30km south west of Sydney Central Business District.

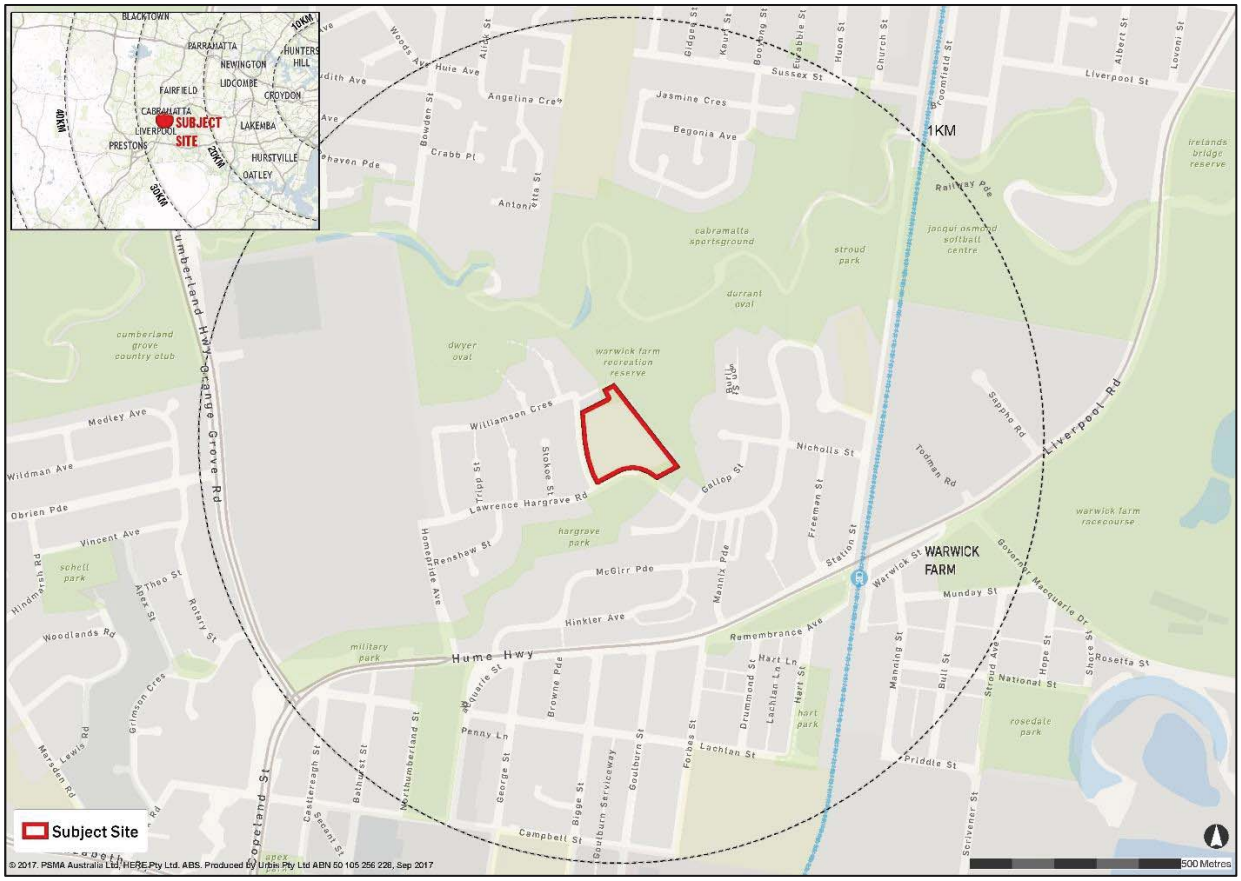
The area is accessible via major arterial roads and is also serviced by public transport in the form of rail and buses. Warwick Farm Railway Station is located approximately 800 metres east of the site.

The site is predominantly surrounded by low density residential and outdoor recreation and open space uses, summarised as:

- Immediately north of the site is a childcare centre. Further north are existing low density residences accessible from Williamson Crescent;
- East is the Warwick Farm Recreation Reserve comprising a series of open spaces and Brickmakers Creek which runs parallel to the sites' eastern boundary;
- South of the site on the opposite side of Lawrence Hargrave Road is an open space corridor which Brickmakers Creek extends into and low-density residences. The Liverpool Community Centre is located south east of the site; and
- West of the site on the opposite side of Williamson Crescent are low density residences.

The site context is illustrated in the following Figure 3**.**

Figure 3 – Surrounding Context



Source: Near Map

2.10. TRANSPORT CONTEXT

The site is well connected by public transport links and is easily accessible via the Hume Highway.

Bus:

Local bus services operate along Lawrence Hargrave Drive immediately south of the School, and along the Hume Highway. Walk times for the Lawrence Hargrave Drive bus stops are less than 2 minutes, while walk times from the Hume Highway bus stops are approximately 10 minutes.

Route 823 is a loop service between Liverpool Station and Warwick Farm north of the Hume Highway; travel times between the Lawrence Hargrave Drive bus stops immediately south of the School and Liverpool Station (and vice versa) are approximately 15 minutes.

Routes 904 is a local service between Liverpool Station and Fairfield Station via Lansvale and Canley Vale; travel times between the Hume Highway bus stops south of the School are approximately 7 minutes to/from Liverpool Station, and approximately 30 minutes to/from Fairfield Station.

Train:

The site is located 800 metres from Warwick Farm Train Station (10 minutes' walk) which operates services on the T2, T3 and T5 lines. Direct services are available from Warwick Farm Station to/from Liverpool, Blacktown, Parramatta and Sydney City at a high frequency during the broader AM and PM commuter peak periods.

3. THE PROPOSED DEVELOPMENT

3.1. OVERVIEW

This SSDA seeks development consent for the following works:

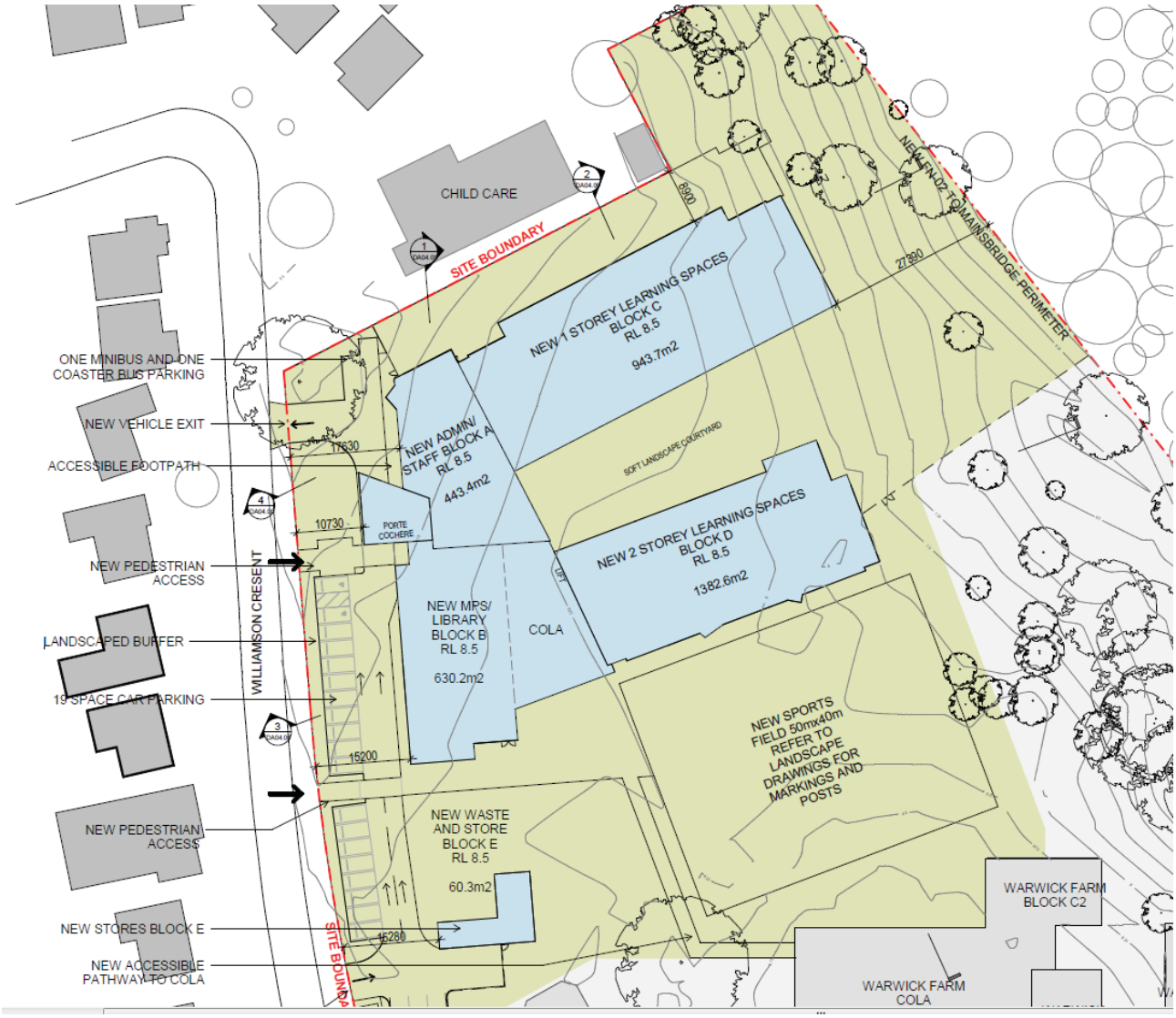
- Removal of eighteen (18) existing trees;
- Construction of a new 2-storey admin building (Block A);
- Construction of a new 2-storey building containing library and shared hall (Block B);
- Construction of two (2) new learning buildings being 1-storey and 2-storeys in height respectively (Block C and D);
- Construction of a new building containing storage facilities (Block E);
- Associated site landscaping and open space improvements including a new covered outdoor learning area (COLA), new sports field (50m x 40m), associated fences and pathways throughout;
- Construction of a separate entry and exit vehicular driveway including 19 car parking spaces, five (5) mini-bus spaces and a porte cochere;
- Provision of two (2) separate pedestrian access points along Williamson Crescent;
- A new substation fronting Williamson Crescent; and

School signage will be dealt with via a separate development application to Council. Additionally, a hydrotherapy swimming pool and the demolition of 2 existing toilet blocks part of Warwick Farm Public School have been designed and consulted for, however do not form part of this SSDA.

This is shown in the Architectural Drawings prepared by Hayball at Appendix A.

The proposed new school will facilitate approximately 120 students and 60 full-time staff. This rate constitutes an increase of 14 students and 8 staff across the site. Further details of the proposal are provided in the subsections below and within Appendix A - AA. A Proposed Site Plan of the proposal can be seen in Figure 4.

Figure 4 – Proposed Site Plan



Source: Hayball Architects

3.2. BUILDING DESIGN PHILOSOPHY

An Urban Design Report has been prepared by Hayball Architects and is attached at **Appendix K.** The proposed school incorporates the following urban design considerations:

- The main school entry is accessed from Williamson Crescent via a formal entry which includes a porte cochere;
- 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 in a U-shape to create a central courtyard and connect outdoor areas with 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 primarily two storeys in scale, which is in keeping with the predominate scale of the surrounding development;
- Courtyard and veranda spaces 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 Williamson Crescent;
- 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.

3.3. DEMOLITION AND SITE CLEARING

Development consent is sought to clear some existing vegetation and to remove up to 18 trees from the site. Tree removal and recommendations are discussed in the Preliminary Tree Assessment Report provided at **Appendix D** of this EIS.

3.4. BUILT FORM AND URBAN DESIGN

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

- Complement the surrounding built and natural character of Warwick Farm;
- Minimise amenity impacts on surrounding residents and the existing Warwick Farm Public School; and
- Provide a superior educational environment that encourages collaborative learning, knowledge and play.

A detailed analysis of each of the above considerations is provided below.

Complements Surrounding Built and Natural Character:

Warwick Farm contains a variety of open parklands and nature reserves. The suburb comprises an area of detached residential dwellings, supporting neighbourhood shops and sports fields and some areas of industrial development. Warwick Farm Race Track is a major landmark in the area.

The proposed school has been specifically designed to complement Warwick Farm's distinct built and natural character. This has been achieved by:

- Providing a range of native Australian flora, turfed areas, swales, bush play areas and gardens into the proposed landscaped design; characteristic of the surrounding parks and reserves;
- Designing the school to include a range of colourful external materials and finishes that are representative of the surrounding area;
- Proposing to construct a range of sporting facilities at the site, including a large sports field; complementing the adjacent Warwick Farm Recreation Reserve which contains many sports ovals; and
- Designing the school to have a maximum building height that is consistent with the surrounding two storey buildings to the west.

Minimises Amenity Impacts on Surrounding Residents:

The new Mainsbridge SSP premises are proposed to be constructed at the northern end of the existing Warwick Farm Public School site, and arranged in a U-shape. This building form and arrangement has been specifically chosen, as it:

- Maximises visual privacy, as the proposed new school buildings are kept distant from surrounding dwellings to the west;
- Provides an acoustic buffer, as outdoor play and announcement noises will be concealed within the proposed internal courtyard space;

- 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 6.3 below.

Provides a Superior Educational Environment for Students and Staff:

The proposed redevelopment of the school on a new site has been designed to provide a superior educational environment for students with learning difficulties. The arrangement of the site in a U-shape ensures the proposal provides interconnected learning spaces and classrooms that encourage active learning and play. This arrangement also ensures the future school provides a pedestrian circulation system that is highly permeable and representative of an inclusive built environment. The centre of the site is proposed to contain a central civic courtyard that provides direct access to the outdoor areas. This arrangement will encourage collaborative learning, knowledge and play amongst students and staff.

New School Buildings:

Multiple double-storey, multi-purpose school buildings are proposed at the northern portion of the site 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.

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

Figure 5 – Proposed development

Source: Hayball

3.5. PARKING AND SITE ACCESS

3.5.1. Parking

A new on-site carpark containing 19 spaces (including 2 accessible spaces) is proposed to be constructed near the western boundary of the site off Williamson Crescent. 5 minibus spaces are also to be provided. Use of this carpark will be restricted to school staff. Bicycle spaces and changerooms are to be provided at the site for staff.

3.5.2. Vehicular Access

The proposed school will contain two vehicular access points, an entrance and an exit:

- An entry driveway provided off Williamson Crescent to the south of the site to serve the proposed on-site car park and drop off/pick up area;
- An exit driveway provided off Williamson Crescent to the north of the site near the Porte Cochere and new Administration building.

Each vehicular access point has been designed in accordance with the relevant Australian Standards.

3.5.3. Pedestrian Access

The proposed school will contain two pedestrian access points:

- Off Williamson Crescent, near the Porte Cochere providing direct access to the main school entrance located in the Administration building;
- Off Williamson Crescent, near the car park to the south of the site.

These pedestrian access points have been designed to provide safe and inclusive access for all.

3.5.4. Assisted Schools Travel Program (ASTP)

Most students will travel to and from the school by group transport including mini-buses and other vehicles as part of the ASTP, which is administered by the DoE. The ASTP provides free specialised transport to and from school for students with a disability who are unable to travel to and from school under the Transport for NSW's School Student Transport Scheme.

Of the students currently attending the existing Mainsbridge SSP, approximately 85% - 90% utilise the ASTP, while only 10% - 15% of students are driven to and from the school by parents/carers. There is no information to suggest that these percentages would be significantly changed further to the relocation of the School.

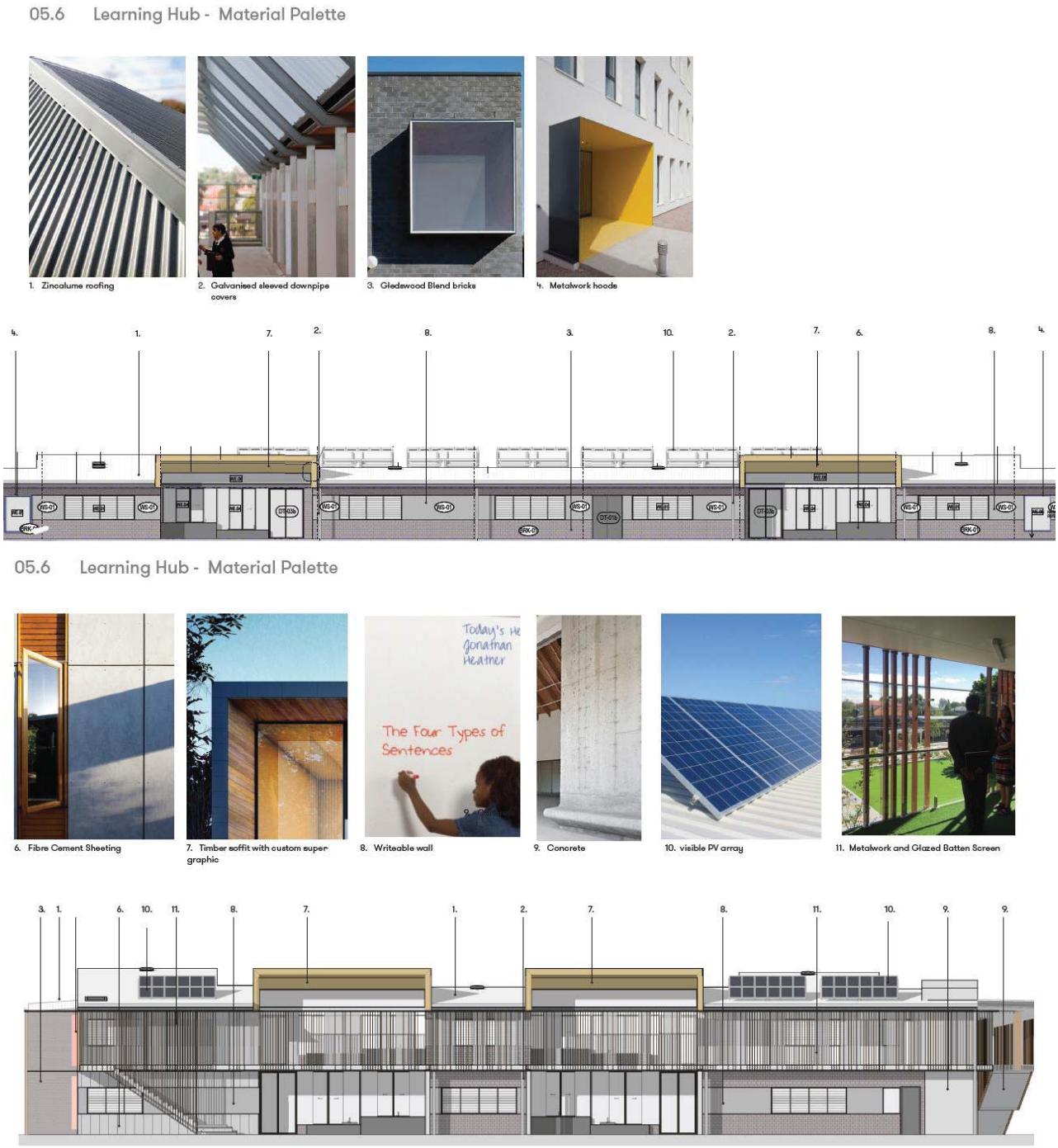
3.6. EXTERNAL MATERIALS AND FINISHES

The proposed school has been appropriately designed with external materials and finishes that complement the surrounding natural and built environment of Warwick Farm. The building materials are durable, hardwearing, low maintenance and evoke smart building design (See Figure 6). Materials include:

- Galvanised sleeved downpipe covers;
- Gledswood blend bricks;
- Metalwork hoods;
- Fibre cement sheeting;
- Timber soffit with custom super graphic;
- Writeable wall;
- Concrete;
- Altair glass louvre system;
- Plywood cladding;
- Aluminium louvres;
- Timbre batten screen;
- Timbre soffit;
- Visible PV array;
- Metalwork and glazed batten screen; and
- Zincalume metal roofing.

For more details, refer to Elevations in Architectural Plan provided in Appendix A.

Figure 6 – Proposed Materials Palette



Source: Hayball

3.7. LANDSCAPING AND SPORTS FACILITIES

A Landscape Plan has been prepared by Tract Landscape Consultants and is attached at Appendix M. New landscaped areas, open space and sports facilities will be provided throughout the school. These spaces will be provided to enhance the learning experience provided by the development.

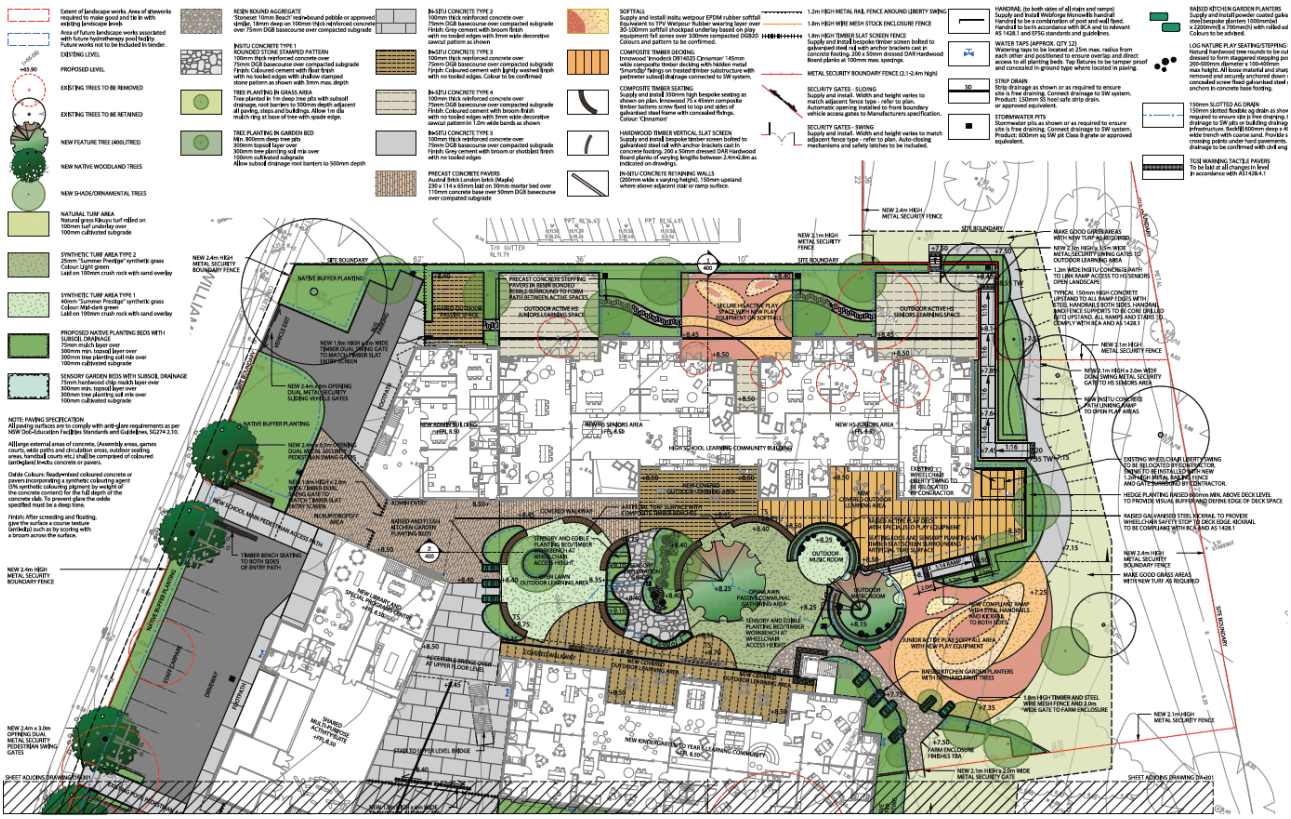
The key aspects driving the landscape design of the school includes promoting social interaction, connecting indoor and outdoor leaning spaces, providing safe outdoor spaces, creating a range of multi-sensory play experiences, providing diverse visual interest, and creating an environment of learning that incorporates the ecologically sustainable features of the built form as learning tools (See Figure 7).

The landscape concept includes:

- Internal courtyard containing open outdoor learning areas, COLAs, sensory and edible explorative gardens, outdoor music rooms, passive communal areas and active play soft fall area with play equipment;
- Native buffer planting beds;
- Civic arrival gathering space;
- Accessible kitchen garden planters and raised feature planting;
- Covered walkways throughout;
- Natural and synthetic turf areas;
- 40 x 50m sports field;
- Landscaped woodland walk area;
- Various active outdoor play and learning areas; and
- 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 7 – Landscape Concept Plan



Source: Tract Landscape Architects

3.8. WASTE

3.8.1. Construction Waste

A Construction Waste Management Plan has been prepared by EcCell Environmental Management and is attached at Appendix N This objective of this plan is to ensure all waste 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. Waste management strategies have been provided for the demolition, excavation and construction phases.

3.8.2. Ongoing Waste

An Operational Waste Management Plan has been prepared by The MACK Group and is attached at **Appendix O**. 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.

The following recommendations have been provided:

Waste equipment:

- Main general waste = 3000L bin collected 1x/fortnight. This is subject to the school being able to achieve increased recycling and to make general waste volume lower. Alternatively, a higher collection frequency maybe required.
- Nappy waste = 130 students @ 30% = 39 @ 5 changes per day = 39 x 300ml x5 = 58.5 L x 3 days = 176 L = 1x 240 L bin collected 2x/ week
- Paper & cardboard = 5x 240 L bin collected 1x/ week
- Comingled waste = 3x 240 L bin collected 1x/ fortnight
- Organic waste = Provide a composting facility

These bins will be stored throughout the school for use at the point of generation. They will be brought to the waste storage/collection area as required for collection. The separate waste storage area is to be located to the south of the main school building and will provide sufficient capacity for the bins proposed.

General comments:

- Bin parking area/ central waste store to be located off Williamson Crescent and suitably screened from view;
- General waste and comingled waste are collected by separate trucks at separate times/ days;
- The path of travel from the compound to the truck needs to be level;
- The bin parking area to be level;
- Access to be designed to suit the collection truck – to be verified by the traffic consultant;
- Swept path diagrams to be provided by traffic consultant;
- Concrete slab able to support the weight of a loaded truck and bins/ skips;
- The collection truck to enter and leave in a forward direction;
- School to review potential for increased recycling practices;
- Colour coded bins to be provided throughout to collect general waste;
- Separate colour coded bins to be provided at strategic locations for comingled waste;
- Caretaker to collect waste on a regular basis and transport it on a trolley;
- Access to waste enclosure to be safe, convenient to all users and to meet WorkCover NSW Occupational Health and Safety guidelines;
- Waste enclosure to be integrated into the overall design;

- Waste enclosure to conceal bins from view from the street;
- Bins to be covered against birds, vermin and vandals; and
- This report is part of the development application process. The final sizing of waste stores and frequency of waste collection will be made once final agreements are in place.

3.9. SITE SERVICES

A Site Infrastructure Overview has been prepared by WSP and is provided at **Appendix G** of this EIS. This report was undertaken in consultation with relevant agencies, and details information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. A Stormwater Management Report and Sediment and Erosion Plan has also been prepared as part of this SSDA by WSP and is attached at **Appendix P**. Both reports outline existing and proposed new services to be developed at the site.

3.10. STAGING AND CONSTRUCTION MANAGEMENT

The proposal is to be constructed over two stages in accordance with the Preliminary Construction Management Plan prepared by GHD and provided at **Appendix V** and the Construction Noise and Vibration Management Plan prepared by Acoustic Logic and provided at **Appendix L**. The two development stages are as follows:

Stage 1 – Early Works

Includes bulk excavation and remediation works and expected to extend over an approximately 3-month period. Early works package does not form part of the SSDA and will occur under a separate approval.

Stage 2 - Construction Stage

Approximately 18 months and will include:

- Construction of retaining walls;
- Construction of main building blocks;
- Landscaping; and
- Installation of associated site services.

During the construction stage, all construction vehicles will access the site via Williamson Crescent and the construction area will be closed off using perimeter fencing. This will assist in mitigating issues associated with site safety, security, theft and vandalism.

Construction Work Hours

The proposed works will be undertaken during the following hours:

- Monday to Friday – 7.00am to 6.00pm
- Saturdays – 8.00am to 1.00pm
- Sundays / Public Holidays – No work

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

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.

3.11. OPERATIONS

Mainsbridge SSP caters for students K-12 with moderate to severe intellectual disabilities. The school will have the following breakdown:

- 60 full time staff
- 120 students (based on 6 students per class)

As per current arrangements, in the morning buses start unloading at 8.50am and this process is usually completed by 9.05am. Buses will then arrive from 2.30-245pm and depart the school by 3.00pm.

No before / after school services are applicable.

No community use of the school facilities is anticipated for Mainsbridge SSP or Warwick Farm PS. Mainsbridge SSP and Warwick Farm Public School will share the new sports field and multipurpose hall for various school events. There is currently no intention for the school hall to be utilised out of hours.

3.12. STORMWATER AND DRAINAGE

A Stormwater Management Report and associated plans have been prepared by WSP and is provided at **Appendix P** of this EIS. This report has been developed to integrate the existing system and accommodate the new works required for Mainsbridge SSP, as well as comply with Council's requirements. The report details drainage associated with the proposal including stormwater and drainage infrastructure including the following:

Stormwater Management

Stormwater controls are to be implemented to ensure that the proposed development does not adversely impact on stormwater flows and water quality of the stormwater system downstream of the site. The principles and operation of the proposed stormwater system for the development and the components of the drainage system are detailed on the stormwater management drawings.

Stormwater Quantity

On-site Stormwater Detention (OSD) will be provided for the development to ensure that runoff is appropriately managed in accordance with Liverpool City Council's 'On-site Stormwater Detention Technical Specification', 2003. The site stormwater system is designed to safely convey the flows through the site and within the capacity of the downstream system. The drainage system for the development is to be designed to collect all concentrated flows from the proposed buildings and surrounding surfaces. The piped drainage system is to be designed to convey the 1 in 20-year ARI with adequate provision for overflows in the event of a 1 in 100-year ARI event. The proposed development is to provide 115m3 of On-site Stormwater Detention (OSD) storage in accordance with Council's Specification. The OSD volumes are to be ascertained in the DRAINS modelling program.

Rainwater Reuse

A 10,000L rainwater tank is proposed for the school in accordance with Liverpool City Council's Development Control Plan 2008, Part 1 – General Controls for all Development, Section 22 Water Conservation. A 150mm diameter overflow pipe will be provided from the tanks and connected to the inground drainage system.

Stormwater Quality

Liverpool City Council's 'Water Management Policy' 2016 does not stipulate any water quality treatment measures for the Council area. Treatment devices have therefore not been provided for the school site in Liverpool City Council's jurisdiction.

An erosion and sediment control plan has been prepared for the development to reduce the amount of sediment laden runoff leaving the site and is included in **Appendix P.**

3.13. ACCESSIBILITY

An Access Report has been prepared by Morris-Goding Accessibility Consulting (MGAC) and is attached at **Appendix R** of this EIS. A BCA report has also been prepared by Steve Watson and Partners and is attached at **Appendix AA**. The following scheme is proposed for the school:

- 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.

MGAC has assessed the proposed scheme. The drawings of the proposal indicate that accessibility requirements, pertaining to site access, common area access, car parking and sanitary facilities, can be readily achieved and comply with the relevant statutory guidelines. This Access Report provides advice and strategies to maximise reasonable provisions of access for people with disabilities. It is advised that MGAC will work with the project team as the scheme progresses to ensure appropriate outcomes are achieved in building design and external domain design.

4. 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;*
- *State Environmental Planning Policy (State & Regional Development) 2011;*
- *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017;*
- *State Environmental Planning Policy 55 – Remediation of Land;*
- *Liverpool Local Environmental Plan 2008.*

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

4.1. BIODIVERSITY CONSERVATION ACT 2016

Liverpool Council is one of the seven local government areas identified as Interim Designated Areas. Within these areas, new applications for development consent, or modifications to an approved development, under Part 4 of the EP&A Act will continue to be assessed under the former planning provisions until 25th August 2018.

As such the Flora and Fauna Assessment provided at Appendix E assesses potential impacts to flora and fauna primarily under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and *Threatened Species Conservation Act 1995 (TSC Act).*

4.2. 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 will result in the relocation and construction of Mainsbridge SSP within the grounds of an existing school. As such the proposal is considered development for the purposes of a new school. In addition, the proposal and has a project value in excess of $20 million. Accordingly, an SSD application has been lodged with the Department of Planning and Environment (DPE).

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

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP) has provisions that will make it easier for child-care providers, schools, TAFEs and universities to build new facilities and improve existing ones by streamlining approval processes to save time and money and 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.*

4.3.1. Schedule 4 - Design Quality Principles

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

- **Principle 1 – context, built form and landscape:** The proposal involves the relocation and development of Mainsbridge SSP at the northern end of an existing school site – Warwick Farm Public School. The proposal only slightly exceeds the maximum building height outlined in the LEP and is considered an appropriate scale for the surrounding residential context. Landscaping will be provided in accordance with the Landscape Plan provided in Appendix M.
- **Principle 2 – sustainable, efficient and durable:** The proposal adopts a range of ESD initiatives, including solar panels and OSD and is further outlined in Appendix Q. The proposal will also provide positive social and economic benefits for the local community particularly in terms of job creation and reducing pressure of surrounding public schools.
- **Principle 3 – accessible and inclusive:** The proposal is capable of complying with relevant provisions for accessibility as outlined in the Accessibility Report included at Appendix R.
- **Principle 4 – health and safely:** 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. The design of the school entry along Williamson Crescent will allow for surveillance and encourage students to move into the internals area of the school. Passive surveillance to Williamson Crescent will be improved as a result of the development. A range of open spaces and sports facilities will be available 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 a new school on an existing school site. The proposed new buildings are designed to ensure flexibility, adaptability and longevity.
- **Principle 7 – aesthetics:** The proposal will have high quality external finishes, which will be aesthetically pleasing by achieving a built form that has good proportion and a balanced composition. The proposal is an appropriate scale and form for the surrounding residential and open space context.

4.3.2. Clause 42 – Development Standards

Clause 42 of the Education SEPP states that:

> *"Development consent may be granted to development for the purpose of a school that is state significant development even though the development would contravene a development standard imposed by the local environmental plan under which the consent is granted."*

The proposal slightly exceeds the building height development standard which applies to the site. Accordingly, Clause 42 of the Education SEPP is to be taken into consideration by the consent authority.

4.3.3. 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 of more students and with access to any road will be referred to the RMS. The RMS were consulted during the SEARs stage and in the preparation of this EIS. The Traffic Impact Assessment prepared by Arc Traffic and Transport, submitted at **Appendix I,** 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.

4.4. 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 (EIS) and is attached at Appendix S. Results of the Preliminary Stage 1 Environmental Site Assessment conducted indicated that there is a high potential for site contamination. EIS identified the following potential contamination sources/AEC:

- Fill material (including material in the identified “asbestos zones”);
- Unknown historical industrial land use(s); and
- Hazardous building materials (including material in the identified “asbestos zones”).

The site did not appear to be used for any activities which may cause contamination as outlined in Table 1 of the SEPP55 Planning Guidelines. However, there are gaps in the historical information where the potential land uses at the site are unknown, and asbestos contamination has been identified at the site. On this basis, EIS recommend the following:

- A supplementary site history assessment including a review of historical land titles, council development approval records and SafeWork NSW records;
- Targeted/detailed investigation in the footprint of the proposed development area(s) to characterise the contamination conditions. If contamination is encountered during the investigation, a Remediation Action Plan (RAP) should be prepared and implemented during the proposed development works; and
- Evaluation of the existing Asbestos in Grounds, Asbestos Management Plan in the context of the current guidelines, site conditions and proposed development works. This evaluation should aim to establish whether a revision to the management plan is required, and/or whether further investigation (and remediation) is required across other parts of the school.

A waste classification will be required for off-site disposal of any surplus materials excavated for the proposed development.

Considering the above, a Stage 2 Environmental Site Investigation was conducted by EIS and is provided at Appendix T. The Stage 2 investigation included a site history assessment and soil sampling from a total of 46 test pit locations. The fill at each test pit was screened for asbestos in soil. The soils at half of the locations were also screened for the remaining Contaminant(s) of Potential Concern. Asbestos and lead were identified in fill above the human health-based site assessment criteria. Lead was also identified in fill at one location above the environmental/ecological site assessment criteria. The potential for the lead in fill to significantly impact the groundwater and the ecosystem associated with the adjacent Brickmakers Creek was assessed to be low.

Based on the findings of the Stage 2 investigation, EIS believe the investigation area has been adequately characterised and can be made suitable for the proposed development subject to the preparation and implementation of a suitable remediation action plan (RAP). Validation is required to confirm site suitability on completion of the remediation works.

4.5. LIVERPOOL LOCAL ENVIRONMENTAL PLAN 2008

The *Liverpool Local Environmental Plan 2008* (LLEP) is the principal environmental planning instrument governing development at the site. An assessment against the relevant controls of the LLEP has been undertaken in the subsections below.

4.5.1. Zoning and Permissibility

The entire site is zoned as R2 Low Density Residential.

Educational Establishment:

Within this zone, 'educational establishments' are permitted with consent. As per the LLEP, an educational establishment is defined as:

> *"a building or place used for education (including teaching), being:*
>
> *(a) **a school**, or*
>
> *(b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act."*

The proposed School is therefore permitted with consent.

4.5.2. Zone Objectives

The relevant objectives of the R2 Low Density Residential zone are:

- *To provide for the housing needs of the community within a low density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To provide a suitable low scale residential character commensurate with a low dwelling density.*
- *To ensure that a high level of residential amenity is achieved and maintained.*

The proposal is consistent with these objectives as:

- It will satisfy the educational and recreational needs of current and future students in the area, and provide significant employment; and
- It is primarily two storeys in scale, which is in keeping with the predominate scale of surrounding residential development. The proposal also provides significant landscaped gardens and bush play spaces to complement the character of Warwick Farm.

4.5.3. Other LEP Provisions

Other relevant provisions contained to the LLEP are addressed in **Table 3** below.

Table 3 – Key LLEP Controls

Consideration	Control	Comment	Compliance
Clause 4.3 - Height of Buildings	8.5 metres	The proposal has a maximum height of 8.58 metres. Justification for this minor variation to height is provided following this table.	No – Refer to Section 4.5.4 of this EIS
Clause 4.4 - Floor Space Ratio (FSR)	0.5:1	The proposal will result in a total GFA of 5,625.2m2 for the entire site. This is an FSR of 0.18:1.	Yes
Clause 5.12 - Infrastructure development and use of existing buildings of the Crown	LLEP does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority, that is permitted to be carried out with or without development consent, or that is exempt	The height and FSR development standards in clauses 4.3 and 4.4 restrict the development of the proposed school, being development permitted with consent, and therefore do not apply.	Yes

Consideration	Control	Comment	Compliance
	development, under State Environmental Planning Policy (Infrastructure) 2007.		
Clause 7.31 - Earthworks	Earthworks must not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.	Bulk earthworks will be undertaken in accordance with: • Geotechnical Report prepared by JK Geotechnics and attached at Appendix U; • Preliminary Construction Management Plan prepared by GHD and attached at Appendix V; and • DPE Conditions of Consent. Accordingly, it is not anticipated that the proposed earthworks will create any adverse impacts, as all proposed earthworks will be undertaken in a highly vigilant manner. Refer to Section 6.8 for more details.	Yes
Clause 7.6 - Environmentally significant land	Development must maintain bushland, wetlands and wildlife corridors of high conservation value.	A portion of the site is classified as Environmentally Significant Land under the LLEP. A Flora and Fauna Report has been prepared and is attached at Appendix E. The report concludes that there will be minimal impact to biodiversity provided the recommendations of the report area adopted. Refer to Section 6.3 for more details.	Yes
Clause 7.8 – Flood Planning	The main objective of this clause is to minimise the flood risk to life and property associated with the use of land,	The site is subject to flooding from Brickmakers Creek that runs adjacent the site. The 1 in 100-year ARI flood level was plotted on the civil drawings and it was ascertained that no major works on the school site are proposed within this flood extent. Accordingly, a flood study is not anticipated to be required for the development. Recommended mitigation	Yes

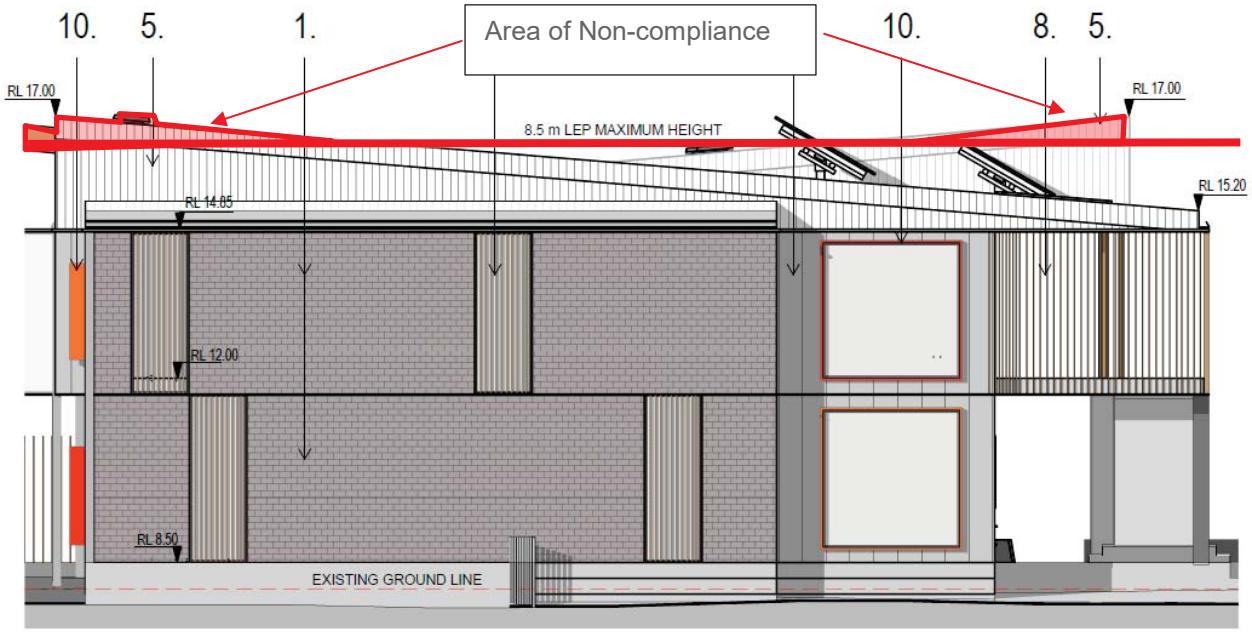
Consideration	Control	Comment	Compliance
		measures are provided in Section 8 of this EIS.	

4.5.4. Justification to Exceed Height Standard

Pursuant to Clause 4.3 of the LLEP, and accompanying height map, a maximum height of 8.5 metres applies to the site. The new school buildings have a maximum height of 8.58 metres (measured from the existing ground level). The proposal will breach the height limit by 0.08 metres. See Figure 8.

Clause 5.12 does not restrict or prohibit, or enable the restriction or prohibition of, the use of existing buildings of the Crown by the Crown. As this DA is on behalf of the Crown, the proposal should not be prohibited based on the minor exceedance of the height limit. The below section provides a justification to exceed the height development standard.

Figure 8 – Block D East Elevation



Source: Hayball Architects

Strict Compliance is Unreasonable and Unnecessary

Compliance with the development standard is considered unreasonable and unnecessary in the circumstances based on the following:

- The development is consistent with the objectives of the development standard as provided in Clause 4.3 (1) of the LLEP. Refer to discussion at Table 3 of this EIS;
- It represents a logical and co-ordinated development of the site for school use;
- It will improve the physical appearance of the site through a carefully designed building that is responsive to site context and its intended function;
- The architectural design of the buildings provides a good quality architectural design outcome for the site;
- The scale and mass of the buildings are consistent with the established built form on site and is aligned with the desired future character of the Warwick Farm;
- The proposal satisfies the objectives of the R2 Zone;

- The additional height provides visual interest and allows a fully functional learning hub facility for the school; and
- The potential environmental impacts of the variation have been detailed in Section 6 of this EIS. The additional height does not cause any overshadowing to adjacent residential properties or visually dominant existing building form.

Strict numerical compliance is therefore considered unreasonable and unnecessary in the circumstances.

Consistency with the Objectives of Clause 4.3: Height of Buildings

Clause 4.3 sets out the objectives of the maximum building height development standard. The consistency of the proposed development with these objectives is set out below.

Table 4 – Clause 4.3 Objectives

Objectives	Proposed Development
(a) to establish the maximum height limit in which buildings can be designed and floor space can be achieved,	The proposal is consistent with the existing built form on-site, maintaining an overall two-storey height. The buildings are well setback from the street frontage to reduce the perceived bulk and respect the adjacent single storey residential dwellings.
(b) to permit building heights that encourage high quality urban form,	The proposal aims to upgrade the current school facilitates to provide new teaching, outdoor learning and administration spaces to benefit the school community. The proposed location of the buildings will preserve open play space for students and minimise impact on adjacent residential properties. Overall, the proposal will have limited environmental impacts and not impact the residential amenity of the area.
(c) to ensure buildings and public areas continue to receive satisfactory exposure to the sky and sunlight,	Shadow Diagrams for 9am, midday and 3pm at the Winter Solstice accompany the Architectural Plans prepared by Hayball Architects and are included in Appendix A. The diagrams demonstrate that the proposal will not overshadow any adjoining residential properties or the childcare centre to the north of the site. The shadow cast by the proposed works is confined within the site itself.
(d) to nominate heights that will provide an appropriate transition in built form and land use intensity.	The proposal nominates heights that are consistent with surrounding development and provides an appropriate transition in built form.

The proposal is consistent with Clause 4.3 of the LLEP.

Planning Grounds to Justify the Non-Compliance

There are sufficient environmental planning grounds to justify the contravening development. These include:

- The variation does not result in unreasonable adverse amenity impact on adjacent land;
- It will result in improvements to the physical appearance of the site through a carefully designed school premises that are modern and responsive to site context and its intended function.

- The variation does not diminish the development potential of adjacent land;
- The development provides all necessary supporting facilities and infrastructure within the site;
- The proposed built form does not result in any adverse environmental effects, such as loss of views, privacy or sunlight from any surrounding residential property or public places.

Community Benefits to Justify the Non-Compliance

The principle aim of the proposal is to provide improved infrastructure to service the education needs of the community within a low-density environment. The proposed variation to the height control of the LLEP does not result in the loss of amenity to the adjoining properties as a result of overshadowing or loss of privacy. The proposed height is considered to be acceptable particularly when balanced against the benefits of the project which area:

- Improved education facilities for students with learning difficulties on land zoned for this purpose.
- High quality teaching and learning spaces to benefit students and teachers.
- High quality educational environment for staff and students that;
  - Provides expanses of open space for students;
  - Enables an excellent academic programme; and
  - Provides an inclusive, supportive and secure pastoral environment for students with learning difficulties.
- High-quality recreation space for the school community; and
- Enhance the students overall school experience by providing improved facilities and outdoor and indoor recreational opportunities.

There is no public benefit in maintaining the development standard. The public benefit is the delivery of much needed education infrastructure for children with disabilities.

Conclusion

The proposal is considered appropriate and consistent with the objectives and intent of Clause 4.3 of the LLEP. Strict compliance with the LLEP in this case is considered to be unreasonable and unnecessary because:

- Strict compliance with the height limit would unreasonably restrict the potential to develop the facilities required by the School.
- The proposal is consistent with the intent of Clause 4.3 of the LLEP which is to minimise adverse amenity impacts on neighbouring residential properties and to maintain the desired future character of the area.
- The proposal will not result in the loss of views as a result of the heights proposed.

4.6. LIVERPOOL DEVELOPMENT CONTROL PLAN 2008

The *Liverpool Development Control Plan 2008* (LDCP) provides detailed controls for specific developments types and locations. Most controls in the LDCP relate to character, streetscape and public domain works. Under Clause 11 of *State Environmental Planning Policy (State and Regional Development) 2011*, the application of Development Control Plans is excluded when assessing SSD projects. Notwithstanding this, the proposal has been assessed against the relevant controls of the LDCP in **Table 5**.

Table 5 – LDCP Compliance Table

Consideration	Control	Proposal	Compliance
PART 3.8: NON-RESIDENTIAL DEVELOPMENT IN RESIDENTIAL ZONES			
Section 3: Educational Facilities			
3.2 Site Planning	Educational Establishments should be located: - In the general vicinity of recreation areas; - Within proximity to public transport; and - Where traffic devices do not impede vehicular access to sites	The proposal has been designed with consideration of the natural and built context. The proposal is located on a site containing an existing educational facility and is near many recreational and open space areas including Warwick Farm public reserve. The site is well serviced by public transport with bus and trains links within easy reach. Traffic controls do not impede vehicular access to the site.	Yes
3.3 Setbacks	Front setback - 5.5 meters Side setbacks – single storey buildings – 4metres, two storey buildings – 8 metres Rear setbacks – single storey buildings – 4 metres, two storey buildings – 8 metres	The proposed school has the following setbacks: Front setback - ranges from 10.73 metres to 17.63 metres. Side setback to the northern boundary - 8.9 metres Rear setback – 27.39 metres	Yes
3.4 Open Space and Landscaped Area	A minimum of 25% of the site area shall consists of landscaped area, including lawn, deep rooted trees, garden beds and mulched areas. There must be an unencumbered area of 5 x 6 metres in the rear setback for the opportunity to accommodate the	Total landscaped area provided is 3282m^2 or 32.2% of the site area. This area does not include additional softfall and paved landscaped areas.	Yes

Consideration	Control	Proposal	Compliance
	planting of deep rooted trees. A minimum 50% of the front setback shall be landscaped area.		
3.5 Building form, style and streetscape	Building form must correspond to surrounding context in terms of bulk, scale, size and height.	The proposed school buildings are appropriate and suitable to the surrounding context. The school is predominantly two storeys in height and is well setback from boundaries to ensure privacy in maintained. Landscaped elements reduce the bulk of the school.	Yes
3.5 Security	Entrances to buildings should be oriented towards the front of the site facing the street. The main entrance should not from rear lanes and should be designed with clear directions and signage. Black walls addressing the street frontage and other public places must be avoided.	Main pedestrian entrance to the school is oriented towards the front of the site and Williamson Crescent. Clear signs allow for easy wayfinding. No blank walls are proposed along buildings addressing the street frontage.	Yes
3.6 Landscaping and Fencing	A Landscape Plan must be submitted to Council with the development application.	A Landscape Plan has been submitted with this application and is attached at Appendix M.	Yes
3.7 Car Parking and Access	All vehicles shall enter and leave the site in a forward direction.	Achieved.	Yes
3.8 Noise	A Noise Impact Assessment prepared by a qualified Acoustics Engineer may be required to be submitted with the application	A Noise Impact Assessment has been submitted with this application and is attached at Appendix X.	Yes

Consideration	Control	Proposal	Compliance
	depending on the scale and location of the proposed school.		
3.8 Overshadowing	Adjoining properties must receive a minimum of three hours sunlight between pam and 3pm during the Winter Solstice.	Shadow Diagrams submitted at Appendix A demonstrate the adjoining properties achieve a minimum of three hours sunlight during the Winter Solstice.	Yes
3.8 Privacy	Maintain privacy to adjoining developments.	The privacy of adjoining developments including the childcare centre located directly to the north of the site are maintained as generous setbacks are proposed for the new school and overlooking is minimised.	Yes
3.9 Site Services - Waste	Waste disposal facilities shall be provided for development.	A Construction Waste Management Plan and Operational Waste Management Plan attached at Appendix N and Appendix O respectively, outline the waste disposal facilities for the new school.	Yes

4.7. CONTRIBUTIONS

Section 89 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 94 and 94A. 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.*

Comment: 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).

5. 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;*
- *A Plan for Growing Sydney;*
- *NSW Long Term Transport Master Plan 2012;*
- *Sydney's Cycling Future 2013;*
- *Sydney's Walking Future 2013;*
- *Sydney's Bus Future 2013;*
- *Crime Prevention Through Environmental Design (CPTED) Principles;*
- *Healthy Urban Development Checklist, NSW Health;*
- *Greater Sydney Commission's Draft Western City District Plan; and*
- *Liverpool Development Control Plan 2008.*

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

5.1. 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 south 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 for special purposes.

- **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*.

5.2. A PLAN FOR GROWING SYDNEY

Released in December 2014, A Plan for Growing Sydney (the Strategy) includes a range of goals, directions and actions that aim to support the strategic growth of Sydney over the long term. One of the key planning directions (Direction 1.10) contained to the Strategy is:

> *"Plan for education and health services to meet Sydney's growing needs".*

In accordance with the Strategy, this SSDA will ensure that a relocated and enlarged school for special purposes can be delivered to meet Sydney's growing educational needs. The proposal will take enrolment pressure off the existing School currently exceeding student capacity and ensure a high quality educational facility is provided for the future population of Liverpool LGA.

The proposal is also consistent with the other wider goals and directions contained within the Strategy, including:

- **Direction 1.7: Grow strategic centres – Providing more jobs closer to home;**

  The proposal will create temporary job opportunities in manufacturing, construction and construction management, and on-going jobs in teaching and administration for the residents of Warwick Farm and the wider Liverpool LGA.

- **Direction 1.11: Deliver infrastructure;**

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

- **Direction 3.1: Revitalise existing suburbs; and**

  The proposal will relocate and redevelop an ageing school to provide contemporary facilities to meet future educational standards, and provide increased jobs and growth for Warwick Farm.

- **Direction 3.3: Create healthy built environments.**

  The site is close to bike paths, established residential neighbourhoods and multiple bus and train routes. Future employees will be encouraged to access the site via public transport, cycling or walking whilst students will for the most part utilise the Assisted Schools Travel Program (ASTP) to travel to and from the site. This will reduce reliance on cars, decrease road congestion and generally create a healthy built environment. The proposal also includes a range of open spaces, playgrounds and sports facilities to encourage passive recreation.

The proposed development 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 and employment opportunities for students with learning difficulties.

5.3. NSW LONG TERM TRANSPORT MASTER PLAN 2012

The *NSW Long Term Transport Masterplan* (2013) seeks to promote the use of public transport as an effective travel option. The site benefits from being located:

- Near dedicated cycleways and bicycle friendly roads;
- Within walking distance of Warwick Farm Railway Station (800 metres);
- Within an area well serviced by buses; and
- Within an existing residential neighbourhood containing appropriate footpaths.

Accordingly, future employees can easily cycle, walk or catch the bus to the School. This will reduce reliance on cars, decrease congestion and promote in sustainable outcomes.

In addition, most students will utilise the Assisted Schools Travel Program (ASTP) which will see children transported via minibuses directly to and from their homes.

5.4. SYDNEY'S CYCLING FUTURE 2013

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

The DoE website acknowledges that the decision to install and maintain bicycle racks is made by an individual school to reflect individual circumstances surrounding safety. Existing bicycle racks are available through the site at key buildings and will be made available for future students and employees.

The site is well serviced by existing dedicated cycle routes and can also be accessed from a network of smaller, more accessible local streets. Future parents, students and employees of the school will be able to use these roads to access the site via bike. This will reduce reliance on cars, decrease congestion and promote sustainable outcomes.

5.5. 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. The school is located in an established residential neighbourhood. Students, teachers and parents can access the site by walking. This will promote healthy practise and decrease vehicular use.

5.6. SYDNEY'S BUS FUTURE 2013

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

The school will be serviced by the Assisted Schools Travel Program (ASTP) which utilises minibuses to transport students to and from the site. The school is also located close to multiple local bus stops operating State Transit bus services (see Section 2.10 of this EIS). Students, teachers and parents will therefore be able to easily access the site via bus, deterring the need to drive.

5.7. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN 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 6** below.

Table 6 – 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 maintenance and landscaping. Territoriality relates to the way in which a community has ownership over a space.

	Principle	Definition
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.

A CPTED Assessment has been undertaken by Urbis below. The CPTED Assessment concludes that the proposed design of the newly constructed School will incorporate natural surveillance, access control, territorial reinforcement and space management design principles to deter crime. Further, the new School premises proposes to employ many existing CPTED measures that have been successful at deterring crime at the existing School.

Notwithstanding this, the CPTED Assessment has also made further recommendations to enhance these outcomes. A summary of these recommendations that have been informed by best-practice CPTED principles for schools is provided within the subsections below:

5.7.1. 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 proposed driveway and vehicular entrance and exit points off Williamson Crescent.
- 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.

5.7.2. Access Control

- High quality fencing should be contained to the entire perimeter of the site to restrict access.
- 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.

5.7.3. Territorial Reinforcement

- Signs depicting the name of the school should be displayed at the vehicular site entrance (Williamson Crescent).
- 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.

5.7.4. 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.

5.8. 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.

5.9. GREATER SYDNEY COMMISSION'S DRAFT WESTERN DISTRICT PLAN

Released in November 2016, the *Draft Western District Plan* (Draft District Plan) includes a range of priorities and actions to appropriately support the strategic growth of Sydney's Western District. The Draft District Plan identifies the following:

- There will be a 43% growth in school-aged children to 2036 within the District;
- The NSW Department of Education estimates that an extra 77,978 students will need to be accommodated in both government and non-government school in the District by 2036; and
- The largest projected growth in school-aged children within the District is expected in the Camden (26,403), Liverpool (21,072), Campbelltown (13,541) and Penrith (11,008) local government areas.

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 Draft 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 Draft District Plan, as it supports the DoE's substantial investment in the relocation and development of Mainsbridge SSP.

6. KEY ASSESSMENT 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);
- Biodiversity;
- Social Impacts;
- Noise and Vibration;
- Sediment, Erosion and Dust Controls;
- Contamination (Section 4.2);
- Geotechnical and Salinity;
- Flooding; and
- Bush fire.

6.1. ENVIRONMENTAL AMENITY

6.1.1. 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 not overshadow the existing Warwick Farm Public School buildings, however will overshadow the existing sports fields at 12pm and 3pm during the winter solstice. The overshadowing is most prominent at 3pm when the sports field will unlikely be used as it is outside of school hours, the proposal will not negatively impact the solar amenity of Warwick Farm Public School.

Adjoining Sites:

Shadow diagrams for 9am, 12pm and 3pm during the winter and summer solstice have been prepared by Hayball Architects and are attached at **Appendix A**. The shadow diagrams demonstrate that there are no overshadowing impacts caused by the construction of the new school premises on neighbouring residential sites or the adjacent Warwick Farm Public School. Specifically:

- Residential properties to the west will be unaffected by the proposal and will continue to have access to sunlight. The western edge of the site will contain a car park and no new school buildings that have the potential to cause overshadowing;
- The childcare centre to the north will be unaffected by the proposal and will continue to have access to sunlight. Block C will be setback 8.9m and one-storey in height to ensure the child care centre is not impacted.
- The existing Warwick Farm Public School to the south will be unaffected by the proposal and will continue to have access to sunlight.

Due to the chosen arrangement and scale of the proposal, there are no significant overshadowing impacts caused on neighbouring residential sites. 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 LDCP.

6.1.2. Privacy

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

- The new School buildings are well setback behind the proposed car park along the western edge of the site adjacent to Williamson Crescent. Setbacks vary from 10.7m – 17.63m. Williamson Crescent provides a high level of separation, which ensures that privacy levels are maintained at the interface between the school buildings and surrounding residential properties.
- To the north of the site, Block C has a proposed setback of 8.9m to the neighbouring childcare centre site. Limited windows are provided to the northern elevation to limit overlooking to the childcare centre, windows that are provided will be fitted with aluminium louvres to protect privacy of the school and childcare.
- Brickmakers Creek and remnant bushland exists to the east of the site. Consequently, no privacy concerns occur.
- To the south of the site, a new sports field separates Mainsbridge SSP site from the existing Warwick Farm Public School. There is sufficient building separation to ensure privacy is maintained. Block D and the south Mainsbridge security fence will act as a buffer between the schools to ensure safety and privacy is maintained between the schools.
- 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 properties on the opposite side of Williamson Crescent and the separation between the schools.

6.1.3. View Impacts

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

6.1.4. Wind Impacts

A Wind Impact Assessment (WIA) has been prepared by SLR Consulting Australia Pty Ltd and is attached at Appendix Y. SLR's assessment involved the following:

- Identifying local prevailing wind conditions impacting the site;
- Examining ground level wind impacts and identify wind "hot spots" around the redevelopment; and
- Recommending wind mitigation options to ameliorate any potentially adverse conditions.

The WIA made the following observations:

- Pedestrian areas along Lawrence Hargrave Road to the south area too far away from the new building on the site to experience any change in local wind conditions, given the low height of these new buildings. The local footpaths will not experience any change to wind conditions as a result of the proposal.
- The main entry area will likely be impacted by stronger west to northwest winds. The angle of Block A and B will provide a moderate horizontal "funnelling" effect and the porte cochere canopy overhead slope will also create a modest "funnelling" effect for westerly winds. SLR Consulting have outlined recommendations to ameliorate these potential adverse wind conditions, these recommendations are outlined in Section 8 of the EIS.
- The main internal access point between the existing school buildings and the redevelopment will be shielded from almost all wind directions.
- The "open" walkway at Level 01 connecting Blocks A, B and D has exposure to westerly winds, this will however be partially blocked by porte cochere. To ameliorate the wind conditions, SLR Consulting have outlined recommendations, these are outlined in Section 8 of the EIS.

Overall, the assessment found that wind conditions within the grounds of the proposed school are generally suitable, due to the low-rise nature of the development will have no impact on winds at surrounding public access locations including pedestrian footpaths. The WIA concludes that proposal is suitable for the site, and wind conditions can be improved subject to the implementation of the recommendations.

6.2. TRANSPORT AND ACCESSIBILITY

6.2.1. Parking

A Traffic Impact Assessment (TIA) has been prepared by Arc Traffic and Transport and is attached at **Appendix I.** The proposal seeks to provide a total of 19 car parking spaces onsite, including 15 spaces reserved for staff, 2 accessible spaces and 2 visitor spaces.

Council's LDCP requires the provision of 1 space per staff member for new schools, plus 1 space per 30 students; and considering full time equivalent staff on-site at any one time, the school would require a total of 59 parking spaces. Whilst the proposal does not comply with the LDCP parking rates, the Traffic Impact Assessment supports the proposed car parking rate on the following basis:

- The EFSG provides guidance regarding the provision of on-site parking for all schools. For Special Purposes schools, the EFSG requires the provision of up to 29 parking spaces for a school of this size, noting that this is a maximum figure (in the EFSG) and that many SSP provide significantly lower levels of on-site parking. The provision of 19 on-site spaces therefore complies given that the EFSG is the relevant reference standard for the SSD application.
- It is estimated that the peak parking demand during the school day would be for up to 50 parking spaces. Whilst only 19 car spaces are accommodated on site, Williamson Crescent has sufficient on street capacity to support the proposed parking provision.
- Approximately 85% - 90% of students attending the existing Mainsbridge SSP utilise the Assisted School Travel Program (ASTP), while only 10% - 15% of students are driven to and from the School by parents/carers. There is no information to suggest that these percentages would be significantly changed further to the relocation of the School.
- Additional on-site parking spaces are provided for all 5 school buses used as part of the ASTP, i.e. School buses would exclusively park on-site at all times.
- Council's car parking rate of 1 space per staff member plus 1 space per 30 students is considered highly unsustainable, as:
  - This rate will discourage staff members from accessing the site using sustainable active transport modes (walking and cycling) and public transport.
  - This rate greatly incentivises the use of private cars to access the site, which will increase congestion, pollution and noise on surrounding residential streets; and
  - This rate is counterproductive to the measures outlined within the Green Travel Plan.

6.2.2. Access

No direct vehicle or pedestrian access is currently provided to the site other than a gated driveway from Williamson Crescent providing for general service/maintenance vehicle access to the northern portion of the Warwick Farm Public School.

Primary access to the school will be provided via Williamson Crescent via two access points, including an entry only driveway near the southern boundary of the School, and a departure only driveway near the northern boundary of the School. In the peak period, all vehicles dropping off or picking up students will enter via the southern driveway and queue on-site in two lanes leading to a covered set-down/pick-up area (the porte cochere). The porte cochere design provides for students to safely enter or depart either side of the vehicle under supervision.

From Williamson Crescent, trips will be distributed to the east via Lawrence Hargrave Drive and Mannix Parade to the Hume Highway; and to the west via Lawrence Hargrave Drive and Homepride Avenue to the Hume Highway.

6.2.3. Assisted School Travel Program

The majority of students will travel to and from the school by group transport including mini-buses and other vehicles as part of the ASTP. The ASTP provides free specialised transport to and from school for students with a disability who are unable to travel to and from school under the TfNSW School Student Transport Scheme.

The ASTP is expected to reduce vehicular traffic to and from the school given that approximately 85% - 90% of students are expected to utilise the program and only 10% - 15% of students are driven to and from the school by parents/carers.

As part of the ASTP, the school itself operates 5 mini-buses, which include:

- 1 Toyota Cruiser mini-bus with a seating capacity of 23
- 4 Toyota Commuter mini-buses, each with a seating capacity of 12

These vehicles will be parked within the school grounds outside of the AM and PM peak pick-up/drop-off periods. School mini-buses generally depart for their collection run outside of the AM peak hour, and as such generate only an arrival trip during the AM peak hour. Similarly, School mini-buses generate a departure trip only during the PM peak hour as they commence their drop-off run, with their arrival trip (back at the School) outside of the PM peak hour.

In addition to the school mini-buses, other ASTP contractors utilise a range of passenger vehicles ranging from the Commuter mini-buses to normal passenger vehicles. A total of 15 contractor vehicles currently provide student transport to and from the existing Mainsbridge SSP, though the potential exists for this to increase to a peak of up to 19 vehicles in line with the additional student population at the proposed School. These contractor vehicles would each generate both an arrival trip and a departure trip during both the AM and PM peak hours.

6.2.4. Student Drop-Off and Pick-Up

As discussed, only a small percentage of students are dropped off/picked up by parents/carers daily. Based on the estimate of up to 15 students being transported by parents/carers, it is estimated that these students would generate the following trips in the school peak periods:

- 15 arrival trips and 15 departure trips during the AM peak hour
- 15 arrival trips and 15 departure trips during the PM peak hour

6.2.5. Traffic Generation

With reference to the above, it is estimated that the school would generate the following total trips in the peak periods:

- 70 arrival trips and 35 departure trips during the AM peak hour
- 35 arrival trips and 55 departure trips during the PM peak hour

The TIA assesses the traffic impact of the proposal on the surrounding road network. All trips are expected to be generated to/from the Hume Highway. For trips to/from the east, the preferred route is expected to be via the Hume Highway to Mannix Parade, then Lawrence Hargrave Drive to Williamson Crescent (and vice versa). For trips to/from the west, the preferred route is expected to be via the Hume Highway to Homepride Avenue, then Lawrence Hargrave Drive to Williamson Crescent (and vice versa).

A small proportion of trips may also be generated to the south towards Liverpool (Bigge Street and Goulburn Street); these trips would also be expected to utilise the route via Mannix Parade.

Some trips in the immediate vicinity of the School may be generated to Williamson Crescent (west) to/from Lawrence Hargrave Drive depending on the time of arrival/departure, i.e. later trips that might coincide with the WFPS peak periods in Williamson Crescent (i.e. arriving immediately prior to the School starting time, or sometime after the School finishing time). Notwithstanding, all trips have been assigned to Williamson Crescent south of the School for a worst-case assessment.

Finally, trips have been distributed to the Hume Highway routes based on the existing surveyed distribution of trips at the key Hume Highway access intersections, i.e. proportionally with consideration of arrivals from/departures to either Mannix Parade or Homepride Avenue in the AM and PM peak periods.

In light of the above, Arc Traffic and Transport conclude that the proposal is supportable on traffic planning grounds and will operate satisfactorily.

6.2.6. Public Transport Capacity

There is little if any potential for students of the school to use public or active transport for their trip to or from the school. Students at the school will be exclusively catered for by the DoE's Assisted Schools Travel

Program (ASTP) vehicles or by private (parent or carer) vehicles; there is essentially no potential for students to walk/cycle to or from school, nor to use public transport.

There is however good potential for staff to utilise public transport for travel to and from the school simply as a function of the good accessibility of the school to public transport services.

In this regard, the walk distance of just over 10 minutes between the school and Warwick Farm Station is well within reasonable walking distance for a commuter trip, while the local bus route (823) provides a frequent and immediate connection between Liverpool Station and the School during both the AM and PM peak periods.

6.2.7. Active Transport Opportunities

Walk only trips are unlikely to be generated by staff as there is only very minimal potential for staff to live within walking distance of the school. However, the walk trips between the School and public transport stops are certainly within appropriate commuter walk times to connecting high frequency public transport, and are accommodated appropriately by the local pedestrian network.

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 for staff as well as shower and locker facilities.

6.2.8. Green Travel Plan

A Green Travel Plan (GTP) has been prepared by Arc Traffic and Transport and is provided at Appendix J of this EIS. The GTP notes that the existing Mainsbridge SSP in Liverpool is not accessible from an active or public transport perspective, thereby 80% of staff travel to and from the existing School via private vehicle. The purpose of the GTP is to maintain, if not reduce, the percentage of staff currently using private vehicles. The following GTP initiatives are proposed:

- GTP Coordinator: A staff member or representative of the DoE would be responsible for the preparation and ongoing maintenance of the GTP.
- GTP Information Brochures: At the commencement of each year, or as new staff arrive at the School, they will be provided with the GTP Information Brochure. The brochure will outline the available active and public transport opportunities available too staff, as well as the carpool program.
- GTP Intranet: A copy of the GTP would be available of the School's intranet for easy reference.
- GTP Review: The ongoing implementation of and revision to the GTP will be the responsibility of the GTP Coordinator. It is expected that there would be a minimum of an annual review of all of the information contained within the information brochure, which would include a review of key factors such as (for example) any updates to public transport services/timetables or a need to increase bicycle parking provision. The carpool register would be a more fluid document which could be updated throughout the year.

6.2.9. Construction Traffic

The Preliminary Construction Traffic Management Report provided in **Appendix BB** outlines traffic management impacts during the construction of Mainsbridge SSP. 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 7:00am – 1:00pm Saturdays; no construction work would be undertaken on Sundays or public holidays.

Heavy vehicles are to be excluded from accessing the School site during Warwick Farm Public School peak periods, and moreover during the standard School Zone peak periods during which there are more significant pedestrian and short-term parking demands in the local network, and particularly in Lawrence Hargrave Drive and in Williamson Crescent. These restrictions will need to be further examined by the contractor in consultation with Council.

Site Access

The proposed truck routes to /from can be summarised below

- Inbound: Trucks will arrive at the site via Hume Highway (from either direction), Homepride Avenue, Lawrence Hargrave Road and Williamson Crescent.
- Outbound: Trucks will depart from the site via Williamson Crescent, Lawrence Hargrave Road, Homepride Avenue and Hume Highway.

Traffic Generation and Impacts

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, and more specifically little if any impact on the operation of the key Hume Highway intersection.

Parking During Construction

The site has relatively good access to public transport services being situated within 400m from the nearest bus service and 600 metres from Warwick Farm Railway Station, and accordingly, it is expected that workers would utilise these public transport services to / from the site. Furthermore, the use of public transport and car-pooling will be actively encouraged by the builder and all sub-contractors to reduce the reliance on private vehicles and minimise parking demands.

Should contractors use private vehicles, they will be required to park on-site and not on-street, thereby minimising impacts on neighbouring residents as well as the existing Warwick Farm Public School. This would in effect, be enforced by the on-street parking restrictions provided along Williamson Crescent

6.3. ECOLOGICAL SUSTAINABLE DESIGN

An Ecologically Sustainable Development (ESD) Report has been prepared by Hayball Architects and is attached at **Appendix Q.** The proposal will include the following ESD initiatives (amongst others):

- ESD Principles in EP&A Regulations 2000:
  - Design is consistent with the requirements of Liverpool City Council Development Control Plan (DCP)
- Best practice:
  - The proposed design has been benchmarked against the Green Star Design and As Built tool.
- ESD measures to minimise consumption of resources, water and energy:
  - Use of certified/best practice materials for steel, timber and permanent formwork.
  - Consideration of durability, recycled content, location, embodied carbon and toxicity where feasible for other materials selection such as plasterboard, AFS or FSC certified timber, concrete with supplementary cement etc.
  - Energy efficiency initiatives including Insulation and glazing to all buildings, efficient lighting design and control with high efficacy luminaries, high efficiency chiller plant with optimised staging and high efficiency boiler plant.
  - Water efficiency initiatives including the installation of efficient fixtures and fittings, water sensitive landscape and irrigation design. water reuse initiatives (e.g. onsite rainwater collection used for irrigation) and air-cooled heat rejection, as opposed to water cooled heat rejection.
- Minimise consumption of energy generated from non-renewable sources and effective energy efficiency measures:
  - Optimise onsite renewable energy, solar PV panels, to reduce the peak load on site as well as reduce the amount energy required from the grid.
  - Efficient building fabric and services will achieve operational energy savings.
  - Well-designed window to wall ratio to minimise the impact of solar gains and heat lost through the façade.
- Reduce the demand for drinking water including any proposed alternative water supply:

  - Rain water tank to capture rainwater to be for irrigation and toilet flushing.
  - Selection of high efficient fittings and fixtures.
  - 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.
- Sustainable transport including no new carparking on site, good access to public transport and active transport facilities to staff.
- Use of sustainable materials.

6.4. BIODIVERSITY

A Flora and Fauna Assessment has been prepared by Alphitonia and is provided at Appendix E. The assessment highlighted the proposal had the following impacts:

Vegetation clearing

A search of the relevant databases and literature identified 17 threatened flora species with a 5km radius of the site area. A targeted survey for threatened flora did not find any threatened species on-site. The proposal will require vegetation clearing for the proposed new buildings, pathways, carparks and landscaping. The proposal will not remove any endangered vegetation communities, but will remove a number of scattered planted and nine planted native trees in the western and northern parts of the site and mown lawn. The proposal will not impact or remove any threatened tree species.

Loss of fauna habitat

The proposal will remove approximately nine planted native trees, a small patch of shrubs (Kunzea ambigua) and one planted Callistemon sp. The canopy species provide potential foraging habitat for two threatened species; (Grey-headed Flying-Fox) and (Eastern Bentwing-bat). While Eastern Bentwing-bat do not forage on the trees themselves, the blossoms attract insects, which are their prey. The habitat removal is likely to have a negligible impact on local fauna due to the size of the shrubs proposed to be removed.

Indirect impacts

It is difficult to quantify indirect impacts of the proposed development, but these may include impacts such as noise and/or erosion, stormwater runoff, and edge effects associated with the construction and operational phase of the project. Other disturbances in urban environments, such as light pollution and edge effects on native vegetation, are unlikely to be exacerbated by the current proposal. Indirect impacts will be managed through recommended measures outlined in Section 8 of the EIS.

Threatened species, populations, ecological communities and migratory species

The likelihood of threaten species occurring on site is low for the majority of threatened species with the except of the following:

- (Grey-headed Flying-fox) – TSC Act and EPBC Act
- (Eastern Bentwing-bat) - TSC Act

Significant Impact Assessments (SIA) for each species is provided in Appendix B of the Flora and Fauna Assessment. The SIA concludes the following:

- The proposed development will not result in a significant import on Grey-headed Flying-fox given that the proposed works will only remove a small area of foraging habitats, the works will not isolate an area of known habitat and the works will not impact a known camp.
- The proposed development will not result in a significant impact on the Eastern Bentwing-bat given that the proposed works will only remove a small area of mostly foraging habitats, the works will not isolate an area of known habitat and there are areas suitable for foraging nearby.

The assessment found that the proposal is not likely to have a significant impact on Grey-headed Flying-fox or Eastern Bentwing-bat and a Species Impact Statement is not required.

6.5. SOCIAL AND ECONOMIC IMPACTS

The proposal will generate numerous beneficial social and economic impacts for Warwick Farm and the wider Liverpool LGA. The anticipated social and economic impacts include:

- The proposed redevelopment of the 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 8 additional staff members will be required after the redevelopment of the school;
- Relocation and redevelopment of the school will alleviate pressure on existing aged school facilities and cater for future population growth;
- The 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. This will enable high-quality teaching beyond what can currently be provided within the existing aged demountables and wooden classrooms;
- The proposal will cater for children who have physical or learning impairments and are unable to attend a 'normal' primary school. The school will create a safe and nurturing environment to cater for special needs education and foster learning in an appropriate setting;
- The proposed built form has been designed to ensure residential amenity will be maintained to residential dwellings fronting Williamson Crescent;
- Deliver a 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 Warwick Farm. 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'.

6.6. NOISE AND VIBRATION

6.6.1. Construction Noise and Vibration

A Construction Noise and Vibration Management Plan has been prepared by Acoustic Logic and is attached at **Appendix L**.. The report addresses the recommended approach for managing potential noise and vibration impacts arising from excavation and construction activities associated with the relocation of the existing Mainsbridge SSP from its existing location to the new site. The objective of this study is to minimise noise and vibration emissions from the excavation and construction phase.

There is potential for noise and vibration impacts during construction of the proposed school, due to the proximity of surrounding residences and the adjacent Warwick Farm Public School. Accordingly, careful management will be required to minimise acoustic and vibration impacts on the school and residences. These measures should be determined in detail when a contractor has been engaged. In accordance with the recommendations, community consultation will occur prior to evacuation commencing and a complaints log book established to record any noise complaints.

Notwithstanding this, the project-specific mitigation measures have been recommended in Section 8 of this EIS.

6.6.2. Operational Noise

A Noise Impact Assessment has been prepared by Acoustic Logic and is attached at **Appendix X**. The report identifies nearby sensitive receivers and operational noise sources with the potential to adversely impact nearby development. The surrounding area includes residential receivers to the north and east. Both unattended noise logging and attended noise measurements were conducted to quantify the existing environmental at the site.

Table 7 shows the background noise level. The intrusiveness criteria permit noise generation is to be no more than 5dB(A) above existing background noise levels. Noise sources will include internal area/classrooms and mechanical services.

Table 7 – Long Term Noise Logging

Time of Day	Background Noise Level dB(A)L_{90}	Intrusiveness Noise Objectives dB(A)$_{Leq\ (15minus)}$ (Background + 5dB)
Day Time (7am-6pm)	39	44
Evening (6pm-10pm)	33	38

The report addresses the recommended approach for managing the operational and likely noise to be generated by the proposed Mainsbridge SSP project, these recommendations are outlined in Section 8 of the EIS.

An assessment of noise impact from the school to surrounding receivers as well as noise into the future learning building was undertaken. An analysis of noise from classrooms, the school bell/PA system, the school hall and from mechanical equipment indicates that compliance with noise emission goals for the site is both possible and practical. Based on this assessment the proposed Mainsbridge SSP is acoustically acceptable and will not negatively impact on the acoustic amenity of surrounding receivers. The recommendations of the acoustic report should be included in the conditions of consent.

6.7. SEDIMENT, EROSION AND DUST CONTROLS

A Stormwater Management Report and associated plans have been prepared by WSP and included at **Appendix P**. An erosion and sediment control plan has been prepared for the development 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 – Brickmakers Creek.

The Preliminary Construction Management Plan at **Appendix V** outlines measures to mitigate dust production from evacuation and construction. If wind-blown dust is observed, water trucks will be employed to spray exposed areas or stockpiles will be covered with geofabric or similar material. Dust will not be produced as part of the ongoing operation.

6.8. GEOTECHNICAL AND SALINITY

6.8.1. Geotechnical

A Geotechnical Report prepared by JK Geotechnics is provided and attached at **Appendix U.** The investigation reveals a generalised subsurface profile comprising interbedded silty clay, clayey silt and silt deposits. Neither groundwater nor bedrock were encountered within the investigating depth. The report provides a number of construction recommendations outlined in Section 8 of this EIS.

6.8.2. Salinity

A Salinity Assessment has been prepared by EIS and is provided at **Appendix W.**. Based on the results of the preliminary assessment, the site is within a moderate to high salinity risk area. The investigation/development area currently comprises a grassed sports field that is largely devoid of extensive, deep-rooted trees. On this basis, and considering the finished levels for the proposed development, the

development is unlikely to adversely affect the hydrogeological regime at the site in such a way that would be expected to increase the risks associated with salinity

Based on the limited analysis undertaken, the surface soil/fill does not appear to be aggressive towards concrete structures in relation to pH. However, due to the limited analysis undertaken, EIS recommend that additional samples be collected and analysed to confirm the exposure classification for piles/building slabs. This investigation should be undertaken once the proposed construction details are finalised so that the investigation can target the sampling at appropriate depths (groundwater should also be assessed).

If the additional sampling identifies aggressive or saline soil/groundwater conditions, a salinity management plan should be prepared for the proposed development.

6.9. FLOODING

A Stormwater Management Report has been prepared by WSP and is provided at Appendix P; flooding is considered within this report. The school site is subject to flooding from Brickmakers Creek that runs adjacent to the site. The 1 in 100-year ARI flood level adjacent to the creek is 7.6m AHD and the PMF is 12.0m AHD. Based upon this, WSP has determined that no major works are proposed within the flood extent and the site is suitable for the school use. Accordingly, a flood study was not anticipated to be required for the development.

The proposed school buildings have been set at a minimum 1 in 100-year ARI plus 500mm freeboard. Floor levels at the PMF were not adopted due to issues with accessibility of the site. The architectural plans located at Appendix A illustrate this future.

6.10. BUSH FIRE

A Bush Fire Assessment Report has been prepared by Peterson Bushfire and is provided at **Appendix F.** The site is identified as containing bushfire prone land as mapped on the Liverpool Bushfire Prone Land Map. The school is shown to have part of the '100m Vegetation Buffer' within its site extending from a remnant of forest. Development proposals involving schools on bushfire prone land area defined as 'Special Fire Protection Purpose' (SFPP) development under section 100B of the *Rural Fire Act* 1997 and requires assessment in accordance with Planning for Bushfire Protection 2006 guidelines.

The proposed buildings will benefit from an existing managed separation distance to identified bushfire hazards exceeding 100 m. A line of trees along the eastern boundary within the adjacent reserve has been excluded from the hazard assessment and is not mapped as bushfire prone vegetation. As a result, the proposed buildings are rated BAL-LOW.

The existing management within the school grounds is such that vegetation removal is not required for bushfire protection purposes. The proposed access complies, and the installation of utilities is to comply with Planning for Bushfire Protection 2006.

With the adoption of the recommendations outlined in Section 8 of this EIS, the proposed development will comply with Planning for Bushfire Protection 2006 for Special Fire Protection Purpose (SFPP) development.

7. CONSULTATION

A Consultation Outcomes Report prepared by GHD and provided at Appendix Z and has been prepared to document engagement activities and feedback from residents and the school community throughout the design process. Key stakeholders include both Mainsbridge SSP and Warwick Farm Public School. Both schools have very different perspectives regarding the project as well as different engagement requirements. While Mainsbridge SSP required communications around how the transition will be managed to the new facilities, Warwick Farm Public School required engagement around the impacts of the upgrade to their school, in particular surrounding a reduced site. Other key stakeholders identified in the Consultation Outcomes Report are:

- Local community;
- Transport for NSW;
- Government Architects Office NSW;
- Gandangarra Local Aboriginal Land Council;
- Liverpool City Council; and
- Roads and Maritime Services.

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

7.1. SCHOOL ENGAGMENT ACTIVITIES

In order to understand the Mainsbridge School's priorities for their new school facilities, GHD undertook school engagement activities to update the school community as the project progresses and to provide an opportunity for feedback from stakeholders for consideration in the development of the project. Two project team members staffed each booth, where A1 posters were presented with artist impressions of the proposed school design. These activities include:

- Information booths
- Learning space feedback surveys

It is important the project team capture the comments and concerns of both school communities during the engagement process, so the location of the booths was split between both Mainsbridge SSP and Warwick Farm PS. Consultation activities targeted a number of key stakeholders including:

- School staff
- Parents
- Students

School Information Booths

To inform the local school community, including parents, teachers and students, the project team held monthly information booths. These sessions were held during peak school periods where a high parent population was expected. This included:

- School pick up and drop off times
- School events (including assemblies, fetes and parent teacher evenings)
- 'Coffee club' meetings (Warwick Farm)
- P&C meetings

Two project team members staffed the information booths. The project team presented the proposed concept design on A1 posters. These posters included a map of the new building in relation to the existing school, as well as artist impression drawings for more visual engagement. As an opportunity to gain

feedback on learning space design, the project team distributed feedback surveys to information booth attendees during the month of June.

Learning space feedback

GHD held information sessions with both Mainsbridge School and Warwick Farm Public School to raise awareness around the proposed development. The main objective of these sessions was to gain feedback that could be used to help inform the design concept design and artist impression drawings as visual aids Attendees at these sessions were asked to complete a short survey, gathering feedback on the proposed concept design and any ideas, questions and concerns relating to the project. This survey was distributed to the school communities of both Mainsbridge School and Warwick Farm PS to ensure all impacted stakeholder had their ideas and concerns captured.

Using a mixture of open ended, multiple choice, and ranking questions, the survey covered a number of sections that aimed to understand community sentiment towards learning settings that form the basis of the proposed concept design. The survey focussed on learning space design preferences, and ways to encourage and facilitate the connection between the two school communities through shared facilities and peer support. Attendees were aware of the proposed development and generally supported the project with few concerns. Most of the feedback received related to design, teaching environment and ongoing consultation. Two members of the GHD project team attended each information booth and recorded the engagement outcomes for each. To encourage attendance and participation, the booths were advertised in the Liverpool City Champion and the Fairfield Advance. This also provides opportunity for community members that are not directly involved with the school to attend

Staff engagement

The project team conducted two staff briefings during the early concept design phases of the project. The purpose of these activities was to inform the staff of the proposed school upgrade.

Staff briefings were held at both schools on the following dates:

- Tuesday 21 May 2017 – Mainsbridge School (8.20 am – 8.40 am)
- Tuesday 21 May 2017 – Warwick Farm PS (3.10 pm – 3.40 pm)

To inform the initial concept design of the school upgrade, Hayball held a workshop with the staff of Mainsbridge School on Tuesday 20 June. The school staff visited the recently constructed Lucas Gardens School for the workshop. Hayball facilitated the workshop to understand staff priorities for the proposed learning upgrade, as primary users of the new learning spaces. The feedback from this workshop is part of the engagement activities conducted by Hayball and informed the concept design for the upgrade. Details of the workshopping session is summarised in Hayball's Urban Design Report.

Project Reference Group meetings

To inform the ongoing design of the school, a Project Reference Group (PRG) was established. The PRG met fortnightly to discuss the progression of the concept design and to give feedback to the project team. The group comprises of the school principal and assistant principal, a parent representative, staff representatives, Asset Management Unit and the Director of Public Schools. Details of the PRG outcomes is summarised in Hayball's Urban Design Report attached at Appendix K.

7.2. COMMUNITY ENGAGEMENT ACTIVITIES

Community Information Booths

To capture feedback from a broader range of stakeholders, the project team hosted community information booths. Community members are seen as people who are interested or impacted by the proposed school upgrade, but are not necessarily part of the school community. This could include:

- Neighbours who may be impacted by construction impacts and general school operations
- Families of future students
- Other interested local community members

To target these stakeholder groups, GHD planned information booths in locations determined to be widely used by the local community. In order to maximise community engagement with the project, information

booths were set up in locations with high levels of pedestrian traffic during peak operating hours. Given the nature of this upgrade, it was important GHD targeted local communities from both Mainsbridge School and Warwick Farm PS. The project team captured the feedback from each of these information booths. Overall feedback at these information booths was positive.

Local community letterbox drop

To inform the surrounding community of Warwick Farm Public School of the proposed school upgrade in their area, a letterbox drop was undertaken to residents on 26 September 2017.

7.3. TRANPORT FOR NSW

The project team met with Transport for New South Wales (TfNSW) regarding the project on 28 November 2017. The meeting provided an opportunity for TfNSW to ask questions and gain a deeper understanding of the proposed development. TfNSW identified a need for the Traffic Management reports to clearly communicate the proposed changes to parking restrictions on Williamson Crescent. Overall feedback on the development was positive with further comments to be provided following receipt of the Development Approval application.

7.4. GOVERNMENT ARCHITECTS OFFICE NSW

The Project Team and DoE stakeholders met with the Government Architects Office on 28 November 2017. Preliminary feedback was provided which centred on how the development has been considered in the context of the broader public domain and how design development has responded to this context. Overall feedback on the development was positive with further comments to be provided following receipt of the Development Approval application.

7.5. GANDANGARRA LOCAL ABORIGINAL LAND COUNCIL

GHD has sent correspondence to the Gandangarra Local Aboriginal Land Council (GLALC) to give them an update on the proposed school upgrade. The LALC was provided with a package of collateral including the site plans for their review. The project team is currently waiting on their feedback.

7.6. LIVERPOOL CITY COUNCIL

GHD engaged Liverpool City Council to discuss the proposed school upgrade on 25 October 2017. A key issue that has remained consistent across many engagement activities with the school is parking and traffic. The project team discussed options to mitigate the impact of this issue.

7.7. ROADS AND MARITIME SERVICES

GHD engaged with Roads and Maritime Services (RMS) to discuss the proposed school upgrade on 9 October 2017. RMS did not raise any concerns as the School does not front a classified road. RMS recommended that a Traffic Impact Assessment accompany any future applications for the site, in this regard a Traffic Impact Assessment has been prepared by Arc Traffic and Transport and is attached at **Appendix I.**

8. RECOMMENDATIONS AND MITIGATION MEASURES

A range of mitigation measures are proposed to reduce any potential environmental and social impact of the proposal. **Table 8** below provides a summary of the environmental management measures proposed.

Table 8 – Mitigation Measures

Item	Potential Impact	Mitigation Measure
Overshadowing	Overshadowing of adjoining residential properties.	• 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.	• Retention of existing trees contained to the north, north-east, east, and western boundaries to screen the proposal and prevent onlooking. • Proposed buildings achieve minimum setback distances. • Implementation of recommendations outlined within the Construction Noise and Vibration Management Report.
Biodiversity	Vegetation clearing, loss of fauna habitat, threatened species	• Implementation of recommendation outlined within the Flora and Fauna Report including: – Minimise the disturbance footprint as much as practicable, – Do not store plant and equipment in remnant bushland, – Prepare a sediment and erosion control plan, – Rehabilitate and revegetate disturbed areas following the works, including weed management, and – Landscaping should include species characteristic of Cumberland Riverflat Forest. – In addition, an Preliminary Tree Assessment Report has been prepared by Paul Shearer Consulting and is provided at Appendix D. Section 3 of this report outlines recommendations relating to the removal of 18 trees.
Transport and Accessibility	Traffic impacts, demand for on-site staff car parking.	• Implementation of measures outlined within the Traffic Impact Assessment including: – That the school prepares a detailed Green Travel Plan for staff outlining all public and active transport opportunities and strategies by which to reduce private vehicle travel. – That the existing parking restrictions in Williamson Crescent during the WFPS peak periods be extended to the School to ensure two-way traffic flows in Williamson Crescent are maintained. – That the DoE consult with Council and the RMS regarding the extension of the existing School Zone in Williamson Crescent to the west of the School.

Item	Potential Impact	Mitigation Measure
		– That the DoE consult with Council and the RMS regarding defining the No Standing zone in Homepride Avenue providing for a dedicated left turn lane, Homepride Avenue to Hume Highway, of minimum 50m. – That the DoE consult with the Warwick Farm Public School to ensure that the school driveways are not being used for turning movements to the WFPS pick-up lane along the eastern side of Williamson Crescent.
Construction Vehicles	Adverse construction vehicle impacts on surrounding residents.	• Implementation of measures outlined within the Preliminary Construction Management Report. • All truck drivers will be provided with a copy of the proposed dedicated site access route. • Dedicated traffic controller will be employed at the construction vehicle access point off Williamson Crescent to direct traffic and uphold pedestrian safety. • The following strategies will be employed by DoE to manage demand for on-site staff carparking: – Provision of 19 on-site staff car parking spaces, including 2 accessible space. – Majority of students to utilise ASTP. – Green Travel Program. – Car-pooling initiatives.
Wind	Wind conditions at ground level student walkway areas.	• Implementation of recommendations contained within the Wind Impact Assessment Report. Whilst the assessment found that wind conditions within the grounds of the proposed school are generally suitable, to assist in ameliorating the potential adverse winter, westerly wind condition at this location, SLR recommends the following: – Consideration be given to providing a vertical windbreak in the area immediately in front of the main pedestrian entry point into the school - which could be in the form of additional landscaping, vertical screens, etc, OR – Consideration be given to providing vertical windbreaks at the gate entry point itself, e.g. a staggered entry design provided by vertical walls (could be glazed); and – Consideration be given to provide the western edge of the Porte Cochere with some porosity to divert wind flow partially upwards rather than downwards. – The assessment found that with the inclusion of the above additional design treatments, wind conditions at ground level student walkway areas, including between the Library and Administration Building,

Item	Potential Impact	Mitigation Measure
		would be suitable for standing. These recommendations have been or can be incorporated into the final School design.
Crime and Safety	Crime risk to safety of students, staff and visitors.	• The proposed redevelopment incorporates CPTED principles to deter crime. Incorporated principles include: – 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 Williamson Crescent site entrance 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.
Acoustic and Vibration	Noise generation during construction and operation of the School.	– Implementation of recommendations contained within the Construction Noise and Vibration Management Report. Regarding excavator and piling noise: – All noise generating excavation works on site are to occur after 8am, and are to provide a 1-hour respite period during the morning period. – Additionally, an afternoon respite period will also be enforced on site between the hours of 12pm to 1:30pm. – All surrounding receivers will be notified of the duration and extent of the works proposed during the excavation stage via letterbox drops, with a detailed engagement plan and contact information for all relevant personnel on site. – Regarding hand tools (Jackhammers, Angle Grinders, Impact Drills, Electric Saws): – Wrapping hammering heads or placing a soft material in between the hammering head and concrete should not occur. Ultimately the reduction in construction noise from hammering with this treatment will be minimal and the length of construction exposure will be extended due to constant rewrapping due to the hammer wearing away at the material, will occur frequently. – All surrounding receivers will be notified of the duration and extent of the works proposed via letterbox drops, with a detailed engagement plan

Item	Potential Impact	Mitigation Measure
		and contact information for all relevant personnel on site. – Warwick Farm Public School must be consulted to ensure any intrusive constructions operations do not impact on sensitive operations like examinations. – Regarding vehicle noise and concrete pumps: – All construction traffic, including loading and unloading operations are to occur via an access gate along Williamson Crescent. – A designated loading/unloading area as illustrated in the figure 3 of the report. Any concrete pumping operations must also be limited to this area. This location will provide maximum proximity to the surrounding identified sensitive receivers. – Trucks and concrete trucks must turn off their engines when on site to reduce impacts on adjacent land use (unless truck ignition needs to remain on during concrete pumping). – Regarding other activities: – In the event of complaint, noise management techniques identified in this report should be employed to minimise the level of noise impact. This may include community consultation and scheduling of loud construction processes. – Notwithstanding the above, general management techniques and specific acoustic treatments may be implemented on a case-by-case basis to reduce noise emissions to surrounding receivers. These include: – ACOUSTIC BARRIER - Barriers or screens can be an effective means of reducing noise. Barriers can be located either at the source or receiver. – SELECTION OF ALTERNATE APPLIANCE OR PROCESS - This involves the formulation of work practices to reduce noise generation. It is recommended that all available and reasonable treatments and mitigation strategies presented in this report be adopted to minimise noise emissions from the excavation and construction activities on site. – SILENCING DEVICES - Where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts. – TREATMENT OF SPECIFIC EQUIPMENT - In certain cases, it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted.

Item	Potential Impact	Mitigation Measure
		– ESTABLISHMENT OF SITE PRACTICES - Construction Profile will ensure all plant, equipment and machinery are regularly serviced and maintained at optimum operating conditions, to ensure excessive noise emissions are not generated from faulty, overused or unmaintained machinery. – STAFF TRAINING AND REPORTING MECHANISM - All construction staff on site, as part of the site induction process, will be informed of the surrounding sensitive receivers on site and the site-specific recommendations to reduce noise impacts to these receivers – ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES - For any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon, the builder and the regulatory authority. – DEALING WITH COMPLAINTS - A permanent register of complaints should be held. All complaints received should be fully investigated and reported to management. – The above mitigation measures can be incorporated into the conditions of consent and are aimed at working towards achieving the noise management levels established at surrounding receivers. – Implementation of recommendations contained within the Noise Impact Assessment. Whilst the proposed school is acoustically acceptable, the report recommends the following acoustic treatments/management controls to mitigate acoustic impacts: – 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 Industrial Noise Policy, with detailed design to be done at CC stage. – External speakers for PA and bells should be directional facing away from residential receivers. – Windows to the school buildings should be constructed of minimum 6.38mm laminated glass and should be capable of being closed during periods of high noise generation. • The above mitigation measures can be incorporated into the conditions of consent to ensure operational noise resulting from the proposed School is deemed acceptable.

Item	Potential Impact	Mitigation Measure
Contamination	Disturbance of Asbestos materials.	• Asbestos materials to be removed from the site prior to the commencement of any renovation/demolition works that may cause their disturbance. • Implementation of recommendations outlined within Stage 1 Environmental Site Assessment and Stage 2 Environment Site Investigation Report. • Implementation of Remedial Action Plan (RAP) if required.
Tree Protection	Construction impacts on retained trees.	• Implementation of recommendations outlined within Preliminary Tree Assessment Report to ensure significant trees are retained and protected during construction.
Bushfire	Impacts from bushfire	• Implementation of recommendations outlined within the Bushfire Assessment including: – Proposed landscaping should comply with the principles listed within Appendix 5 of PBP. – 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). A clearance of 0.5 m is required for residential connections. – 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). – The Bush Fire Assessment concludes that with the adoption of the recommendations above, the proposed development will comply with Planning for Bushfire Protection 2006 for infill Special Fire Protection Purpose (SFPP) development. The proposal is justifiable on a bush fire hazard grounds.
Water Management	Impacts from stormwater.	• Implementation of proposed stormwater concept plan and erosion and sediment control plan.
Waste	Excessive waste generation.	• Implementation of Construction Waste Management Plan and Operational Waste Management Plan. • 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.

Item	Potential Impact	Mitigation Measure
		• 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.
Erosion and Sediment Control	Erosion and sediment runoff into adjacent watercourse.	• Implementation of proposed erosion and sediment control plan. The following structures are proposed to be installed at the site to mitigate dust, erosion and sediment runoff: – A silt fence along the entire south and east facing boundary and part of the north facing boundary to mitigate soil runoff to the adjacent Warwick Farm Public School and Brickmakers Creek; – A catch drain surrounding the entire school building site with haybales placed at 30m intervals; – Various silt traps throughout the site; – Temporary sediment basin to pump out stormwater once settled; and – A temporary construction entry/exit at the sites' western boundary to remove silt from all vehicles vacating the site.
Geotechnical	Structural impact to soils	• Implementation of recommendations outlined in the Geotechnical Report including the following: – Following tree and vegetation removal, any contaminated fill should be removed. The topsoil should be separately stockpiled for possible use for landscaping. – A high-level footing solution consisting of strip and pad footings or a stiffened raft slab founded in soils of at least stiff to very stiff strength may be adopted. The footings should be designed for a maximum allowable bearing pressure of 200kPa. – The initial footing excavations must be inspected by a geotechnical engineer prior to pouring to confirm that satisfactory founding material has been exposed. – JK Geotechnics recommend that footings be excavated, cleaned, inspected and poured with minimum delay to avoid deterioration. If delays in pouring concrete are anticipated, the base of the footings should be protected with a blinding layer of concrete. Water must be avoided from ponding on the base of footings as this will tend to soften the foundation material, resulting in further excavation and cleaning being required. – The proposed buildings may be supported using conventional bored or steel screw piles founded in soils of at least very stiff strength at minimum depths

Item	Potential Impact	Mitigation Measure
		of 3m. The piles should be designed for an allowable end bearing pressure of 350kPa. In addition, an allowable shaft adhesion of 35kPa may be adopted for bored pile design, provided the upper 2m of the soil profile is ignored to take potential shrinkage into account. – The piles will need to be anchored to sufficient depth into the alluvial soils and be designed for tension due to potential swell pressures in the overlying silty clays. We recommend that ground beams or slabs between piles be designed as suspended and poured over void formers at least 50mm thick to isolate them from the underlying clays. – The initial pile holes must be inspected by a geotechnical engineer prior to pouring to confirm that adequate founding material and socket depths have been achieved. – Groundwater inflow may occur into bored pile holes but we anticipate that the inflow will be controllable by conventional pumping methods. The bored piles should be drilled, cleaned, inspected and poured with minimal delay (ie. all on the same day). – Unless incorporated into a raft slab, JK Geotechnics recommend that ground floor slabs be designed as suspended between footings and poured over a void former a minimum of 50mm thick to isolate them from the underlying clays. The detailing of floor slabs to accommodate shrink-swell movements of even smaller magnitude to avoid damage is extremely difficult. In accordance with AS2870, slab-on-grade internal floors are not appropriate for 'Class M' and more severe sites. – The local council has guidelines relating to salinity issues which should be checked for relevance to this project. – A waste classification will need to be assigned to any soil excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), General Solid, Restricted Solid or Hazardous Waste. Analysis takes seven to 10 working days to complete, therefore, an adequate allowance should be included in the construction program unless testing is completed prior to construction. If contamination is encountered, then substantial further testing (and associated delays) should be expected. JK Geotechnics strongly recommend that this issue is addressed prior to the commencement of excavation on site.
Salinity	Impacts from high levels of salinity	• Implementation of recommendations outlined in the Salinity Assessment including:

Item	Potential Impact	Mitigation Measure
		– An erosion and sediment control plan should be prepared prior to the commencement of earthworks. The plan should be implemented during the development to manage and control sediment discharge from the site; – Earthworks, including the stripping of vegetation and topsoil/fill should be staged (where possible) to reduce the time of exposure of subsoils to erosion by wind and rain; – Sodic and highly dispersive soils can be treated by gypsum and/or lime. This will increase the proportion of exchangeable calcium in the soil and reduce the degree of sodicity (and thereby dispersivity) in areas where cut faces will be exposed. The amount of lime/gypsum to be added will vary with the soil and tests should be undertaken prior to, and during, the proposed earthworks to assess the appropriate quantity of lime/gypsum; – Stormwater should be managed appropriately to reduce infiltration. Stormwater infrastructure should be designed to minimise leakage; and – Nutrient rich topsoil should be used to promote plant growth in landscaped areas. Special attention should be paid to soil fertility to promote optimal conditions for successful revegetation. Suitable native plant species which require minimal watering should be established in landscaped areas.
Flooding	Impacts from flooding	• The following recommendations are provided on the types of materials to be used in construction to ensure that structural integrity of the buildings is maintained during a flood event. Various types of loads must be considered in the design of the proposed buildings in relation to flood protection. These include: – Impact loading caused by debris carried by flood waters; – Uplift or buoyancy forces; – Hydrostatic forces; and – Hydrodynamic forces. • The structures should be designed in accordance AS1170 for the types of loadings listed above for all flood events up to the PMF level. In addition to potential loadings due to flooding, construction materials must be durable for short term duration immersion in flood waters. This would include all structural components being constructed from reinforced concrete, bricks or reinforced masonry blocks. • A Flood Evacuation Strategy and On-site Response Plan will most likely not be required for the proposed works. The water within a low hazard flood category is

Item	Potential Impact	Mitigation Measure
		considered safe to wade through should emergency access be required in a flood event.

9. 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 R2 Low Density Residential under the LLEP. The proposed development is permissible with consent and consistent with the land use objectives of R2 zoning;
- The land is already used for educational purposes with Warwick Farm Public School located at the southern end of the site. The site is currently underutilised and the proposal continues this educational use and in no way creates an undesirable precedent;
- 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 minor increase in students and staff that will result from the proposed relocation and development of Mainsbridge SSP is not significant and will not generate unreasonable impacts on the surrounding locality.

The proposal is in the public interest because:

- The proposed works are permissible with consent and have been prepared having regard to Education SEPP and LLEP;
- The proposal has been prepared having regard to Council's planning policies and generally complies with the aims and objectives of the controls for the site;
- The proposal is suitable for the site as evidenced by the site analysis and various site investigations, including geotechnical, bushfire, site contamination and flora and fauna;
- 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 vehicles 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 Warwick Farm and create an attractive streetscape along Williamson Crescent; 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 proposed development.

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

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APPENDIX A ARCHITECTURAL PLANS

APPENDIX B SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

APPENDIX C QUALITY SURVEYORS COST ASSESSMENT

APPENDIX D PRELIMINARY TREE ASSESSMENT REPORT

APPENDIX E FLORA AND FAUNA ASSESSMENT

APPENDIX F BUSHFIRE ASSESSMENT

APPENDIX G SITE INFRASTUCTURE OVERVIEW PLAN

APPENDIX H SITE SURVEY

APPENDIX I TRAFFIC IMPACT ASSESSMENT

APPENDIX J GREEN TRAVEL PLAN

APPENDIX K URBAN DESIGN REPORT

APPENDIX L CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

APPENDIX M LANDSCAPE PLAN

APPENDIX N CONSTRUCTION WASTE MANAGEMENT PLAN

APPENDIX O OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX P STORMWATER MANAGEMENT REPORT AND PLANS

APPENDIX Q ECOLOGICALLY SUSTAINABLE DEVELOPMENT REPORT

APPENDIX R ACCESS REPORT

APPENDIX S STAGE 1 ENVIRONMENTAL SITE ASSESSMENT

APPENDIX T STAGE 2 ENVIRONMENTAL SITE INVESTIGATION

APPENDIX U GEOTECHNICAL REPORT

APPENDIX V PRELIMINARY CONSTRUCTION MANAGEMENT REPORT

APPENDIX W SALINITY ASSESSMENT

APPENDIX X NOISE IMPACT ASSESSMENT

APPENDIX Y WIND IMPACT ASSESSMENT REPORT

APPENDIX Z CONSULTATION OUTCOMES REPORT

APPENDIX AA BCA REPORT

APPENDIX BB PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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