

East Leppington Primary School



Education



Contents

1

Project Summary

Introduction
Project Framework
SEARS

2

Context Analysis

Context

3

Site Analysis

Site Analysis
Site Sections
Site Images

4

Design Principles

Education
Site Narrative
Design Statement
Site
Landscape
ESD
CPTED + External Lighting

5

Option Analysis

Option Comparison

6

Built Form

Site Planning
Materials + Finishes
Wayfinding
Massing

7

Visualisations & Streetscape

3D Visualisations
Streetscape Elevations

8

Design Verification

Design Quality Principles
GANSW Response

DOCUMENT/STATUS REGISTER

Issue	Date	Purpose	Written	Approved
A	30.8.19	DAR Draft	HS / NM	SR
B	13.09.19	Final DAR	HS / NM	SR

LIST OF ABBREVIATIONS

AS – Australian Standards
BCA – Building Code of Australia
COLA – Covered Outdoor Learning Area
CDR – Concept Design Report
DDA – Disability Discrimination Act
DoE – Department of Education
EFSG – Education Facilities Standards and Guidelines
GANSW – Government Architect New South Wales
GBA – Gross Building Area
GEA – Gross Envelope Area
GFA – Gross Floor Area (Planning)
HBA – Home Base Unit
HDC – Head Design Consultant
PPA – Perumal Pedavoli Architects
SINSW – School Infrastructure NSW
TSG – Technical Stakeholders Group
UFA – Usable Floor Area

PROJECT DETAILS

Site Address	Cnr Commissioner Drive and Elkhorn Street, Willowdale, East Leppington, NSW 2567
Site Area	3.0 Ha
Land Use & Zoning	SP2 Infrastructure (Educational Establishment)
Project Description	Construction of a new Primary School at East Leppington. The project will provide 44 new permanent teaching spaces and core facilities (Core 35) to accommodate up to 1,012 students

1 Project Summary

INTRODUCTION

The Design Analysis Report has been prepared by Perumal Pedavoli Architects as the Project Architect partnered with Hansen Yuncken as the head contractor on behalf of the School Infrastructure NSW (SINSW). The Design Analysis Report builds on the work of the previous Planning Phase Architects SARM who developed the concept plan that accompanied the request for SEARs for the project. It is a result of input provided by the key stakeholders SINSW, TSA Management, East Leppington Primary School PRG, Hansen Yuncken and Perumal Pedavoli Architects. The report collates the concept design approach for the project and brings together the input of the entire consultant team.

PROJECT FRAMEWORK

The previously prepared report by SARM Architects identifies the project background as:

“The East Leppington New Primary School will be built within Stockland’s Willowdale development and falls within the Raby Road Primary School cluster is identified in Sydney Metropolitan plan “A Plan for Growing Sydney” with a significant focus for intensive growth and infrastructure investment over next 20 years. The Cluster falls for within Camden and Campbelltown Local Government area (LGA) and includes 7 new schools, one of which is East Leppington New Primary School. The projections are for an increase in numbers of primary school age children, demand for teaching space, facilities to at least 2031. The expansion of existing and building of new schools are required to cater for population growth.”

The project to date has been subject to community and stakeholder consultation including PRG’s, Council, Government Architect reviews and SINSW Technical Stakeholder reviews. The key relationships of the original SARM masterplan submitted for the SEARS have been maintained however, the site planning has been revised to incorporate the feedback from the various stakeholders to improve the design as described in this report. This report has been prepared to accompany the Environmental Impact Statement and SSD Application for the project, in accordance with the SEARs.

“The report collates the concept design approach for the project and brings together the input of the entire consultant team.”

1 Project Summary

SEARS

New East Leppington Primary School – Subconsultant Specialist Introduction

This Design Analysis Report has been prepared on behalf of the Department of Education (DoE) and Schools Infrastructure NSW (SINSW) in support of a new school known as East Leppington Public School, located in Commissioners Drive, Denham Court NSW (the project).

The project is a new school and is State Significant Development (SSD). The SSD Application for the project is identified as SSDA 9476. This Design Analysis Report is to be read in conjunction with the Environmental Impact Statement (EIS) that accompanies SSDA 9476. The project will provide modern public school infrastructure for the existing and future community to meet education needs. The project specifically will provide the following to accommodate up to 1,012 students at completion:

- General Learning Areas
- Multipurpose Hall
- Covered Outdoor Learning Areas (COLA)
- Administration Area
- Staff Area incl. Amenities
- Student Amenities
- Library
- Canteen
- Storage
- Assembly Court
- Landscaping
- Pedestrian Circulation
- Vehicle Circulation, bulk waste pad, staff car parking, bus zone and bicycle storage area

The NSW Department of Planning, Industry and Environment (now known as DPIE, and previously known as the Department of Planning and Environment) issued the Secretary's Environmental Assessment Requirements (SEARs) for the project 10 August 2018. The SEARs identifies the following specific assessment requirements for architecture with respect to SSDA 9476:

SEARS (SSD 9476)

Requirements	Pertinent
4. Built Form and Urban Design	
In consultation with the Government Architect NSW ensure that the proposal demonstrates design quality in accordance with the Design Quality Principals of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the Design Guide for Schools, through consideration of the following:	Note
Address the contextual fit including height, bulk and scale, setbacks and interface of the proposal with the surrounding development, topography, streetscape and public open spaces.	Refer Design Analysis Report Section 2, 3 and 4
Built form including overall site layout, planning and massing, façades, building articulation and scale, materials, colours.	Refer Design Analysis Report Section 2, 3, 4, 6 and 7
Crime Prevention Through Environmental Design Principles.	Refer Design Analysis Report Section 4
Provide details of any digital signage boards, including size, location and finishes.	Refer Architectural Drawing No.00_003
Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools.	Refer Design Analysis Report Section 8
Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Refer Architectural Drawing No.00_002
Site and context including planning and massing options and preferred strategy for future development.	Refer Design Analysis Report Section 2, 3,4 and 5
Landscape design, including consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation.	Refer Landscape Drawings and Landscape Report
Visual impact including views to and from the site and any adjoining heritage items.	Refer Design Analysis Report Section 7
Demonstrate good environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.	Refer Design Analysis Report Section 4 Refer Architectural Drawings No.00_002, 201, 202 Refer Landscape Drawings and Landscape Report Refer to ESD Report

Aboriginal culture and heritage, to be developed in consultation with the local Aboriginal community and cultural groups and incorporated holistically in the design proposal.	Refer Design Analysis Report Section 4 Refer Landscape Drawings and Landscape Report
Environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.	Refer Design Analysis Report Section 4 Refer Architectural Drawings No.00_002, 201, 202 Refer Landscape Drawings and Landscape Report Refer to ESD Report
ESD principles including sustainability targets and integration of these in design approach.	Refer to ESD Report
5. Environmental Amenity	
Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing and acoustic impacts.	Refer Architectural Drawings No.00_301, 302, 303 Refer Design Analysis Report Section 7 Refer Acoustic Report
View analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development).	Refer Design Analysis Report Section 7
Lighting strategy and detail measures to reduce spill into the surrounding sensitive receivers.	Refer Design Analysis Report Section 4
Identify any proposed use of the school outside of school hours (including weekends) and assess any resultant amenity impacts on the immediate locality and proposed mitigation measures.	Refer EIS
6. Staging	
Provide details regarding the staging of the proposed development (if any).	Refer EIS for potential staging of Hall
Plans and Documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents.	
Architectural Drawings:	
<ul style="list-style-type: none"> Showing key dimensions, RLs, scale bar and north point, including: 	Refer Architectural Drawings No.00_001 to 00_802
<ul style="list-style-type: none"> Plans, sections and elevation of the proposal at no less than 1:200 showing indicative furniture layouts and program 	Refer Architectural Drawings No.00_011 to 00_202

<ul style="list-style-type: none"> Illustrated materials schedule including physical or digital samples board with correct proportional representation of materials, nominated colours and finishes 	Refer Design Analysis Report Section 6
<ul style="list-style-type: none"> Details of proposed signage, including size, location and finishes 	Refer Architectural Drawing No.00_003
<ul style="list-style-type: none"> Detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality 	Refer Architectural Drawing No.00_801
<ul style="list-style-type: none"> Site plans and operations statement demonstrating the afterhours and community use strategy 	Refer Architectural Drawing No.00_002 + EIS
Site Survey Plan, showing existing levels, location and height of existing & adjacent structures/buildings site boundaries & remnant & planted vegetation on the site.	Refer Survey Plan
Site Survey Plan, including:	
<ul style="list-style-type: none"> Site and context plans that demonstrate principles for future development and expansion, built form character and open space network. 	Refer Design Analysis Report Section 2
<ul style="list-style-type: none"> Active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links 	Refer Design Analysis Report Section 2
<ul style="list-style-type: none"> Site and context plans that demonstrate principles for future network, active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links 	Refer Design Analysis Report Section 2
<ul style="list-style-type: none"> Sediment and Erosion Control Plan 	Refer Civil Drawing
<ul style="list-style-type: none"> Shadow Diagrams 	Refer Architectural Drawings No.00_301 to 00_303
View analysis, photomontages and architectural renders, including those from public vantage points.	Refer Design Analysis Report Section 7
Landscape architectural drawings showing key dimensions, RLs, scale bar and north point, including:	Refer Landscape Drawings + Report
<ul style="list-style-type: none"> Integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed including articulation of playground spaces 	Refer Landscape Drawings + Report
<ul style="list-style-type: none"> Plan identifying significant trees, trees to be removed and trees to be retained or transplanted 	Refer Landscape Drawings + Report
Design Report to demonstrate how design quality will be achieved in accordance with the above Key Issues including:	

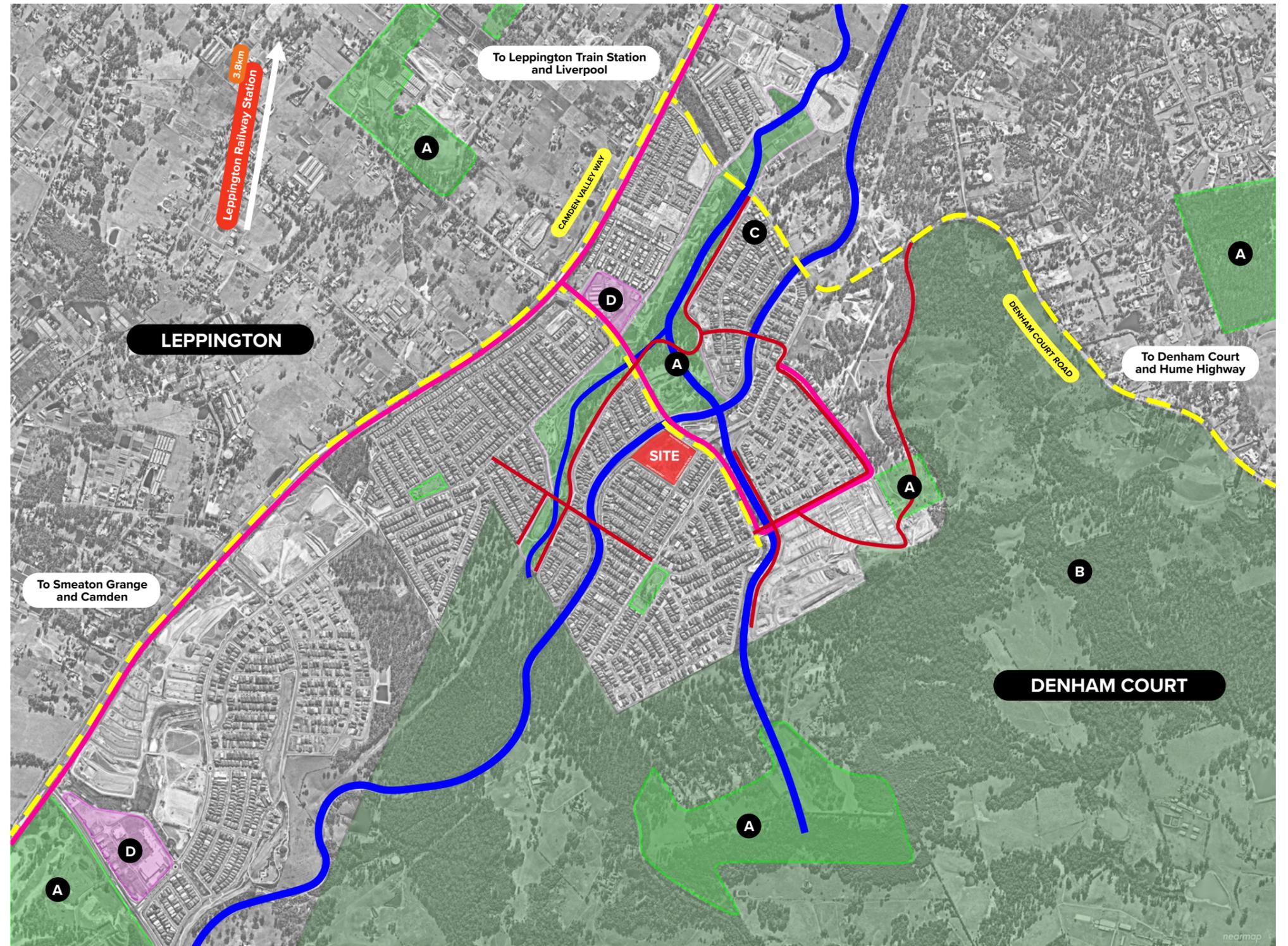
<ul style="list-style-type: none"> Architectural design statement 	Refer Design Analysis Report Section 8
<ul style="list-style-type: none"> Diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal 	Refer Design Analysis Report Section 4
<ul style="list-style-type: none"> Detailed site and context analysis 	Refer Design Analysis Report Section 2 and 3
<ul style="list-style-type: none"> Analysis of options considered including building envelope study to justify the proposed site planning and design approach 	Refer Design Analysis Report Section 5
<ul style="list-style-type: none"> Visual impact assessment identifying potential impacts on the surrounding built environment and adjoining heritage items 	Refer Design Analysis Report Section 7
<ul style="list-style-type: none"> Summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and response to this advice 	Refer Design Analysis Report Section 8
<ul style="list-style-type: none"> Summary report of consultation with the community and response to any feedback provided 	Refer EIS
Geotechnical and Structural Report	Refer Geotech + Structural Reports
Accessibility Report	Refer DDA Report
Arborist Report	Refer Arborist Report
Schedule of Materials and Finishes	Refer Design Analysis Report Section 6

2 Context Analysis

CONTEXT

The site for East Leppington Primary School is located within a new and rapidly expanding suburb, Leppington. The site has the town centre and green space to the north and residential areas surrounding 3 sides of the East Leppington site with a water course passing the NE.

Legend	
	Site
	Retail / Commercial Centres
	Recreation / Open Space
	Main Roads / Transport Corridor
	Water Course
	Public Transport Route
	Proposed Pedestrian / Cycle Path



- A. Sporting Fields and Recreation Areas
- B. Open Space / Bush
- C. Christelle Family Child Care
- D. Retail and Commercial Centres

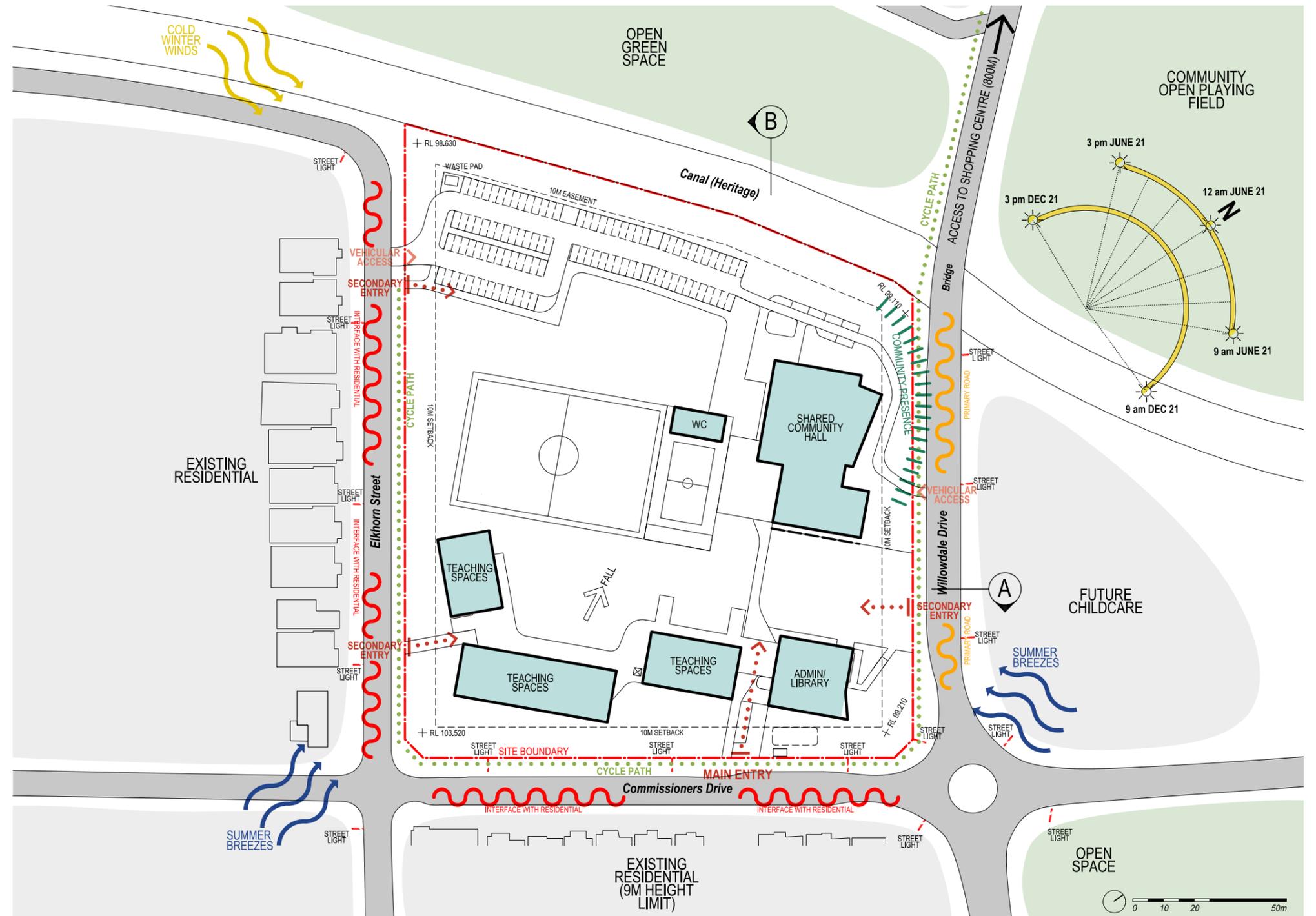
3 Site Analysis

SITE ANALYSIS

East Leppington Primary School is located on D'harawal land and located within a growth precinct. A site walk was undertaken on 2 August 2019 with aboriginal elders, Uncle Ivan and Uncle Eddie. They highlighted that the air and sun are important to this site, the school should be designed to accommodate good ventilation and access to the sun.

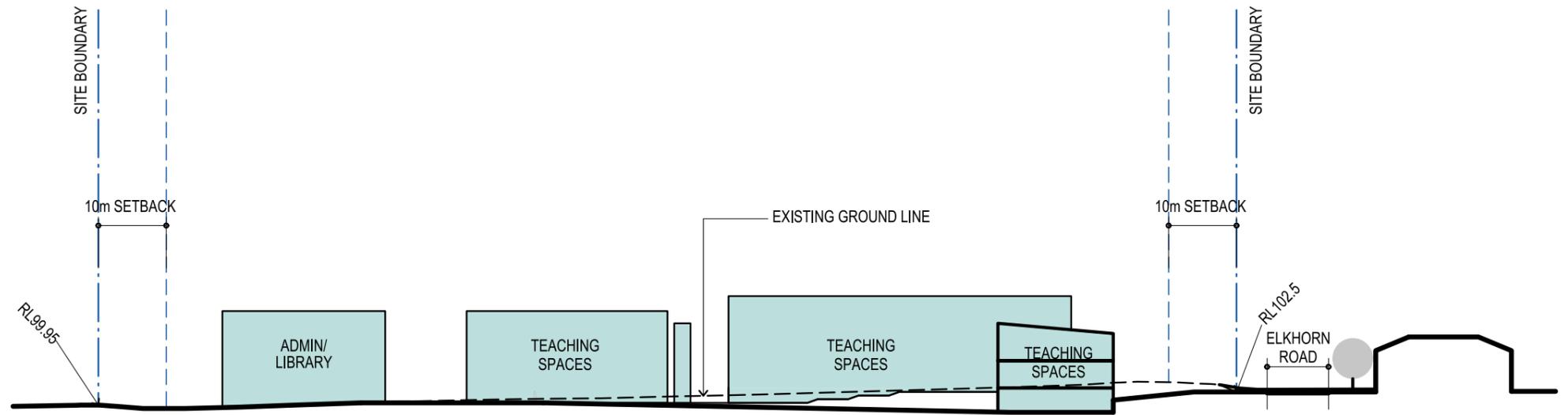
The immediate context includes newly constructed single dwellings, shopping centre, sports and recreation facilities and an emerging pedestrian and cycling network. The site is contained by Willowdale Drive on the North East, Commissioners Drive on the South East, Elkhorn Street on South West and a concrete lined canal on the North West. Willowdale Drive connects to the main community and retail precinct to the North West. The site slopes significantly down towards the canal along the North West boundary. Given the slope and street network, the corner of Willowdale Drive and Commissioners Drive becomes the predominant corner of the site. The site is completely cleared of trees.

The slope, minimal green canopy and the interface with the residential scale are the most notable constraints on the site. The opportunities for the site include the multiple street frontages, north facing natural light and district views.

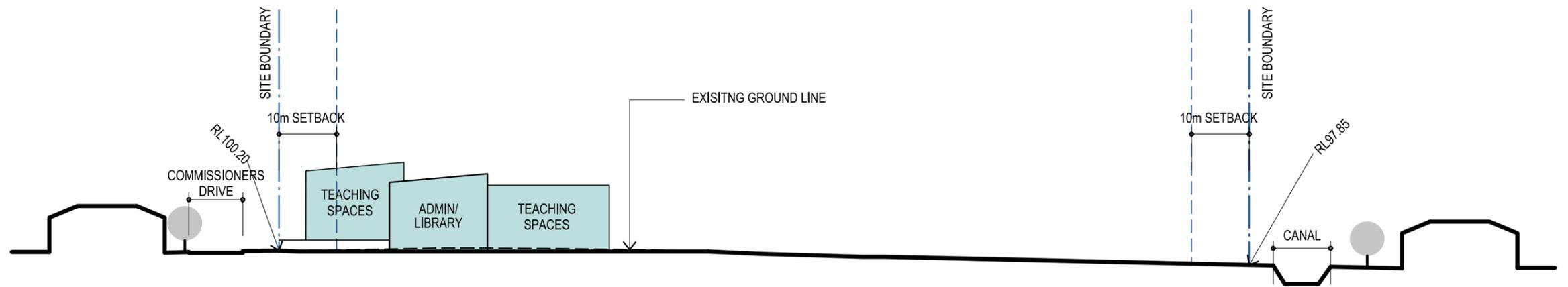


3 Site Analysis

SITE SECTIONS



East West Section – Section A

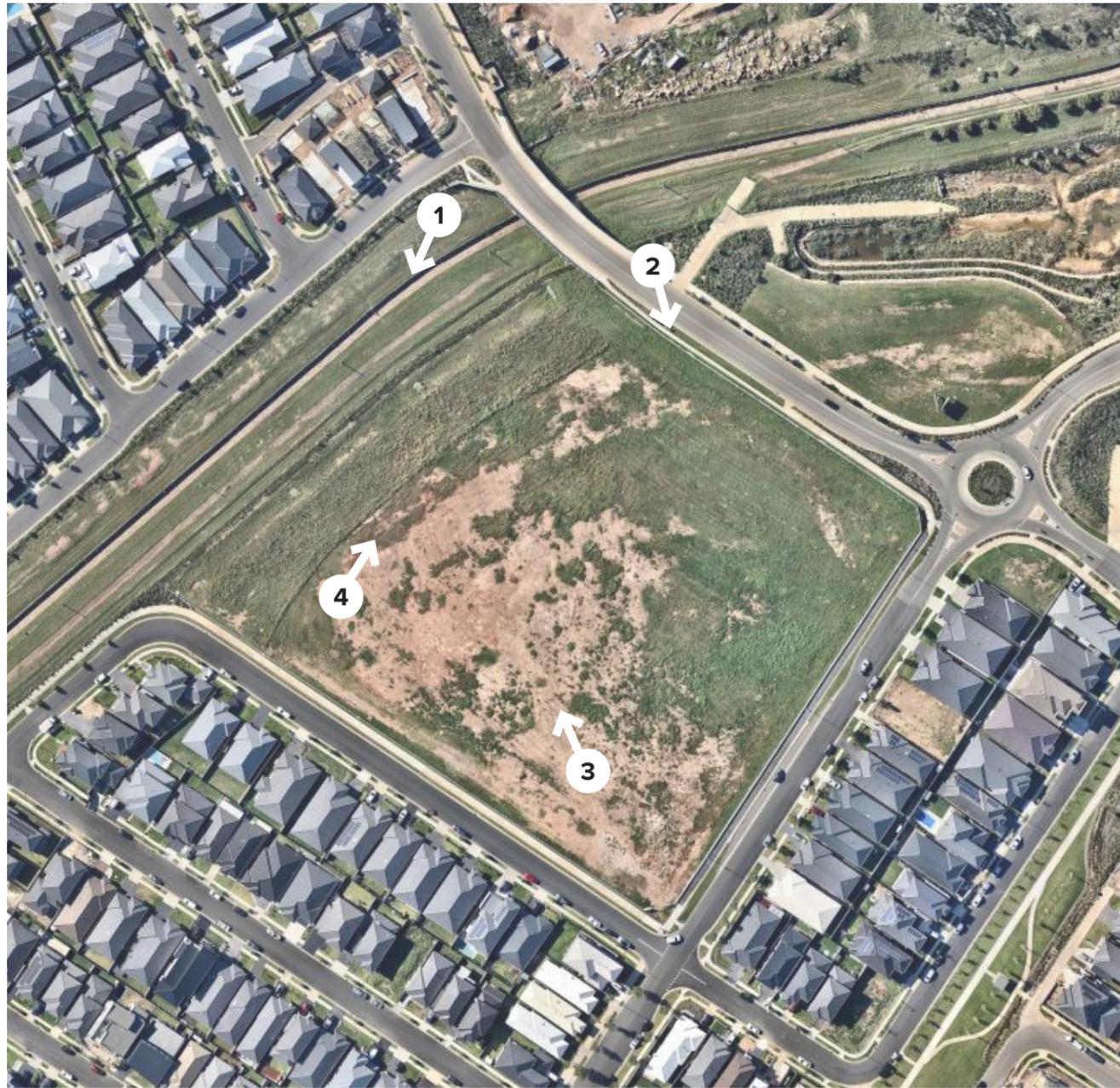


North South Section – Section B

EAST LEPPINGTON



SITE IMAGES



Source: Nearmap (Satellite Image from July, 2019)



1 View from Canal looking South West



2 View from Willowdale Drive looking South



3 Site walk towards the North with aboriginal elders Uncle Ivan and Uncle Eddie

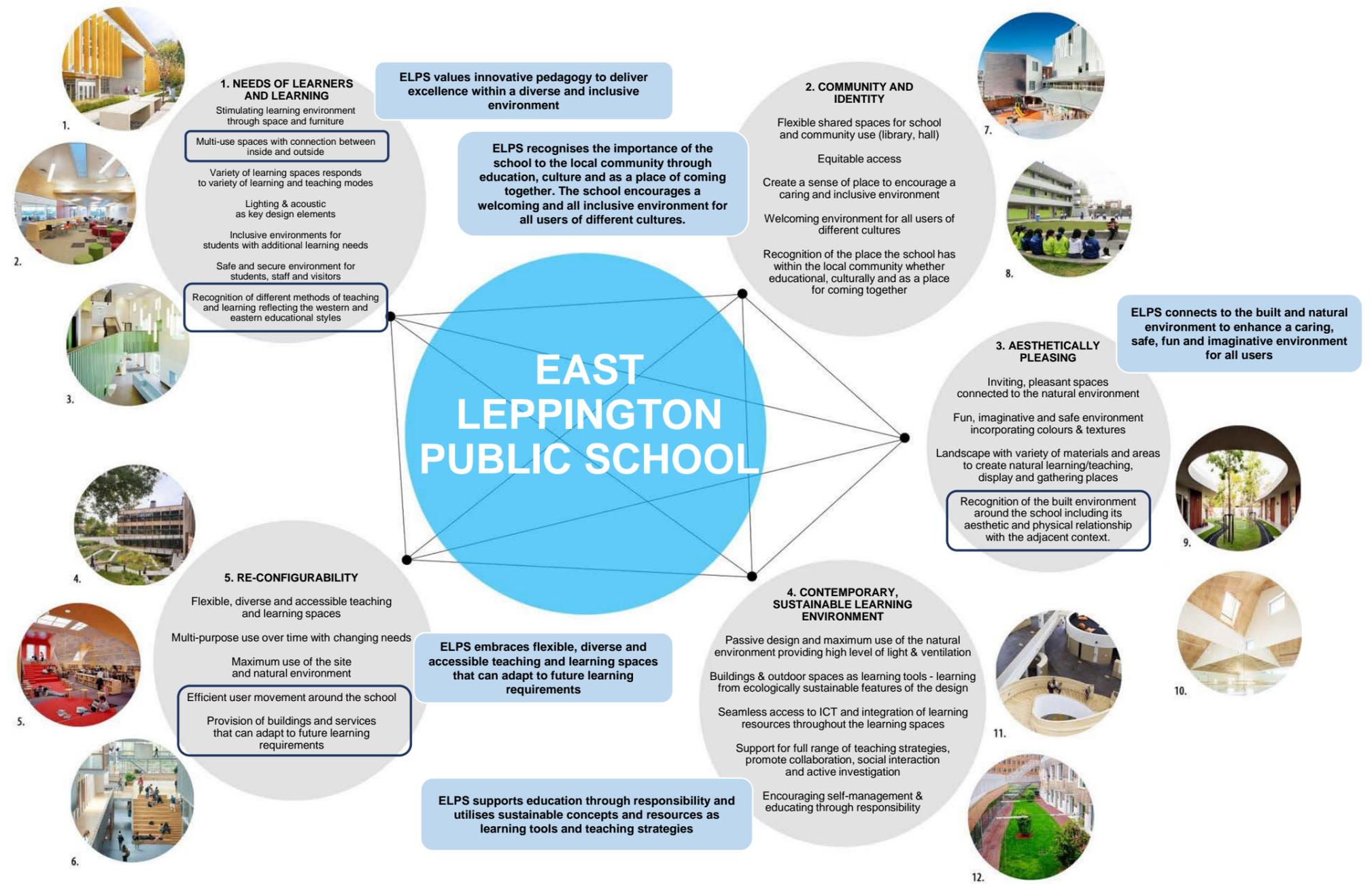


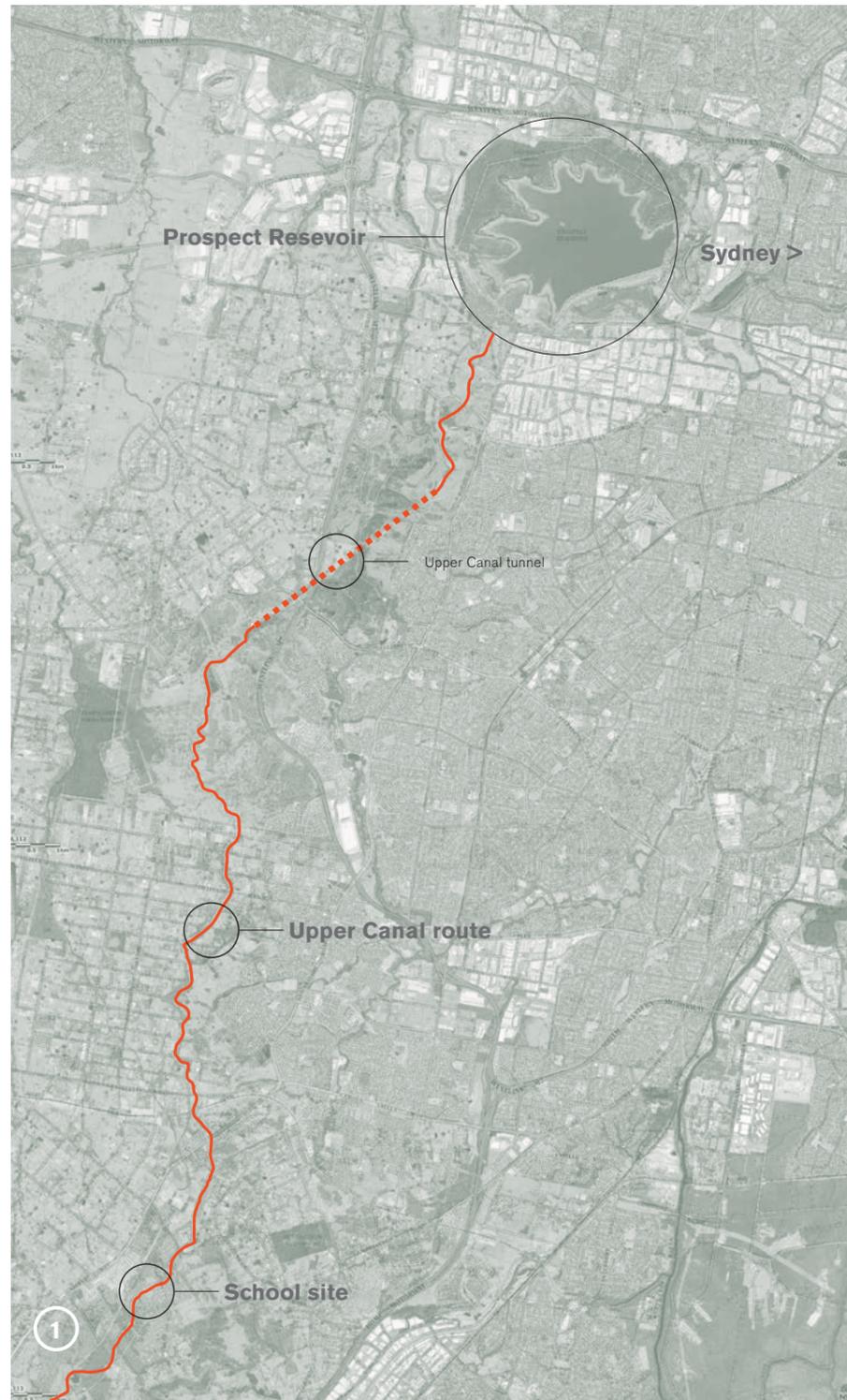
4 Site walk with aboriginal elders Uncle Ivan and Uncle Eddie

4 Design Principles

EDUCATION

Education principles have been developed for the project and form the foundation of the design.





The Upper Canal:

Topographic map showing the pathway of Upper Canal traversing the landscape to the north of the East Leppington school site. Built in the 1880s it supplies up to 40% of Sydney's water and remains the only way to transfer water from the four Upper Nepean dams. It uses only gravity to transfer water over 64km to Prospect Reservoir in the north.

Subregion vegetation profile:



Shale Hills: Grey Box, Forest Red Gum, Narrow-leaved Ironbark, Spotted Gum.



Alluvial Sands & Gravels: Hard-leaved Scribbly Gum, Rough-Barked Apple, Old Man Banksia.



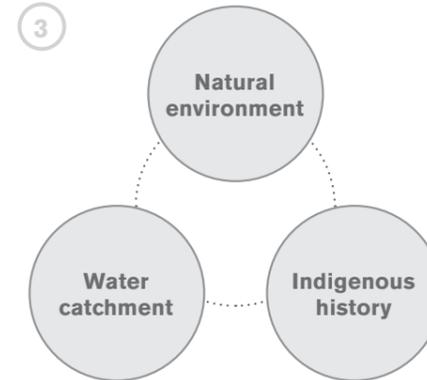
River Flats: Broad-leaved Apple, Cabbage Gum, Forest Red Gum, Swamp Oak.



Lagoons & Swamps: Tall Spike-Rush, Juncus, Parramatta Red Gum.



Native fauna inhabiting the area: Bush-Tail Possum, Owl, Welcome Swallow, Wood Duck.



Sense of place: Activation of these three elements renders them visible to the users of the site and provides learning opportunities and a stronger sense of place.

Colour palette:

A range of colours are drawn from the inflorescence and leaves of the vegetation. These colours, with strong links to the natural environment, are proposed to be incorporated into the buildings, landscape and signage and wayfinding scheme.



CONNECTING COUNTRY:
BRINGING THE NATURAL ENVIRONMENT TO LIFE
Conceptual development for the East Leppington Primary School

OVERVIEW:

Three distinct features of the site are present that will for the concept development for the signage scheme. A range of these elements may also be incorporated into an interpretive overlay featured on signage elements.

1. The Upper Canal

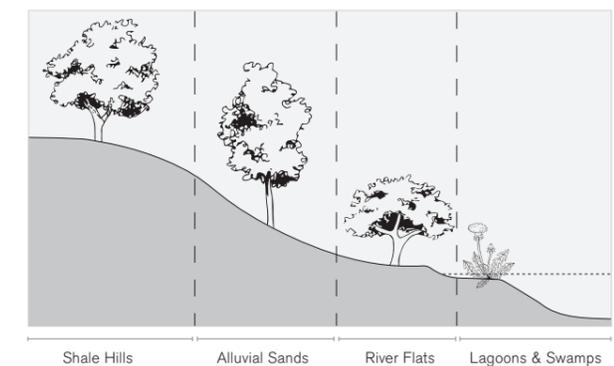
The canal, situated on the northern boundary of the proposed site, is significant in its connection to broader Nepean catchment and its role in the provision of water to the city of Sydney. As a man-made element the canal contrasts the natural watercourses of the region and is noted as being of significant heritage value.

2. Vegetation profile

The presence of the natural flora and fauna at the proposed site is significantly diminished which presents an opportunity to bring it to life. Historically, these plant resources were used in many ways to provide shelter, materials, tools and sources of food. The protection of the natural environment is still of high importance to the area. The native vegetation is an active connection to the indigenous heritage.

3. Indigenous heritage: Dharawal people

The site is situated within a region rich in oral history and stories referencing the local waterways. The indigenous heritage is activated through the landscape – the flora, fauna and geographical features.



Land profile: A variety of vegetation types dependant on the nature of the land.

4 Design Principles

DESIGN STATEMENT

The design intent is to bring together the school's education principles and an urban design strategy that creates a school that is specific to its site and community.

East Leppington is a rapidly changing suburb. It is the traditional land of the D'harawal people and the school site is located within what was once abundant Cumberland Plain Woodland. With European settlement, agricultural practices commenced a process of land clearing. Today a substantial part of the local context has been cleared and transformed in to low density residential subdivisions. This residential subdivision occupies the adjacent southern and western land. To the north is the Sydney Water canal. This canal is significant in its connection to broader Nepean catchment and its role in the provision of water to the City of Sydney. As a man-made element, the canal contrasts the natural watercourses of the region and is noted as being of significant heritage value.

The site narrative has been developed collaboratively by the consultant team. The themes bring together the natural environment and indigenous history. These elements inform the landscape design, wayfinding approach and the natural material palette selected for the school. The palette is deliberately neutral with subtle accent colours to ensure that the landscape, wayfinding and the colour generated by the activity of the students becomes the focus. The material and finishes, wayfinding and landscape are described in further detail within the documents that form part of this submission.

The proposed design balances the built form and landscape design to create a harmonious streetscape within the local contextual setting. The site massing locates the built forms adjacent to the streets to maximise the useable play spaces towards the centre on the site. The built form has been broken down and articulated to reduce the bulk and scale, opening up key view lines, daylight and breeze paths across the site. These concepts align with the input received from the local aboriginal D'harawal elder Uncle Ivan who suggested we

provides gaps between building to allow the sunlight and breezes to pass in between the built forms.

The Administration and Library building (Block A) has been positioned on the north-eastern corner of the site, (corner of Commissioners Drive and Willowdale Drive) creating an 'urban marker' as a wider contextual response. The main entrance for the school is located between Block A and B off Commissioners Drive with a covered walkway defining a focal point and a point of arrival to the school. Site specific signage and wayfinding will layer a narrative from the local aboriginal history and culture.

The hall (Block E) represents the potential for a joint use facility on the site. The layout of the site allows for the opportunity to have both the school and community utilise the hall. The location of the hall provides for community access direct from a clearly defined entry on Willowdale Drive and a separate school access from the southern assembly area. The hall has direct access to the community carparking area towards the north. The

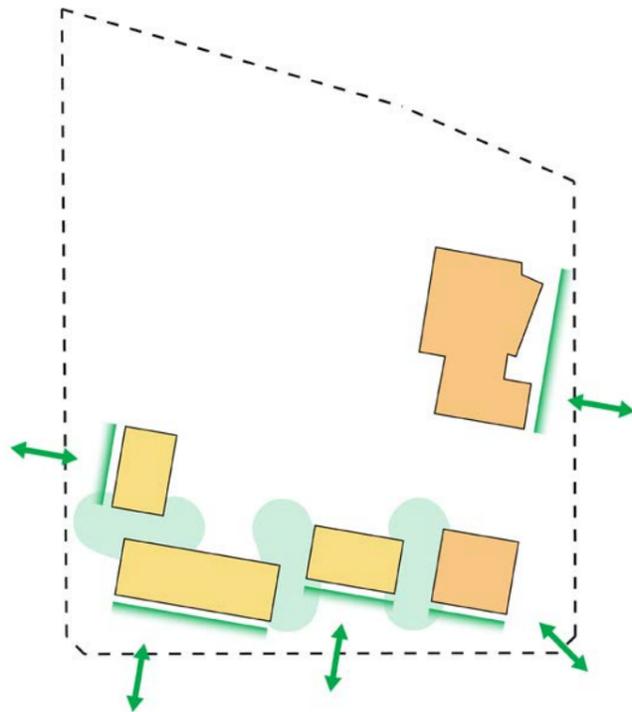
hall has been designed to activate and encourage the inclusivity of the community.

The arrangement of the built forms (Block A, B, C, D & E) creates a protective layer off the site boundary to visually protect the centralised open space. A key principle has been to provide a centralized open area which contains a variety of spaces for activities and learning e.g. quiet activities, small group gatherings, sustainable learning, nature play, sport courts. These spaces are designed for accessibility and inclusivity, with the aim to provide equitable access across the site underpinned by clear visual circulation and wayfinding to ensure that the students, staff and visitors become immediately familiar with the site layout. A level of comfort and understanding of the environment for the end user has been a key urban design principle applied to the planning of this project.

The purposeful arrangement of spaces and material application will continue to develop as the design progresses through to the construction phase.

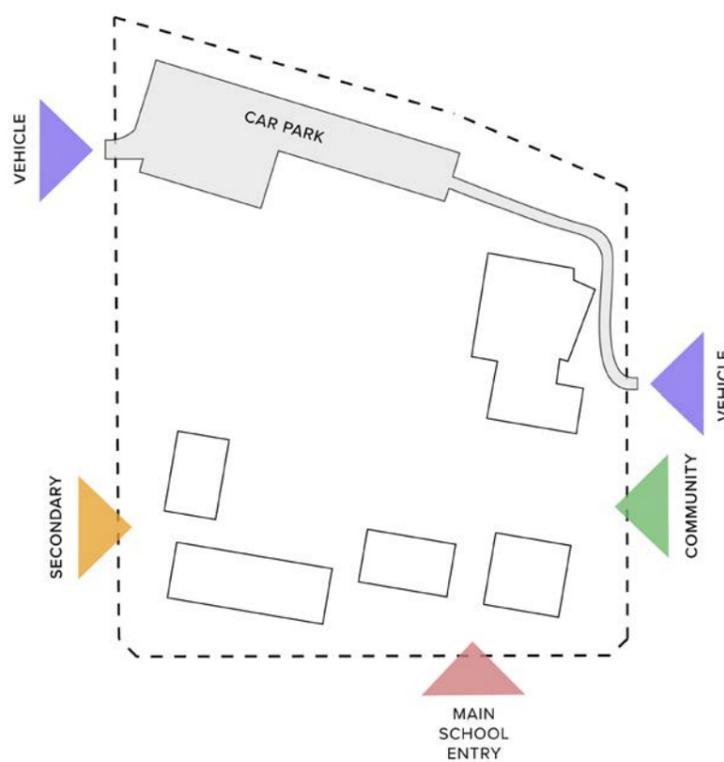
4 Design Principles

SITE



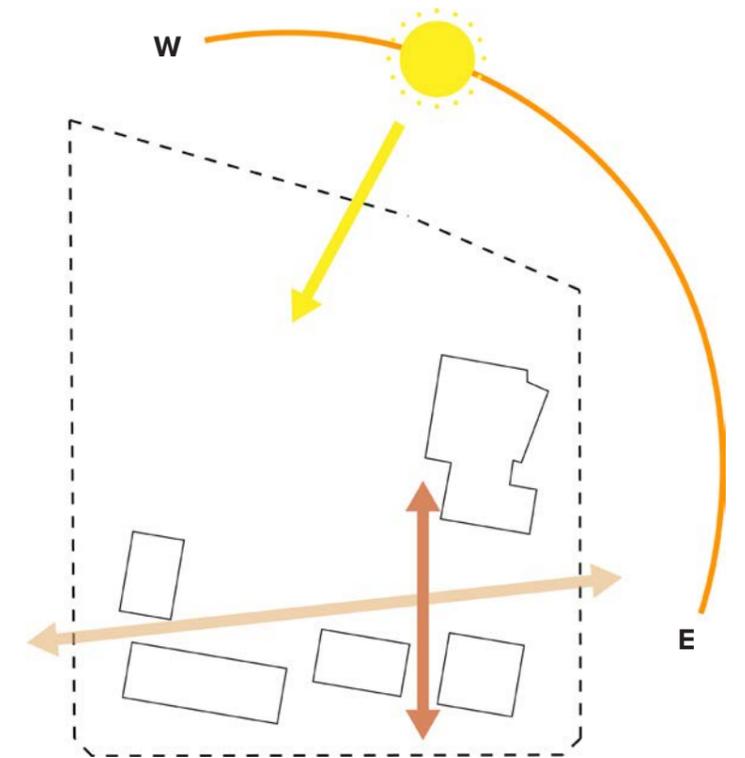
STREETSCAPE

Address the street with built form and landscape. Building mass articulated to allow views through into and across the site.



ENTRIES AND CONNECTIONS

Clear and well defined entries. Clearly identified school and community access points. Maximize separation between vehicles + pedestrians.

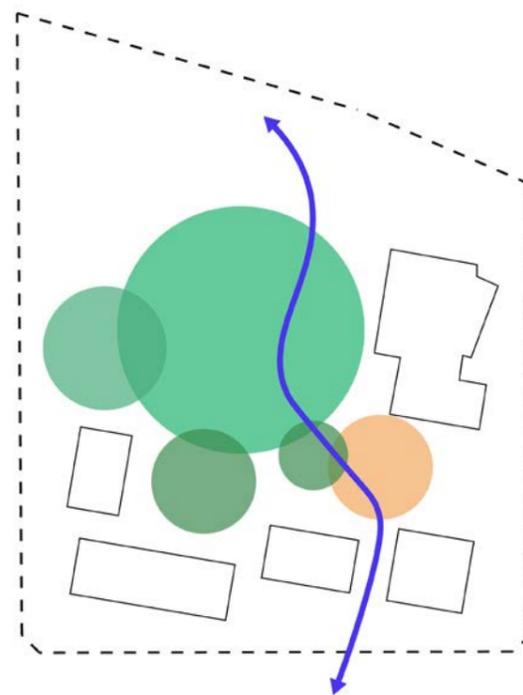
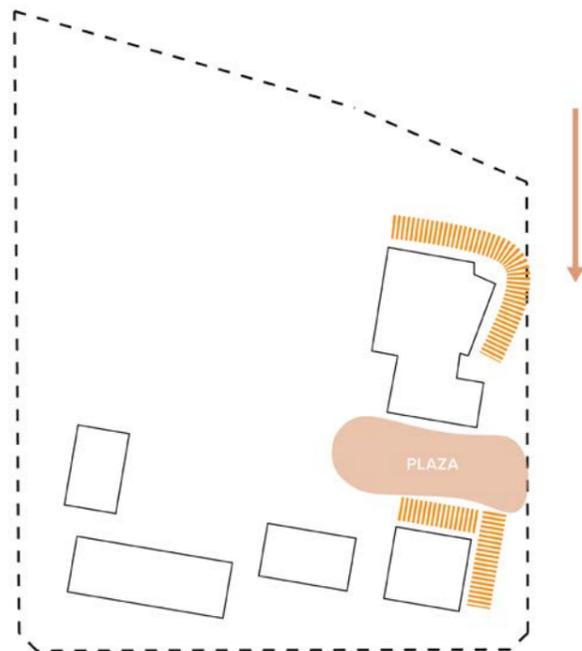


CIRCULATION

Circulation with main North-South axis and secondary East-West axis. Clarity of circulation between school + community access. The site planning will be reinforced with clear way-finding strategies. The site layout utilizes the northern sunlight (east to west) across the site.

4 Design Principles

SITE

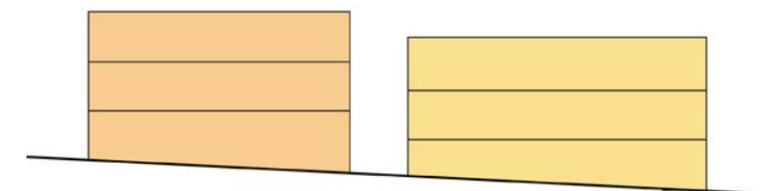


COMMUNITY

Shared access addressed from Willowdale Drive to provide closest physical connection to retail / community precinct.

OPEN SPACE

Provide a variety of open spaces linked for both school + community use. Indigenous + historical framework to weave a narrative through the ground plane.



MASSING

Step massing to respect slope to ensure at grade entries and avoid unnecessarily high volumes at the interface with residential.

4 Design Principles

LANDSCAPE

APPROACH

The proposed school site is located in an area of Western Sydney near the Nepean River and Oran Park. The approach to the Landscape development is to establish a local school community with a sense of place and belonging with a connection to the environment. The main elements to be considered include the original natural environment and the European and Indigenous Heritage of the site. These will be combined to offer educational resources to be engaged with by the primary school students.

THE NATURAL ENVIRONMENT

The school site is located within what was once the Cumberland Plain Woodland, the most widespread ecological community found in Western Sydney. The presence of the natural flora and fauna on the proposed site is virtually nil which presents a significant opportunity to bring it back to life.

EUROPEAN HERITAGE

The upper canal traverses the landscape to the north of the East Leppington school site. The canal is significant in its connection to broader Nepean catchment and its role in the provision of water to the city of Sydney.

INDIGENOUS HERITAGE

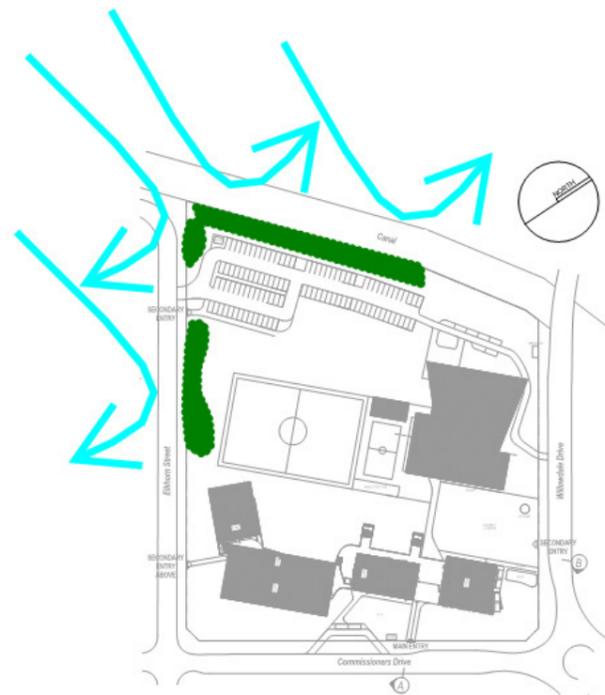
A recognition of the D'harawal people and their heritage as the original inhabitants of the land on which the school site is located. The Nepean River was of great importance to the indigenous people for food, shelter, and freshwater. The river banks also provided a protected meeting and gathering place. The Cumberland Woodland Plain also contains a large body of Aboriginal cultural heritage. This includes open campsites, scarred trees, grinding grooves, stone quarries, rock engravings and other places of social and spiritual life.



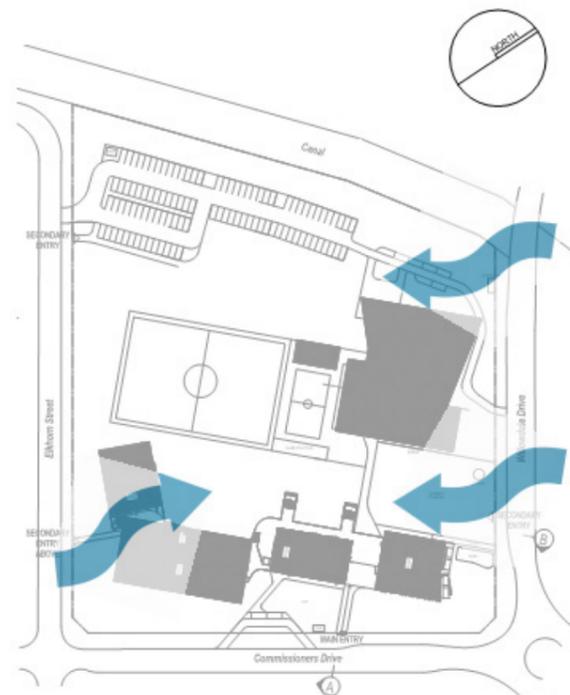
Source: Taylor Brammer Landscape Concept Package

4 Design Principles

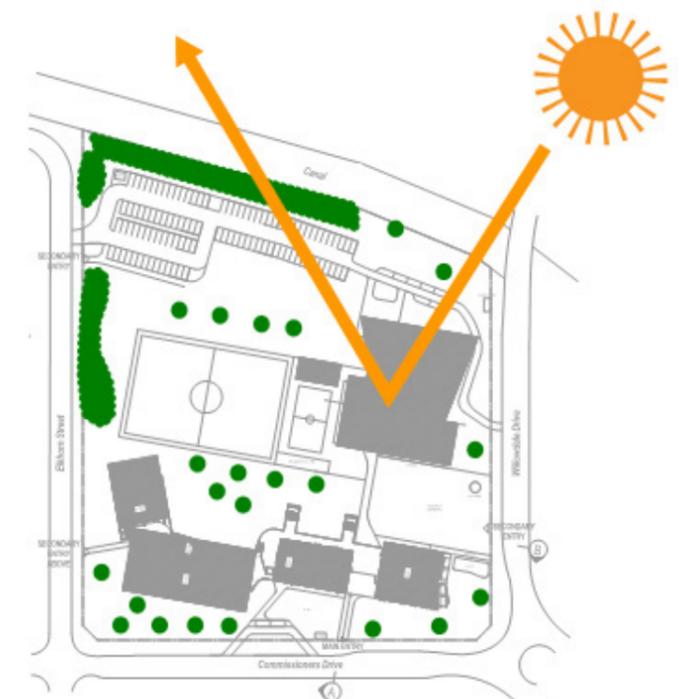
ESD



Source: Steensen Varming ESD CDR



Source: Steensen Varming ESD CDR



Source: Steensen Varming ESD CDR

PROTECT FROM WESTERLY WINTER WINDS

Consider appropriate planting, e.g. thick coverage at pedestrian level along Western edge of site to protect from cold winter winds.

PATH FOR NORTH/SOUTH SUMMER WINDS

To allow air movement for natural ventilation and to increase thermal comfort.

MITIGATE HEAT ISLAND EFFECT

Consider high solar reflectance index materials, e.g. roof materials, playing court and carpark surface; provide vegetation; provide shade with vegetation and external shading elements within the architectural design.

CPTED

CPTED consists of four (4) universal design principles which are aimed at assessing crime risk and reducing preventable risk before a development is approved. The proposed development has been designed with regard for these CPTED principles.

Territorial Re-Enforcement

The Site has frontage to the public domain along Willowdale Drive, Commissioners Drive and Elkhorn Street. The site is fenced in accordance with the SINSW security requirements therefore delineating ownership and access. The entry points are clearly defined by built form, signage and with access to the site via controlled points in the perimeter fence. The main entry to the school is located on Commissioners Drive.

Surveillance

The principles relating to surveillance relate to spaces in public areas where people can see and interact with others. The proposal, with clear circulation paths, promotes strong natural surveillance of both the public domain and the interior areas of the site. During weekend and after-hours periods, the site will be secured with site fencing and the buildings will be fitted with a Back to Base Alarm System. Furthermore, the external lighting for night time crime deterrence will be designed in accordance with the relevant Australian Standard & Schools Security Unit (SSU) requirements.

Access Control

The proposed development intends to utilise fencing to all boundaries and with gates, thus providing controlled access points. Fencing around the boundary of the site will not restrict surveillance opportunities and will be constructed with optically permeable materials in accordance with EFSG & SSU requirements.

Space/Activity Management

The proposed development achieves this through the design of buildings orientated to the exterior of the site and promotion of interior open spaces, protected from the public domain. During school operation, the students will be contained generally to the interior of the site. Graffiti resistant materials will be used wherever practicable to assist in removal.

EXTERNAL LIGHTING STRATEGY

Key Considerations for External Lighting

AS 4282:

- Light falling on surrounding properties
- The brightness of luminaires in the field of view to nearby residents
- Glare to users of adjacent transport systems
- Effects of astronomical observations

Control of Effects:

- Level of lighting
- Times of operation for proposed lighting
- Type of lighting technology

CPTED (Crime prevention through environmental design)

- Ensuring correct categorisation of areas
- Ensuring robust quality fittings
- Ensuring compatibility with security

Design Objectives:

- The implementation of a new exterior lighting design will be in accordance with the following Australian Standards:
- AS/NZS 1158:2005 Lighting for the roads and public spaces and
 - AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting.

The design will consider surrounding properties and residents and work to mitigate the negative effects of this through careful and considered selections of luminaires and control strategies, appropriate lighting levels and lighting locations.

The new exterior lighting system will also consider crime prevention and work to eliminate cause through the implementation of correct lighting categorisations, a cohesive lighting system that is compatible with security system requirements as well as through the use of quality robust luminaires.



External Pole Top Led Luminaire with full cut-off and back spill control

External Lighting AS/NZS 1158 P Category Classification



P11B



P2



P3



Steensen Varming: Electrical and Lighting Services Site Plan – Exterior Categorisation

5 Option Analysis

PREVIOUS SITE PLAN



PROPOSED SITE PLAN



OPTION COMPARISON

The site planning has been revised to incorporate the feedback from the Government Architect NSW (GANSW) State Design Review Panel and incorporate the design principles established for this project. The previous SARM Architects design proposed a large, single building form that was significantly angled away from Commissioners Drive. This layout had two main disadvantages; firstly it creates a lengthy singular building form without the potential breaks for views and breezes across the site and the ability to apply passive design principles. The second disadvantage is the amount of land provided within the front setback that cannot be fully utilised for open play space by the students.

The proposed layout divides the singular volume, reducing the bulk and scale of the built form, creating opportunities for breezes and view lines across the site connecting the green spaces. The built form is positioned adjacent to the streetscape to maximize the useable play spaces towards the centre on the site. The highly articulated built forms have generous setbacks from the boundary to allow for a landscape buffer zone for acoustic and visual privacy. The built forms facilitates solar access, cross ventilation and view lines across the site.

The Administration and Library building (Block A) is located on the north-eastern corner (Commissioners Drive and Willowdale Drive) of the site to create an 'urban marker' and focal point along the streetscape. The hall (Block E) is located towards the north-eastern corner of the site framing the streetscape, strategically positioned to utilise the carparking areas to the north and to facilitate a separate direct public entrance off Willowdale Drive. The vehicular access off Willowdale Drive and carparking has been rationalised to avoid any clashes with pedestrian access into the hall and the waste pad has been relocated closer to the site boundary.

6 Built Form

SITE PLANNING

The site planning incorporates feedback from the GANSW Design Review Panel and responds to the design principles established for this project.

The proposed layout locates the built forms (Block A, B, C, D & E) adjacent to the streetscape to maximise the useable open space and play activities towards the centre on the site. The careful consideration of the site massing, building setbacks and landscape areas has created a positive streetscape setting and a site specific contextual response. The separate built volumes provide visual articulation whilst offering opportunities for passive design principles. These key site concepts have been align with the advice provided by local aboriginal elder Uncle Ivan who encouraged paths through the site for to allow sunlight and breezes to enter the school site.

The Administration and Library building (Block A) on the south-eastern corner creates an 'urban marker' within the local context and a focal point for the streetscape.

The main entrance for the school is positioned off Commissioners Drive between Block A and B.

The hall (Block E) is positioned north of Block A for ease of access across the site for pedestrian and vehicular movement. The hall has been identified as a valuable multi-purpose facility which will be jointly used by the council and community groups to encourage and activate social interaction. The design ensures that both the community and school can use the hall, with the school specific elements located in the southern section closest to the school. An operable wall is intended to separate the school from the community use when the two sides are operating separately. Subject to the final joint use agreement (yet to be finalised), the combined space is able to be used by either the school or community subject scheduling between stakeholders.

The car park is located to avoid the services easement along the rear boundary. The intent is to separate

the staff car parking from the community car parking. The final arrangement will be resolved as the joint use agreement progresses. The servicing of the site, including sub-station and booster pumps, have been located considering code compliance & service availability. Their proposed locations are away from main active spaces and where appropriate, screened by landscaping. The waste pad is positioned close to the site boundary for ease of access by the waste management provider and to eliminate potential conflicts with students.

The landscape design is an integral part of the site planning. The narratives for the site are woven through the landscape and unite the building forms to create a learning campus that acknowledges the history and local site context.

See diagram on the following page.

6 Built Form

SITE PLANNING

- 1. Waste Pad
- 2. Main Switchboard Room
- 3. Substation
- 4. Pumps
- 5. Shade Structure
- 6. Plant with Screen
- 7. Assembly
- 8. Bicycle Parking
- 9. Sports Field
- 10. Main School Sign
- 11. Future Electric School Sign



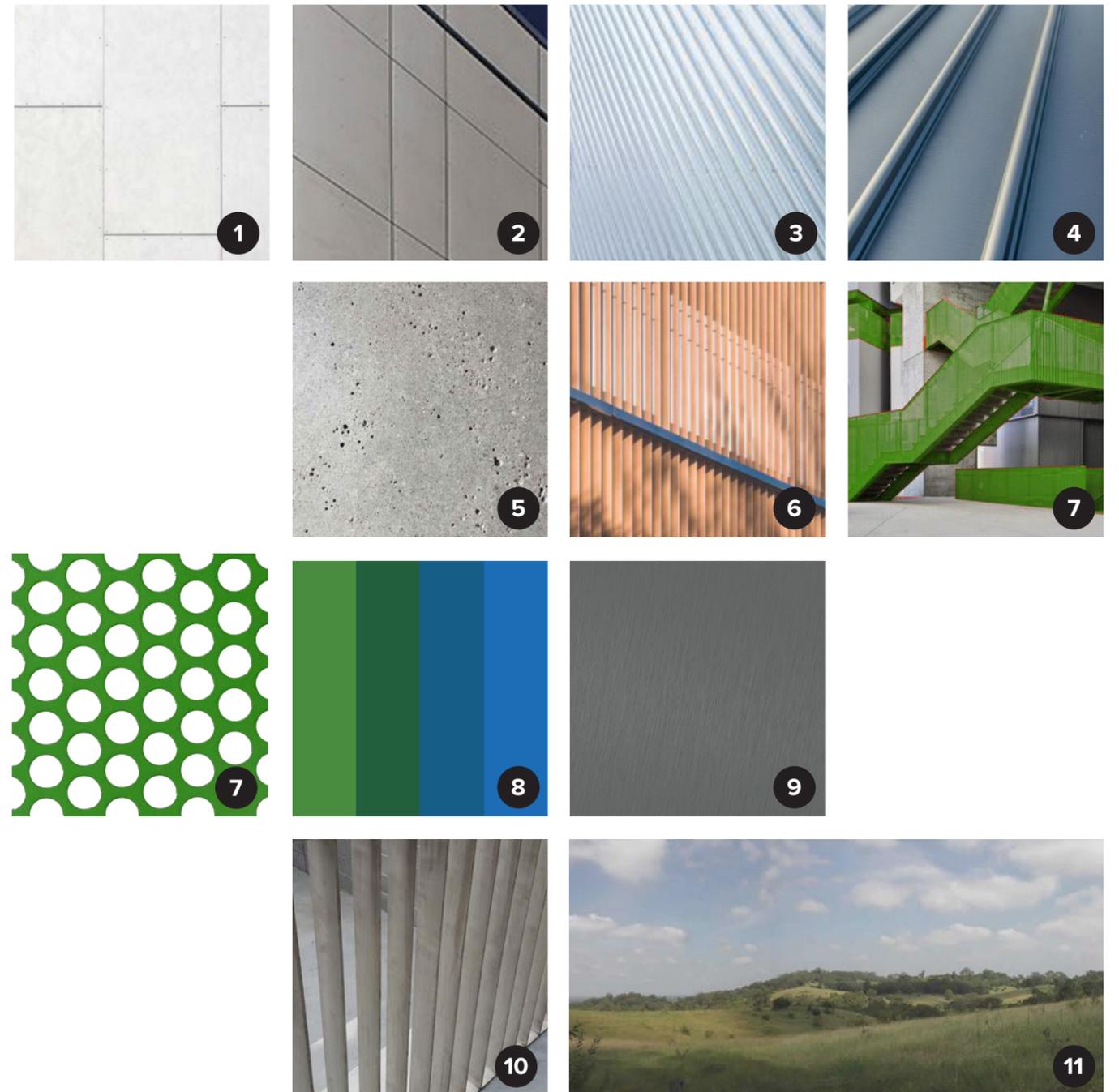
6 Built Form

MATERIALS + FINISHES

The concept for the materials is to provide robust, low maintenance materials. The colours are based on a neutral palette with selected highlight accent materials and colours.

The materials and finishes are designed to work with the landscape and wayfinding to create a coherent language that will define the school and can be used to form the basis of the school branding and identity.

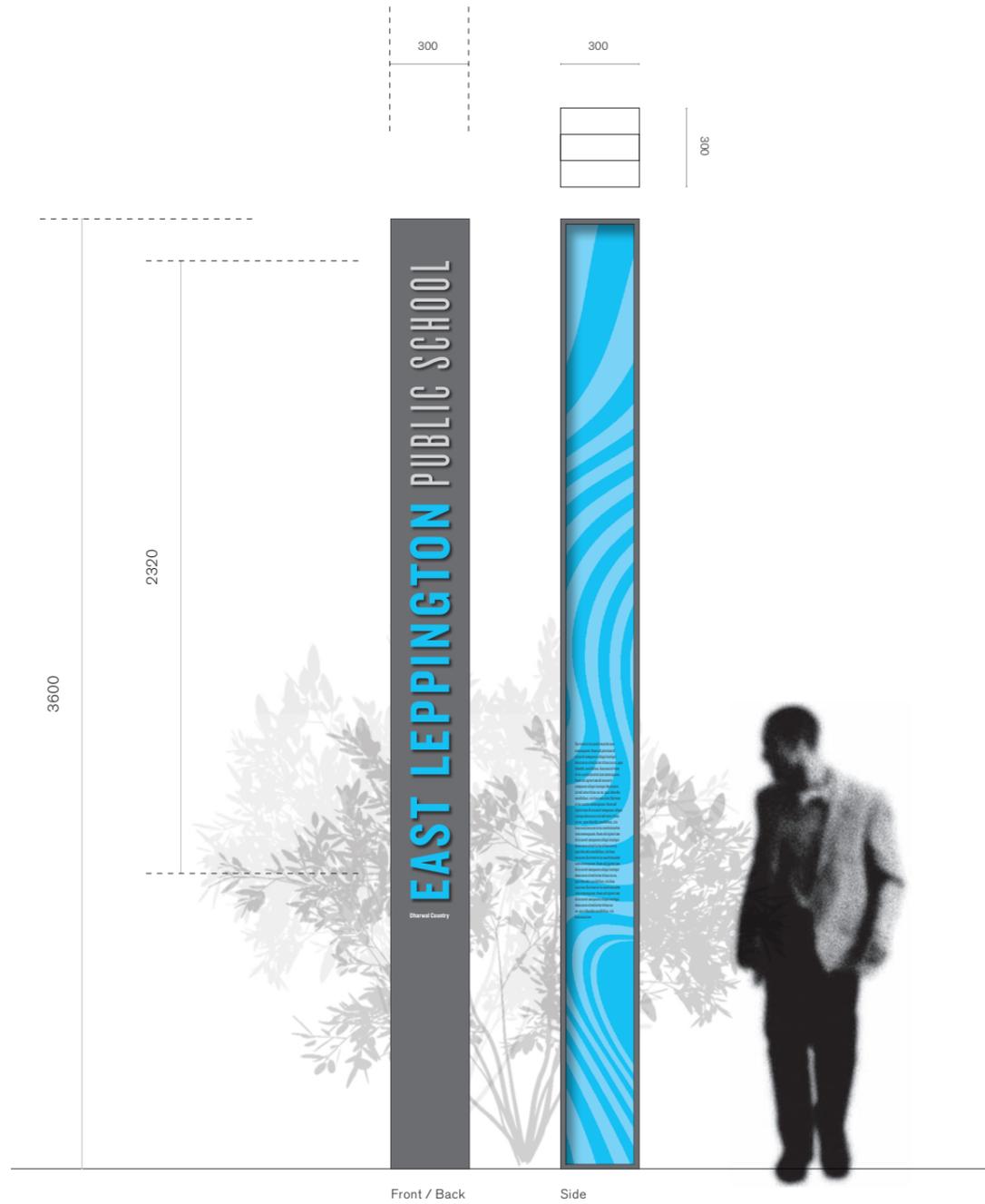
Refer elevation Architectural Drawing 00_101 for location of external finishes.



1. Cladding General CFC Neutral Colour (CFC1)
2. Cladding Accent CFC Feature Colour (CFC2-A)
3. Roofing Upper Level (MR1)
4. Roofing Lower Level (MR2) and Metal Wall Cladding (MWC1)
5. Concrete
6. Privacy Screen – Aluminium Louvres (LV1)
7. Stair Feature Colour – Powdercoated Perforated Metal
8. Window Reveal + Sunshades Accent Colours
9. External Window + Door Frames
10. Balustrades – Galvanized
11. Local Context

6 Built Form

WAYFINDING



1.0 SIGN ELEVATION: ENTRY PLINTH

The plinth is a contemporary sign form aligned with the progressive learning environment reflected in the architecture of the school form and interiors. A small text panel to the side of the sign form aims to provide an opportunity for a Dharwal Welcome to country message or other interpretive information. The plinth fabrication is proposed in 10mm steel plate forming front, top and back, finished in gloss dark grey with durable, long lasting external paint finish, school name in 15mm dimensioned lettering and internal SHS galvanised frame clad in 4mm aluminium sheet featuring graphics with durable, long lasting external paint finish. The square form of the sign allows for the information to be duplicated each side and allows for visibility on two approaches to the school entry. Note: final colour selection to be confirmed by the school.

Scale: 1:20

EAST LEPPINGTON PUBLIC SCHOOL WAYFINDING AND SIGNAGE

ENTRY SIGNAGE

THE STRATEGIES ARE DRAWN IN RESPONSE TO THE SITE NARRATIVE, SITE CONDITIONS AND CONTEMPORARY WAYFINDING PRINCIPLES



1.1 SITE PLAN: SIGN LOCATION

- Entry sign located to Northern side of pathway leading into the school. Two sided sign provides visibility from both approaches.
- Proposed location for digital school sign.



1.2 WATER GRAPHIC

Pattern to the sides of the plinth is an abstract representation of water flow which references the importance of the East Leppington area as water catchment and the canal on the North Western boundary of the school.

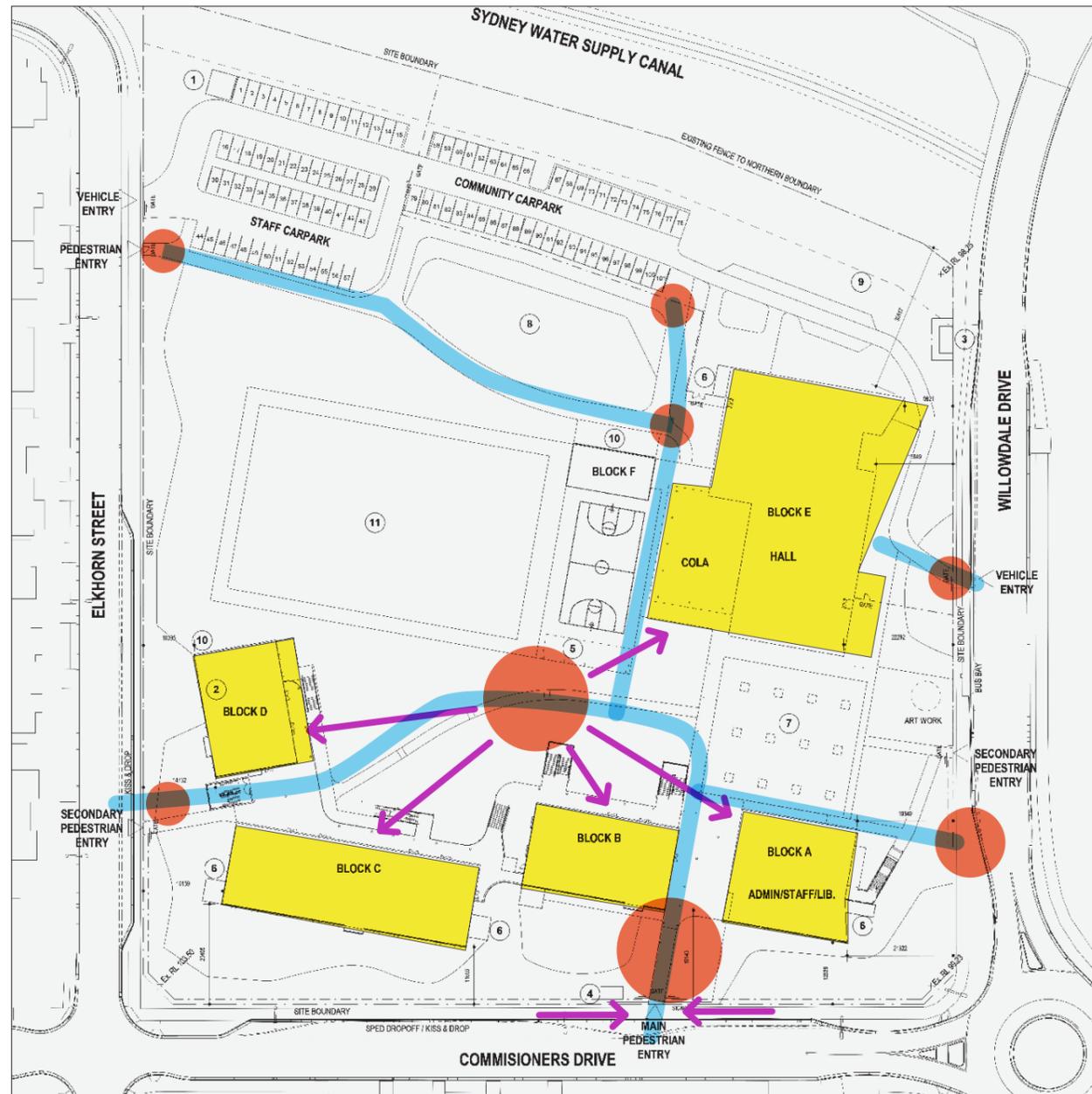
EAST LEPPINGTON PUBLIC SCHOOL

1.3 TYPOGRAPHIC NAMESTYLE FOR LETTERING

Proposed namestyle is shown in a contemporary font called Knockout 49 Liteweight for the main school name and Knockout 26 Junior Flyweight for Public School.

EAST LEPPINGTON PRIMARY SCHOOL WAYFINDING AND SIGNAGE WAYFINDING STRATEGY

THE STRATEGIES ARE DRAWN IN RESPONSE TO THE SITE NARRATIVE, SITE CONDITIONS AND CONTEMPORARY WAYFINDING PRINCIPLES



Note: site plan is indicative only. Final locations to be confirmed with resolved site plans.

1.0 SITE ANALYSIS: Circulation and nodal points

The above diagram identifies **Circulation Pathways**: tracing the movement of users throughout the site, **Nodal points**: highlighting the intersection of circulation pathways and therefore the location of signage forms and according to the scale of the nodal point and the level of information required, **Primary destinations**: which forms the basis for navigation throughout the site and **Primary site lines**: which influences the location of Type 2 Block signage and Entry signage. These four factors will guide the location and development of a signage system.

█	Circulation pathways
█	Nodal points: Primary / Secondary / Tertiary
█	Primary destinations
█	Primary site lines

TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8
ENTRY BOLLARD	BLOCK SIGNAGE	DIRECTIONAL PLINTH	DIRECTIONAL BOLLARD	DOOR SIGNAGE	FLOOR NUMBERS	SUPER GRAPHICS	IDENTIFICATION SIGNAGE
IDENTIFICATION	IDENTIFICATION	DIRECTIONAL	DIRECTIONAL	IDENTIFICATION	IDENTIFICATION	ARTWORK	IDENTIFICATION
Supports the clear identification and branding of the school at main entry visible on both approaches to the entry.	Supports the clear identification and branding of school blocks visible from the central grounds within the site.	Ensures provision of high level information supporting navigation to and from primary destinations within the site.	Ensures provision of detailed information supporting navigation to and from secondary destinations within the site.	Signage system that supports the clear identification of classrooms detailing the floor level and room number.	Signage system that supports the clear identification of floor levels in each building adjacent to vertical circulation.	A range of site specific large scale graphics that contribute broadly to the site aesthetics and amenity and specifically to learning and placemaking.	Signage system that supports the clear identification of destinations throughout the site.
3650mm x 300mm x 300mm	1200mm x 600mm x 50mm	2000mm x 400mm x 50mm	1600mm x 150mm x 150mm	300mm x 150mm	2000mm x 600mm	2700mm x 8000mm	200mm letter height
4 x sided sign form with graphics to each face. Welded 15mm mild steel sign faces front, back and top, paint finished. Sides as 4mm aluminium sheet fixed to 100mm SHS galvanized frame carrying graphics panel full height. Dimensioned lettering to sign face from 10mm acrylic, 2 pack paint finished. Engineering and footing details to be resolved.	1 x sided sign form with graphics to face that may wrap around the corner of a building. Sign face as 3mm aluminium sheet finished with durable, high build external paint, concealed fixed to 50mm SHS galvanized frame. Dimensioned lettering to sign face from durable, high build external paint.	2 x sided sign form with graphics to front and reverse faces. Sign face as 3mm aluminium sheet, finished with durable, high build external paint, concealed fixed to internal 50mm SHS galvanized frame. Graphics to sign face with clear protective coating over to seal. Engineering and footing details to be resolved.	Square, 2 x sided sign form with graphics to front and reverse faces. Bollard is standard SHS post finished with durable, high build external paint. Graphics to sign face with clear protective coating over to seal. Engineering and footing details to be resolved.	1 x sided sign form with graphics to front face only. Sign face as 4mm aluminium sheet, finished with durable, high build external paint. Sign form chemically fixed to wall or glazed surface. Graphics to sign face with clear protective coating over to seal.	1 x sided sign form with graphics to front face only. Sign face as 6mm aluminium sheet, finished with durable, high build external paint. Base plate mechanically fixed to wall surface with sign face chemically fixed to base plate.	Graphic to be digitally printed die sublimation to synthetic wallpaper product such as 3M. Require drops in 1200 or 1500mm width to full heights of walls. Require means to conceal ends of graphics to avoid lifting or picking.	1 x sided sign form. Dimensioned lettering from 10mm acrylic, finished with durable, high build external paint, chemically fixed to wall or glazed substrate.

1.1 SIGNAGE REQUIREMENTS AND SPECIFICATION: SCALE 1:20

1.2 THE WAYFINDING STRATEGY

PRIMARY OBJECTIVES: The primary objective for the wayfinding is to facilitate the autonomous navigation and movement throughout the site of a range of users supporting a positive visitor experience.

USER GROUPS: The signage will support a range of user groups comprising students, parents, staff and broader community. It is expected that the requirements will be higher for first time visitors to the site and as familiarity increases with subsequent visits the dependence upon information and signage will decrease.

CIRCULATION AND NODAL POINTS: A range of circulation pathways are evident within the site typically tracing the movements from a number of entries to a range of key destinations. As the school site contains no through vehicular access the signage will preference pedestrian movement and, where relevant, guide visitors through the site from designated car parks. A high reliance on directional information (to/from destinations) is typical at circulation nodal points which are characterised by: 1. transitions between spaces and zones: ie public/school & internal/external, 2. transition between transport modes: ie vehicular/pedestrian, and 3. at the intersection of circulation pathways. To support good site navigation a range of signage is required that accommodates a range of varying types and scale of information providing clear

identification of destinations throughout the site and the movement between them. Primary site lines are noted in the heart of the school grounds and main entry that will guide location of entry signage and situation of high level block signage.

INTEGRATED SIGNAGE SUITE: A draft, functional signage suite is detailed above that responds broadly to the site narrative and to the specific site conditions. The suite consists of a set of scaled forms, categorised as either directional or identification, that respond to the identification and navigation to and from a range of primary and secondary destinations.

MATERIALS, AESTHETICS AND FORM: Whilst the design of signage satisfies primarily functional requirements and will preference the autonomous navigation of visitors throughout the site, it is important also that the signage respond to the architectural, material and spatial scale and consider this in its design, materiality and construction. The signage will importantly contribute to the sense of place and strengthen the site narrative.

BRAND AND SIGNAGE: A secondary though important function of a signage system is to appropriately brand the site. At a basic level this means the clear representation of the school brand but also to reflect the aspirations, character and positioning of the school through its design. This will be further developed with user groups.

6 Built Form

MASSING

The massing of the form is broken down into a series of smaller volumes. These volumes step to follow the fall of the site with the objective of providing on grade access points at entries into the school.

The connecting walkways provide relief to the façade and act as the main shading element for the northern facades. The open stairs provide further articulation whilst providing safe access and weather protection for the students.

The design has been developed based on the input received at the GANSW review panel meetings. The hall is intended to have joint use with the local community. It is located on Willowdale Drive as it is the main connection back towards the local retail centre of Willowdale. The school's main entry is from Commissioners Drive and is clearly defined with a covered colonnade. The school has access to the hall from the south and the community will have access from the east and also the community carpark located to the west. Further discussion relating to GANSW reviews can be found in Section 8.



HAND DRAWN AERIAL MASSING FOR EAST LEPPINGTON PRIMARY SCHOOL

7 Visualisations & Streetscape

3D VISUALISATIONS

The Administration and Library building (Block A) has been positioned on the north-eastern corner of the site, (corner of Commissioners Drive and Willowdale Drive) creating an 'urban marker' as a wider contextual response. The main entrance for the school is located between Block A and B off Commissioners Drive with a feature covered walkway defining a focal point and a point of arrival to the school. Site specific signage and wayfinding will layer a narrative from the local aboriginal history and culture.

The built form (Block A, B & C) along Commissioners Drive has generous setbacks to allow for a landscape buffer zone to consider the adjacent residential dwellings and ameliorate any potential amenity and visual impacts. The stepped facade articulation and window detail composition creates a dynamic streetscape address. The buildings produce minimal overshadowing impacts as can be seen on the shadow diagrams that form part of this package. The scale of the proposal does not have any negative impacts with respect to the heritage item located to the north of the site.

VIEW OF ENTRANCE FROM COMMISSIONERS DRIVE





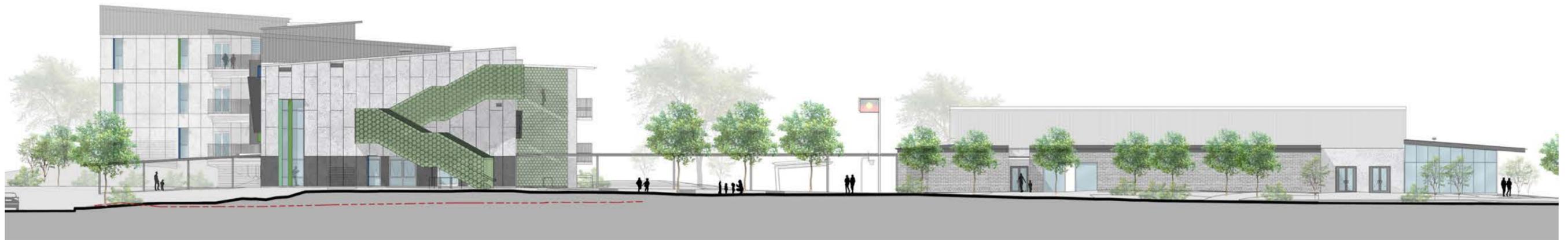
VIEW FROM WILLOWDALE DRIVE

7 Visualisations & Streetscape

STREETSCAPE ELEVATIONS



South Elevation – Commissioners Drive



East Elevation – Willowdale Drive

8 Design Verification

DESIGN QUALITY PRINCIPLES

Below are PPA's responses to the Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities (2017).

CONTEXT, BUILT FORM & LANDSCAPE

Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage. The design and spatial organisation of buildings and the spaces between them should be informed by site conditions such as topography, orientation and climate. Landscape should be integrated into the design of school developments to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites.

The design for the East Leppington Primary School is based on information drawn from the site analysis and urban design principles this ensures the project is suited to its context and provides a positive streetscape response. The site is located on D'harawal land and the project team was fortunate enough to be take on a site walk with local aboriginal elders Uncle Ivan and Uncle Eddie. They encouraged the design team to

allow the breezes and sunlight to penetrate the centre of the site and to use the landscape to encourage the wildlife back to the school. The building massing and landscape design responds to this approach by avoiding a continuous built form and in utilising endemic planting on site. The Administration and Library building (Block A) and Hall building (Block E) have been designed with street frontages off Commissioners Drive and Willowdale Drive with clearly defined arrival points. The arrival locations on the site consider vehicular movement from the main connecting roads and the wider community. The landscape design will include canopy planting within the boundary setbacks to soften and improve the amenity for both the school users and neighboring residents.

The Hall building (Block E) is a multi-purpose 'shared' facility identified for dual use by the school and community groups. It has been positioned towards the north-eastern corner of the site for easy and uninterrupted access by both pedestrian and vehicular movement. The built form (Block A, B & C) along Commissioners Drive and Elkhorn Street have generous setbacks to allow for a landscape buffer zone to consider the adjacent residential dwellings and ameliorate any potential amenity and visual impacts.

The site has a gentle fall from the south-western corner across to the north-eastern boundary. The built form and massing is strategically orientated to consider the relative stepping site levels, aligning the floor levels to ensure an accessible and inclusive design. The different arrival entrance points to the school around the site are designed on grade for visual inclusivity, accessibility and connectivity to the public domain. A site narrative of 'Connecting to Country' has been developed through the applied material palette, landscape design, signage and wayfinding strategy to include the local indigenous narrative, history and culture of the D'harawal people. The combination of the building forms and landscape setting will provide a sense of identity for the neighbourhood and wider community. The overall form, site layout and landscape approach ensure that negative impacts for the neighbours has been mitigated.

SUSTAINABLE, EFFICIENT & DURABLE

Good design combines positive environmental, social and economic outcomes. Schools and school buildings should be designed to minimise the consumption of energy, water and natural resources and reduce waste and encourage recycling. Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.

East Leppington Primary School is designed with regard to the principles of environmentally sustainable development. The building orientation, sun shading and passive thermal design elements are the first step to creating a sustainable building. This is further enhanced by the inclusion of a rainwater tank to be used for irrigation, solar power and the selection of long lasting, low maintenance materials. The structural system for the buildings is a mixture of concrete frame and steel framing. The benefit of these systems is that the internal walls are non-loading bearing allowing for reconfiguration in the future if deemed necessary. Together with Steensen Varming, the buildings have been optimised to facilitate good daylighting and natural ventilation. The ESD report forms part of this submission, outlines these ideas in more detail including energy conservation, water conservation and other sustainability initiatives.

ACCESSIBLE & INCLUSIVE

School buildings and their grounds should provide good wayfinding and be welcoming, accessible and inclusive to people with differing needs and capabilities. Note: Wayfinding refers to information systems that guide people through a physical environment and enhance their understanding and experience of the space. Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.

The site has been designed to provide an accessible ground plane with the main premise such that the buildings are all served by ramps and/or lift. The design of the open space aims to provide walkway transitions between the various areas. This creates equitable access for all users. The site layout is clear and simple, promoting easy and direct circulation. This will be enhanced by clear wayfinding signage. The signage strategy is included in Section 4 of this report. The layout of the various functions that can be used by the community have been designed so as to facilitate secure after hours use. The Hall and library are located at the street edge with clearly defined entries to allow easy and delineated access by the community. The school has the potential to connect to the surrounding community open spaces via the existing pedestrian and bicycle network.

8 Design Verification

DESIGN QUALITY PRINCIPLES

HEALTH AND SAFETY

Good school development optimises health, safety and security within its boundaries and the surrounding public domain, and balances this with the need to create a welcoming and accessible environment.

The East Leppington School design ensures that natural light, ventilation & acoustics are used to create healthy and safe learning and teaching environments. The school site is to be fenced at the boundary as the perimeter security. The landscaping of the site and the articulation of the fence will assist with integrating the fence into the site and public domain. The school has a main entry on Commissioners Drive that is clearly identified. There are multiple secondary entry and exist points that are needed to manage the large student numbers on the site. These points are secure and are open at the start and end of the day only. During school hours the access points will be locked to ensure that all visitors and students enter and leave via the main entry during these hours.

AMENITY

Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood. Schools should include appropriate, efficient, stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas.

The layout of school campus is designed around the principles developed through workshops with the Project Reference Group (PRG), building on the design work undertaken by the previous project team. The objective is to provide a variety of teaching and learning spaces that have access to natural light and ventilation and have good internal acoustics to facilitate comfortable learning environments. The typical learning clusters contain four homebases, a large practical activity/maker space area and presentation space. This arrangement provides the opportunity for future focussed learning within a range of fixed and flexible spaces. These spaces are complemented on site by special programs rooms, learning spaces within the library and facilities for special needs students. The hall has the potential for community joint use and as such provides the opportunity for the school to have access to a larger facility. In addition, a range of outdoor learning and play spaces are provided with the aim to encourage learning from the natural environments and the buildings themselves. Some spaces are designed to be multipurpose to cater for a range of school uses as well as community use through coordination with the school management. This includes the Hall, Library and playing fields. The proposed design orientates the built form adjacent to the surrounding streets, positioning the large play area in the center of the site. This has the benefit of protecting the amenity of the local neighbourhood and the safety of the students.

WHOLE OF LIFE, FLEXIBLE & ADAPTIVE

School design should consider future needs and take a whole-of-life-cycle approach underpinned by site wide strategic and spatial planning. Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

The design of the site is based on the urban design and sustainability principles described in the points above. The key factors that ensure a building can be used well into the future are; long lasting, low maintenance materials to ensure its use stand up to the impacts associated with school buildings, framed construction that allows the internal walls to be reconfigured in the future to adapt to future learning requirements and finally, providing a variety of learning spaces that have good amenity for the uses teachers, students & community.

AESTHETICS

School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements. Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood. The built form should respond to the existing or desired future context, particularly, positive elements from the site and surrounding neighbourhood, and have a positive impact on the quality and sense of identity of the neighbourhood.

East Leppington Primary School is designed to provide a highly articulated and dynamic built form. The Administration and Library building (Block A) is designed as an 'urban marker' signifying a focal arrival point to the school with key visual devices such as a large oversized picture frame window and external sculptural public staircase for public circulation.

The hall building (Block E) fronts Willowdale Drive with a direct street entrance designed to facilitate the community. A key site strategy for the project identifies the importance of connecting the neighbourhood and wider community groups.

The teaching buildings (Block B, C & D) have an articulated façade comprising of picture windows and vertical coloured blades defining the varied interior learning environments. The geometrical and colour composition creates a dynamics and balanced streetscape address.

A site narrative of 'Connecting to Country' has been developed through the applied material palette, landscape design, signage and wayfinding strategy to include the local indigenous narrative, history and culture of the Dharawal people. These themes will be explored further during design development to ensure that the local and indigenous history permeate the design. The combination of the building forms and landscape setting will provide a sense of identity for the neighbourhood and wider community.

8 Design Verification

GOVERNMENT ARCHITECT RESPONSE

The following are PPA's responses to the comments provided in the feedback from SDRP Session 36, dated the 8th of August 2019.

The project team would like to thank the panel for their responses and feedback in respect to the abovementioned project. The current status of the project is approaching 50% Schematic Design and many of the items noted in feedback will be integrated into the design as the design progresses. We note that the panel generally supports the design development of the project as noted in the extract below. In particular the following aspects of the design proposal are supported:

1. Overall masterplan, clarity of site plan and design principles;
2. Community access to school facilities;
3. Civic presence and scale of the buildings;
4. Permeability of the school grounds from the street and potential connection to future open space to the north;
6. Engagement with local Indigenous Cultural Heritage during design concept development (and ongoing).

GANSW Comment	PPA Response
Hall and Library	
The panel understands the hall and library will be delivered through conventional construction techniques. Both these facilities should be developed to create a strong identity for the school and to differentiate this school from others nearby.	Noted
The hall is an important school facility and should be developed to reflect this importance with the joint use requirements secondary and ancillary to the school requirements.	The hall is currently in the process of redesign subsequent to a positive meeting with Campbelltown Council. Further information will be provided as the design progresses noting the above.
Clearly articulate the relationship and façade treatment of the hall to the school grounds and public domain, including clear legibility of arrival to the hall from the carpark, entry forecourt and school assembly area.	Noted. Will be included in the redesign.
Clarify the relationship between the hall and Willowdale Drive, including access, proximity, levels and visualisations of the hall from various vantage points.	Noted. Will be included in the redesign.
Consider repositioning the service area west of the hall to improve the pedestrian connection between the COLA and the carpark.	Noted. Will be included in the redesign. The waste pad will be located within the staff carpark to allow for ease of access by the collection vehicle. The northern and western interface will be designed to facilitate a stronger connection to the COLA, carpark and also the community facilities.
The expression of the outdoor stair of the Admin/Library block is supported and should be further detailed as a public access element to encourage its use by students and staff.	Noted. The stair will connect the assembly area that will double up as a community open space. The design will incorporate elements that distinguish this staircase from the general student staircases.
Consider relocating the toilet block west of the play court to provide a more open connection between the COLA, playcourt and children's play area.	The redesign of the hall will have an impact on the final location of the toilet block. The COLA has a direct connection to the games court. The location will aim to maximise the connection to the play space to the north.
Aboriginal Culture	
The panel commends the approach to understanding and engaging with local Aboriginal culture; we invite the team to demonstrate concrete outcomes in future presentations, and deep integration of the findings into the project.	Noted
The indigenous art courtyard concept is supported as an entry marker and statement and should be woven throughout the entire site through landscape and design strategies referring to the entry gesture. Provide details of how the connection to country will be made evident throughout the school grounds: for example, using landscape, materials, plant selection, art installations/murals, naming, wayfinding devices, play equipment, paving, colour, texture, and formal narratives.	Noted. These narratives will be extended throughout the site as the landscape, wayfinding and buildings develop.
Modular Construction System	
The approach to modular construction presented is supported subject to further detail being provided to demonstrate a high quality of construction that delivers a site specific design solution.	The surrounding residential areas are characterised by extensive use of grey toned materials. Illustrate how the school can provide relief from this visual monotony through the subtle use of colour and further detail the materiality of each building.
Provide further detail on how the modular system will deliver environmental performance and functional amenity for the buildings.	The SSDA will be accompanied by an ESD report prepared by Steensen Varming. The principals outlined in this report are incorporated into the design and will be refined as the design progresses.

8 Design Verification

GOVERNMENT ARCHITECT RESPONSE

The following are PPA's responses to the comments provided in the feedback from SDRP Session 36, dated the 8th of August 2019.

GANSW Comment	PPA Response
The top story of the homebase blocks should take advantage of the additional roof space and potentially incorporate a raked ceiling, ceiling fans and/or additional clearstory windows to differentiate it from the lower floors.	The design is being developed to ensure that the top floor takes advantage of the roof space. Ceiling fans will be incorporated into all learning spaces.
Investigate opportunities to raise the ceiling level in the lower homebase levels to achieve additional height.	As the design progresses, opportunities will be reviewed to raise the ceiling level if possible.
The surrounding residential areas are characterised by extensive use of grey toned materials. Illustrate how the school can provide relief from this visual monotony through the subtle use of colour and further detail the materiality of each building.	The design concept for the materials relates back to the site narrative around connecting to country. A range of accent colours are used to provide relief from the neutral background of the main building elements. This is further enhanced by the screens used to define the staircases. These elements, combined with the substantial site landscaping, will provide relief in a subtle way.
Landscaping & Public Domain	
The integrated landscape is crucial to the identity of the school and usability of outdoor spaces and must be delivered concurrently with architectural development.	The landscape design is being progressed in line with the feedback received at SDRP 3.
Provide detail on how different age groups will be accommodated within the open spaces.	The landscape design is being progressed in line with the feedback received at SDRP 3 in consultation with the PRG and ESFG.
Provide an evidence-based analysis demonstrating that the landscape proposal will reduce the heat-island effect.	The ESD consultant, together with the landscape architect, will address this as the design progresses.
Provide detail on how the heat-island effect could be further mitigated through early intervention methods, for example tree planting prior to start of construction.	The project team will explore the possibility of any early works. Planning and contractual issues will need to be reviewed to understand the feasibility.
Provide detail on how the southern landscape buffer can be integrated with the homebases as an outdoor learning area or dedicated play space for younger age groups,	The ground floor homebases have been provided with sliding doors to the front setback and the landscape levels have been adjusted to allow access to the outdoor space. This design is subject to technical stakeholder review to ensure it can be supported.
Minimise the extent of fencing as much as possible and articulate fencing to incorporate landscaping on both sides to reduce visual impact and clarify long-term fencing strategies for the whole site.	The site fencing has been placed at the perimeter with the key entry areas having a recess to articulate the entry and provide opportunity to introduce soft landscaping to reduce the impact of the fence. The final fence locations will require review and sign off by the security unit and therefore will be subject to their feedback.
Illustrate opportunities to connect the school into the surrounding community including walking and cycling paths and connection to adjacent open space.	The context analysis shows the surrounding open space network and walking and cycling paths. The multiple entry points to the school facilitate a connection to this network. The location of the hall promotes community interaction as there is direct access from the walkway that connects to the retail and open space network to the north of the site.