

Prepared for: SINSW
Date: 27 October , 2022



State Significant Development Application Report

The Forest High School

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We pay our respects to Elders, past and present and emerging.

Architectus is committed to honouring Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters and seas and their rich contribution to society.

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Executive Summary & Design Brief

Architectus was engaged by School Infrastructure NSW to prepare a Master Plan, Concept Design and Schematic Design for the relocation of 'The Forest High School' to a new site in Frenchs Forest. The brief for the new school site looks to future proof the capacity of the school by providing an 'EFSG Medium' school (previously 'EFSG Stream 9') which can accommodate 1500 students.

The completed school will provide enhanced equitably throughout all levels and areas of the school, and respond to the significant features of the site and its unique location.

The following report expands in detail upon the brief, the site appreciation, the guiding design principals, the master plan, the built form and urban response, and the facade and materiality,

Engagement

An extensive consultation process took place through the development of the proposed school design. The following is a list of consultation sessions during the Master Plan, Concept Design and Schematic Design phases:

Meeting	Date
PRG 01	25.10.20
PRG 02	09.12.20
TSG 01	15.12.20
PRG 03	16.12.20
EFSG 01	17.12.20
PRG 04	03.02.21
ERG 01	09.02.21
TSG 02	17.02.21
Meeting with Principal	17.02.21
EFSG 02	18.02.21
Meeting with Principal	22.02.21
PRG 05	24.02.21
Meeting with Principal	01.03.21
DfMA meeting	05.03.21
EFSG 03	08.03.21
PRG 06	10.03.21
ERG 02	16.03.21
PRG 07	31.03.21
EFSG 04	13.04.21
SDRP 01	14.04.21
PRG 08	21.04.21
EFSG 03	19.08.21
ERG 02	07.09.21
PRG 09	08.09.21
EFSG 04	13.09.21
TSG 03	30.09.21
PRG 10	06.10.21
PRG 11	01.11.21
ERG 04	09.11.21

Meeting	Date
EFSG 05	11.11.21
PRG 12	17.11.21
Indigenous Consultation	25.11.21
PRG 13	01.12.21
SDRP 02	08.12.21
Kick off User Group	11.03.22
PRG 14	30.03.22
EFSG	19.03.22
ERG	26.04.22
PRG 15	27.04.22
ERG	17.05.22
TSG	18.05.22
PRG 16	18.05.22
PCG	26.05.22
EGR	21.06.22
PRG 17	22.06.22
Pre PRG	29.06.22
Design Review with School	01.07.22
EFSG	13.07.22
TSG	13.07.22
ERG	19.07.22
PRG 18	20.07.22
PCG	28.07.22
EFSG	31.08.22
TSG	31.08.22
ERG	06.09.22

Brief

The brief for each school is based on the EFSG for a Medium High School (Stream 9). The following additional units have been selected by SINSW:

- 1 x Science Learning Unit
- 1 x Movement Studio
- 1 x Lecture Learning Unit
- A Support Unit made up of 3 classes and ancillary functions

Site context

The Forest High site is in Frenchs Forest, approximately 40km north of Sydney central business district and within the Northern Beaches area of Sydney. Northern Beaches Council is proceeding with the new Hospital Precinct Structure Plan which incorporated the relocation of The Forest High School. Due to the proposed development and expansion of the health precinct adjacent to the Northern Beaches Hospital, the Forest High School will relocate to the 4.5-hectare Allambie Heights site.

Site constraints

Considering the reduced plot area compared to the existing site and available developable area of the proposed site, the footprint required for buildings and car parking as well as access and setbacks, the site size is challenging to accommodate all programs and open spaces effectively. The site has steep level changes from North to South, which requires careful consideration. With significant existing vegetation, the site falls under bushfire zone restrictions. The western portion of the site has existing infrastructure including overhead high voltage transmission lines. At the centre of the site, there are large existing trees and a potentially sensitive zone for aboriginal archaeology.

Detailed analysis and understanding of the site, and the development of opportunities and constraints findings has enabled key design principles to be developed which informed the design options for the school.

Master Plan

Multiple master plan options were developed, with the intention of selecting a single option to be developed during the concept design stage. The options were:

1. Open Courtyard
2. Courtyard
3. Learning Loop

During consultation with SINSW and stakeholders, another option, Option 3 “Learning Loop” was developed to capture the feedback. It was selected as the preferred option for the Concept Design development.

The Concept Design

The concept design was developed in consultation with SINSW and stakeholders to accommodate the requirements of the EFSG and the most recent DfMA guidelines.

The concept design was coordinated to align with the recently issued EFSG Standard Hub Layouts for a ‘Medium High School’ (previously ‘Stream 9 High School’).

The use of these hub layouts resulted in a highly efficient scheme and a reduction in overall GFA.

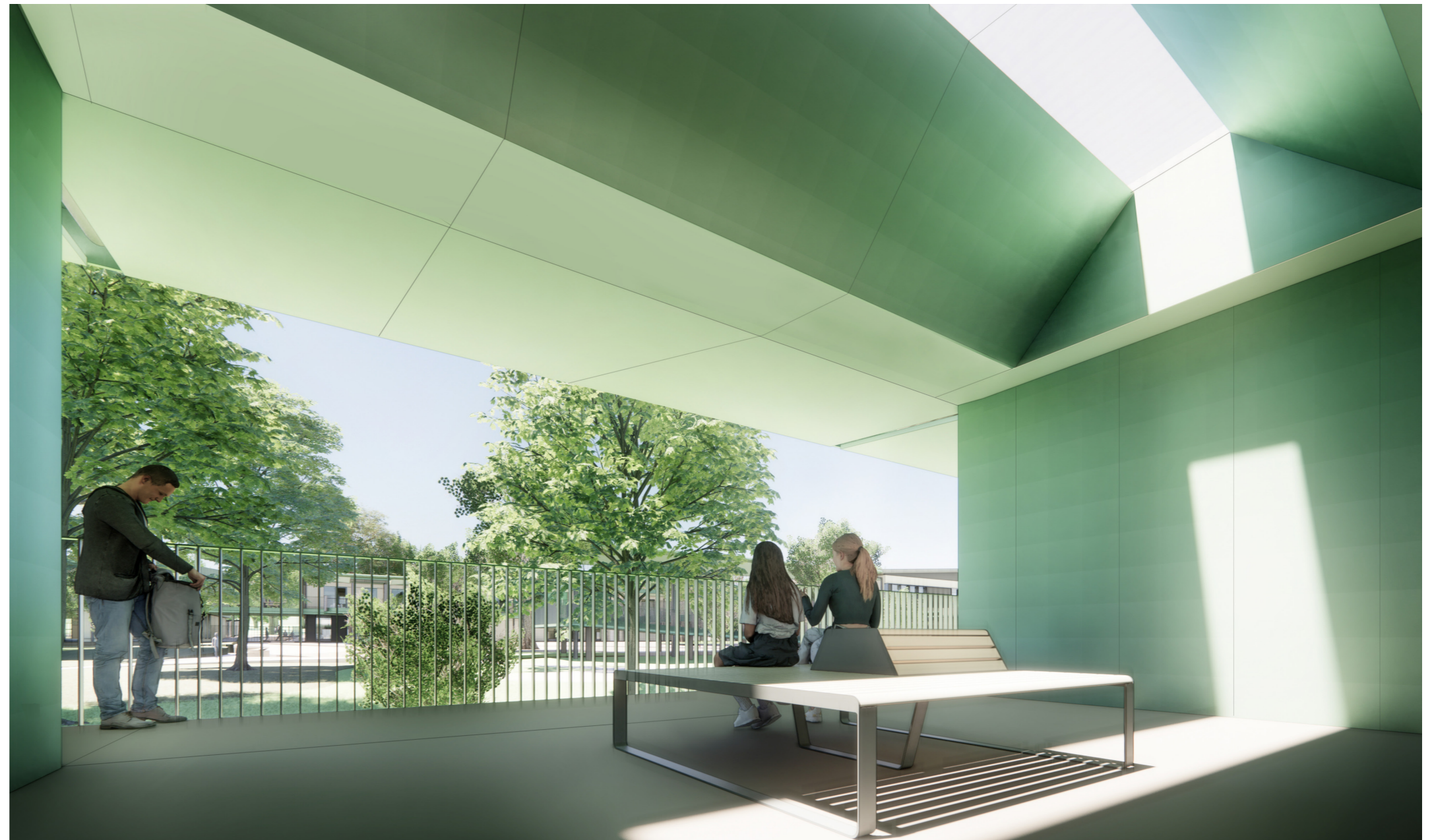
The Schematic Design

The schematic design has been developed in consultation with SINSW and stakeholders to accommodate the requirements of the EFSG and the most recent DfMA guidelines.

Coordination with the following consultants has been incorporated into the schematic design design (please refer to the appendices for the detailed consultant reports):

- Electrical engineering (Steensen Varming)
- Mechanical engineering (Steensen Varming)
- Lift Consultant (Steensen Varming)
- Bushfire (ABPP)
- Civil engineering (Enstruct)
- Structural engineering (Enstruct)
- Landscape architecture (Oculus)
- Ecology
- Traffic and Transport (SCT)
- Quantity surveyor (Turner & Townsend)

- Arborist
- ESD (Steensen Varming)
- BCA/DDA (BM+G)
- Town Planner (DFP)
- Hydraulic Engineering (Erbas)
- Fire Services Engineering (Erbas)
- Acoustic Engineering (Resonate Consultants)







1 Project Overview

This section offers an overview of the project and includes the SEARS requirements, the brief, assumptions, other service considerations, accessibility considerations and the project team.

Project Overview

1.1 SEARS Requirements

3. Design Quality

Demonstrate how the development will achieve:
- Design excellence in accordance with any applicable EPI provision
- Good design in accordance with the seven objectives for good design in *Better Placed*.

Section 3 - Design Principles
Section 4 - Master Plan
Section 5 - Built Form & Urban Design
Section 6 - Facade & Materiality
Section 7 - Design Verification

Demonstrate that the development has been reviewed by the State Design Review Panel (SDRP). Recommendations are to be addressed prior to lodgement.

4. Built Form and Urban Design

Demonstrate how design quality will be achieved in accordance with the Education SEPP Design Quality Principles and the Design Guide for Schools, including:
- how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality.
- how the building design will deliver a high-quality development, including consideration of façade design, articulation, roof design, materials, finishes, colours, any signage, integration of services, and the principles of Crime Prevention through Environmental Design.

Section 3 - Design Principles
Section 4 - Master Plan
Section 5 - Built Form & Urban Design
Section 6 - Facade & Materiality
Section 7 - Design Verification

5. Environmental Amenity

Address how good internal and external environmental amenity is achieved, including access to natural daylight and ventilation, pedestrian movement throughout the site, access to landscape and outdoor spaces

Section 4 - Master Plan
Section 5 - Built Form & Urban Design
Section 6 - Facade & Materiality
Section 7 - Design Verification

Assess amenity impacts on the surrounding locality, including lighting impacts, solar access, visual privacy, visual amenity, view loss and view sharing, overshadowing. A high level of environmental amenity for any surrounding residential or other sensitive land uses must be demonstrated.

Section 4 - Master Plan
Section 5 - Built Form & Urban Design
Section 6 - Facade & Materiality
Section 7 - Design Verification

6. Visual Impact

Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development.

Section 5 - Built Form & Urban Design
Section 6 - Facade & Materiality

Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that addresses the impacts of the development on the existing catchment.

Section 5 - Built Form & Urban Design

Project Overview

1.2 Brief

This section is a summary of the accommodation required for a EFSG Medium High School (previously 'Stream 9 High School').

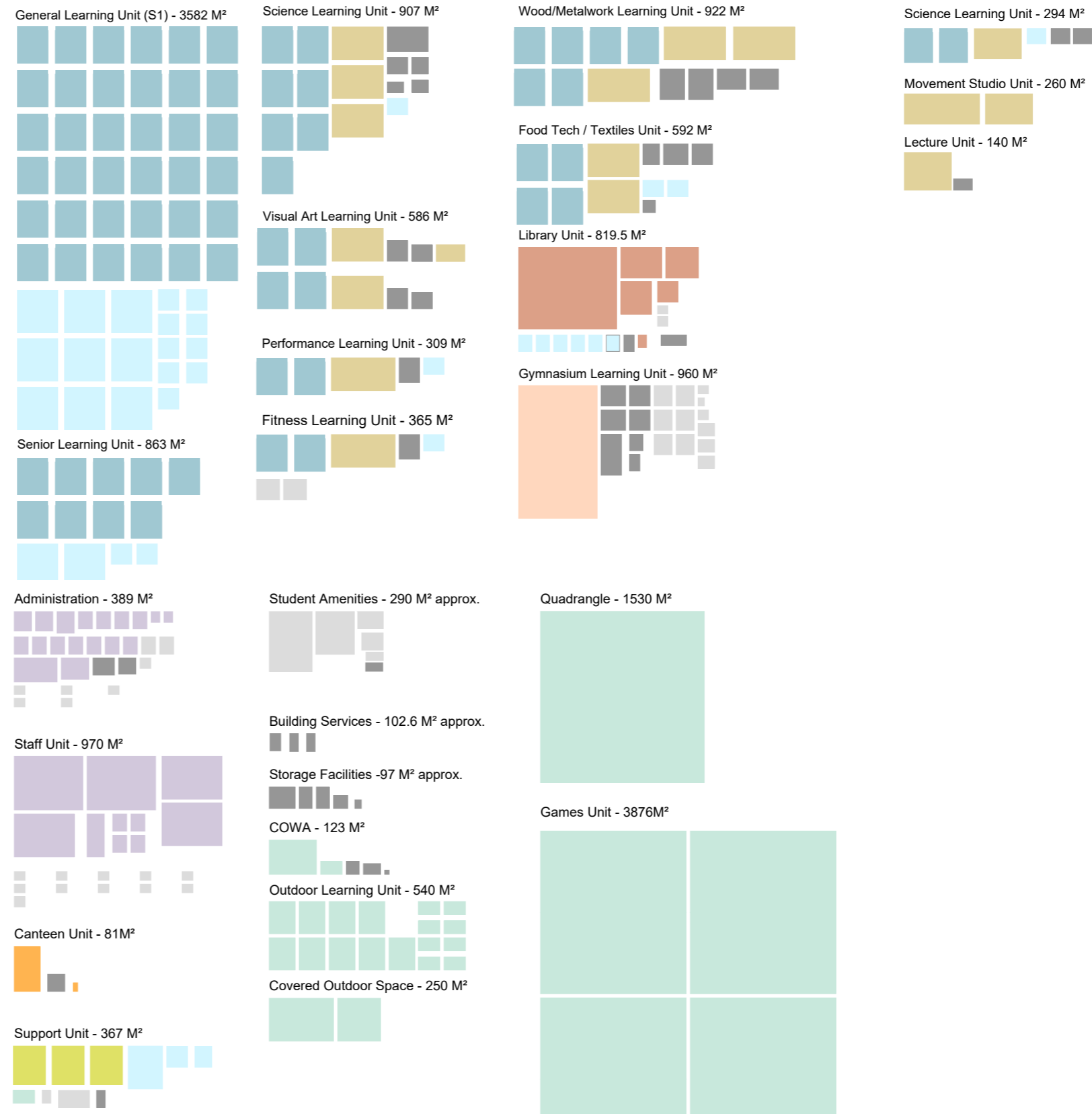
The following diagrams translate the brief into a visual tool to compare learning unit sizes and allocations.

SINSW has given approval to include the following Additional Learning Units:

- 1 x Science Learning Unit
- 1 x Movement Studio
- 1 x Lecture Learning Unit
- A Support Unit made up of 3 classes and support functions.

Legend

- General Learning Space
- Seminar/ Shared Learning
- Lab/Workshop
- Administration / Staff
- Support Unit GLS
- Library
- Gymnasium
- Canteen
- Amenities/Change/Shower
- Services/Store
- Outdoor Areas



1.3 School Vision & Strengths

*“We empower all students and the school community to be lifelong learners and leaders. We creatively seek and promote real world opportunities to inspire global citizenship. The Forest High School has a strong ethos that recognises the individuality of the learner and fosters the expectations of **respect, responsibility and personal best.**”*

- The Forest High School



**Sense of
Community and
Pride**



**Strong Performing
Arts Program**



**Connection with
local Indigenous
Culture**



**Reputation
for Sporting
Achievements**



Autism Unit



**Library is the heart
of the School**



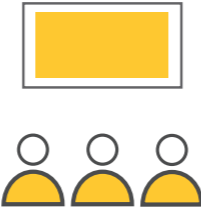
**Real World
Opportunities**



**Diverse Enrichment
Programs**

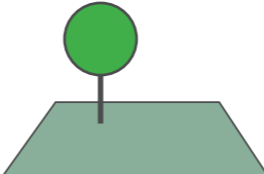
1.4 Assumptions

The project has been developed with the assumptions from the EFSG, brief, planning control and advice from the traffic consultant. These assumptions are as illustrated on adjacent diagrams.



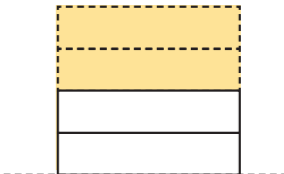
Student numbers

- High School
- Stream 9, Medium Size
- projected 1500 Students



Outdoor space per student

- 10m² per student
- 14,430m² required



Building height

- Maximum 4 storeys
- 8.5m LEP height limit (2 storeys)
- SSDA Application enables proposition of higher buildings.



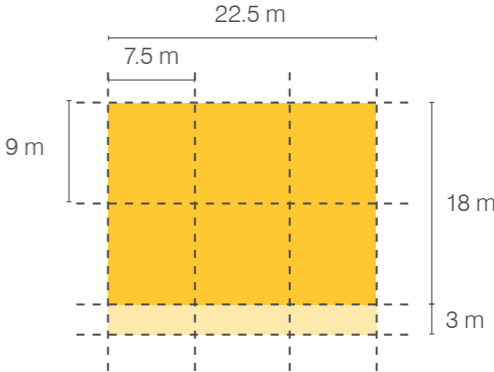
Parking Area

- a minimum of 121 car spaces
- 2 accessible spaces near SELU
- 1 mini-van for SSPU



Sports Area

- A standard soccer field
- Orientation N/S
- Multi-purpose courts



Building envelope shape

- 7.5 x 9 m DfMA Grid module
- 22.5 m module width
- 21 m module depth

1.5 Other Services Consideration

Potential joint use community facility access have been discussed with adjacent communities.

There are opportunities for the following:



Northern Beaches
Hospital

- Established strong links with the adjacent Northern Beaches Hospital. Senior CAFs (community and family studies) classes visit the hospital to work with staff in the maternity ward to enhance their learning experiences through real-life applications of their learning



- Community Northern Sydney Symphonic Wind Ensemble concerts & rehearsals



- Collaboration with Biala Hostel



- Collaboration with Northern Beaches Council



- Collaboration with Arranounbai School

1.6 Accessibility Considerations

The design of the new school will be in accordance with the EFSG, BCA and DDA requirements, providing equity of access to all students, staff and visitors. Site connections will be appropriately ramped and all building levels above Ground Floor will be accessible by lifts and stairs.

The SSU has a designated car parking that includes 2 accessible spaces and a mini bus bay.

Further consideration for the accessibility of movement across the entire school school has been undertaken to promote the new school site as an inclusive school'. This is represented in the design by way of equitable walking routes from all spaces of the school, ensuring the provision of accessible amenities and their distribution across the proposed school, and creating a safe and accessible pedestrian link to the neighbouring Arranounbai School.



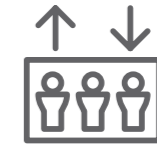
Accessible parking

2 accessible parking spaces provided at the front of the school, in proximity of the Support Unit



Level access across the Campus

Equity of access provided across the site and throughout all levels of every building, through gentle level changes as well as AS1428.1 compliant ramps



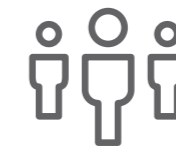
Buildings equipped with lifts

Lifts connecting all levels of the school - 3 lifts in total



Accessible amenities

Accessible toilets located throughout the school, at each bank of student and staff amenities.

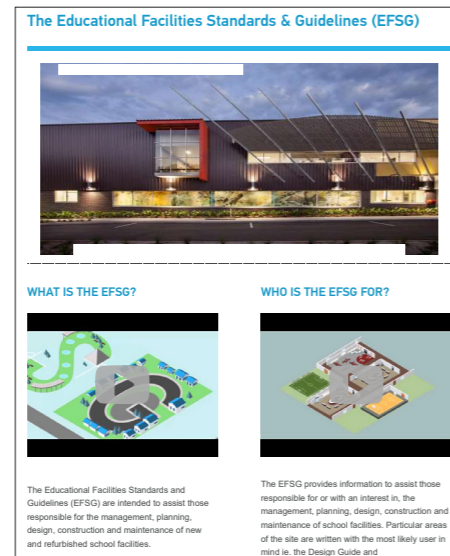


Support Unit designed to EFSG

Designated SSU providing learning and support spaces that are designed for students with intellectual and/or physical disabilities

1.7 Reference Documents Significant to the Project

This section lists other key reference standards and documents which informed the project Brief, Masterplan, Concept Design, and Schematic Design. They will continue to inform the project during its design development and delivery. These documents detail the minimum design requirement which must be met.



Educational Facilities Standards and Guidelines (EFSG)

The EFSG is a suite of information to aid in the planning, design and use of NSW Department of Education school facilities. It is an online platform which contains NSW Department of Education education principles, accommodation recommendations, design intent on rooms & spaces, technical data and specifications.



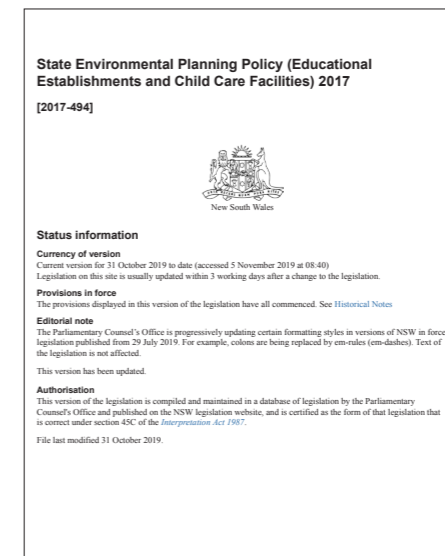
Example Hub Layout Secondary Schools School Infrastructure NSW June 2021

This package is intended to guide the development of master plans and concept design for new schools and new school buildings. This package provides standard hub layouts for each core facility and learning space required within a secondary school.



DfMA Guidelines School Infrastructure NSW

These guidelines are intended to describe the drivers, principles, system and performance criteria of the DfMA System for the purpose of designing and constructing schools in New South Wales.



State Environmental Planning Policy - Educational Establishments and Child Care Facilities 2017 (Education SEPP)

The Education SEPP aims to facilitate the effective delivery of educational establishments and early education and care facilities across NSW by creating consistent state-wide assessment requirements, design considerations and standardising planning approval pathways.



The Forest High School Education Rationale

Developed by SINSW and endorsed by DEL. The purpose of the Education Rationale is to identify the desired service delivery model of the school. The rationale is to be:

1. Included in the Final Business Case.
2. Used as a briefing document for architect and design teams.



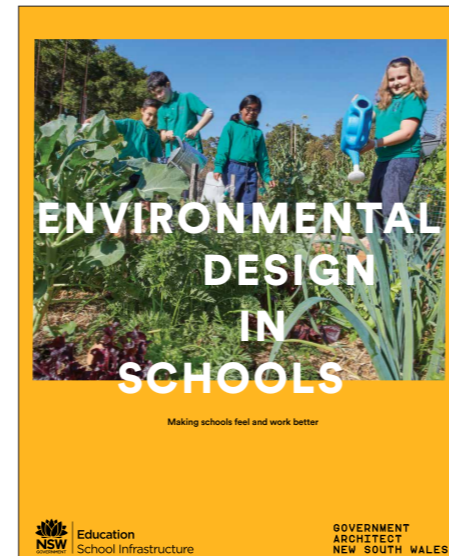
Better Placed - An Integrated Design Policy for the Built Environment of NSW (GANSW) 2017

Better Placed has been developed by GANSW to deliver a strategic approach to ensure that as our cities and towns grow bigger they get even better. It responds to the concerns of communities and those involved in the development of our built environments about the impact of poor design but also defines how we can make the most of the opportunities that will arise as we develop new spaces and places.



Better Placed - Design Guide for Schools - Government Architect New South Wales (GANSW) 2018

The Design Guide for Schools provides a guide for new school developments and upgrades in NSW and accompanies the Education SEPP. It aims to promote and champion good design processes and a 'how to' for school projects to best address the design quality principles in the Education SEPP.



Better Placed - Environmental Design in Schools - (GANSW) 2018

Environmental Design in Schools has been prepared by GANSW in collaboration SINSW to present strategies for passive design as opportunities for making positive, sustainable change in the building or running of a school. It explains how reducing environmental impact can help schools to optimise their value as social, environmental, and economic assets for new or established communities.





2 Site Appreciation

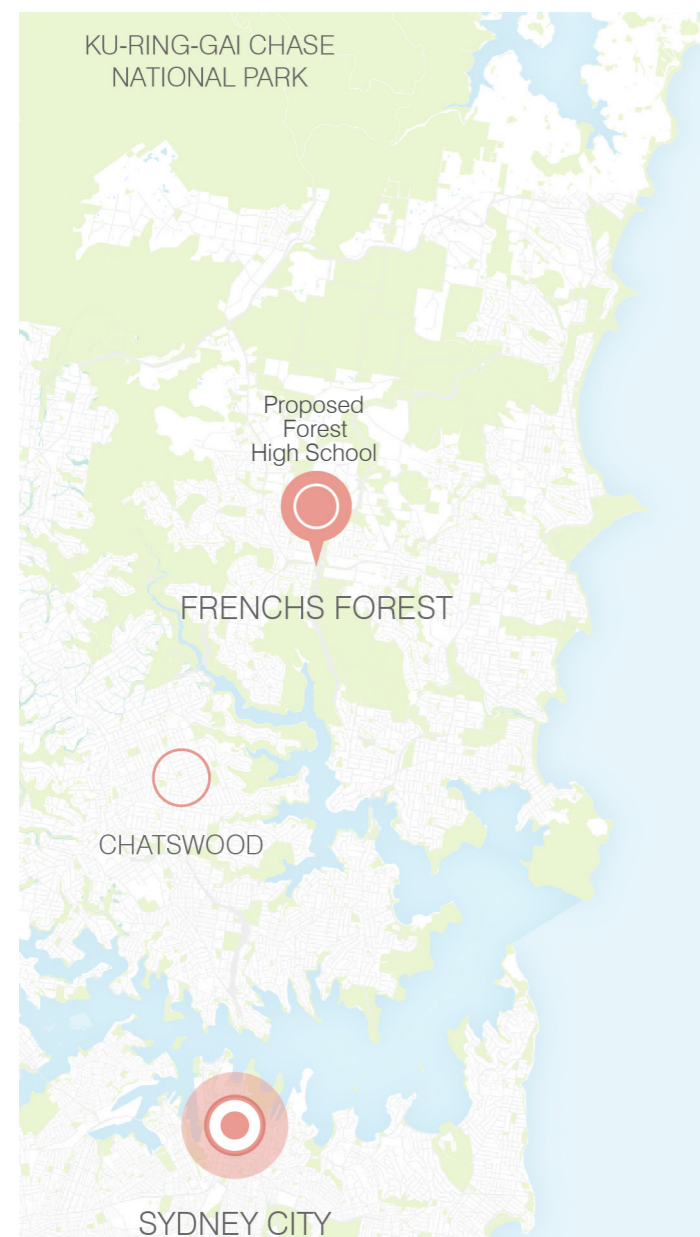
This chapter outlines the context, character, constraints and opportunities of the site which will influence the design.

Site Appreciation

2.1 Greater Site Context

The Forest High site is located in Frenchs Forest approximately 40km north of Sydney central business district and within the Northern Beaches area of Sydney.

Due to the proposed development and expansion of the health precinct adjacent to the Northern Beaches Hospital, the Forest High School will relocate to the Allambie Heights site as shown on the diagram opposite.



Legend














- Existing Forest High School
- Proposed Relocated Forest High School

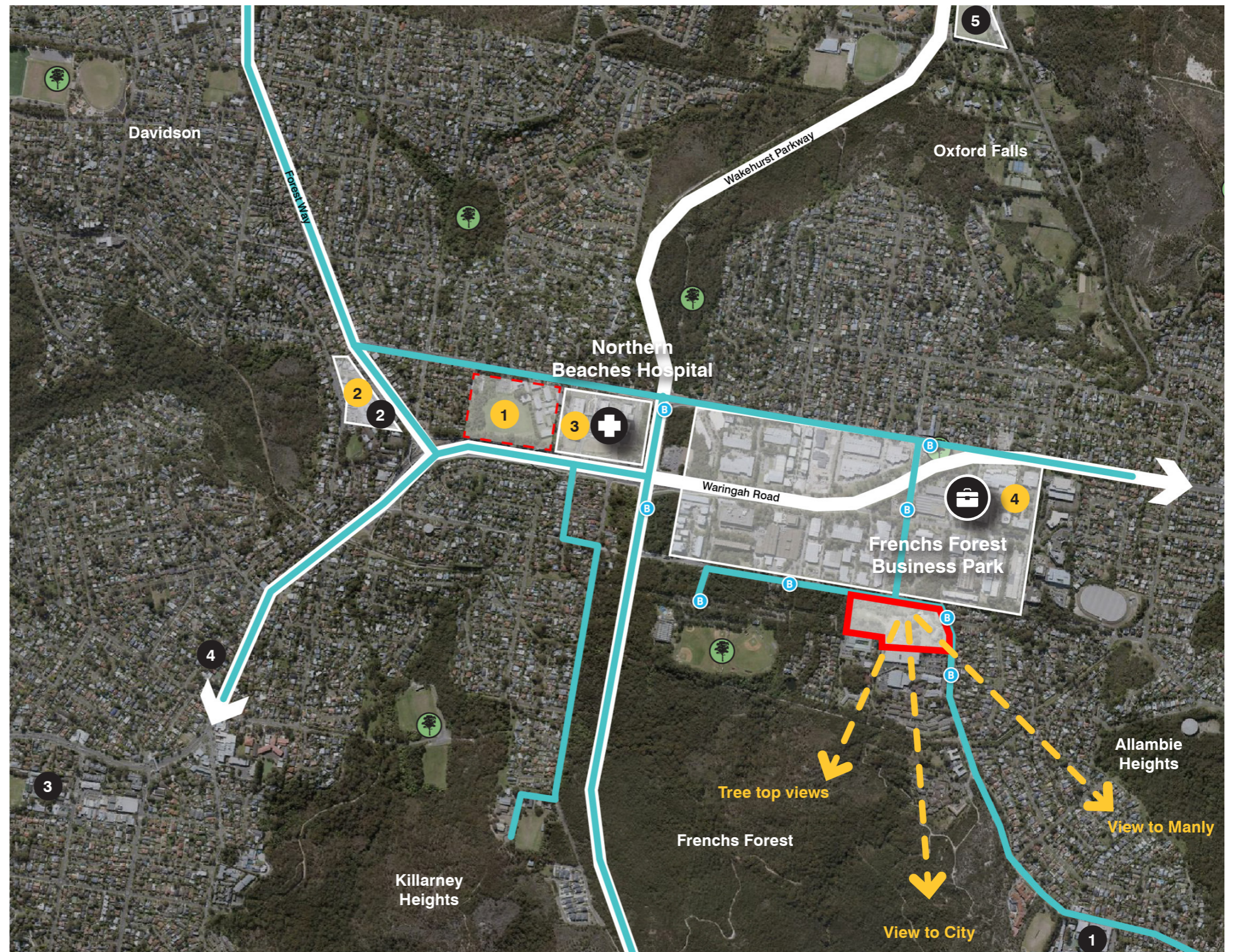
Site Appreciation

Context and Attractors

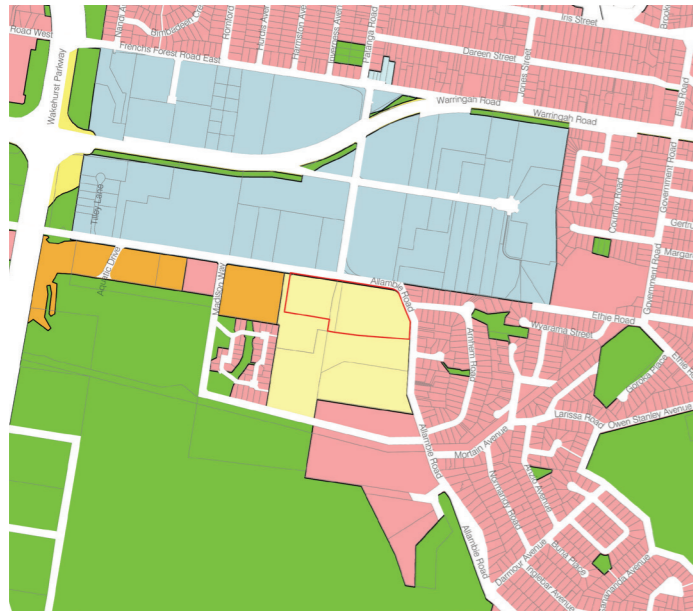
The adjacent diagram shows the context of the site and the attractors for the relocation of Forest High School site.

The relocated Forest High School site is adjacent to the Frenchs Forest Business Park with bus servicing the site. The site also has tree top views and views to city and Manly.

- Legend
-  View from site
 -  Bus route
 -  Existing Forest High School
 -  Proposed Relocated Forest High School
- Education
-  1 Allambie Heights Public School
 -  2 Frenchs Forest Public School
 -  3 Forestville Public School
 -  4 Forestville Montessori School
 -  5 Oxford Falls Grammar
- Community
-  1 Existing Forest High School
 -  2 Frenchs Forest Town Centre
 -  3 Northern Beaches Hospital
 -  4 Frenchs Forest Business Park



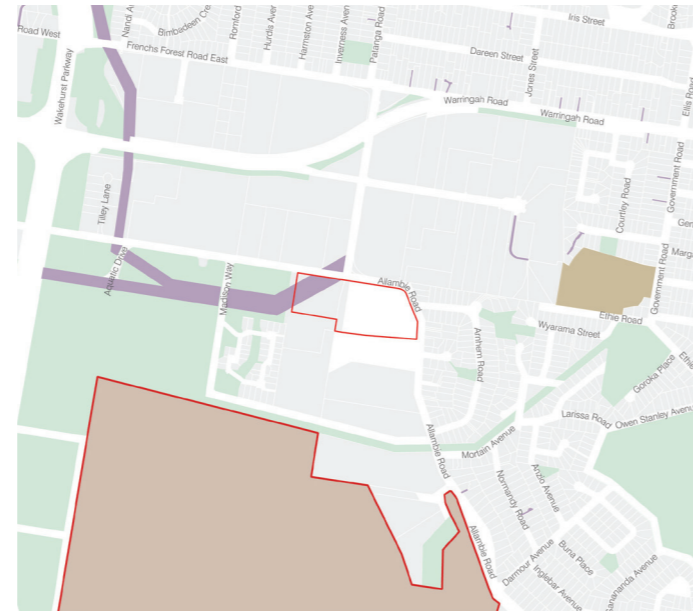
2.2 Context Analysis



Land Zone Map

Legend

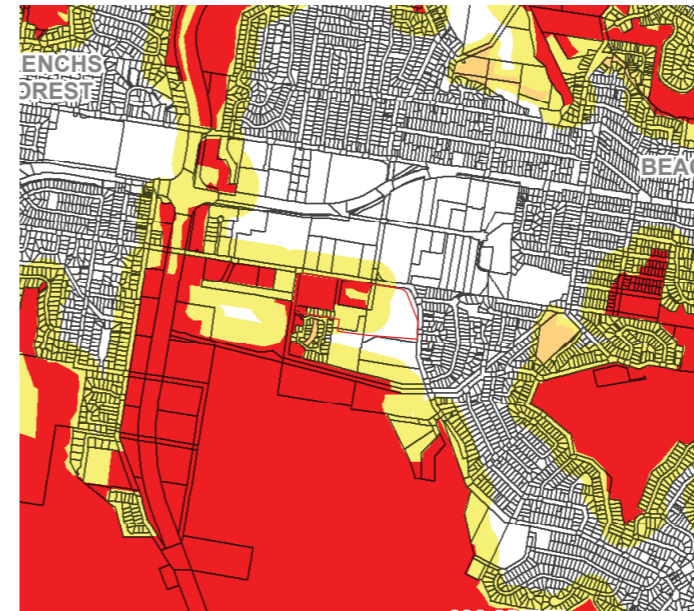
- Site boundary
- B1 Neighbourhood Centre
- B7 Business Park
- E2 Environmental Conservation
- R2 Low Density Residential
- RE1 Public Recreation
- SP1 Special Activities
- SP2 Infrastructure



Planning Constraints

Legend

- Site boundary
- Easement
- Heritage
- Conservation Area - Landscape

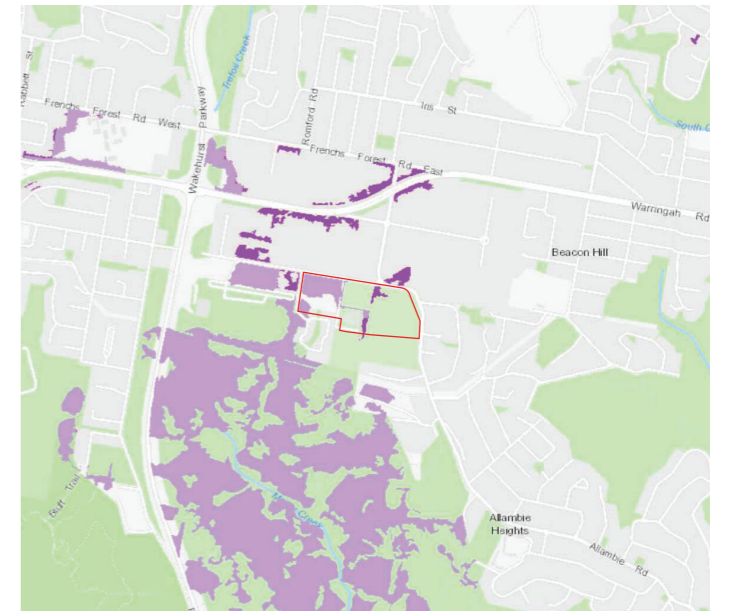


Bushfire Map

Legend

- Site boundary
- Vegetation Category 1
- Vegetation Category 2
- Vegetation Category 3
- Vegetation Buffer

Source: Bush Fire Prone Land Map, Northern Beaches Council



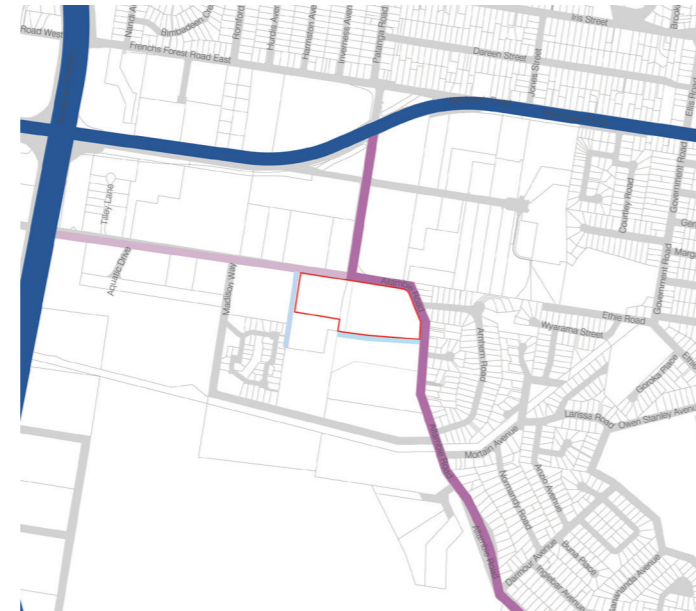
Biodiversity Map

Legend

- Site boundary
- Biodiversity Values
- Biodiversity Values (added in the last 90 days before 22 January 2021)

Source: Biodiversity Values Map of NSW (22 January 2021)

Site Appreciation



Building Height Map

Legend

- Site boundary
- 8.5

Road Hierarchy Map

Legend

- Site boundary
- Primary Road
- Secondary Road
- State Road
- CPA internal road
- DoE road

Open Space Map

Legend

- Site boundary
- Open Space

Transportation Map

Legend

- Site boundary
- Bus route
- Bus stop
- Green open space

Site Appreciation

2.3 Built Form

The existing figured ground grid is a mix from larger, industrial buildings to the north, to a finer grain, residential dwellings to the east.

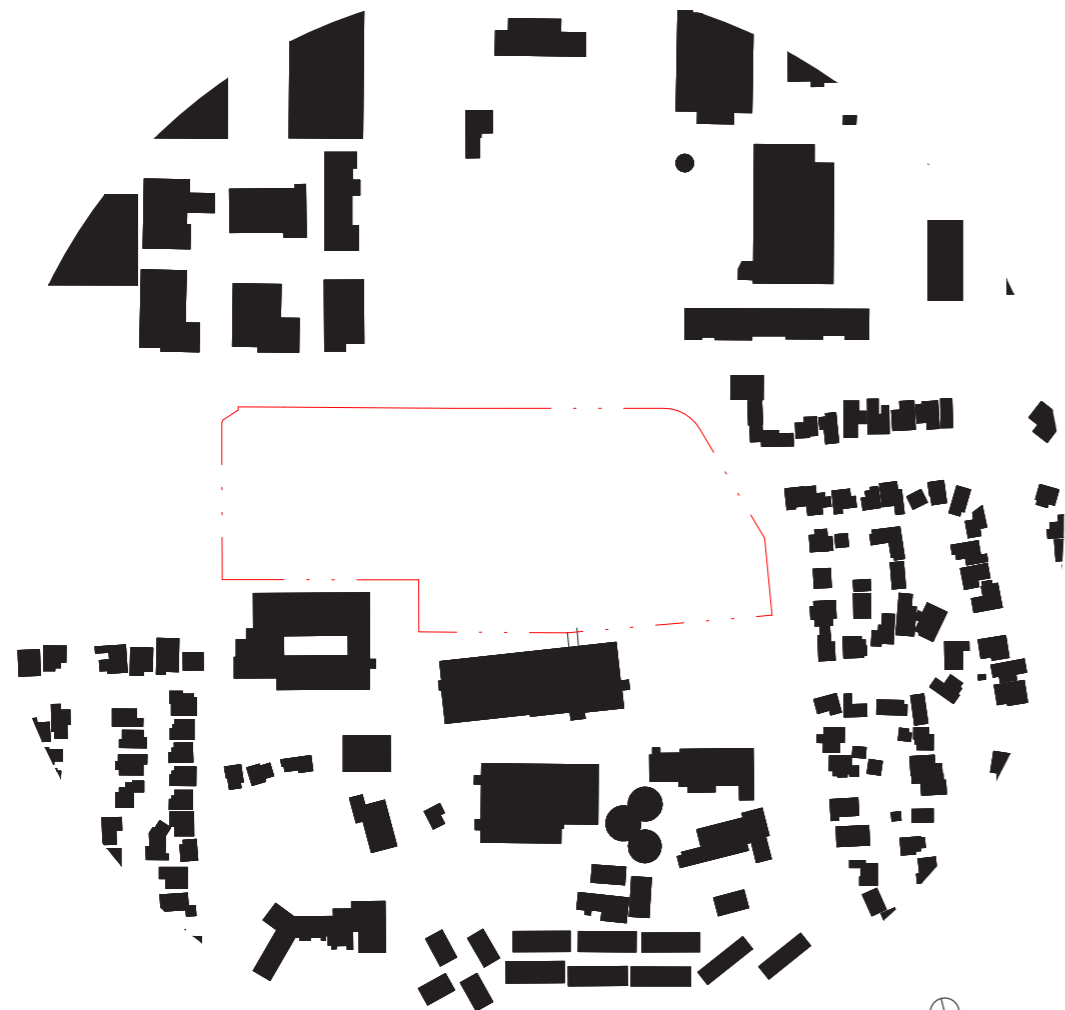


Figure Ground Diagram

To the North

Industrial site bounded by Warringah Road and the northern edge of the site. This area is largely industrial / commercial with a few sporting facilities intermixed.



To the East

Low rise residential buildings, the context slopes down towards the water which allows for expansive views towards the ocean.



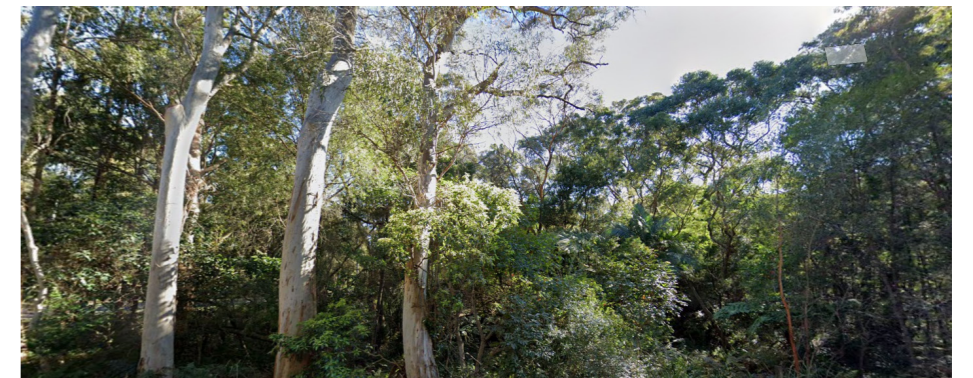
Directly to the South

Cerebral Palsy Alliance building which is distinct in size and adjacency to site. The building also has an expansive car park which borders the site.



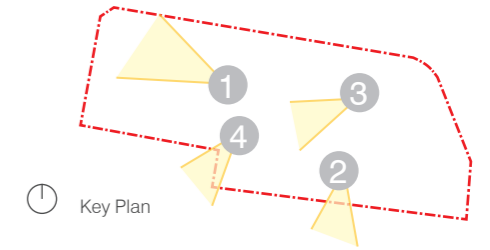
To the West

Dense bushland. The site slopes significantly down towards Manly Creek which allows for distant views of the Sydney CBD.



Site Appreciation

2.4 Site Character



1 High voltage power line on site



2 Fire Egress bridge from CPA Building



3 Vegetation on site



4 DoE road to Arranounbai School

Site Appreciation

2.5 Vegetation

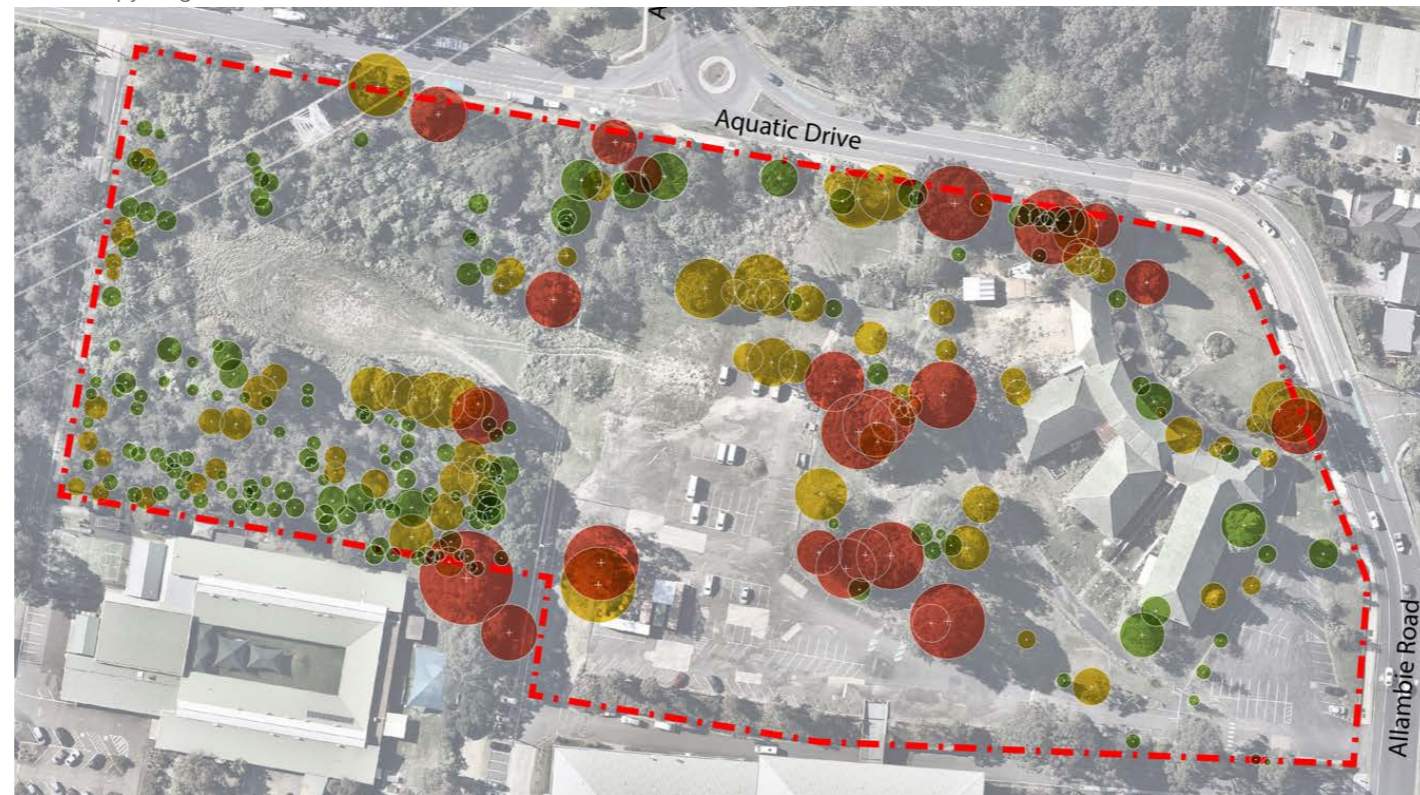
The proposed school site is covered with remnant disturbed Duffys Forest which is a threatened ecological vegetation community. The eastern side of the site is scattered with native high retention value trees and potential habitats for locally occurring fauna species. The high value vegetation needs to be protected and enhanced where possible.

Refer to Oculus's Landscape Design Report for further details.

Diagram Source: Landscape Schematic Design Report



Tree canopy diagram



Tree canopy diagram

Legend

- Site boundary
- Tree canopy
- High retention value tree
- Medium retention value tree
- Low retention value tree



Remnant Duffys Forest on site

Site Appreciation



Native trees on site have high retention value

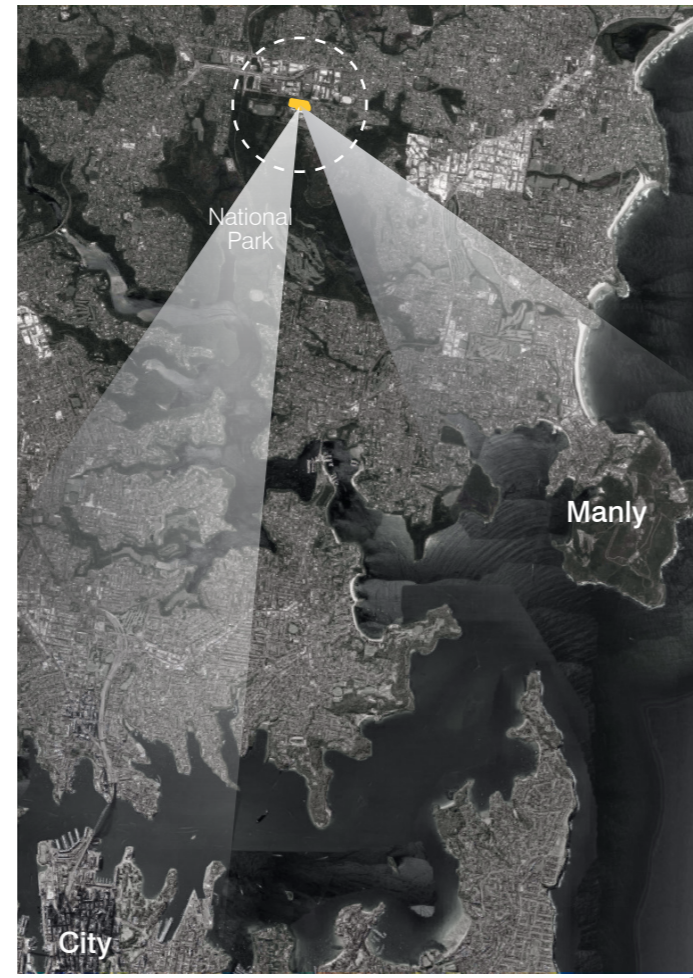
Site Appreciation

2.7 Views to Water, Bush and City

The proximity of national park, bushland, beaches and the ocean creates Frenchs Forest distinctive character . The Frenchs Forest area spreads along ridge lines surrounded by native bushland.

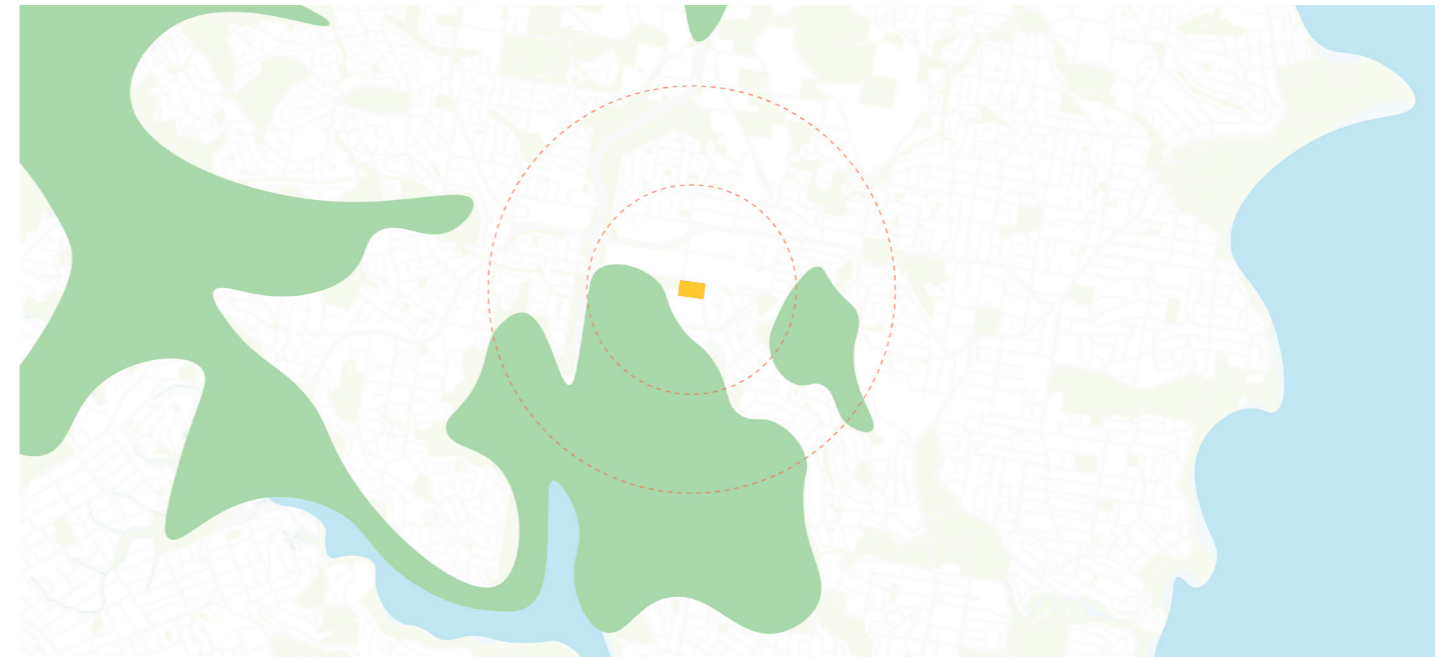
The sloping site offers unobstructed distant views over Allambie Heights Park, the Garigal National Park, the Pacific Ocean, and the Sydney CBD.

The design of the proposed school takes advantage of the views out of the site, increasing the experience of the school, and connecting the site with country.



View key plan

- Legend
- Site
 - Bush
 - Water
 - Viewing from site



Frenchs Forest is surrounded by the national park, bushland, beaches and the ocean

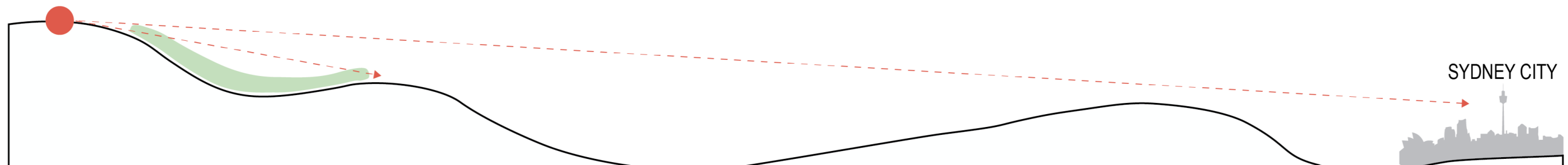


View to bush and city



View to Manly

FOREST HIGH SCHOOL



The steep site topography allows unobstructed views to bushland and city

Site Appreciation

2.8 Connection to Country

Connect With Country

“Water is a major feature in the Cammeraygal landscape. Depictions of water and water associated entities demonstrates a deep and long connection of the people to water. ... Specifically, themes around the interaction of salt and fresh water are relevant to this region.” CWC Report, Tocomall

There has been significant contribution from the CWC consultant in providing insight for the history and relevant context for the selected site. For further information, please refer to the Tocomall Report.



Habitat Connections
(Glossy black cockatoo)



“Water” connections
(rock engraving adjacent site)



“Landscape” connections
(tree top vistas towards the see board)

Design Principles identified;

- Landscape
- Engraving
- Waterways
- Native Garden
- Aboriginal Artwork
- Education of History

Site Appreciation

2.9 Recent Site Heritage

The Country Children's Hostel at McLeod House was a hostel for country children with cerebral palsy to access services that were not available away from the city. McLeod House was built by voluntary labour over three years and opened in 1957. It was named after Neil and Audrie McLeod who co-founded the Spastic Centre of New South Wales (later the Cerebral Palsy Alliance).

The preliminary assessment of the site has identified that it is likely to have some heritage significance at a local level. The site is likely to have social significance for its association with the Spastic Centre (now Cerebral Palsy Association), the volunteers who helped to construct the building as well as those lived and worked at McLeod House during its time operating as the Country Children's Hostel.

McLeod House is a two storey painted brick building, with pitched roof of green roof tiles. The building originally contained 4 wings connected by a curved structure to the north (one wing has recently been demolished). The main entrance to the building is at the centre of the curve on the northern side of the building. The building features timber framed sash windows, timber framed doors with arched highlights and a curved first floor verandah to the easternmost wing.

The building is surrounded by landscaped gardens and mature plantings to the north east and south west.

Source: GML Heritage Preliminary Heritage Advice

Image source: Neil McLeod, *Nothing is Impossible: Adventures in Cerebral Palsy*, 1986



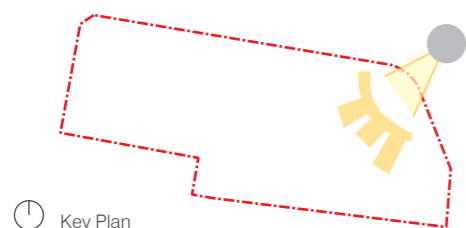
Volunteer workers helping with the construction of McLeod House c1957



Volunteer workers helping with the construction of McLeod House c1957



McLeod House shortly after construction c1957



Key Plan



McLeod's House, Allambie Road Corner view. Source: Google Map

Site Appreciation

2.10 Constraints

The proposed project site on Allambie Rd is smaller than the current School site. Considering this and other constraints, such as setbacks and existing trees, the developable area and allocation of the program have to be carefully investigated.

The site has steep level changes from North to South which may require suspended structures and cut and fill measures. With significant existing vegetation, the site also falls under bushfire zone restrictions.

The western portion of the site has existing infrastructure including overhead high voltage transmission lines, limiting the development potential. At the centre of the site, there are large existing trees and a potentially sensitive aboriginal archaeology zone.



Site Appreciation

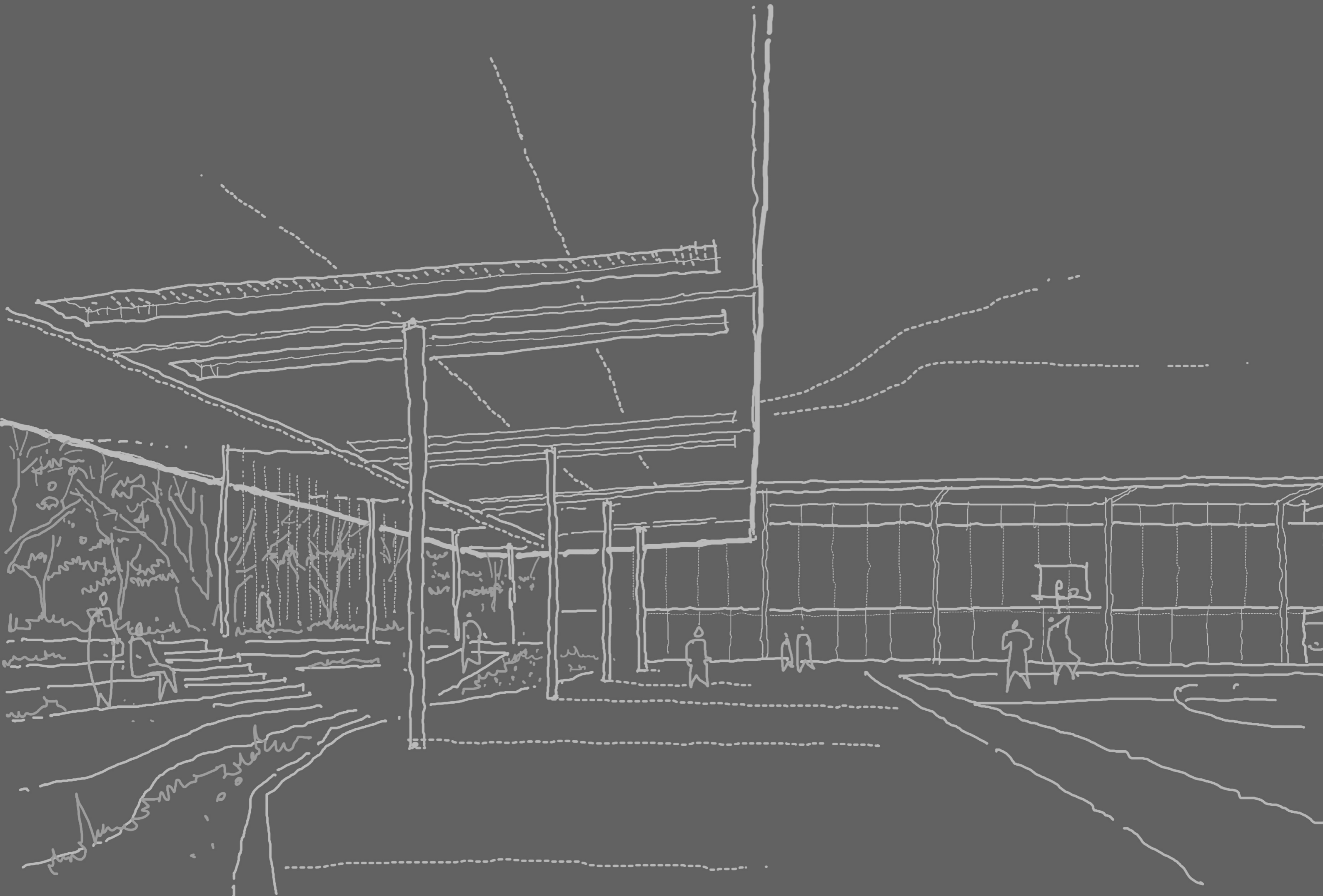
2.11 Opportunities

The site offers good visibility and street presence along Allambie Road. The North-East corner of the site enjoys a high vantage point offering great city views to South. This provides opportunity to create a strong arrival experience and articulation of built forms to highlight the presence of the school to the community.

The existing mature trees and heritage zones in the centre of the site presents a unique opportunity to design outdoor learning spaces that integrates with the existing school's aboriginal study program.

The existing roundabout to the North of the site allows for vehicular traffic to access the site from multiple directions, while there is an opportunity to connect site traffic to the street along the western boundary.





3 Design Principles

This section includes the key principles and concepts driving the approach for the Design outcome.



Design Principles

3.1 Design Principles

Following the school vision and the overarching guidelines from EFSG, the school design principles are developed around the user experience.

These principles demonstrate how the proposed new development will enhance the day in life for different user groups, including students, teachers, staff, and visitors. The principles embrace unique aspects of The Forest High School's existing identity and culture and celebrate these in the new campus.



Connect with Country

A strong sense of belonging to place by relating with

1. Remnant forest and existing trees
2. Tracks along the site
3. Views to the water
4. Spaces for gathering



Connect with Nature

Biphillic design approach to bring in:

1. Daylight
2. Fresh breeze
3. Warmth of sun

Incorporate elements that evoke sense of nature:

4. Natural materials
5. Colour
6. Shapes and forms
7. Textile / pattern outside



Create School Heart

Establish a central space for the entire campus with:

1. Strong connection to existing landscape
2. High visibility and accessibility
3. Close proximity to other collaborative functions

Design Principles



Create School Identity

Showcase the identity of the school through its strong affiliation with:

- 1. Sport activities
- 2. Performance activities
- 3. Community Collaboration



Create Learning Precincts

Create flexible, dynamic learning precincts that provide:

- 1. Physical and visual connection to outdoor
- 2. different modes of learning
- 3. formal and informal collaborative opportunities



Respond to Site Topography

Create an inclusive campus through strong relationships between the site terrain, built forms and landscape promoting:

- 1. Accessibility
- 2. Vantage points for access and views out
- 3. retention of existing natural features.



Equitable Access

Create an inclusive campus through equitable access for all students to all areas of the school by adopting a hybrid vertical circulation strategy that incorporates

- 1. Ramps
- 2. Stairs
- 3. Walkways
- 4. Lifts

Design Principles

3.2 Ecologically Sustainable Design (ESD)

Ecologically Sustainable Design (ESD) is a driving consideration in the development of the proposed Forest High School.

The ESD consultant has provided preliminary guidance on the role that Sustainable Design plays in how NSW Schools are designed and constructed, and delivers ongoing benefits to students and the school operators. Sustainability is a broad term that covers both the environmental performance of schools and the health and well-being of students and staff.

The project will incorporate several ESD and environmentally conscious initiatives in both design and operation aimed at ensuring the principles of sustainable development are both demonstrated and achieved in accordance with the project drivers. This will be benchmarked in an independent third-party certification scheme – Green Star.

The diagram adjacent provides an overview of the key sustainability themes and the vision for The Forest High School.

For full details, refer to the Sustainable Development Plan.



Sustainability Target
(Green Star Design & As Built v1.3 rating tool)

Design Principles

3.3 EFSG Guidelines

Example Hub Layout – School Infrastructure NSW, June 2021

The schematic design development of the Forest High School has been guided by the Example Hub Layout – School Infrastructure NSW, Draft v1.0, June 2021.

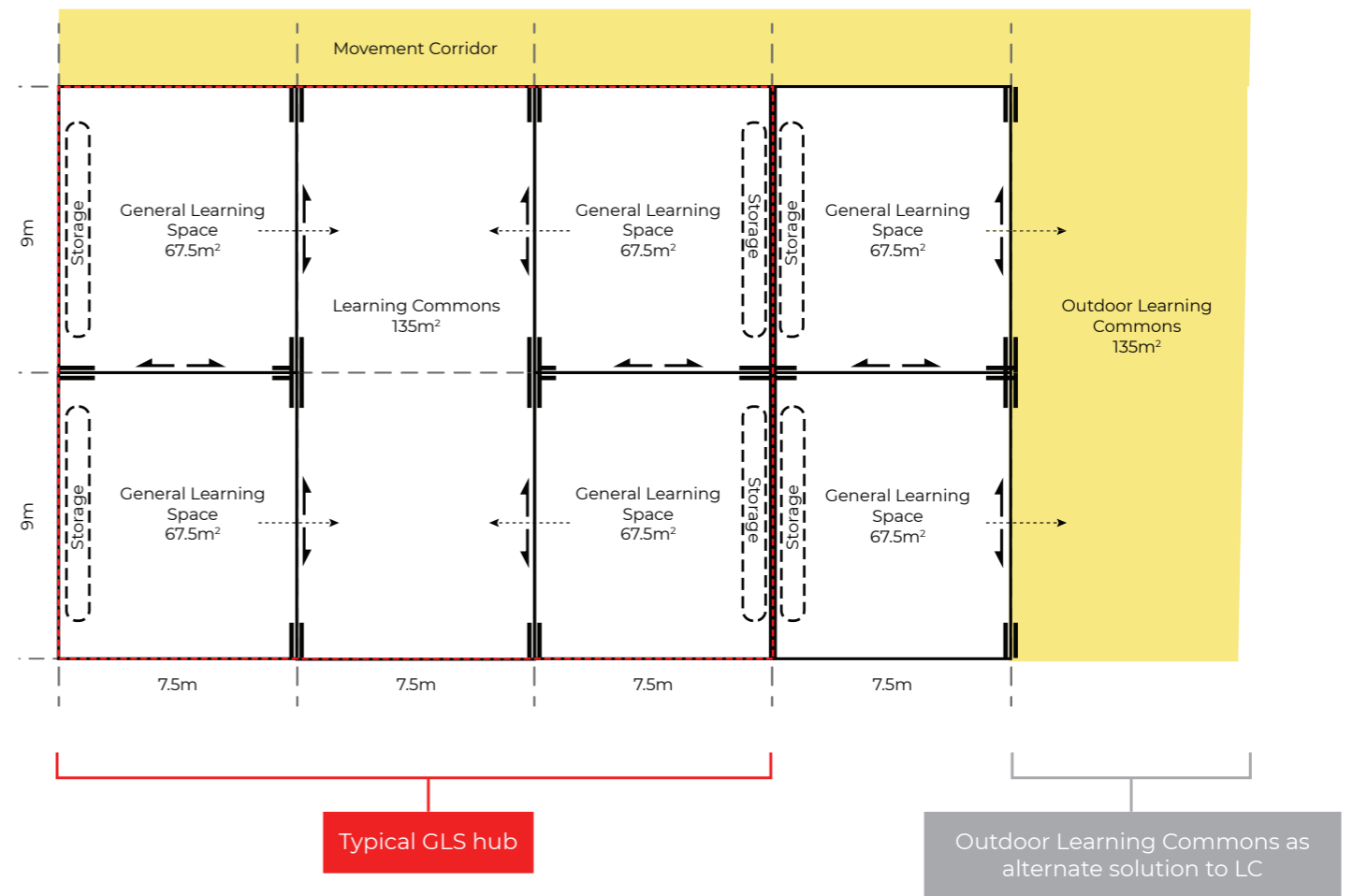
The core facilities and specialist learning units have been simplified into 4 categories : x-small, small, medium and large.

The spaces have been designed to fit within the planning grid of 9m x 7.5m to allow for Modern Methods of Construction (MMC), whether via a volumetric or ‘kit of parts’ approach. The areas have been determined in alignment with the existing Schedule of Accommodation.

The design improves the efficiency of the layout and reduces the internal areas for circulation while offering a floor space that can be accessed appropriately and used flexibly.



Example Hub Layout – School Infrastructure NSW, June 2021



Medium/Stream 9 typical GLS Modules, Example Hub Layout – School Infrastructure NSW, June 2021

Design Principles

3.4 Modular (DFMA) System Guidelines

The NSW Schools DfMA System Guidelines

Design for Manufacture and Assembly (DfMA) has been a key aspect of the concept design.

Typical Building Modules

Architectus were instructed to follow the 9x7.5m grid in line with SINSW practice note information provided at that time, which showed a 9x7.5m grid system with a 3m wide circulation zone added along the length of a typical building module.

The schematic design layouts reflect this instruction and overall approach. 18m deep buildings also support passive design principles including cross flow ventilation, ample daylight penetration to interior spaces, good visibility through the building façades and to surrounding natural landscape environments and an environmentally responsive solution for the overall project.

Flexible Learning Modules

DfMA allows for a flexible learning approach, items fixed within the kit of parts approach to school design (stairs, plant, storage, etc) provide anchors whilst other spaces are able to blend between thresholds.

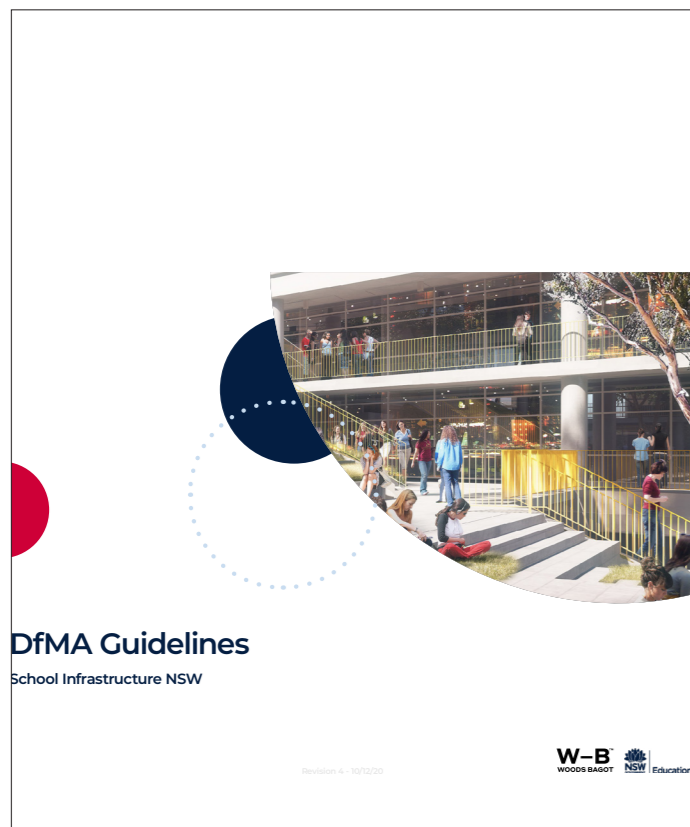
This breaks down the transition from inside and outside spaces - or specialised Lab and workshop spaces between the more traditional learning spaces.

Rapid Construction

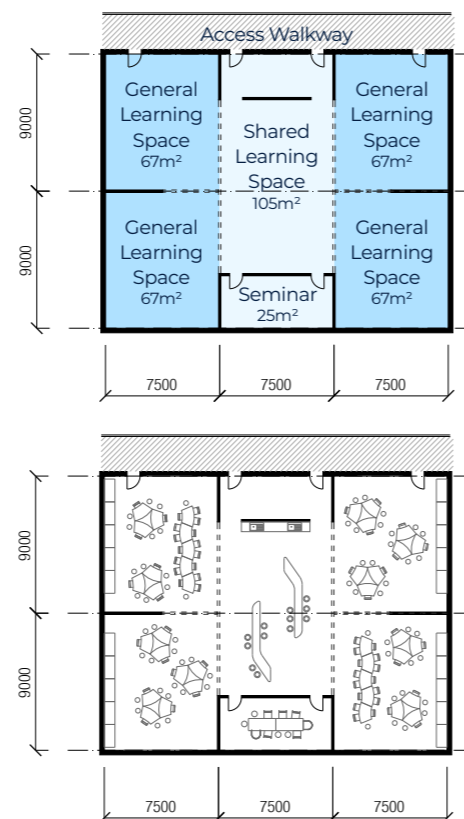
Rapid construction of the DfMA modules would provide a cost benefit with regards to the construction programme. Modules can be assembled off site and transported in their entirety to their intended location, level by level stacking them to create the clusters nestled in the landscape.

This approach to rapid construction helps drive the location of spaces within the design - aligning services and stairwells to create a regular and replicable module throughout the entire project is paramount to creating an efficient system.

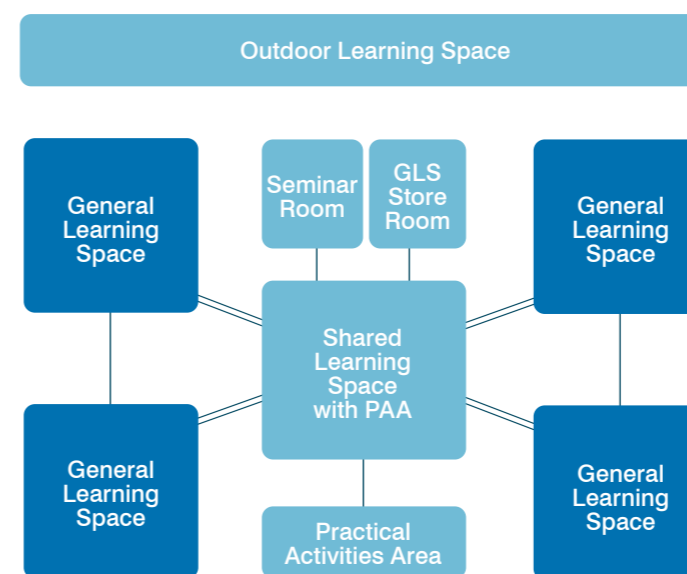
The flexible learning approach ensures that the spaces aren't perceived as a monotonous repetition and the expression of the outdoor space through biophilia and materials helps unify the buildings.



The NSW Schools DfMA System Guidelines



Typical Building Modules - DfMA Guidelines



General Learning Unit relationships diagram



Macquarie University Incubator - Under Construction using DfMA

Design Principles

3.5 Flexible Learning

Flexible Learning Across the Site

When these flexible modules are dispersed throughout the site, we gain a better understanding of how these thresholds between the interior and exterior can be flexed - allowing better engagement and cross pollination between the functions within each of the unique courtyard spaces.

Allowing the landscape to be accessible through a blurred threshold provides better engagement with biophilia and ultimately a healthier and happier learning environment.



Flexible Learning

Flexible Learning Layouts

Function is not restricted by this flexibility; fixed markers for teaching and learning within the spaces allow solo study or group activities no matter the arrangement of the walls.



From a fixed and Static floor-plate...

Collaboration is Key

When opened up, the spaces can create collaborative zones in which different stages or year groups, speciality learning spaces and play spaces can cross pollinate. This helps build a better community within the school, between the students in the same class group and also provide a future focus for the students in the younger year groups.



...into multiple learning typologies.



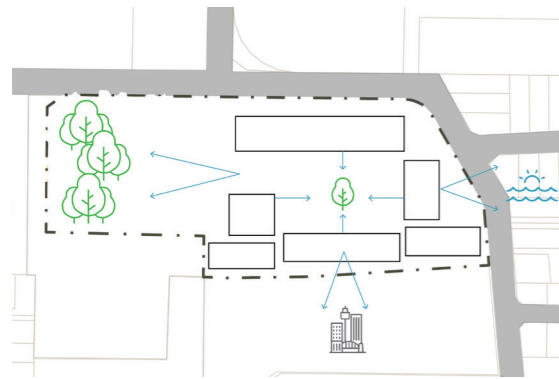


4 Master Plan

This chapter summarises the development of planning options and the details of final Master Plan.

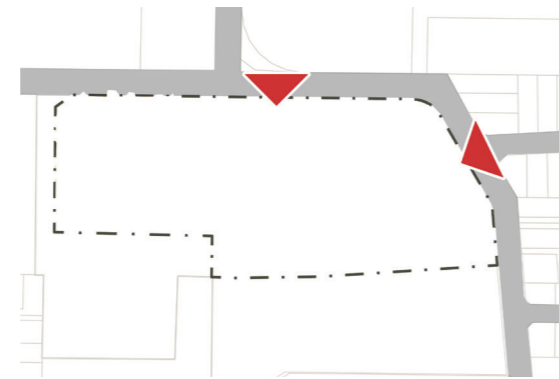
4.1 Master Planning Principles

Following the detailed site analysis, a set of overarching master planning principles are established that would drive the development of planning options.



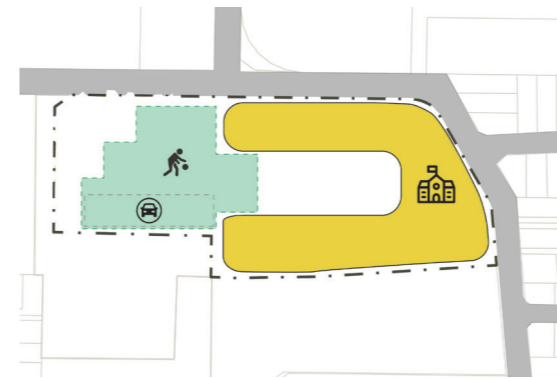
Connecting with country

The physical and visual connections to the landscape, treetops and water sets up the planning framework..



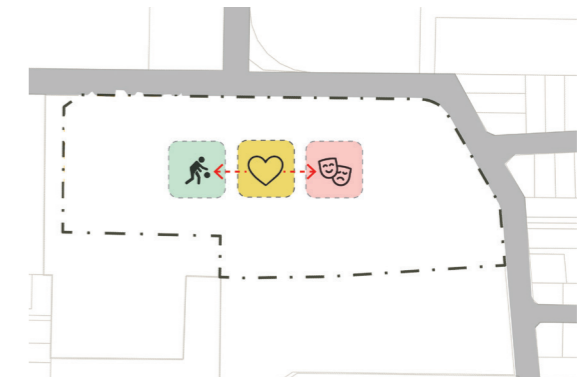
Arrival Points

Potential arrival points along North and East of the site along Allambie Road.



Site Zoning

Majority of the building developments are to be within the eastern zone. The sports and open fields would be located centrally with minimal development to the West responding to site constraints. Staff carpark is located under the sport field.



School Identity

The sports and performance activities are at the heart of the school campus, with good connections to school and community functions.

4.2 Master Plan Options

Previous Option

01



Open Courtyard

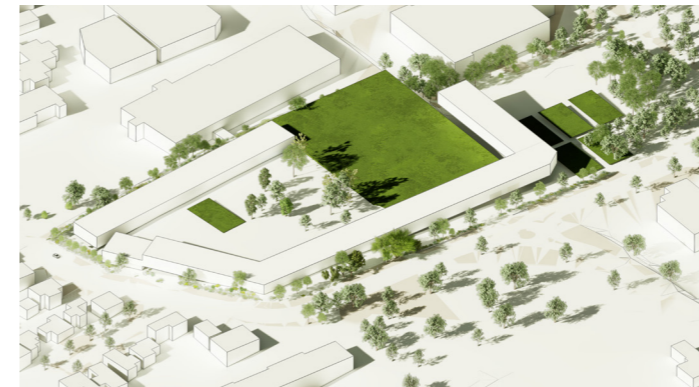
Advantages:

- Gymnasium and Performance Units are oriented along the Eastern end of site as preferred by the School. They are also located close to the site boundary for secure after-hours access.
- Central open space is maximised, with strong connection to high retention value trees, assembly area and Sporting fields
- Arrangement of building blocks around the central open space ensures efficient circulation and wayfinding.

Challenges

- Noise buffer and proximity could be a concern for the buildings along northern and southern perimeter.
- 4 storeys makes equitable movement challenging

02



Courtyard

Advantages:

- Building layout creates a large uninterupted open courtyard for the students to enjoy.
- Maximum 2 storey buildings allow for ramped access between levels, and increased equality in movement throughout the school.
- The southern buildings sit 1 level below the northern buildings allowing for views across the
- Welcoming entry
- Vehicular movement on site reduced to minimum for improved safety of the students

Challenges

- Western end of the site becomes disconnected
- Potentially long distances for students to travel between programmes
- Potential issues building in the bushfire prone land zone

Preferred Option

03



Learning Loop

Advantages:

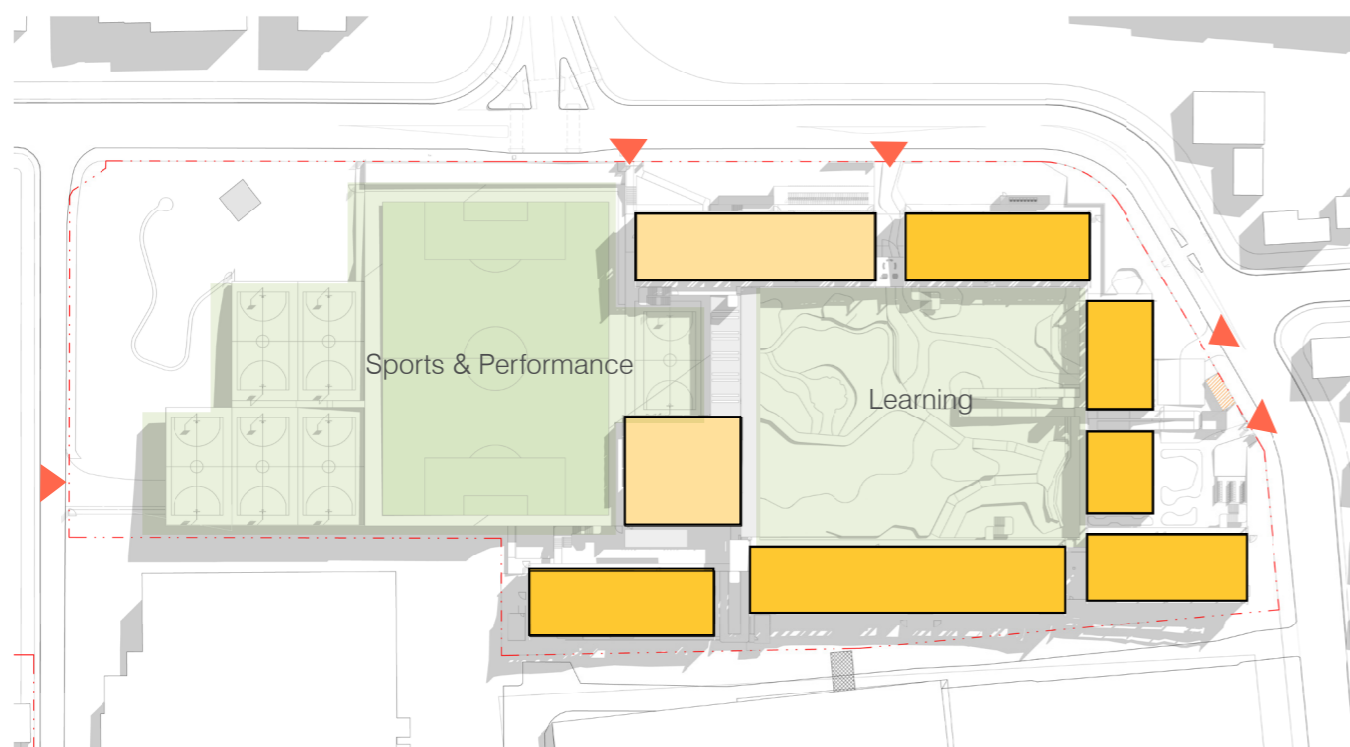
- A loop walkway is created connecting all buildings
- Efficient covered access between all spaces
- Short movement between programmes
- Buffer zone provided to the bushfire prone land
- Maximum 2 storey buildings allow for ramped access between levels, and increased equality in movement throughout the school.
- The southern buildings sit 1 level below the northern buildings allowing for views from all buildings
- Welcoming entry
- Clear out of hours zone to the western of the site
- Vehicular movement on site reduced to minimum for improved safety of the students

Challenges

- Ensuring a strong connection from the internal courtyard to the sports field and courts.

4.3 Master Plan Key Moves

Zoning & Arrival



The school has a strong background in sports and performance, and the broad zoning reflects this. The main student arrivals is located centrally in the school buildings and secondary entry points are to the west and east catering for the mass arrival and departure of students from the various student approach points.

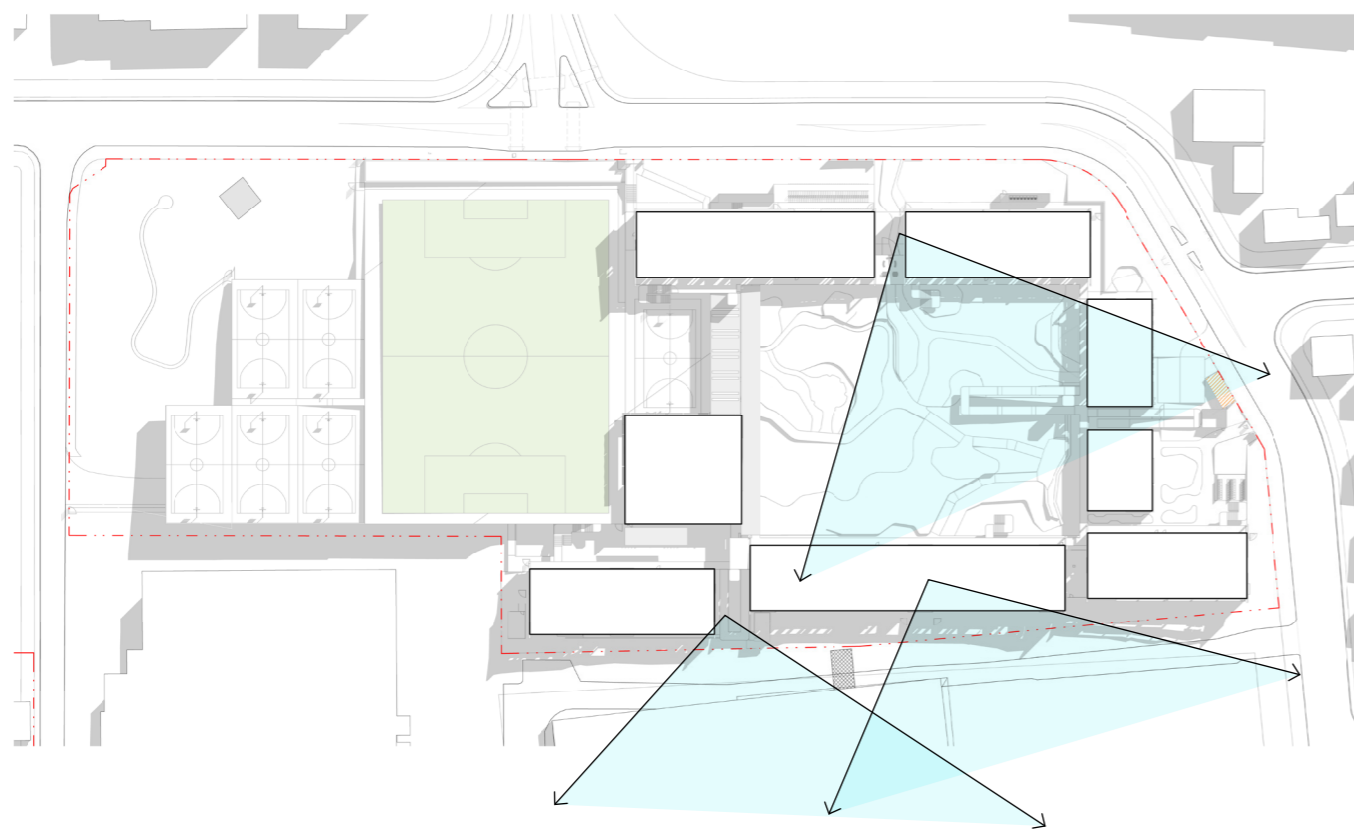
Treetop Views



The extensive presence of trees in and around the site inspires a strong connection to country by celebrating the views toward them.

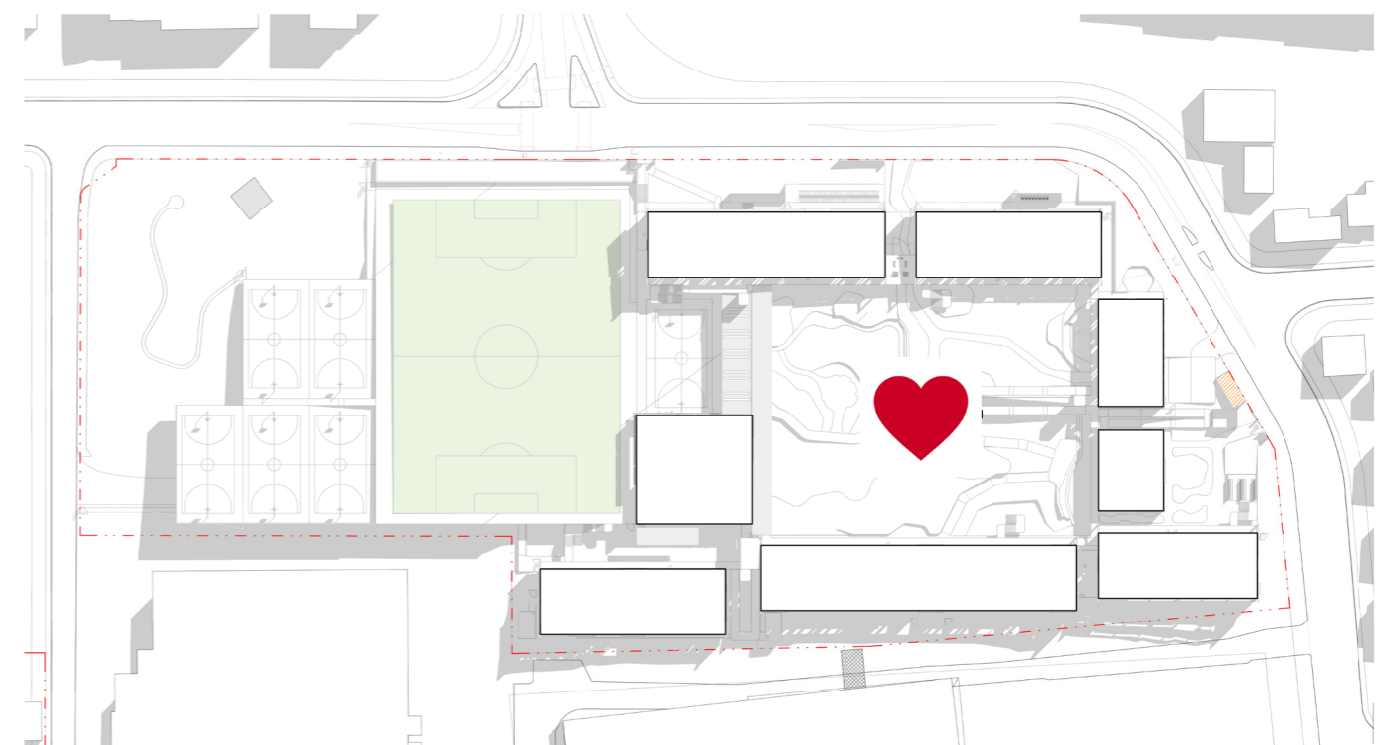
Master Plan

Views to Water & City



The scheme looks to retain and enhance the view to water and city. By adopting low height building volumes along the South and South-East, the northern buildings also enjoy the views across the roof of the southern and eastern buildings.

Campus Heart



The heart of the campus is imagined within the central open courtyard, celebrating the large existing trees, establishing a strong connection to nature for the students.

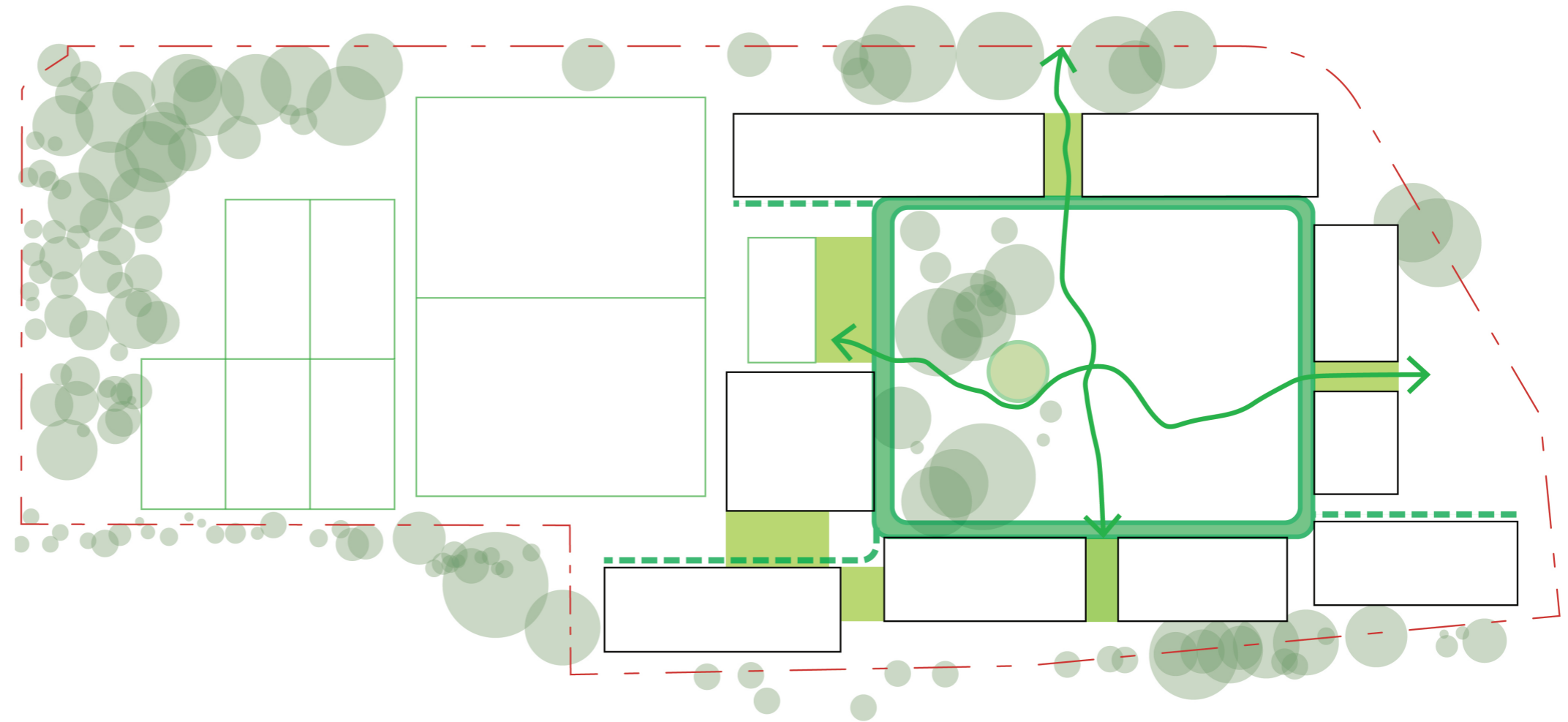
4.4 Responding to Site

The Learning Loop

The proposed design preserves and enhances the existing views to the tree canopy, giving the students, teachers, and visitors an opportunity to glance over the treetops to connect with nature.

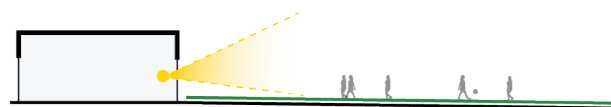
What we're calling 'The Learning Loop' is a circulation device that connects the entire school in a continuous and connected walkway. It creates an efficient student pathway reducing travel time between programmes, connecting the levels of the school with equitable vertical circulation options that plug into it.

It is defined by a single design language of a coloured Soffit. This coloured Soffit also floods the walls where the circulation opens up to an outdoor learning space, or amenities area, promoting the views out of the site and connecting the occupants to the to the country beyond.

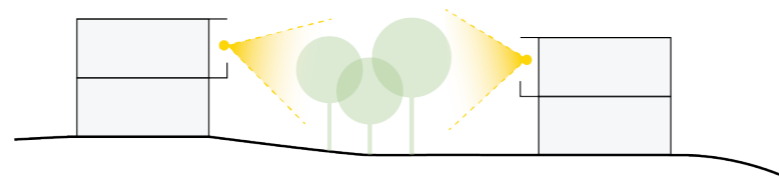


Legend

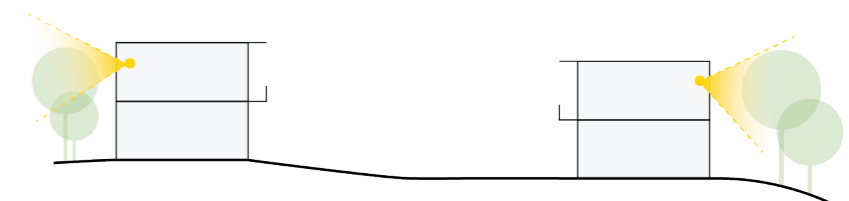
- Informal Learning
- The Loop



Views from the Gym over the football field

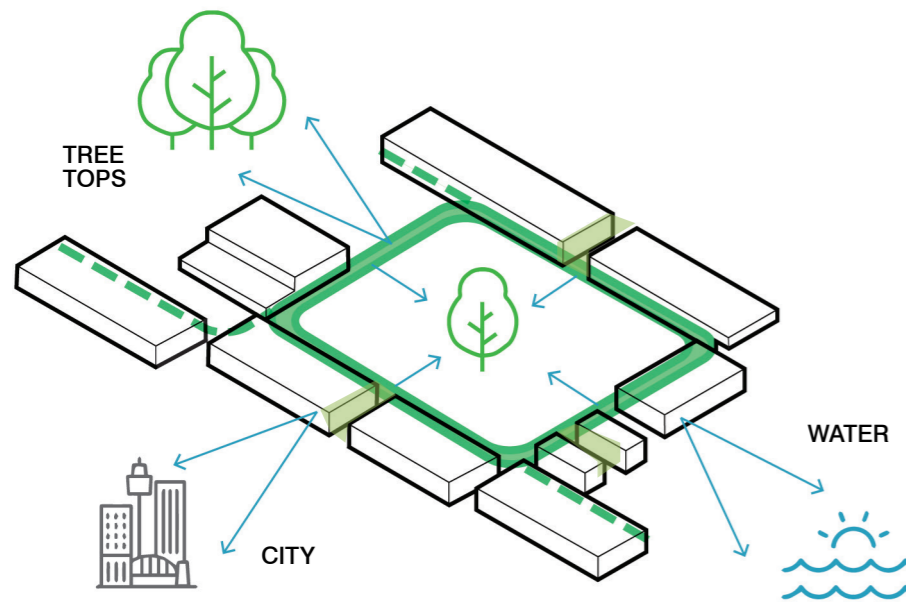


Views to the green heart of the school

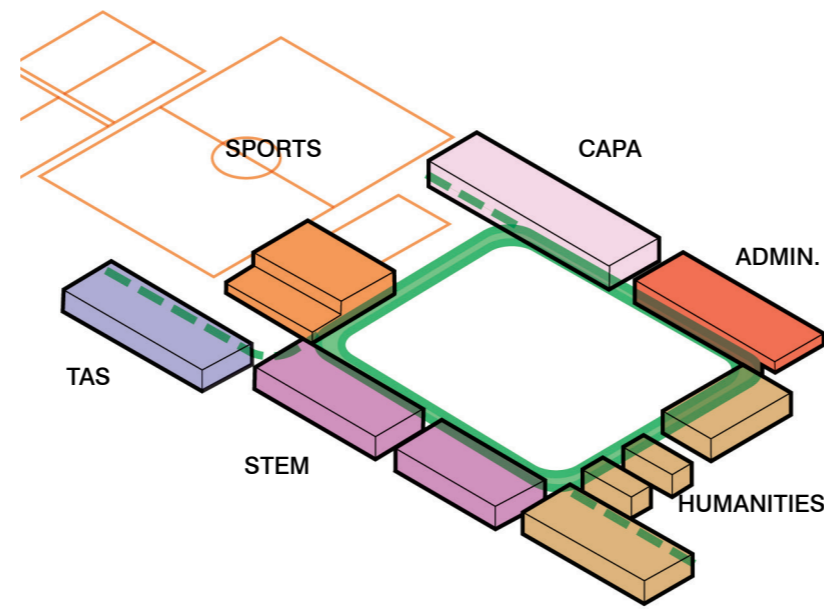


Views to tree canopies on the perimeter

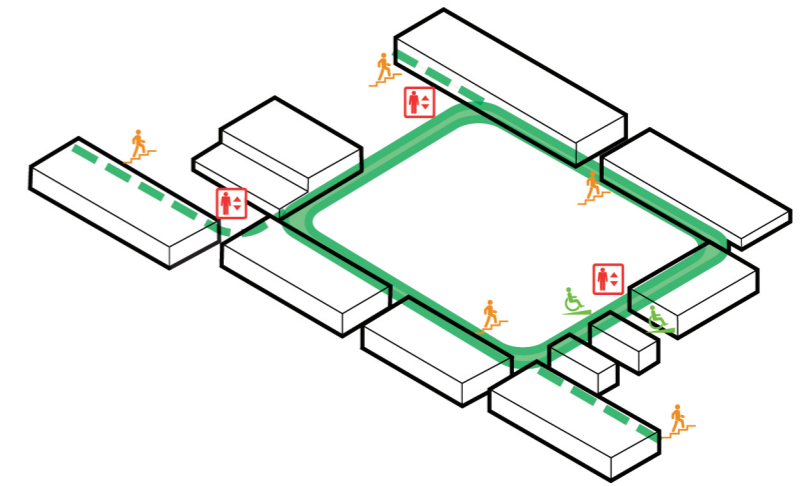
Master Plan



The learning loop connects the occupants to the tree canopy within the site. The breaks in the programme and buildings along the learning loop create opportunities for views out of the site to the water, city and tree canopy beyond.



The learning loop connects the Creative Arts, Sports & Fitness, TAS, STEM, and Humanities programmes, which occupy their own segments along the loop enhancing the wayfinding of the site.



A hybrid system of vertical circulation including Stairs, Ramps, Lifts and walkways plug into the learning loop. This hybrid approach gives all occupants of the school the opportunity to take their preferred means of travel between the levels of the school and the ability to take that journey together.



Views to Tree Top



Views to Water



Views to City

Master Plan

4.5 Site Plan

The site has been arranged utilising the built form as a protective buffer from the busy Allambie Road, wrapping around from the north to the east celebrating the existing mature native trees in the centre of the site. The sports courts and field create a clear buffer to the western bushfire prone land.

The result is a large sheltered landscaped courtyard central to the learning buildings, with the generous COLA acting as a connecting device between the courtyard and the sports field and playing courts to the west.



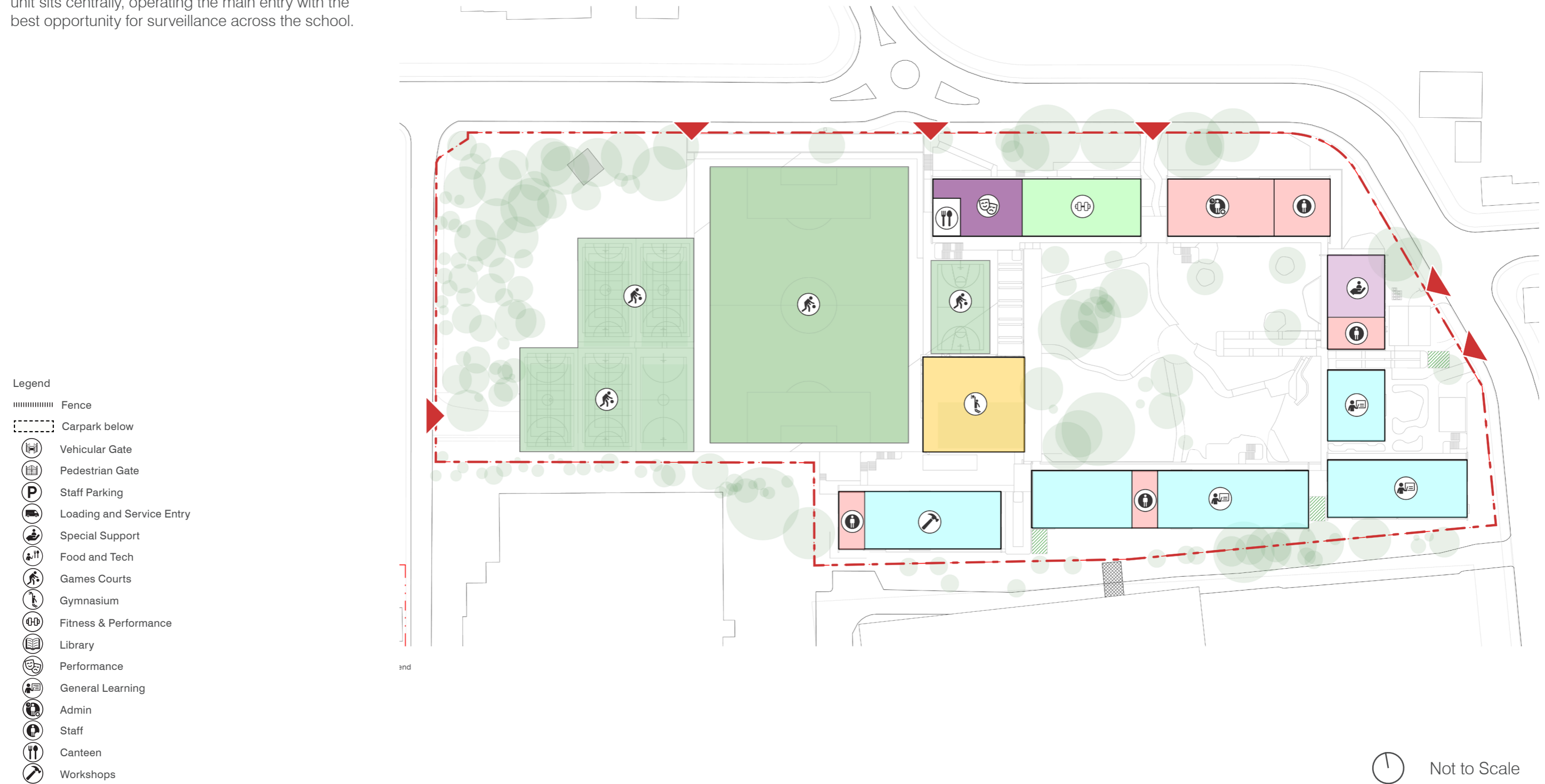
Source: Oculus

⌚ Not to Scale



4.6 Ground Level Program

This diagram shows how the site has been divided into the different precincts. Creative Arts to the North West, Technology to the South West, STEM to the south, and Humanities to the East. The administration unit sits centrally, operating the main entry with the best opportunity for surveillance across the school.



Master Plan

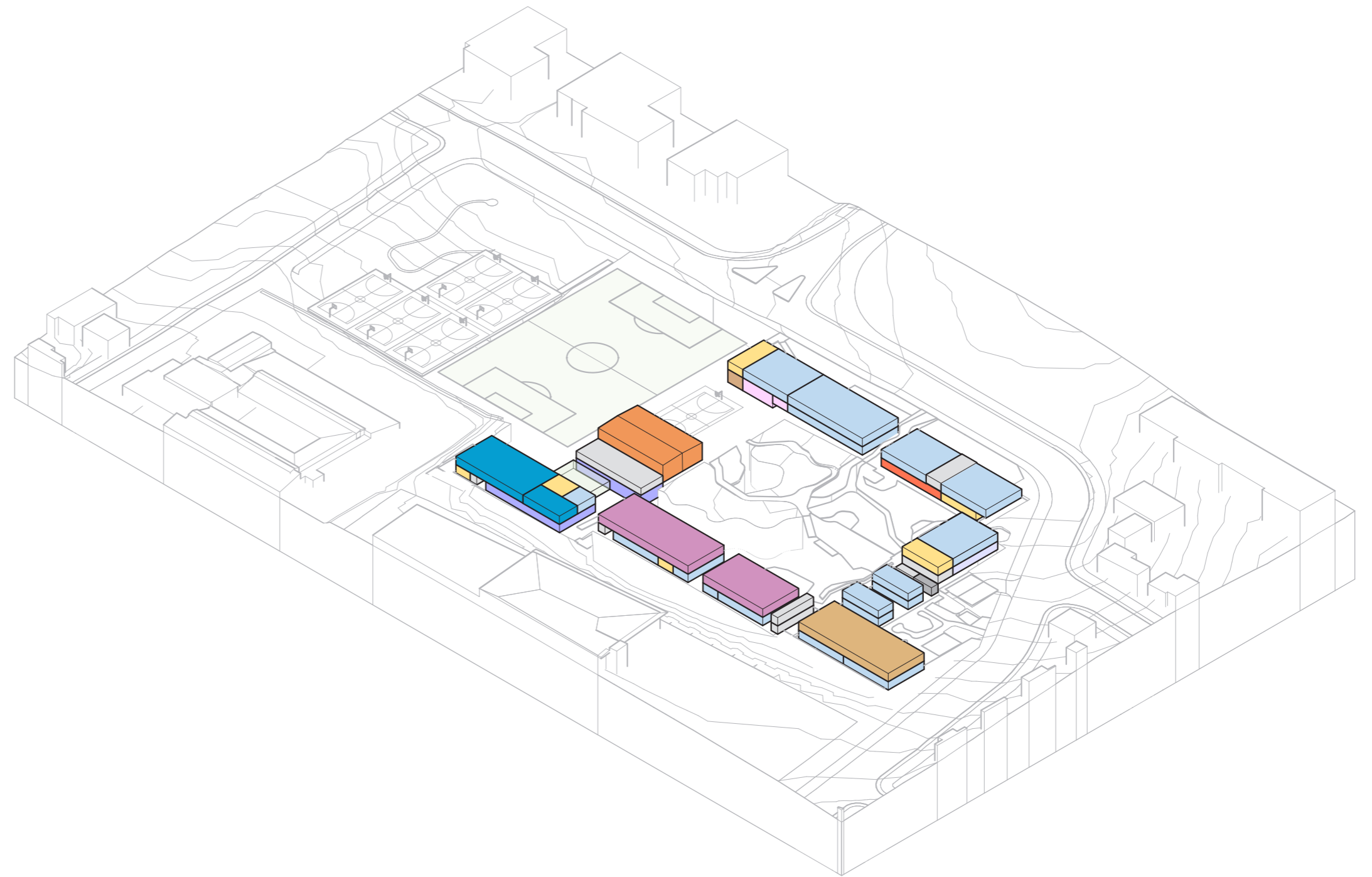
4.7 Block and Stack

The block and stack diagrams to the right show the locations and relationships between the different learning units on site.

Administration Unit is located at the main entry to the school and facing the public domain. Staff study areas are distributed between the buildings following consultation with the School.

Key programs are located on the ground floor to allow the school to function in an efficient and equitable manner. Library is located on the upper level of the southern building and can be easily accessed from the learning loop. Each level is equipped with student amenities and services.

The performance space uses the natural topography to maximise the floor to floor height. Heavily serviced programs such as the Metalwork and Woodwork workshops are located on the ground plane, in close proximity to the service entry and loading dock.



South East View

Legend

- Administration Hub Unit
- Canteen Unit
- General Learning Units
- Food + Textiles Hub
- SSU
- Science
- Lecture Learning
- Gymnasium / Stage
- Library
- Staff Study
- Wood & Metal
- Amenities / Change / Shower
- Services / Store

4.8 Day in a Life

This section demonstrates the interface of the school facilities with the public domain as well as how the school will be used.

These diagrams illustrate how the school will be used from the point of view of zoning, open space, entries and access in regards to entry points, accessibility, egress and evacuation strategy, traffic and transport access, out of hours access, pedestrian access and security measures.

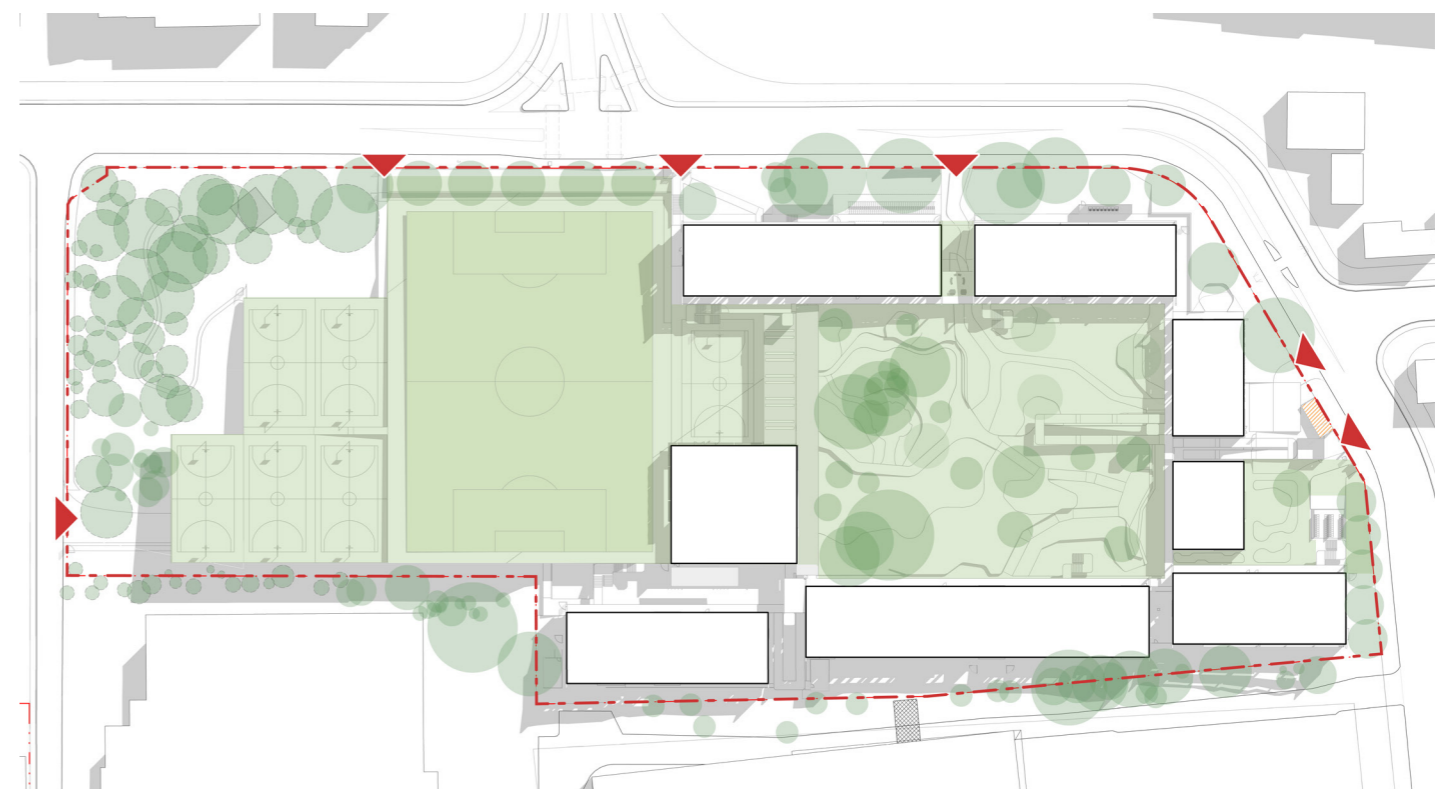
Zoning



The arrangement of the school is a series of buildings that wrap the north, east and southern perimeter. The sports and performance buildings sit to the north west, and the learning buildings to the North, east and south. This forms a protected school heart in the centre of the site, and a sports and performance zone to the west.

- Legend
- Learning Zone
 - Sports and Performance Zone
 - School Heart

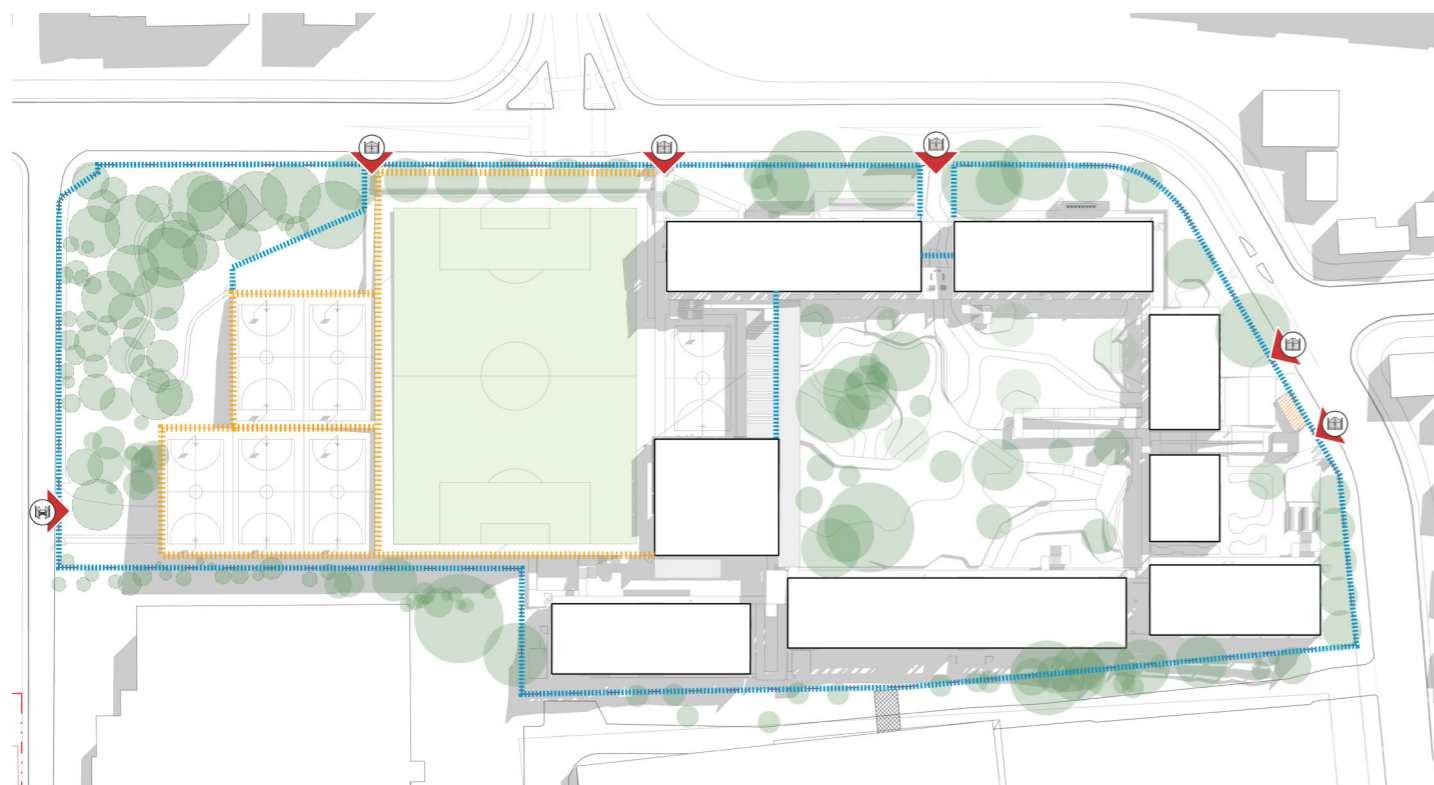
Open Space



The proposed school achieves a generous extent of open space for the students on ground plane shown in the diagram above. Outdoor learning is also maximised by the many outdoor learning commons throughout the school buildings.

- Legend
- Open Space - 20,814m²

Security



The diagram above shows the proposed security measures for the school.

A perimeter boundary fence is provided to the entire school site. A secondary secure line is provided at the main entry and vehicle entry points to enable visitors to the site to be vetted prior to being allowed to enter the school.

- Legend
- Pedestrian Gate
 - Vehicular Gate
 - Staff Parking
 - Vehicle Access
 - 2.15m Security Palisade Fencing
 - Court Fencing

Out of Hours Community Access

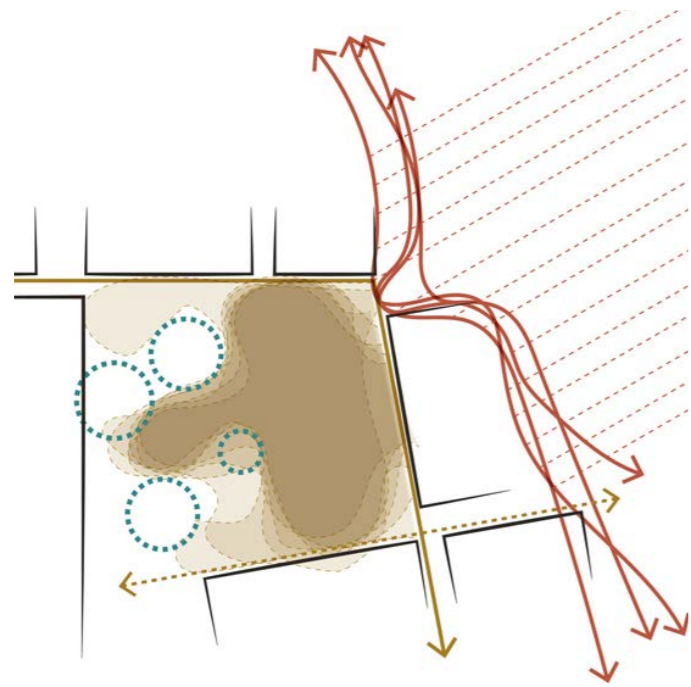


Out of hours community access is provided to the areas shown in the diagram above. The layout of the school enables a clear and secure dividing line separating the out of hours access from the rest of the school.

The out of hours community access area is accessed by the secondary entry point to the west of the main entry, and captures the COLA, sports field, sports courts, gymnasium, and performance area.

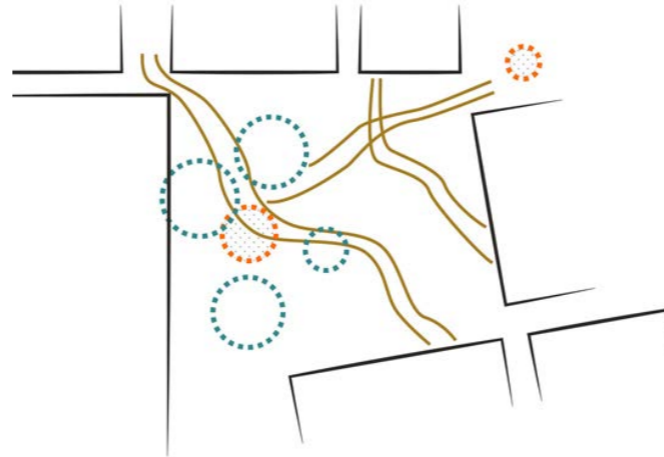
- Legend
- After Hours Entry Point
 - Gymnasium
 - Playing Court
 - Games Field
 - Accessible Buildings
 - Accessible Open Space
 - 2.1m Security Palisade Fencing
 - 2.1m Palisade Fencing
 - Court Fencing
 - 1.8m Mesh Fencing

4.9 Landscape - Site Narrative



INTERACTION

- Consideration for how the school boundary interacts with the street and wider context
- Creating a landscape that fuses existing features with new
- Enhancing and framing views into the heart of the campus



CONNECTION

- Reference the site heritage and natural environment to connect to the past
- Linking the site with historic movement paths between buildings through the core landscape
- Allowing for open views across the campus and beyond



ACTIVITY

- Create hives of activity and moments of rest and relaxation
- Allowing for passive recreation nestled within the landscape
- Providing seating opportunities for gathering, learning and watching

4.10 Landscape - Schematic Plan



LEGEND

- ① Main Entry
- ② Covered Plaza
- ③ SSU Outdoor Space
- ④ Outdoor Learning Areas
- ⑤ Assembly Court
- ⑥ Gathering space
- ⑦ Passive Outdoor Space
- ⑧ Covered Outdoor Learning
- ⑨ Secondary Entry
- ⑩ Synthetic Sports Field - 6500m²
- ⑪ Games Courts
- ⑫ Existing Trees to be Retained
- ⑬ Forest Learning Area
- ⑭ Covered Outdoor Workshop Area
- ⑮ Remnant Duffys Forest
- ⑯ New Road to Carpark
- ⑰ Substation

⌚ Not to Scale

4.11 Landscape - Connecting with Country Framework

There is an opportunity for the project to refer to the sites indigenous and natural heritage.

Remnant Forest &

Integrating plant species of the remnant Duffys Forest ecological community. Using the landscape as an educational tool with signage and information plaques to foster connection and understanding of natural relationships. Allowing the forest edge to provide opportunities for learning and playing in nature.

Existing Trees

Retaining groves of existing trees with passive recreation around them. Re-use of removed trees for seating elements in the landscape.

Tracks

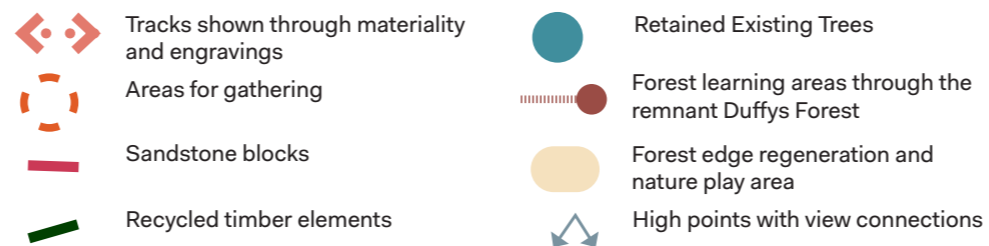
Creating connected tracks across the campus that link the site together and recreate the 'goat tracks' which used to traverse the site. A pathway that transects the school looks to reference connect two sites of engravings which sit to the north and south of the site.

Engravings

Opportunities for engraving within the floor plane, seating elements and sandstone blocks. Storytelling embedded into the landscape with appropriate language and imagery. Involving the students in the creation of engravings and sculptures.

Gathering

Creating spaces within the landscape for group gatherings to share knowledge and learn. Also allowing for individual reflection in smaller more intimate spaces surrounded by native planting.



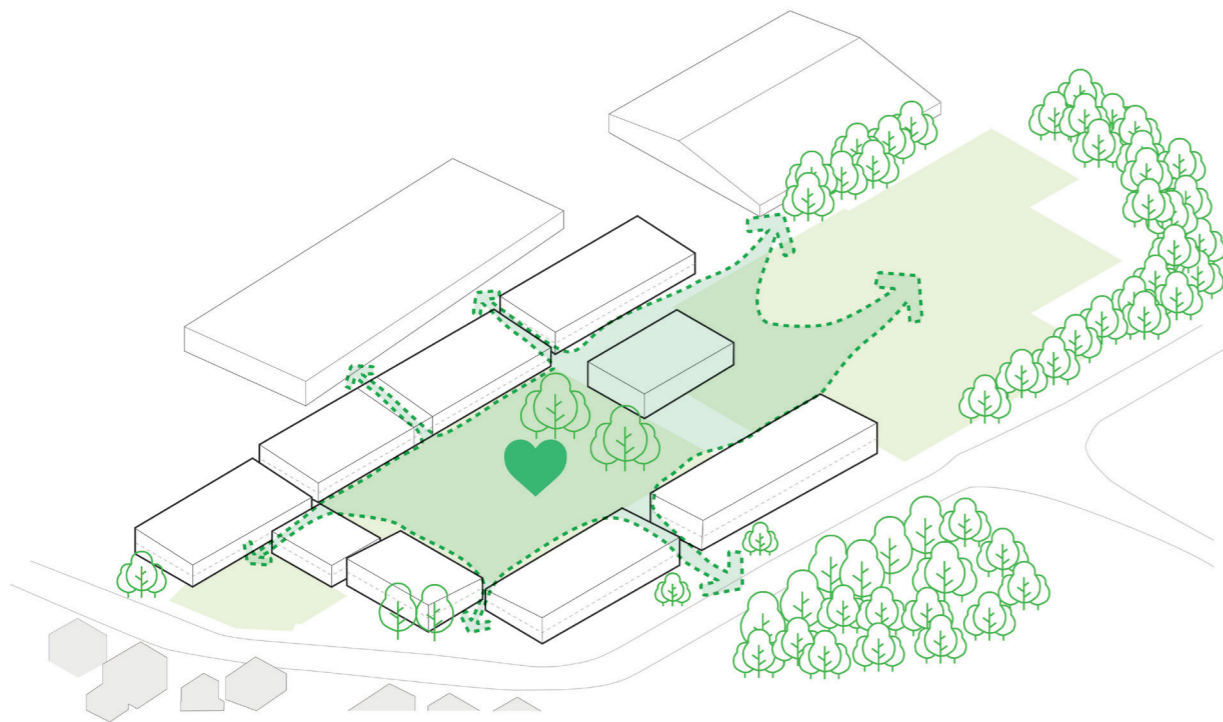




5 Built Form and Urban Response

The following chapter addresses built form and urban environments through form, strategies, and visual impact assessment.

5.1 Concept Strategies

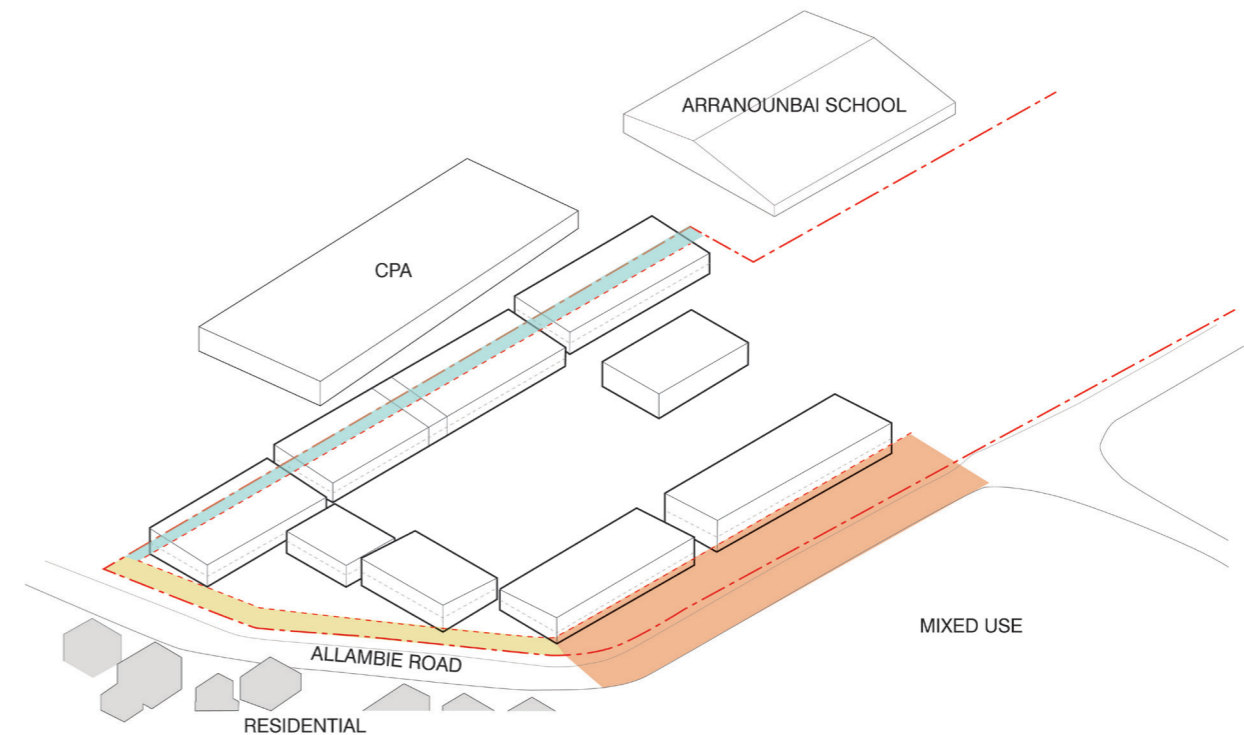


Integration with Site & Landscape

The landscape is the dominant feature of the site, and also the tallest. The school buildings integrate into the site topography, and existing mature trees.

The vertical circulation structures enable the landscape to travel into the upper levels of the school where the learning loop connects the occupants with the tree canopy enabling a strong visual and physical connection to the surrounding nature.

Legend
 - Open Space

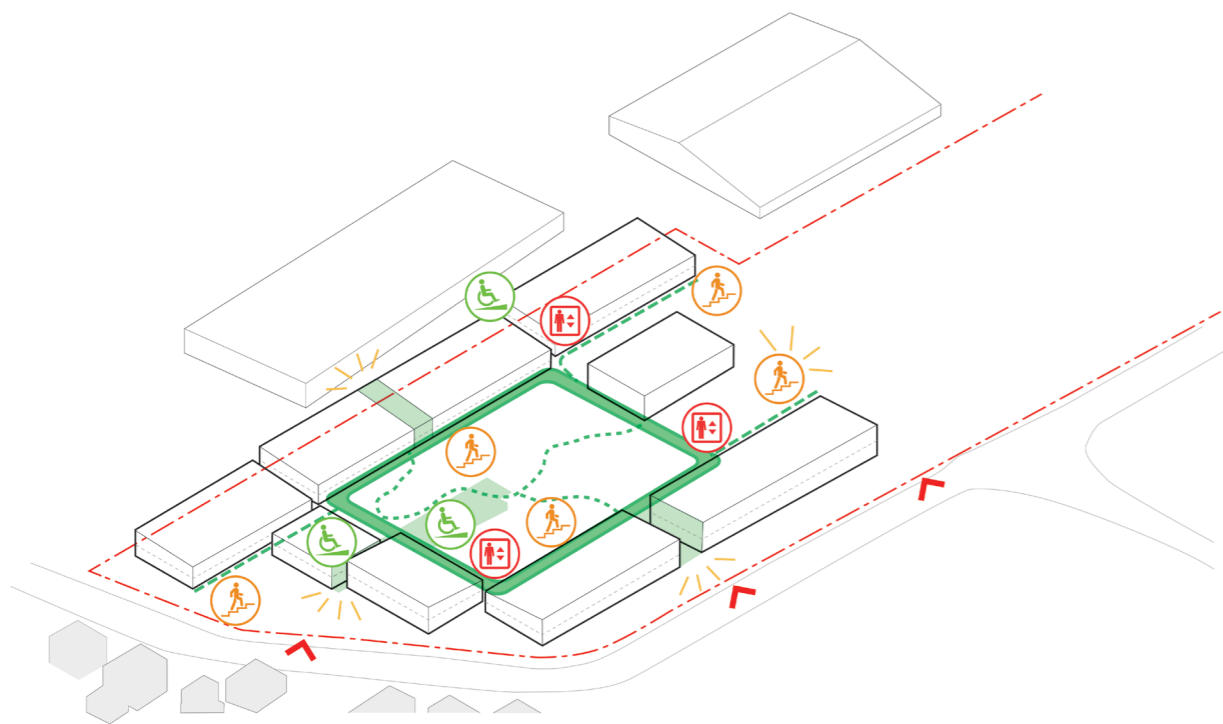


Setback & Street Character

The proposed school buildings setback from the boundary responding to the surrounding streets and urban conditions.

To the north a veiled street presence is created by a generous setback responding to the bushfire asset protection zone. The eastern building frontages turn away from the eastern boundary creating a generous landscaped buffer zone between the residents across Allambie Rd.

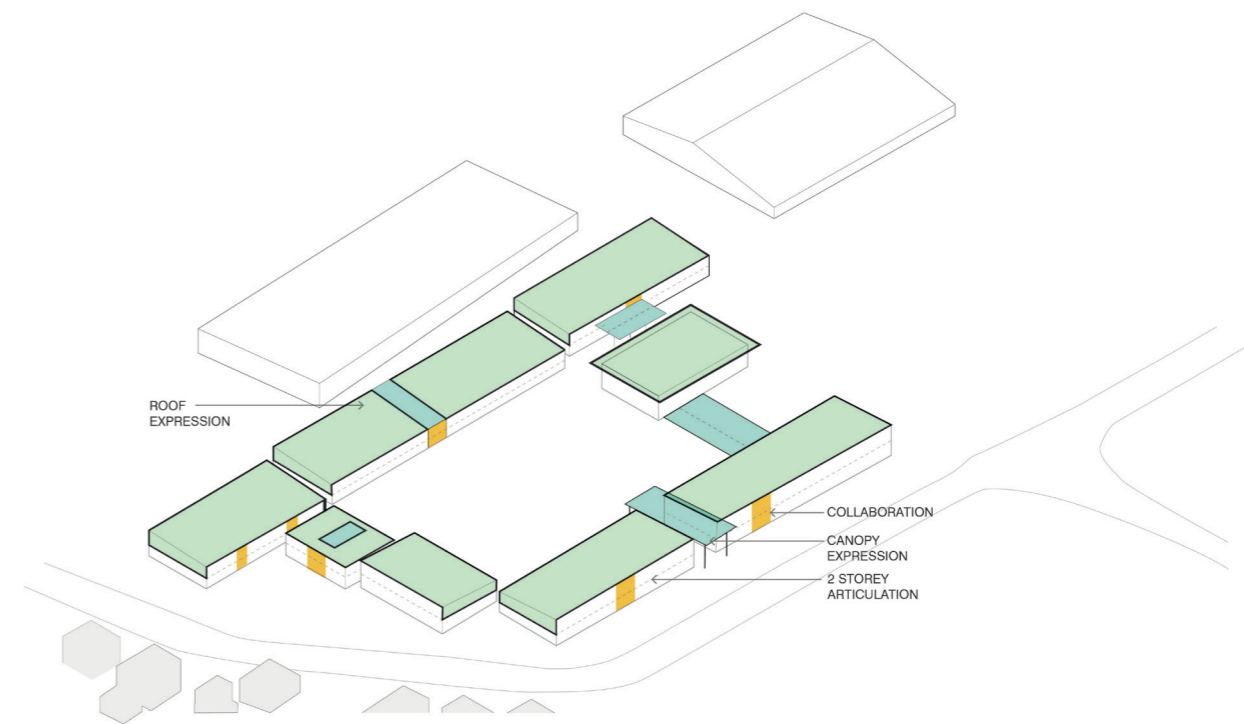
Legend
 - Eastern Setback
 - Southern Setback
 - North Setback from APZ
 - Boundary Line
 - Building Base Line



Circulation & Wayfinding

'The Learning Loop' is a circulation device that connects the entire school in a continuous and connected walkway.

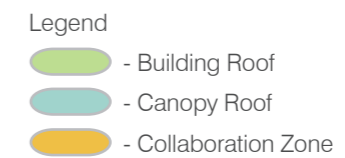
It creates an efficient student pathway reducing travel time between programmes, connecting all levels of the school with equitable vertical circulation options that plug into it, including stairs, ramps, and lifts.



Scale & Articulation

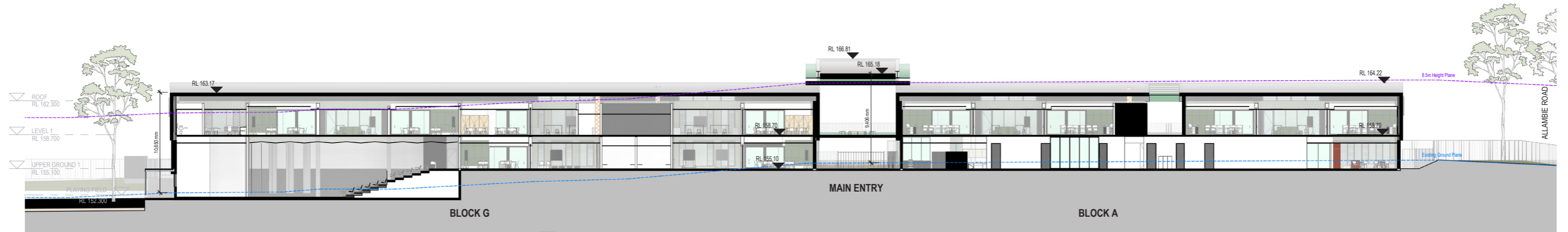
The proposed school buildings are a maximum of 2 storeys in keeping with the surrounding urban context. They are capped with a simple skillion roof, and an articulated facade that speaks to the learning function behind. The northern expression has a generous setback and responds to the industrial context with its longer building forms, the large break center defines the main entry.

As the site turns to face the east, the scale breaks down, stepping down the topography responding to the residential community opposite.

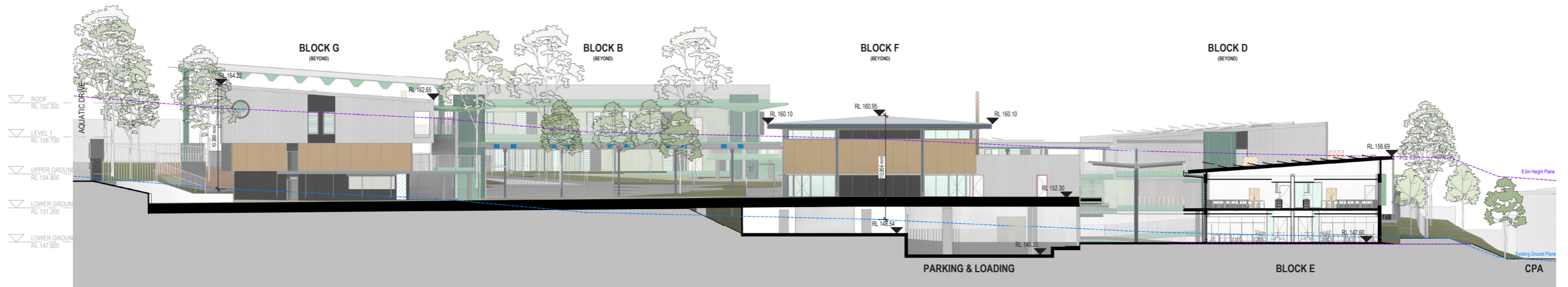


Built Form and Urban Response

Building A + G Section - East West



Building E + Playing Field Section - North South

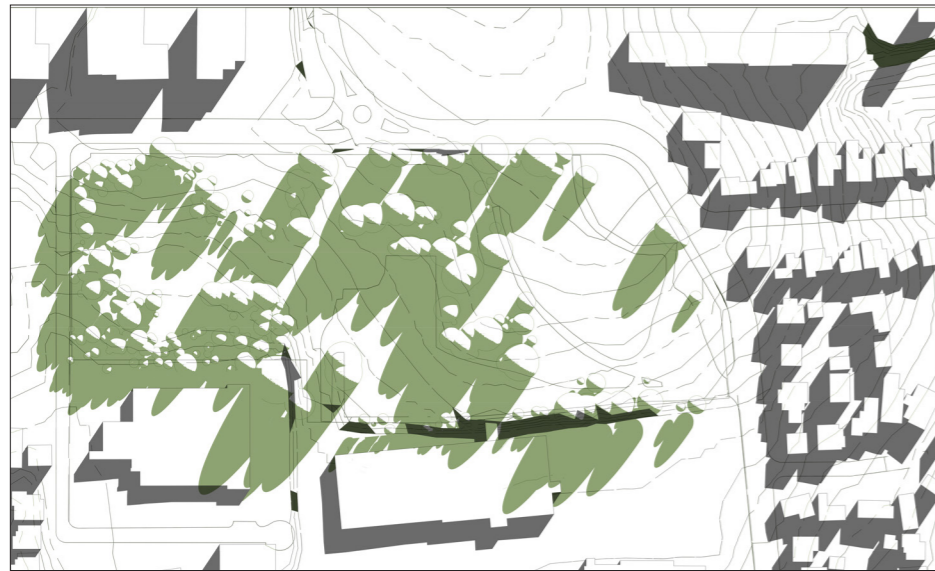


Building B + F Section - East West

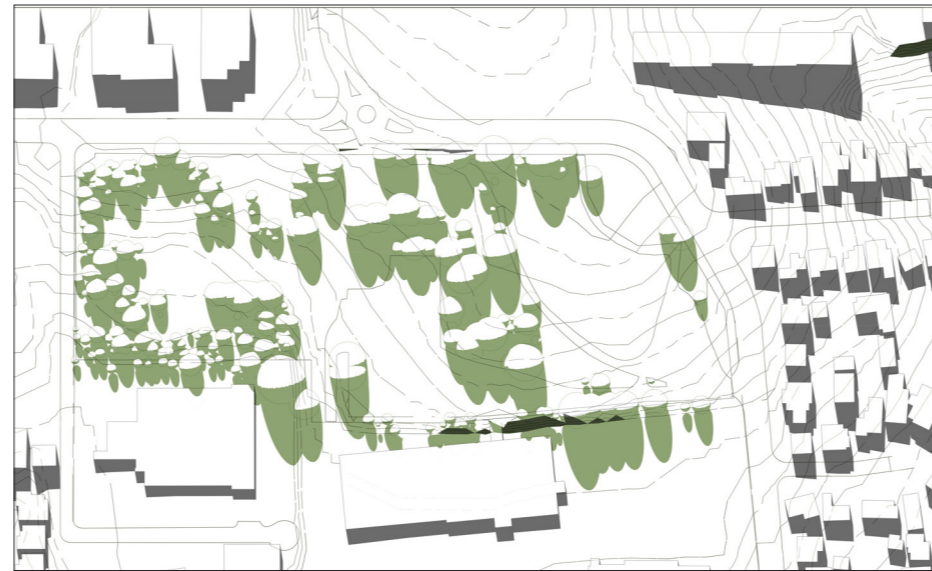


5.3 Shadow Analysis

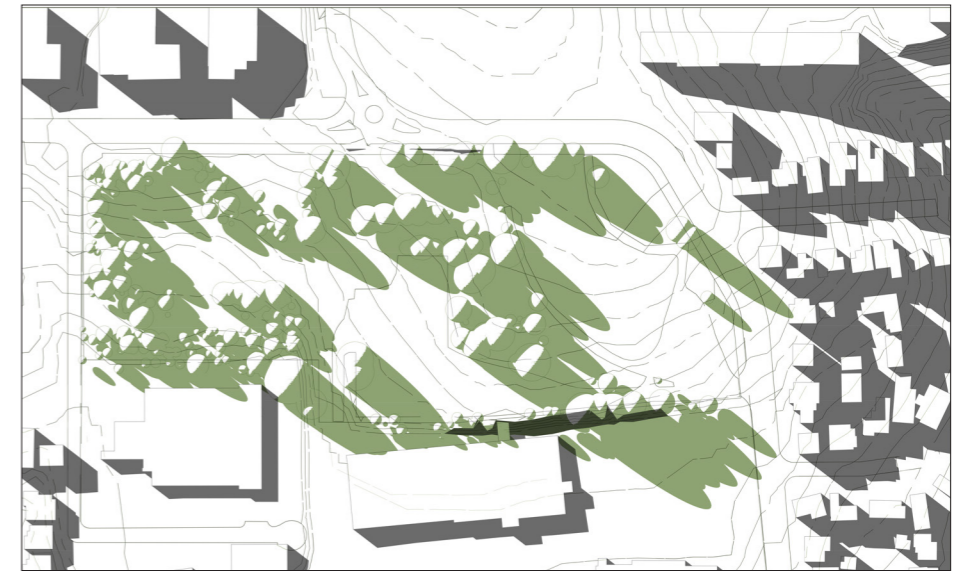
Existing condition: Winter Solstice



9am

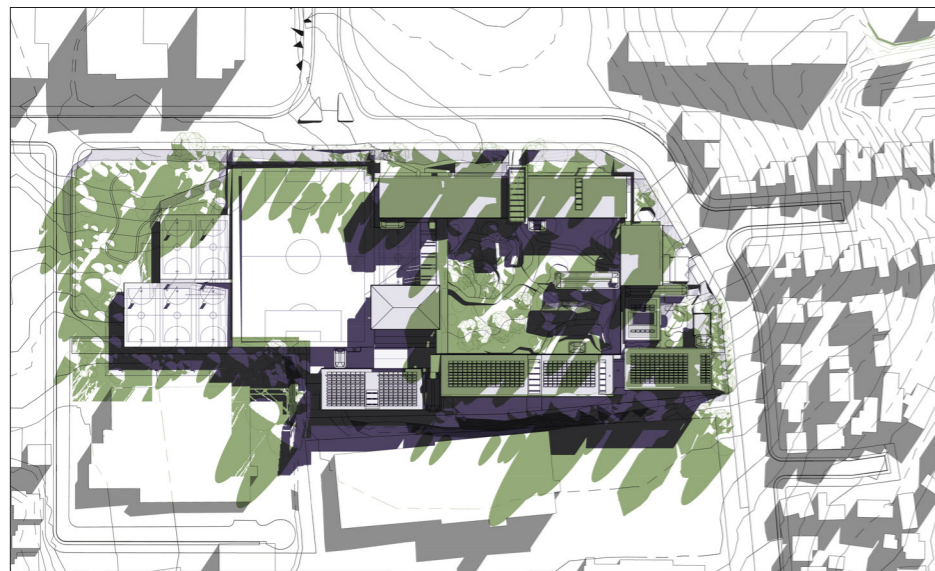


12pm

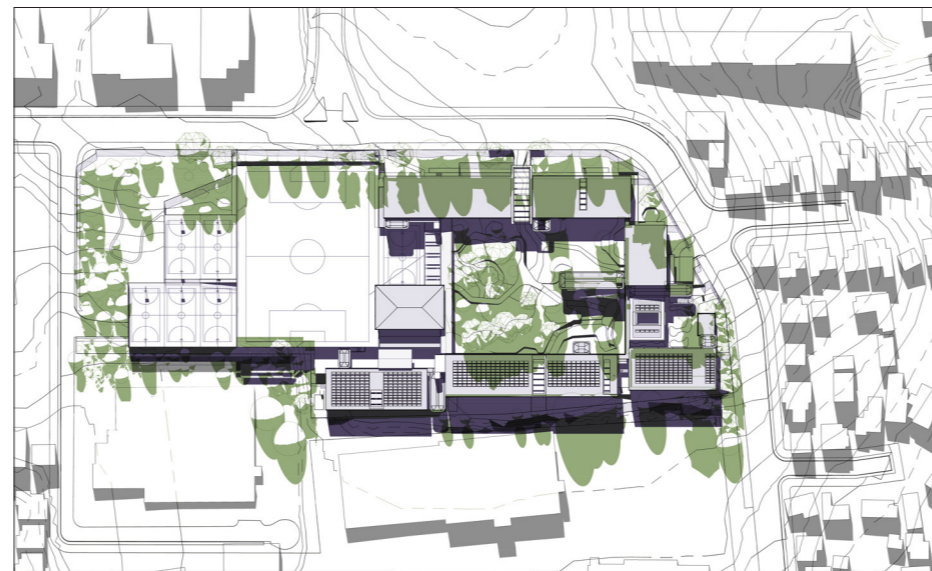


3pm

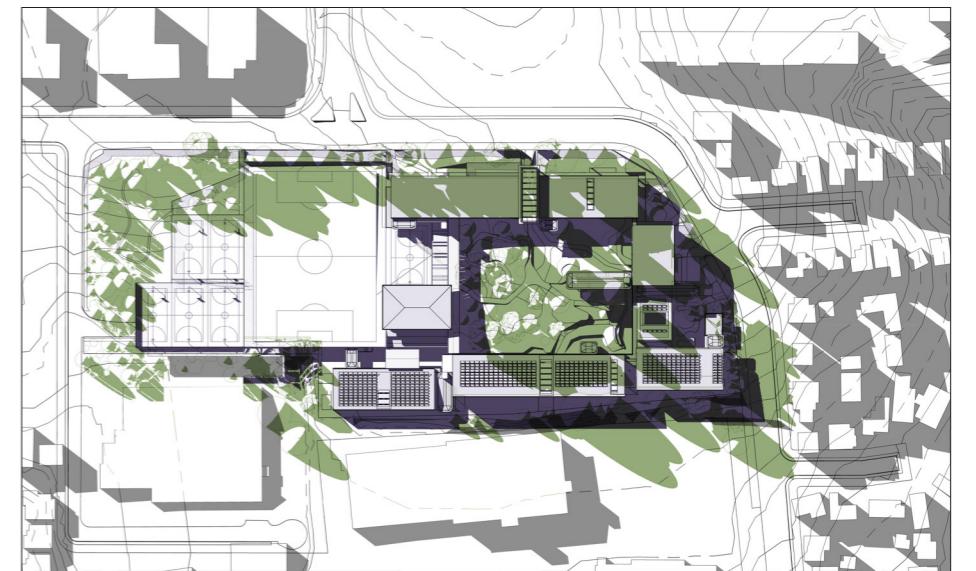
Proposed: Winter Solstice



9am



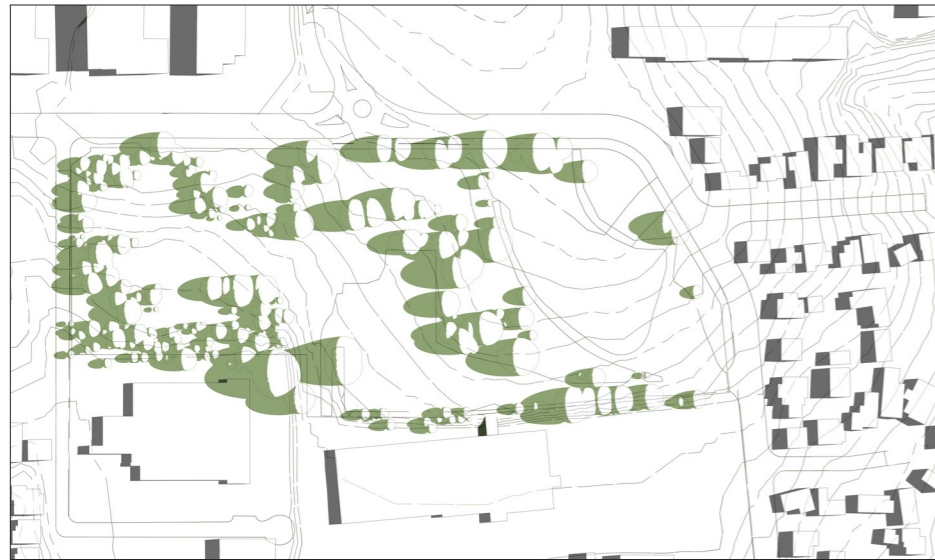
12pm



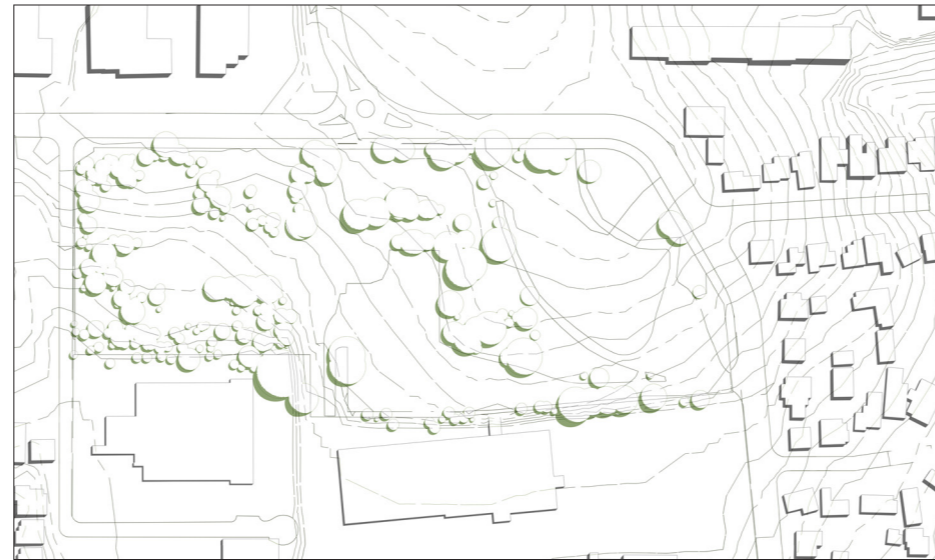
3pm

Built Form and Urban Response

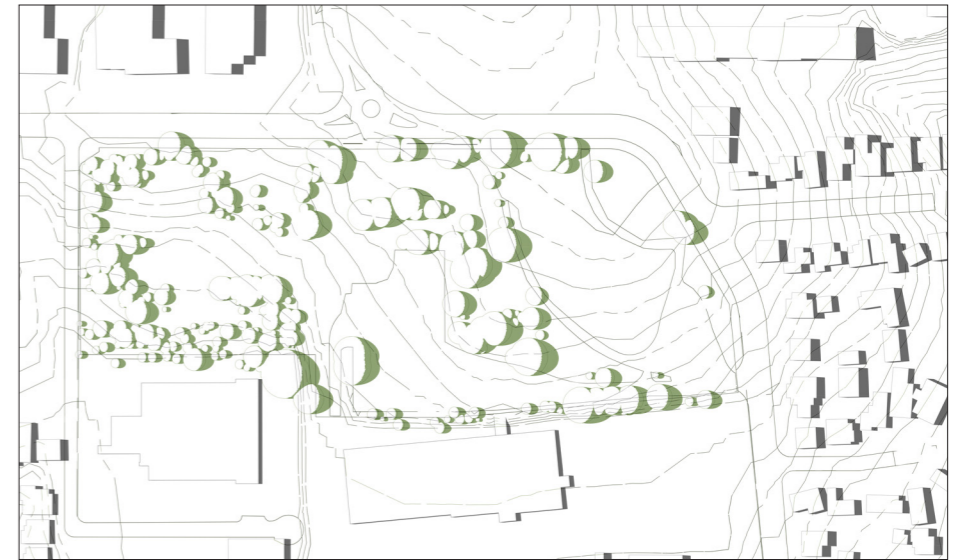
Existing condition: Summer Solstice



9am

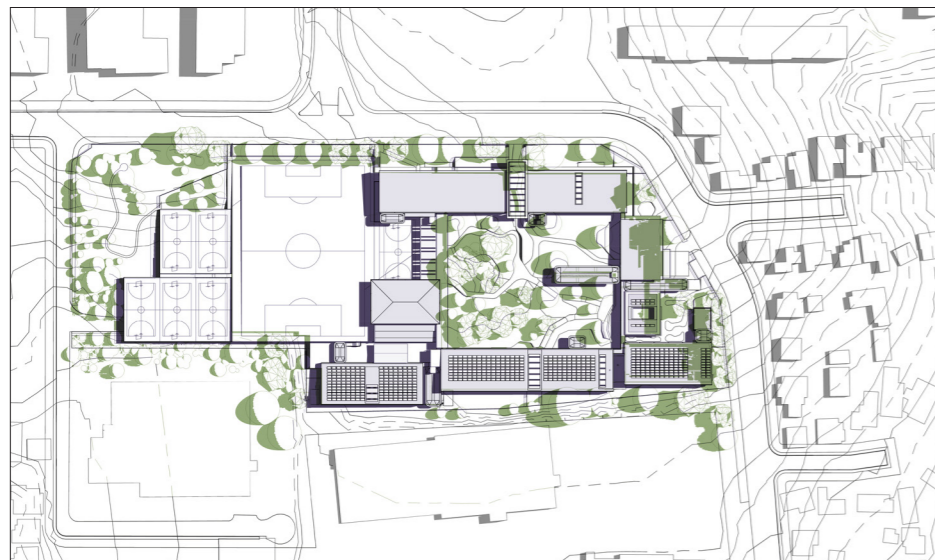


12pm

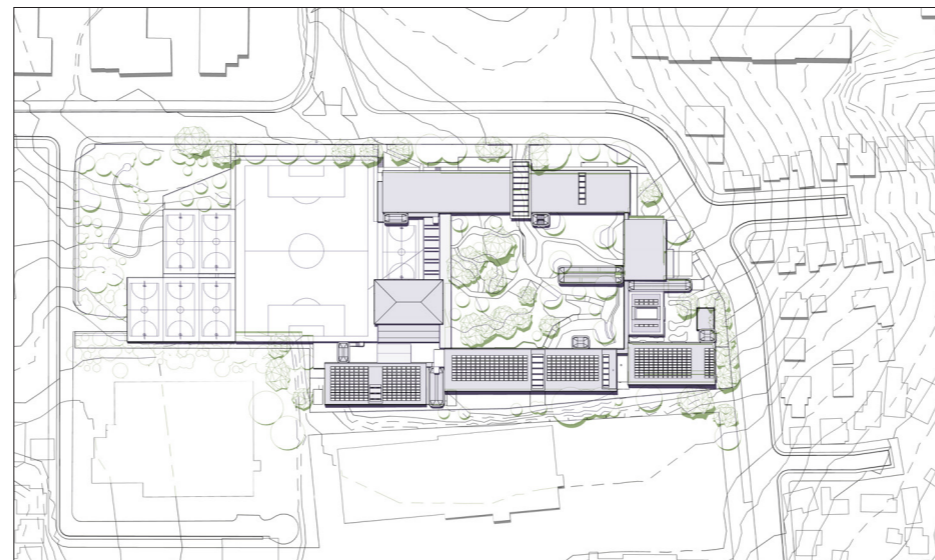


3pm

Proposed: Summer Solstice



9am



12pm

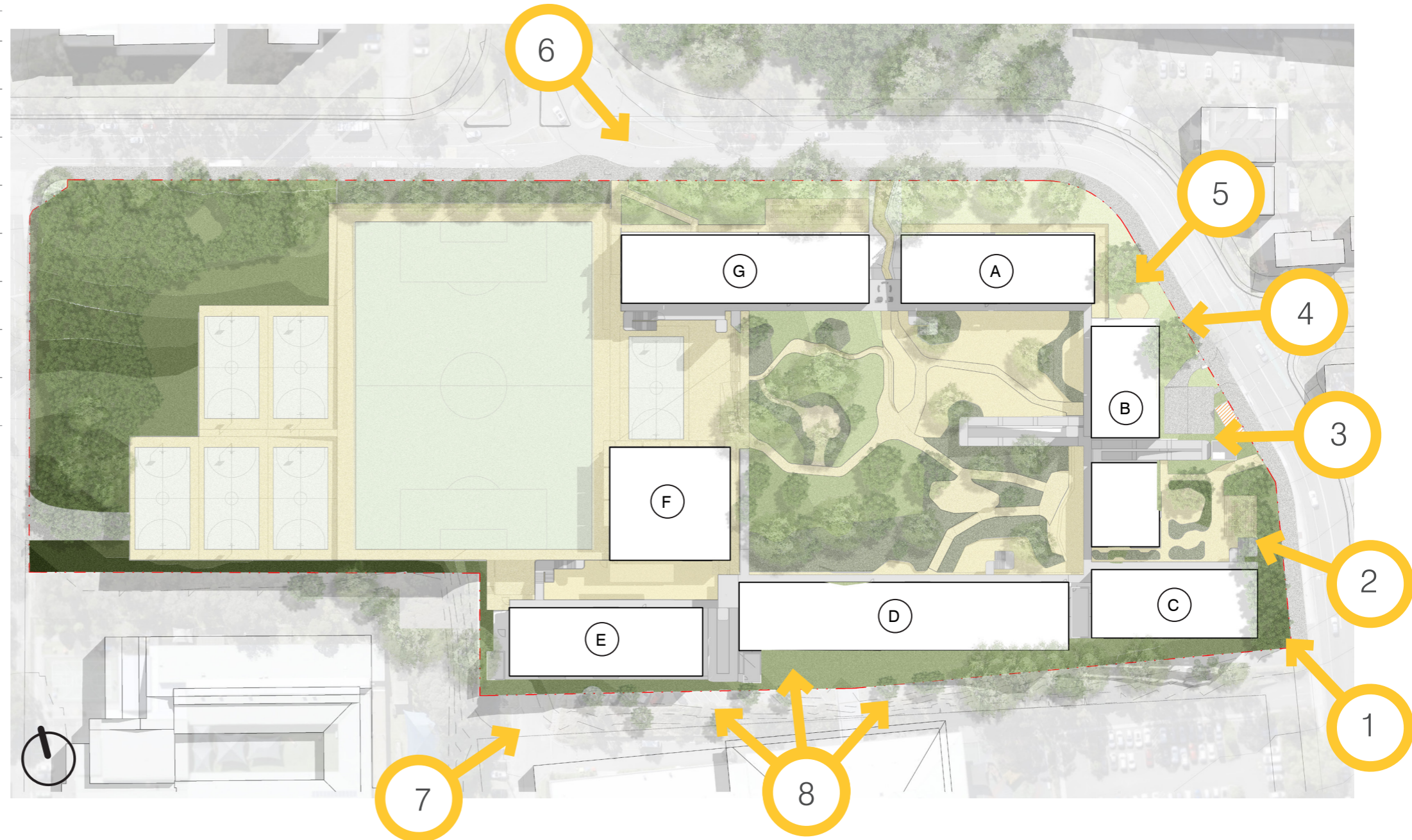


3pm

5.4 Visual Impact & View Analysis

View Table

View Name	Description
View 1	View towards Building C from edge of cul-de-sac Sunlea Place
View 2	View towards Buildings B and C from Allambie Rd residences
View 3	View towards Buildings A and B from Allambie Rd residences
View 4	View towards Buildings A and B from Arnhem Rd top of the hill
View 5	View towards Buildings A and B from residences at top of Allambie Rd
View 6	View towards Building G and Main Entry from Allambie Rd/ Aquatic Dr intersection
View 7	View towards Building E from CPA carpark west
View 8	Views towards Buildings C, D and E from Cerebral Palsy Alliance access bridge

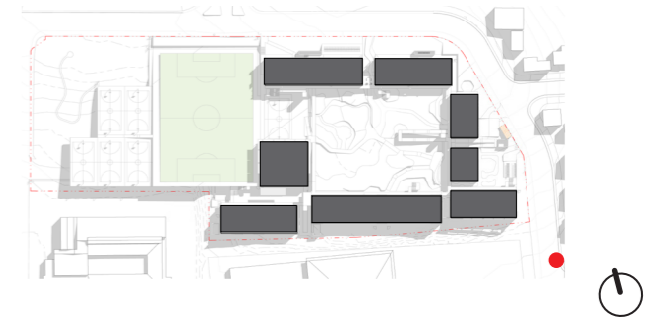


Notes:

- Existing trees size and location is based on current survey information and are represented by an indicative species
- Materiality of proposed external services are represented by an all white envelope

Built Form and Urban Response

View 1 - View towards Building C from edge of cul-de-sac Sunlea Place



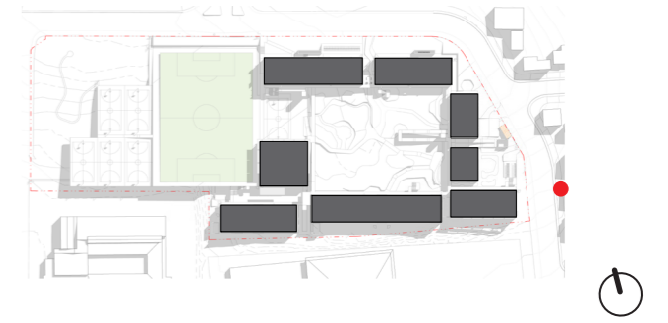
Existing view from edge of Sunlea Place



Proposed view of Building B loading dock entrance on Allambie Road from Sunlea Place

Built Form and Urban Response

View 2 - View towards Building B and C from Allambie Rd residences



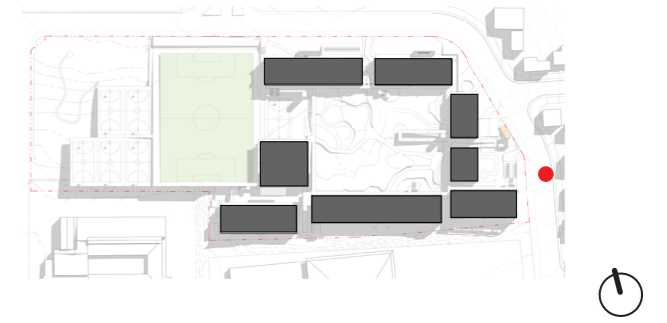
Existing view from Allambie Rd residences



Proposed View of Building B and C from Allambie Rd residences

Built Form and Urban Response

View 3 - View towards Building B from Allambie Rd residences



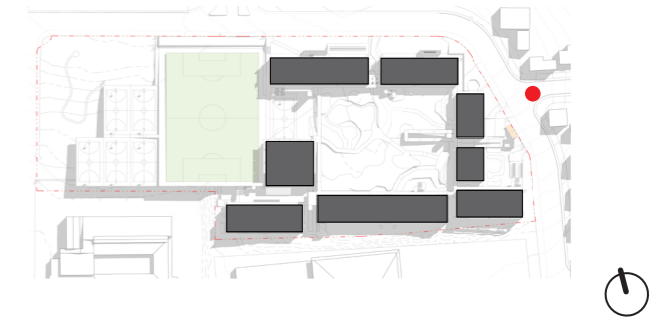
Existing view from Allambie Road residences



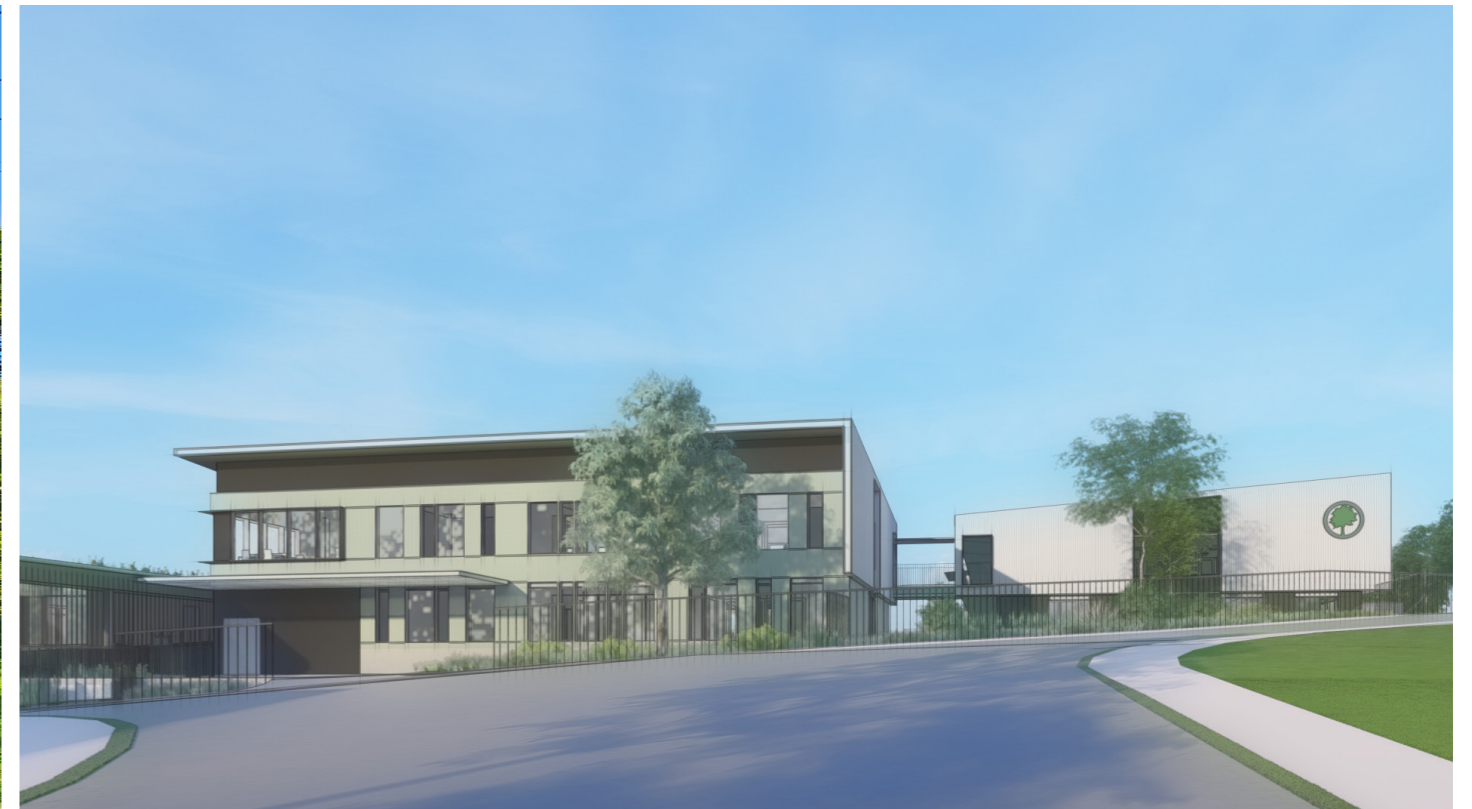
Proposed view of Building B from Allambie Road residences

Built Form and Urban Response

View 4 - View towards Buildings A and B from top of Arnhem Rd



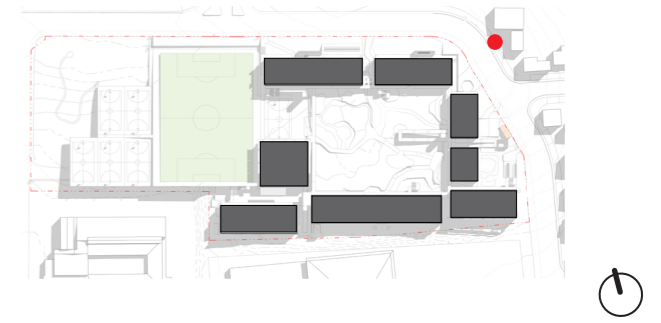
Existing view from top of Arnhem Rd



Proposed view of Buildings A and B from top of Arnhem Rd

Built Form and Urban Response

View 5 - View towards Buildings A and B from residences at top of Allambie Rd



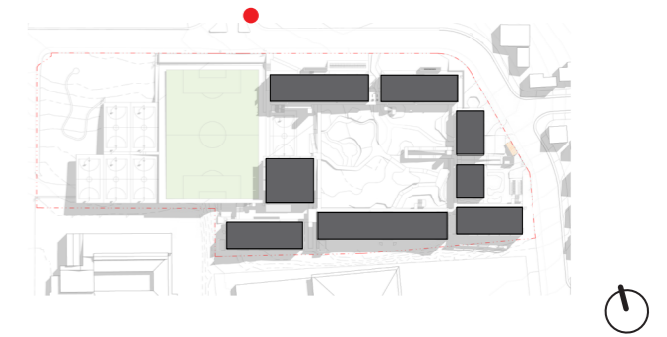
Existing view from top of Allambie Rd



Proposed view of Buildings A and B from top of Allambie Rd

Built Form and Urban Response

View 6 - View towards Building G and Main Entry from Allambie Rd/ Aquatic Dr intersection



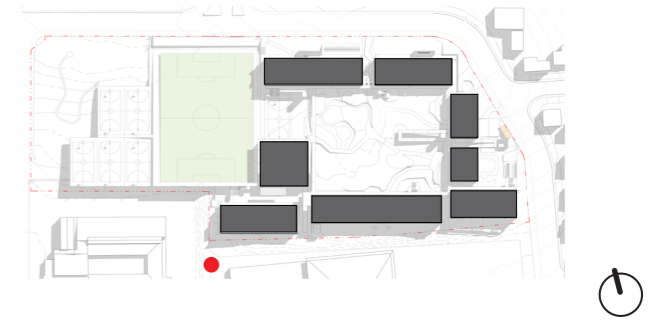
Existing view from the Allambie Rd / Aquatic Dr intersection



Proposed view towards the Building G and Main Entry from Allambie Rd

Built Form and Urban Response

View 7 - View towards Building E and Carpark from CPA carpark west



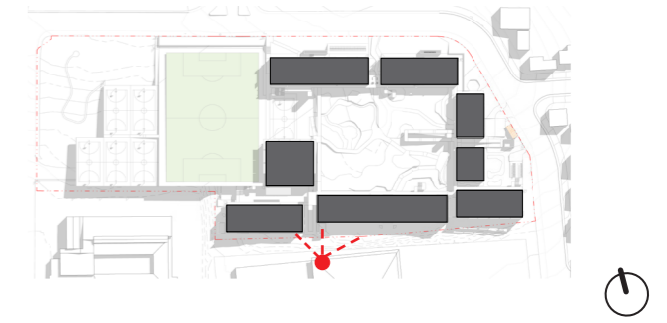
Existing view from the CPA carpark west



Proposed view towards Building E from the CPA carpark west

Built Form and Urban Response

View 8 - Views towards Buildings D and E from the Cerebral Palsy Alliance access bridge



Existing view north-west from the CPA access bridge



Proposed view north-west towards the Buildings D and E

Built Form and Urban Response



Existing view north from the CPA access bridge



Proposed view north towards Building D



Existing view north-east from the CPA access bridge



Proposed view north-east towards Buildings C and D

5.5 Lighting Strategies

This plan should be read in conjunction with the out of hours strategy as outlined by Architectus.

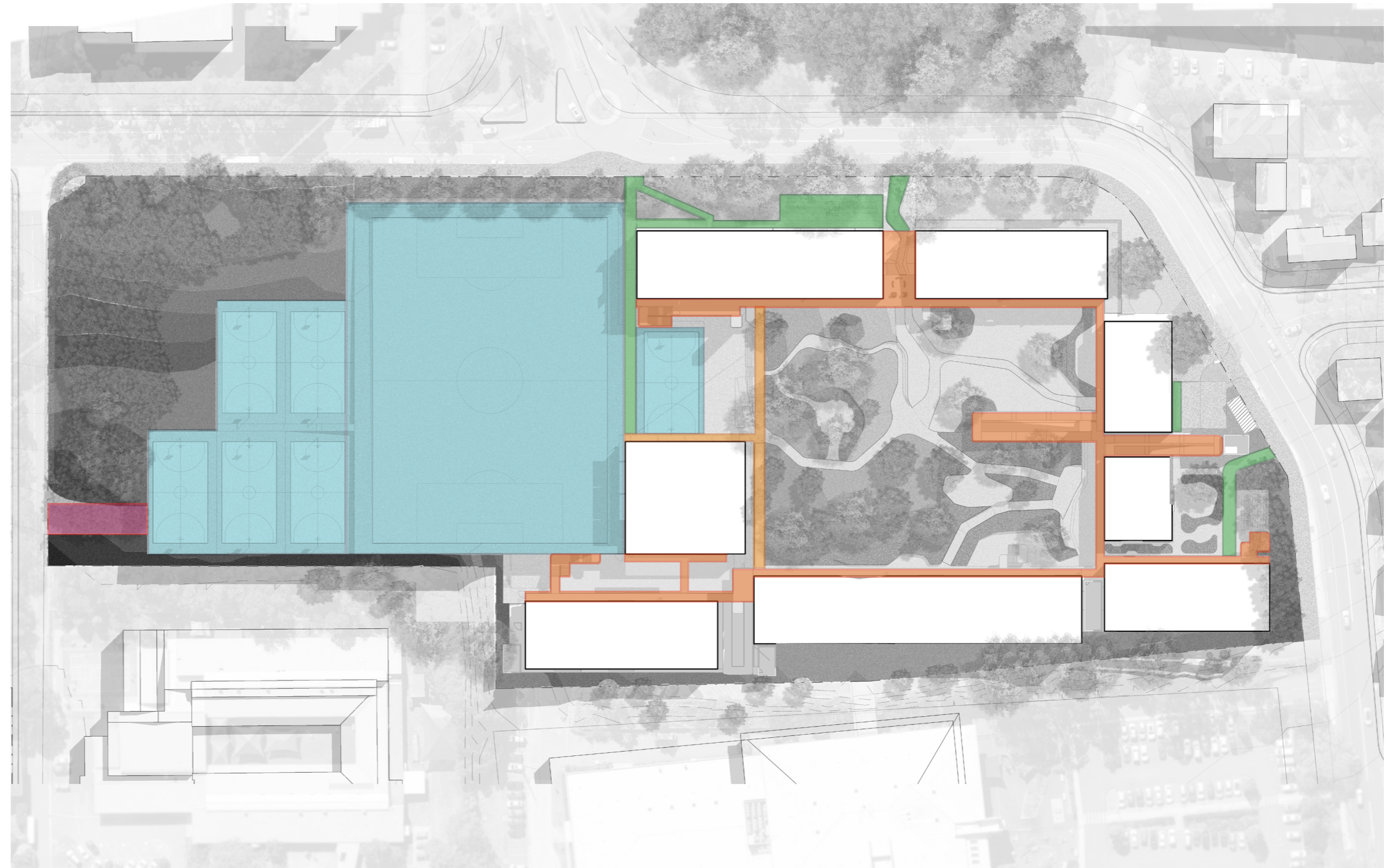
The strategy looks to ensure adequate lighting for access and general purpose. The access lighting is intended to provide safe and comfortable illumination for movement around the school during and after normal school hours. The general purpose lighting is intended to allow various areas to be used for their designed function. The lighting, associated control systems and installation must comply with all applicable Australian codes and standards as outlined in the EFSG requirements.

Key CPTED Strategies for lighting design include:

- Ensuring Correct Categorisation of areas
- Ensuring robust quality fittings
- Ensuring Compatibility with security.

LEGEND

-  Covered Walkway - Recessed ceiling Light
-  Walkway - Pedestrian Pole Light
-  Access Road - Pole Light
-  Sports Field - Floodlight



5.6 Entry Signage Strategies



West elevation



Emblem signage at facing Allambie Road (East)

Proposed location of Type 2 School Emblem signage on Building A east facade



Signage at main school entry facing Allambie Road (North)

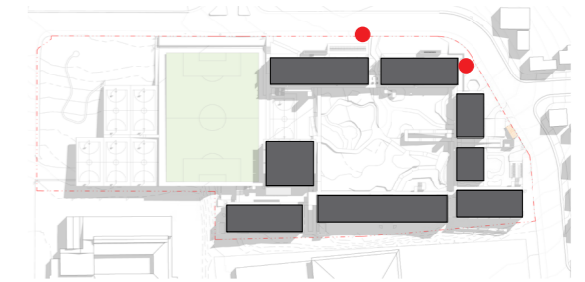
Proposed location of Type 1 School Emblem and Name signage on lightweight wall facing Allambie Rd main entrance



Signage at Secondary school entry facing Allambie Road (North)

Proposed location of Type 4 School Name signage on Block G and Type 5 School Name signage on lightweight Secondary entry wall facing Allambie Rd main entrance

5.6 Signage Strategies continued

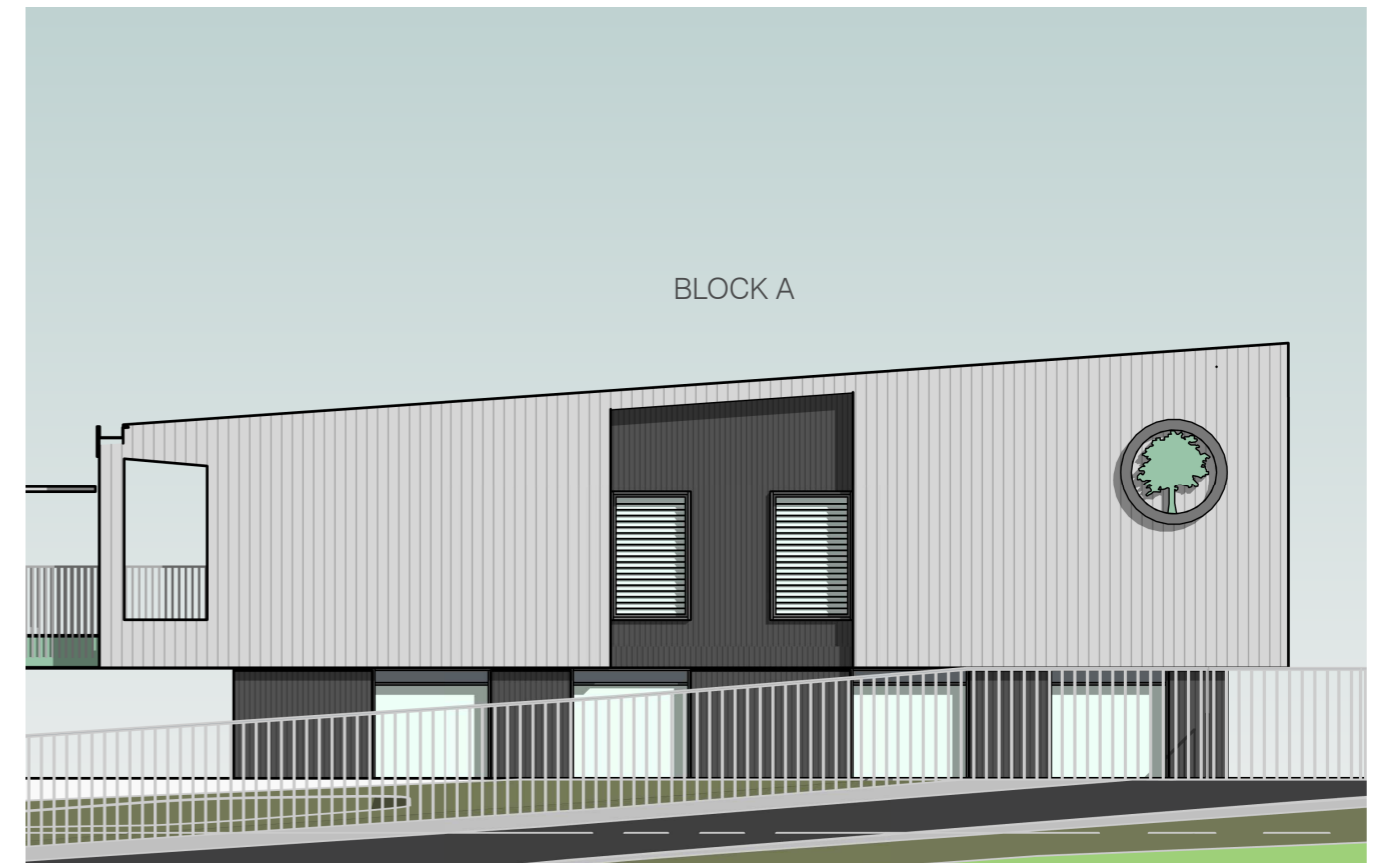


Entry Signage Type 1 - School Name & Emblem (Backlit)

Backlit Metal sign (Emblem and Wording) wall mounted to 2.4M High Lightweight Wall at School Entrance

Emblem approx 1,800mm Dia x 50mm (D)

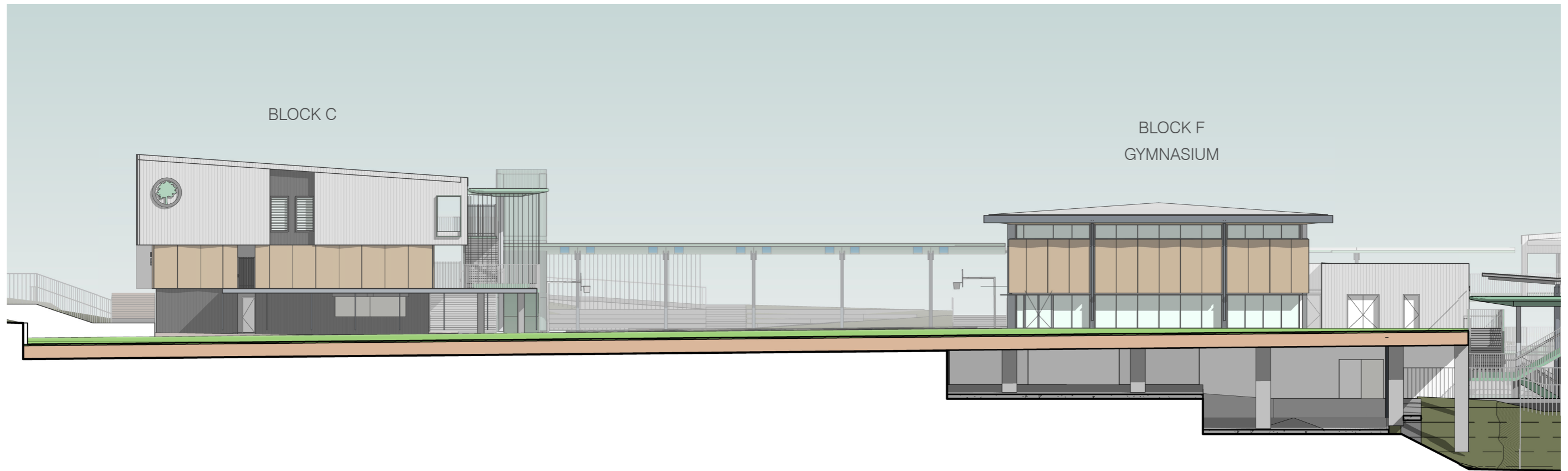
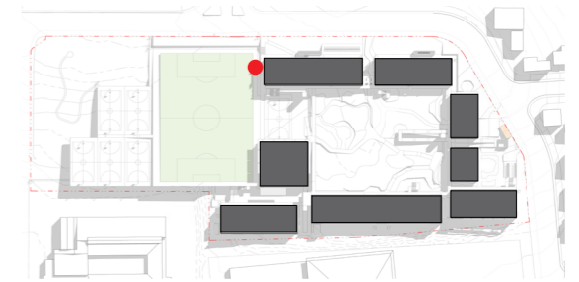
Backlit Wording Dimensions approx. 9,500mm (L) x 500mm (H) x 50mm (D)



Entry Signage Type 2 - School Emblem (Lightbox)

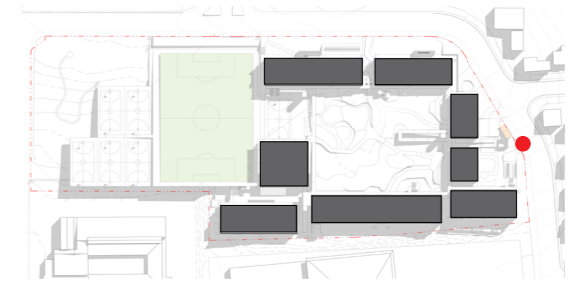
Lightbox Circular and Backlit School Emblem

Dimensions approx. 2,000mm (Dia) x 100mm (D)



Signage Type 2 - School Emblem (Lightbox)

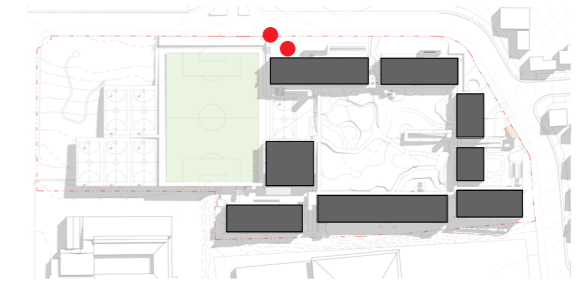
Lightbox Circular and Backlit School Emblem
Dimensions approx. 2,000mm (Dia) x 100mm (D)



Entry Signage 3- Secondary Entrance - School Name (Backlit)

Backlit Metal sign (School Name) mounted to 2.4M High Lightweight Wall at Secondary School Entrance

Backlit Wording Dimensions approx. 2,100mm (L) x 200mm (H) x 50mm (D)



BLOCK G



Entry Signage Type 4 - Building Facade - Theatre Name (TBC) (Backlit)

Backlit Metal sign (Theatre Name - TBC) mounted to building facade at Secondary School Entrance
Backlit Text Dimensions approx. 3,030mm (L) x 300mm (H) x 50mm (D)

Entry Signage 5 - Secondary Entrance - Theatre Name (TBC) (Backlit)

Backlit Metal sign (Theatre Name - TBC) mounted to 2.4M High Lightweight Wall at
Secondary School Entrance

Backlit Wording Dimensions approx. 2,100mm (L) x 200mm (H) x 50mm (D)



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6 Facade and Materiality

The following chapter demonstrates the detailed approach to facade design that complements the overarching design principles.



Facade and Materiality

6.1 Facade Performance Requirement Study

The EFSG and DfMA guidelines have enhanced requirements over and above the BCA for glazing and shading.

Working with the EFSG briefed ceiling heights and our proposed floor to floor heights, the adjacent diagrams compare the facade performance requirements of the EFSG/DfMA Guidelines with the BCA for a typical classroom module.

Typical classroom (GLS) module:
 Typical Floor area: 67m²
 Typical Facade area: 20.25m²

Daylight Requirement

BCA: the glazed panels or openings require an aggregate light transmitting area of not less than 10% of the floor area of the room to which it provides light;
 Therefore minimum glazing area calculation below;
 10% of typical GSL floor area = 6.7m²

EFSG/DfMA: The Minimum Expectation for 'Window to Wall Ratio' (WWR) targets and corresponding glazing area below:

North & West Facade WWR 40% = 10.8m²
 South & East Facade WWR 55% = 11.14m²

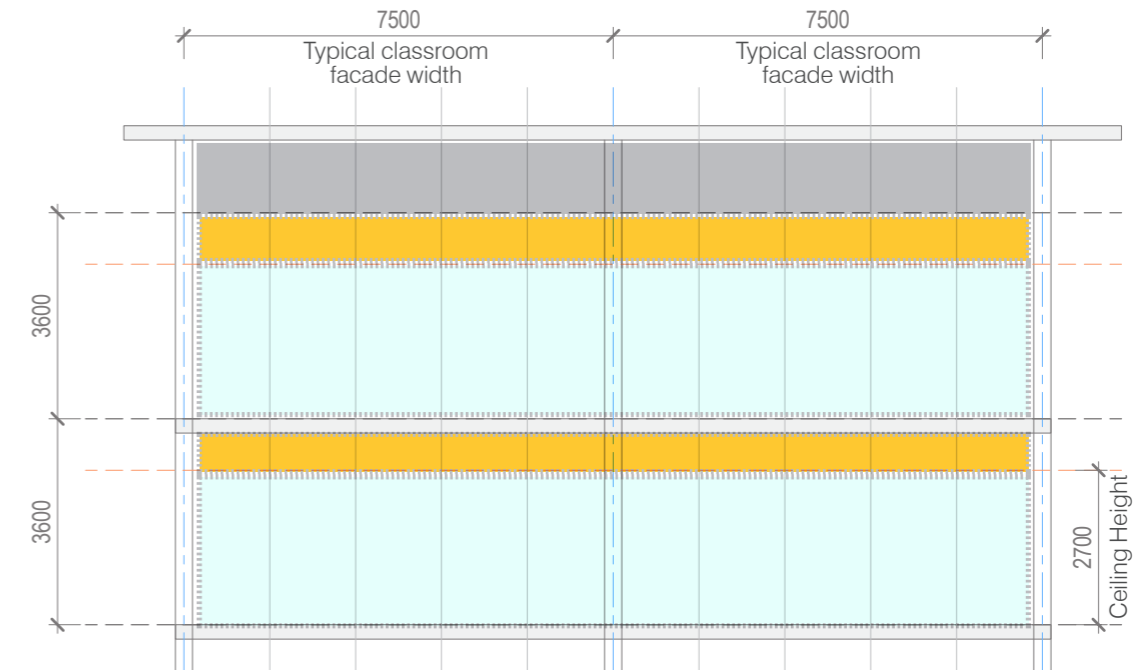
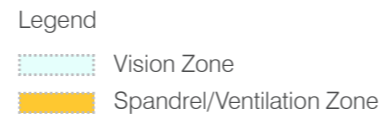
Ventilation Requirement

BCA: a ventilating area not less than 5% of the floor area of the room required to be ventilated
 5% of floor area = 3.35m²

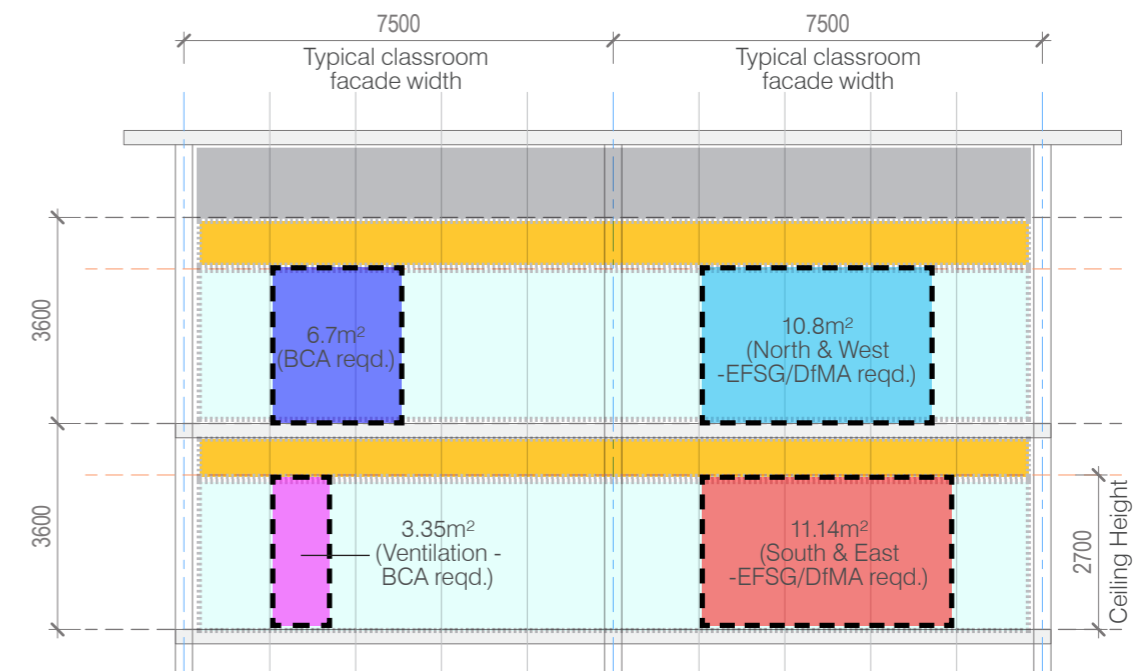
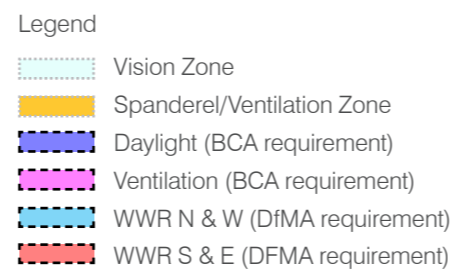
Shading Requirement (SR)

The EFSG requires the following shading requirements;
 North & West Facade;
 SR 60% = 12.15m², horizontal shading
 South & East Facade;
 SR 0-10% = 2m², vertical shading

The following diagram demonstrates where the opportunities are for glazing and ventilation on a Typical GLS facade.

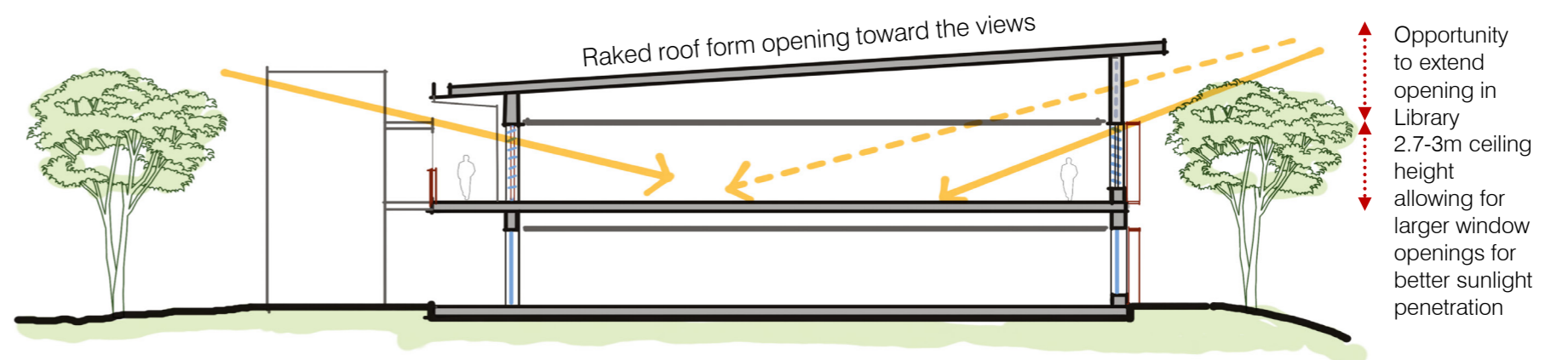
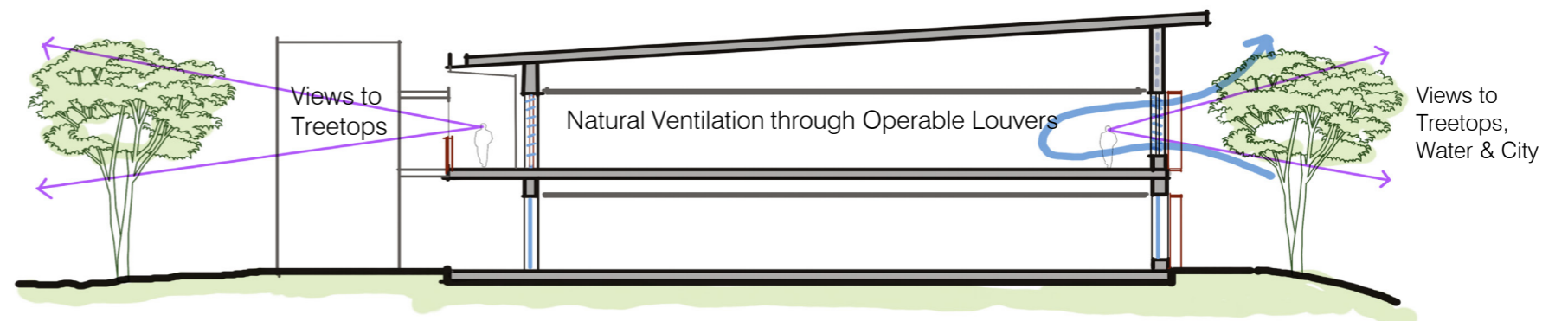


The following diagram visually represents the area requirements from the BCA, and the EFSG/DfMA Guidelines for a Typical GLS facade.



6.2 Passive Design

The Architectural design process has incorporated passive design principles to begin with, setting the overarching performance goals for the proposed facade system

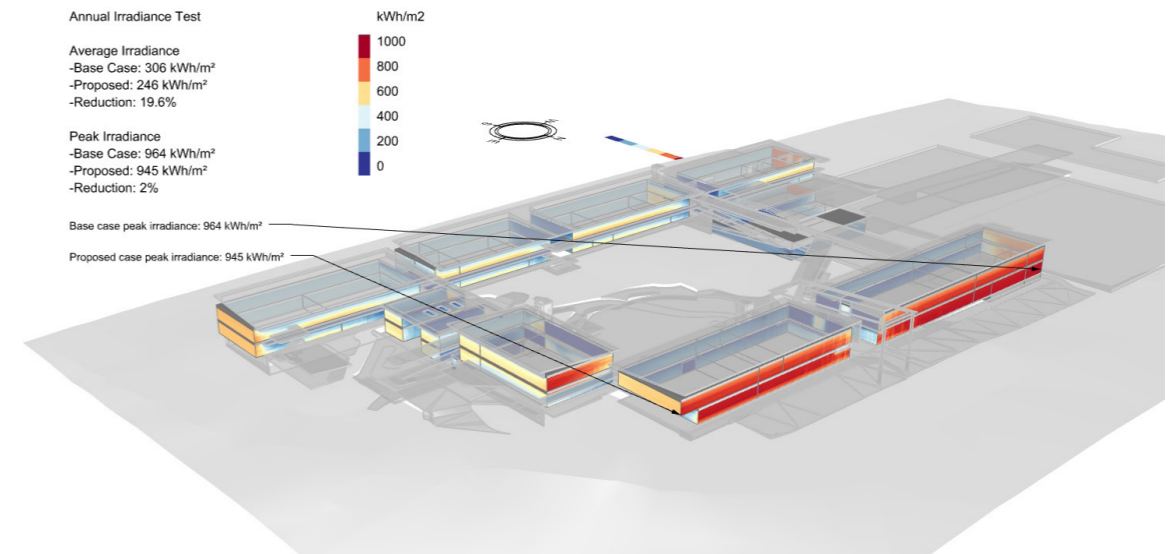
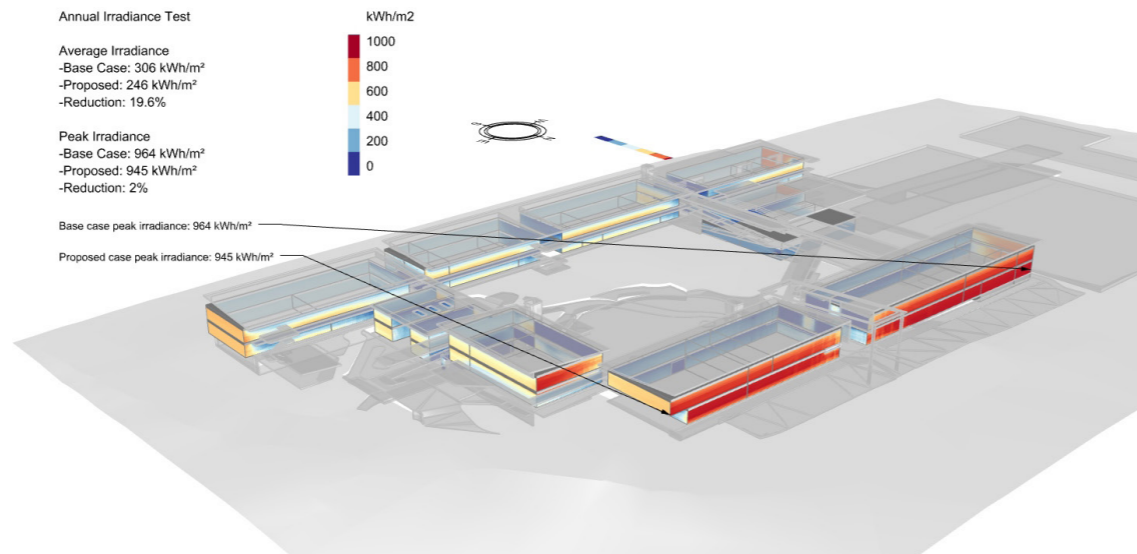


Facade and Materiality

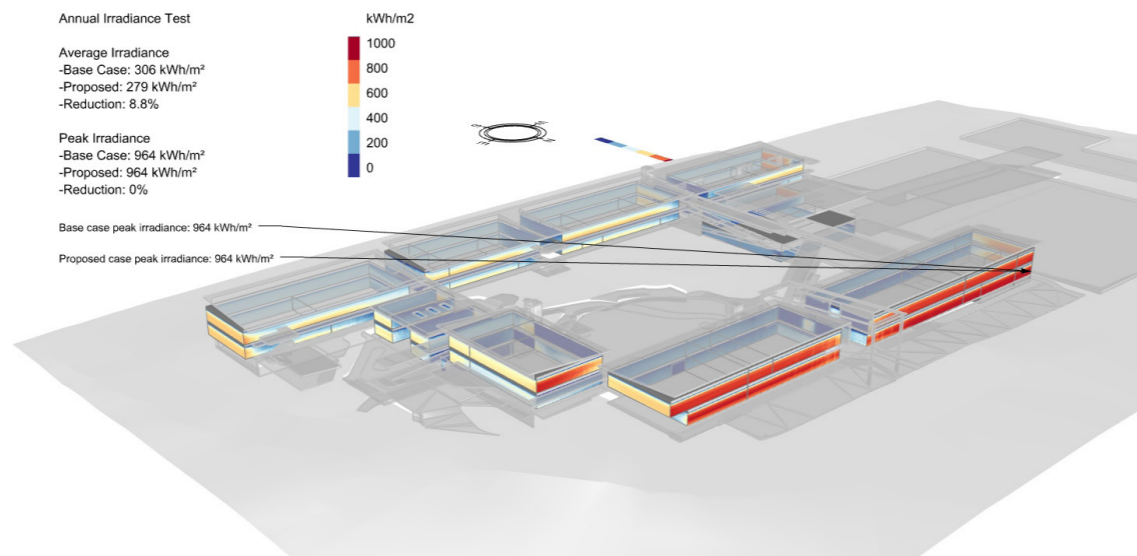
Solar Radiation Analysis

An iterative Solar Radiation analysis informed the design for effective shading strategy to meet the facade performance criteria.

The result was the design providing a combination of both horizontal and vertical sunshading on both the Eastern, and Northern facades.

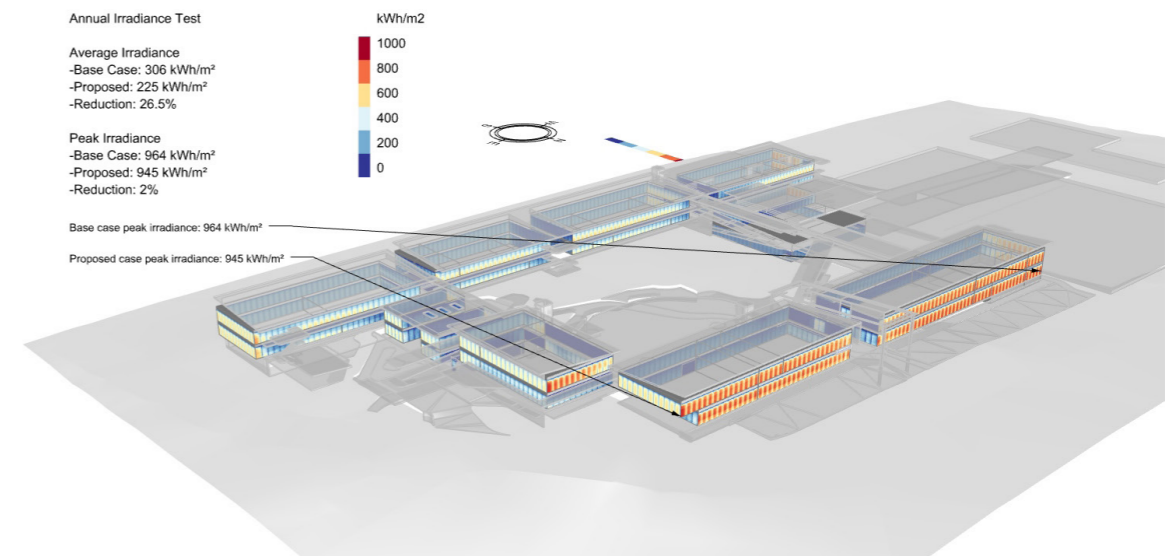


No Shading



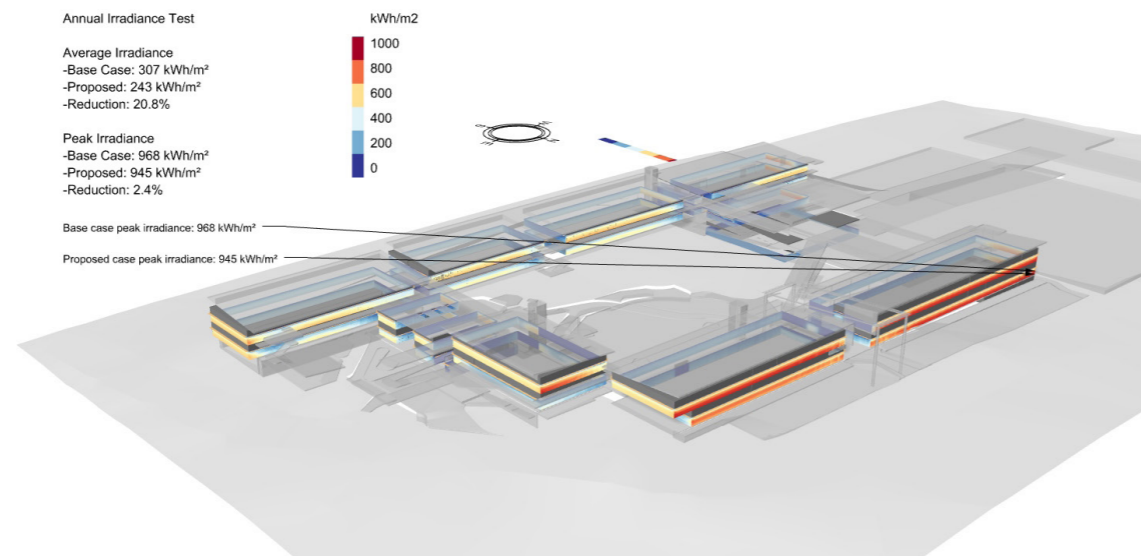
Horizontal Shading

Vertical Shading

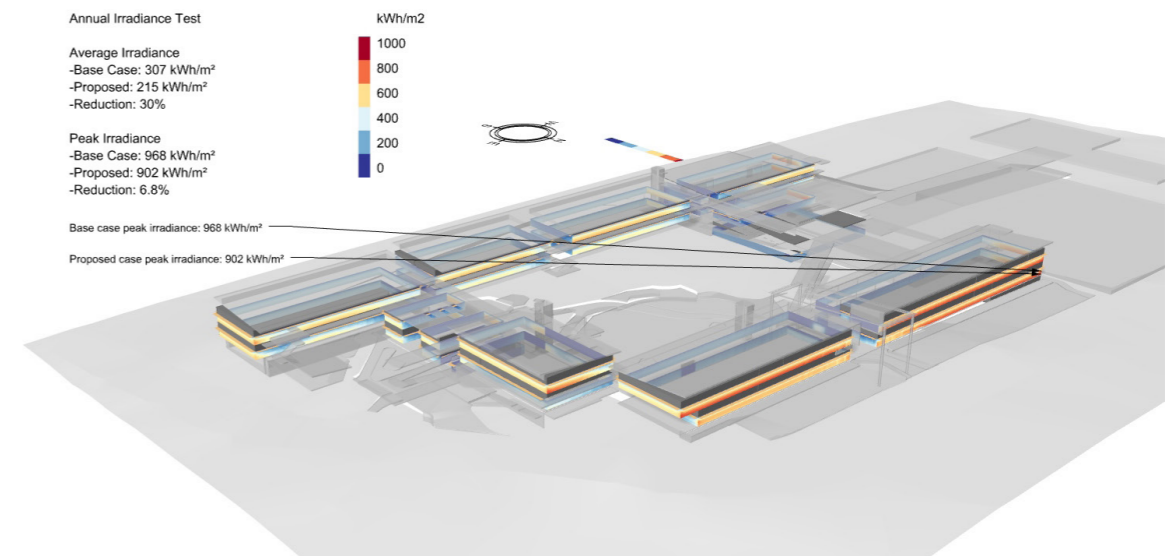


Combined Shading

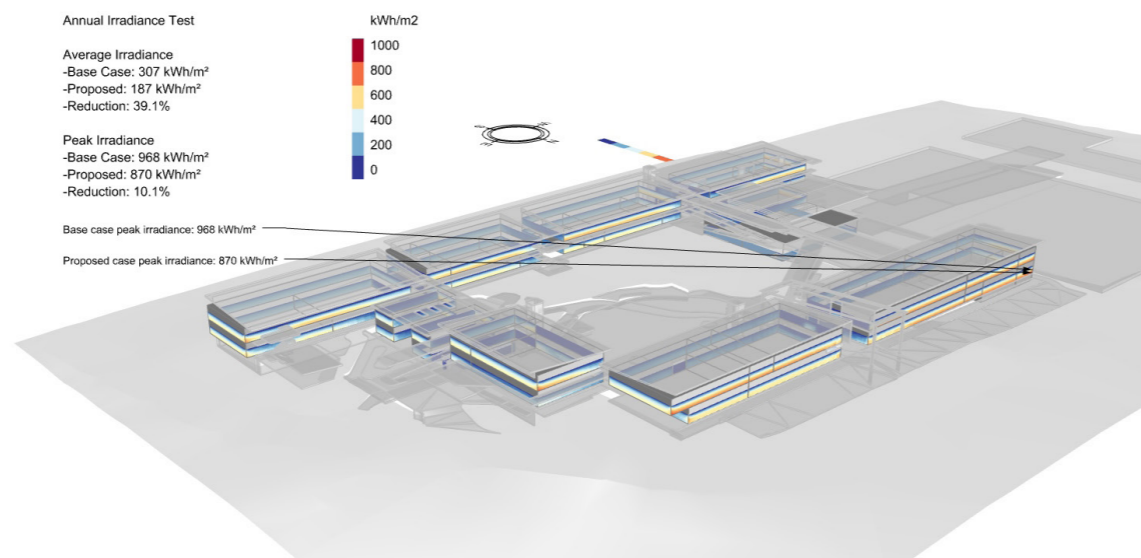
Facade and Materiality



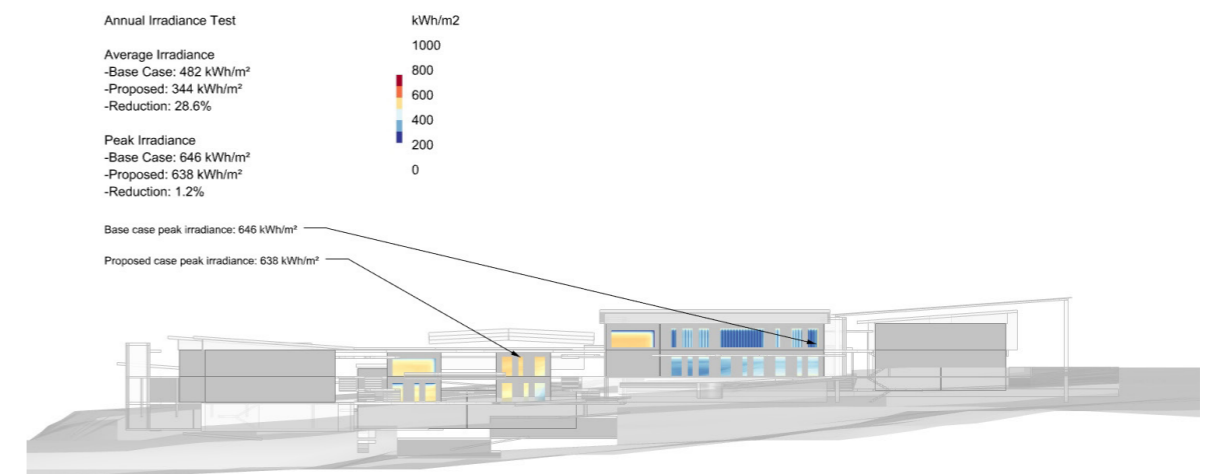
600mm Horizontal Shading



900mm Horizontal Shading



1200mm Horizontal Shading



Proposed Shading - East Facade

Facade and Materiality

6.3 Facade Colour Palette

Connection With Country

The colour palette for The Forest High School takes elements from the surrounding Frenchs Forest's bushland and coastline. Natural elements, such as the soil, rock, canopies, or native species of trees, formed the primary inspiration of the colour palette.



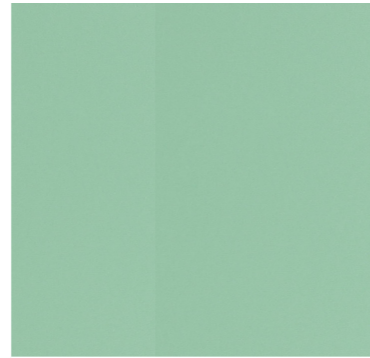
Facade and Materiality

6.4 Facade Material Palette

MR 01/AM 01 - ARCHITECTURAL ROOF /METALWORKS - ZINCALUME
ALL ROOF SHEETING



AM 03 - ARCHITECTURAL METALWORKS - AERO
ALL BUILDINGS, EXTERNAL CIRCULATION FASCIA



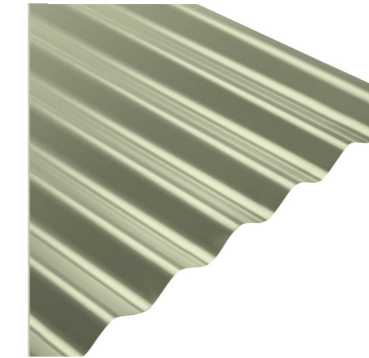
AM 04 - ARCHITECTURAL METALWORKS - DARK GREY
ALL BUILDINGS, PORTAL ELEMENTS



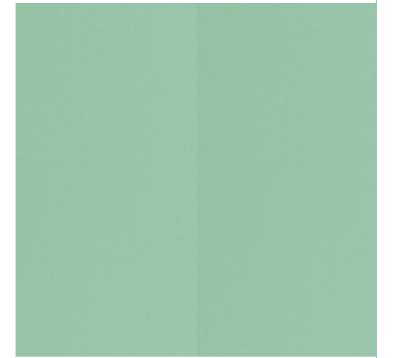
MR 02 - METAL ROOF - EVENING HAZE
STAIR ROOF SHEETING



MR 01/AM 01 - ARCHITECTURAL ROOF /METALWORKS - ZINCALUME
ALL ROOF SHEETING



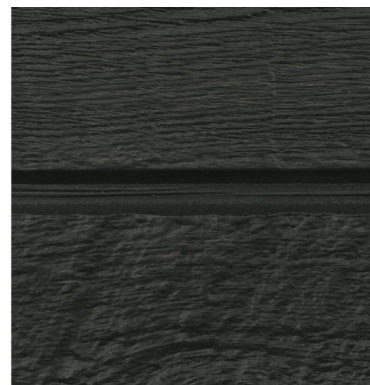
CL 06 - PREFINISHED FC SOFFIT - AERO
ALL BUILDINGS, EXTERNAL CIRCULATION SOFFIT LINING



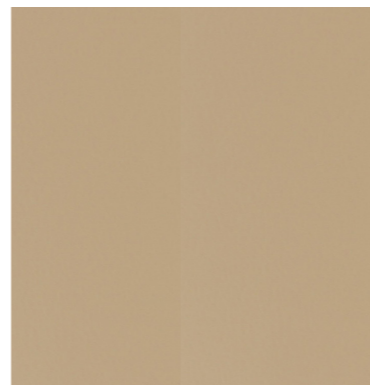
CD 01 - PREFINISHED FC CLADDING - LIMED
EXTERNAL FACADE LINING FOR NEW BUILDINGS



CD 02 - PREFINISHED FC CLADDING - EBONY
EXTERNAL FACADE LINING FOR NEW BUILDINGS



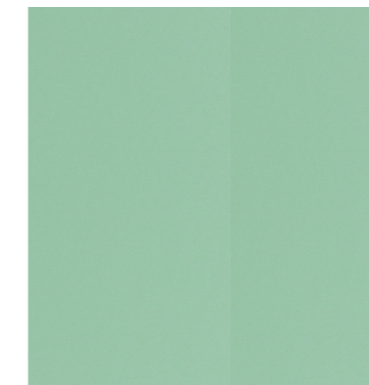
CD 03 - PREFINISHED FC CLADDING - HUSK
EXTERNAL FACADE LINING FOR NEW BUILDINGS



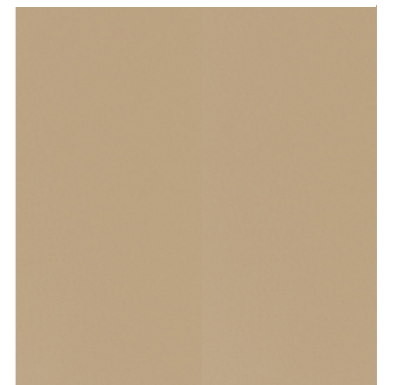
FN 01 - METAL WIREMESH FIN - AERO
EXTERNAL SOLAR SHADING ELEMENTS



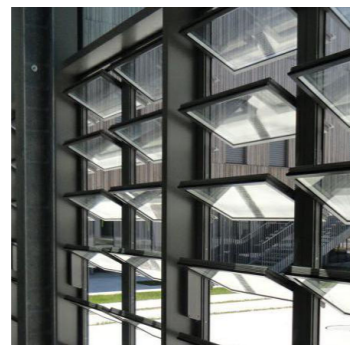
CD 04 - PREFINISHED FC CLADDING - AERO
CD 05 - PREFINISHED METAL CLADDING - AERO
EXTERNAL FACADE LINING FOR NEW BUILDINGS



CL 07 - PREFINISHED FC SOFFIT - HUSK
EXTERNAL SOLAR SHADING ELEMENTS



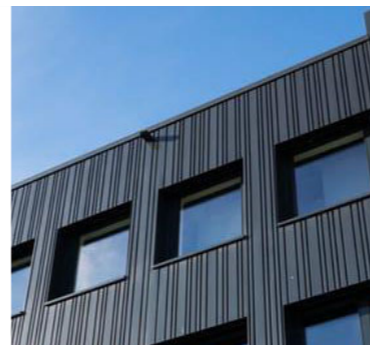
LV 01 - LOUVER TYPE
OPERABLE GLASS LOUVERS FOR NATURAL VENTILATION



LV 02 - LOUVER TYPE
METAL LOUVERS FOR MECHANICAL VENTILATION



WT 01 - WINDOW TYPE
EXTERNAL FACADE LINING FOR NEW BUILDINGS



BL 01 - BALUSTRADE TYPE
GALVANISED METAL BALUSTRADES ALONG ALL CORRIDORS



SCR 01 - FALL PREVENTION BARRIER
TENSILE VERTICAL CABLE SYSTEM ALONG CORRIDOR AND RAMPS



CL 08 - SOFFIT - METAL - WOODLAND GREY
ROOF SOFFIT

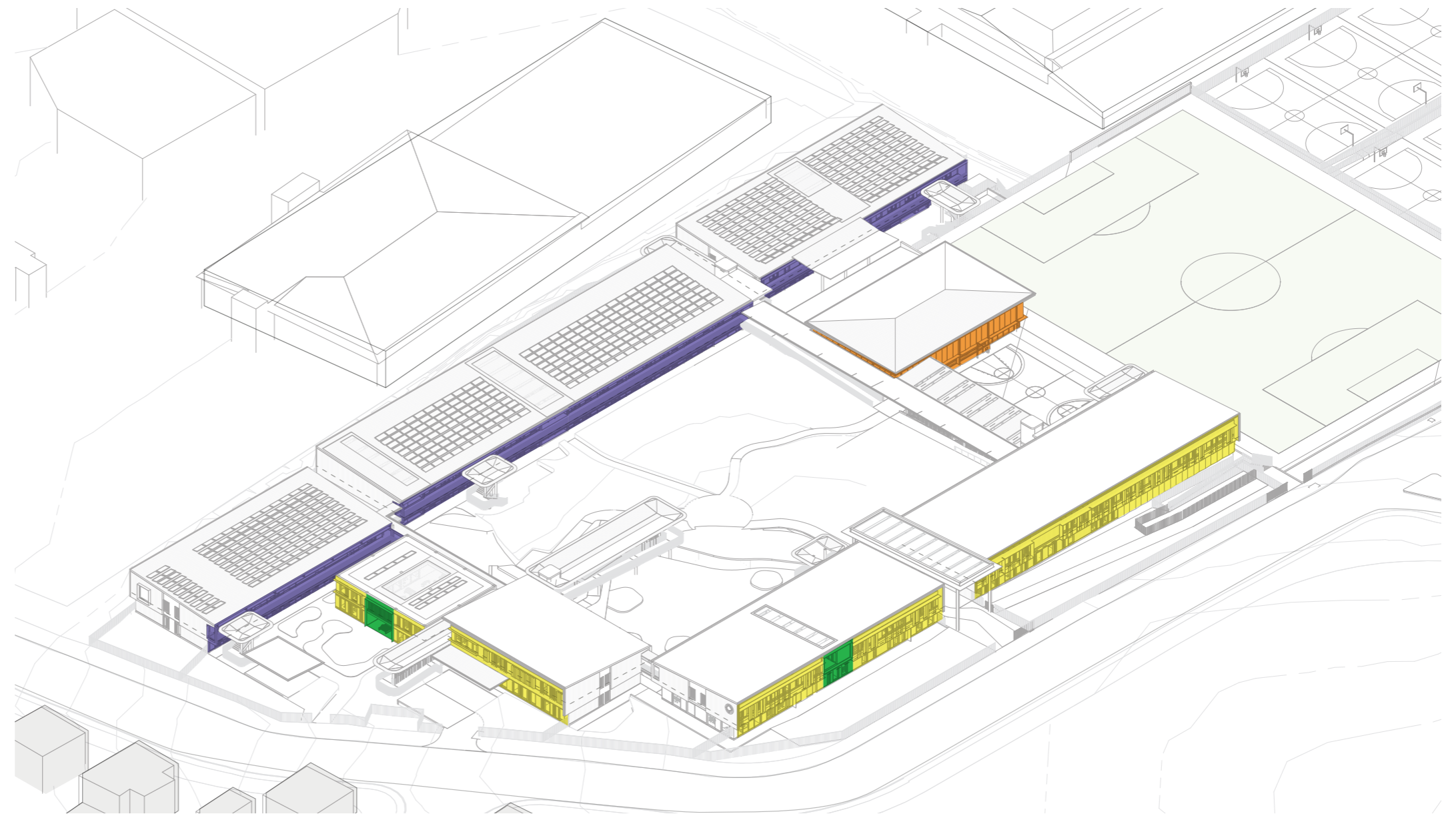


Facade and Materiality

6.5 Facade Strategies

Facade Types

The facade adapts across the school responding to both the functional and environmental conditions, the following diagram identifies the typical facade types across the proposed school.



Legend

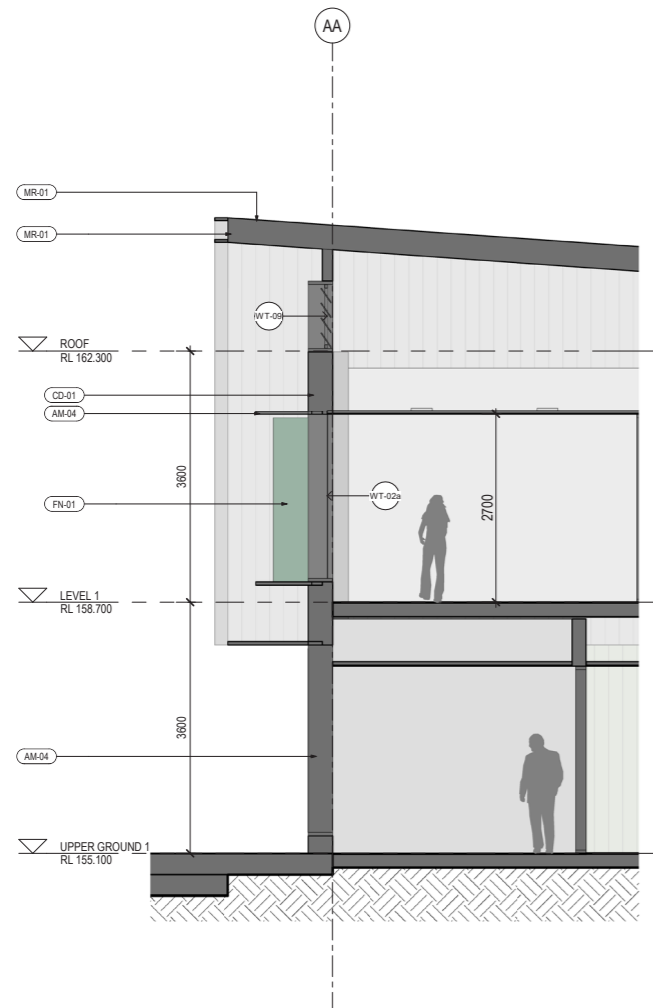
- Type 1 - Academic Blocks - Typical External Facade - Classrooms
- Type 2 - Academic Blocks - Typical External Facade - Learning Commons
- Type 3 - Academic Blocks - Typical External Facade - Corridors
- Type 4 - Gymnasium - Typical External Facade

Facade and Materiality

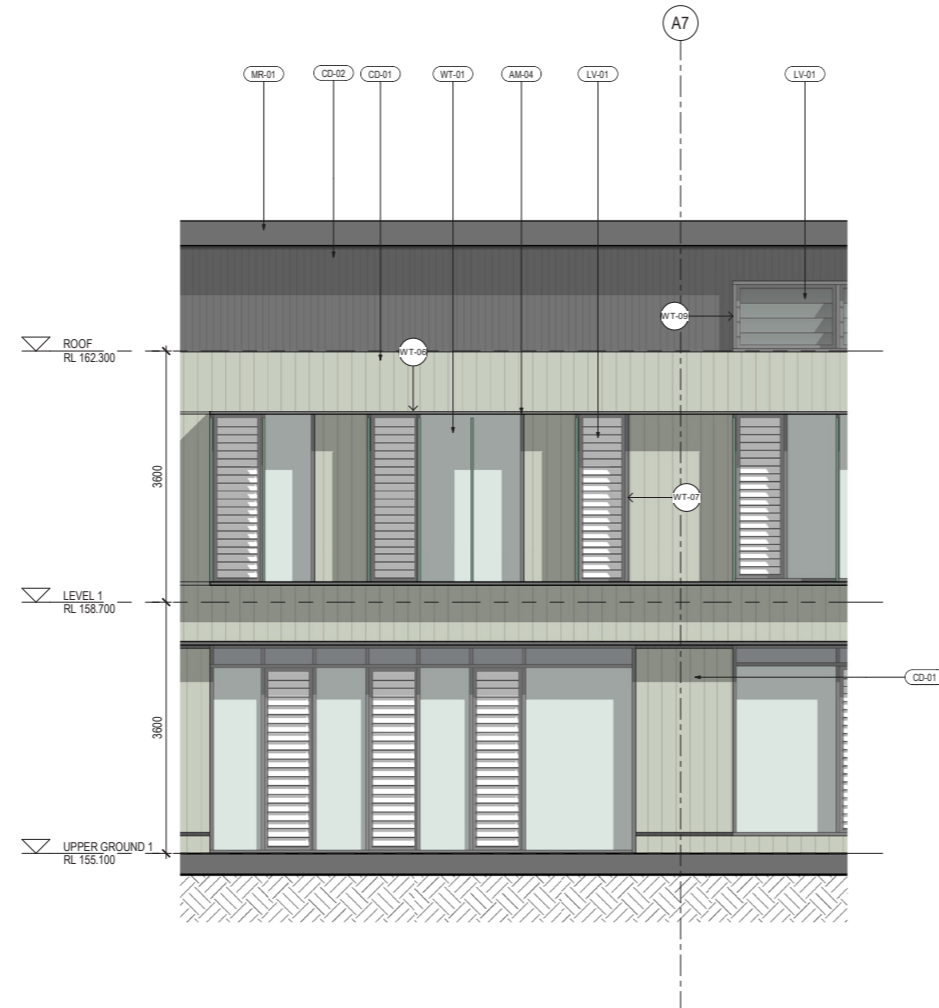
Type 1 - Typical External Facade - Classrooms

The facade to the general learning areas of the school is a vertical expressed Fibre Cement panelling. The learning zone behind is expressed by horizontal datum lines at the skirting and ceiling heights. A mixture of fixed glazing and operable louvre windows in modular sizes are placed between these datums that to meet the light and ventilation requirements of the BCA and EFSG.

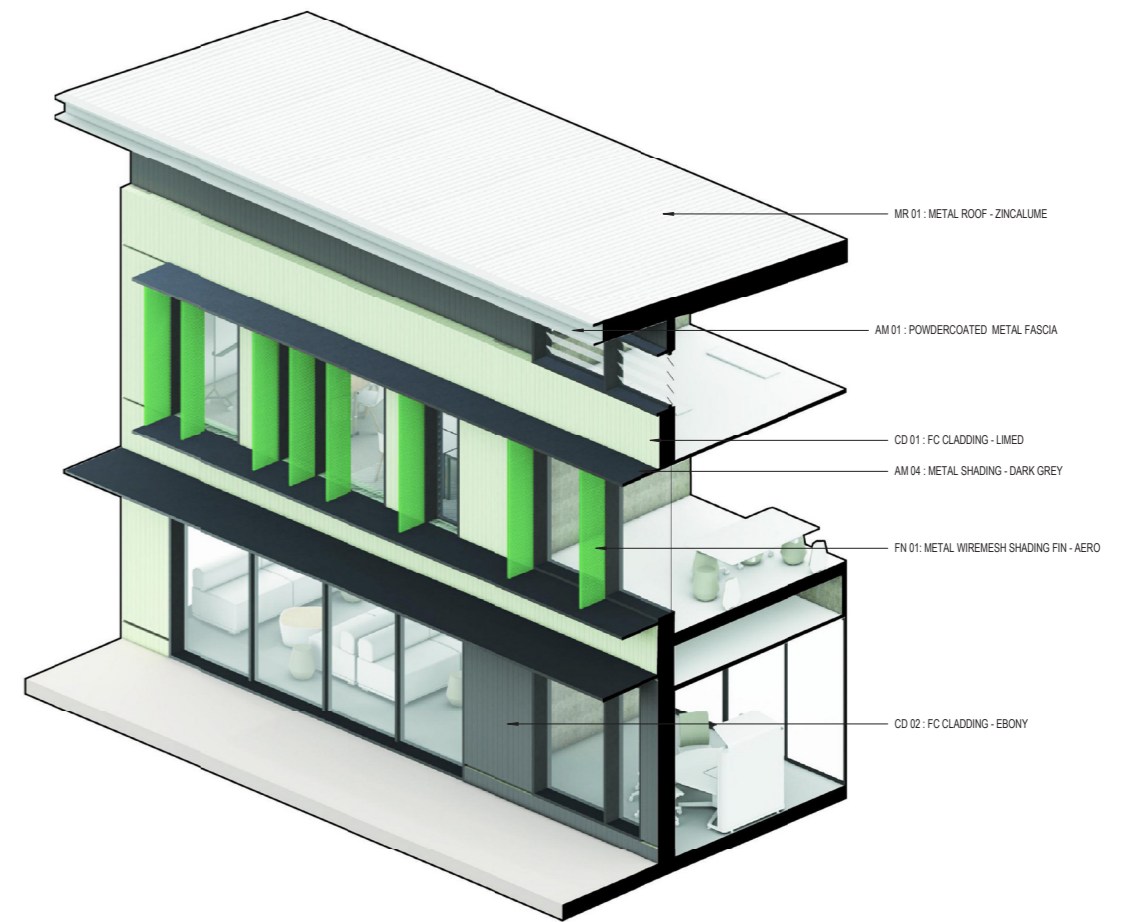
Shading is provided to respond to the facade orientation. On the Eastern and Northern facades horizontal shade extrusions extend out of the facade holding vertical shading elements between them.



Typical Exterior Facade - Section



Typical Exterior Facade - Elevation



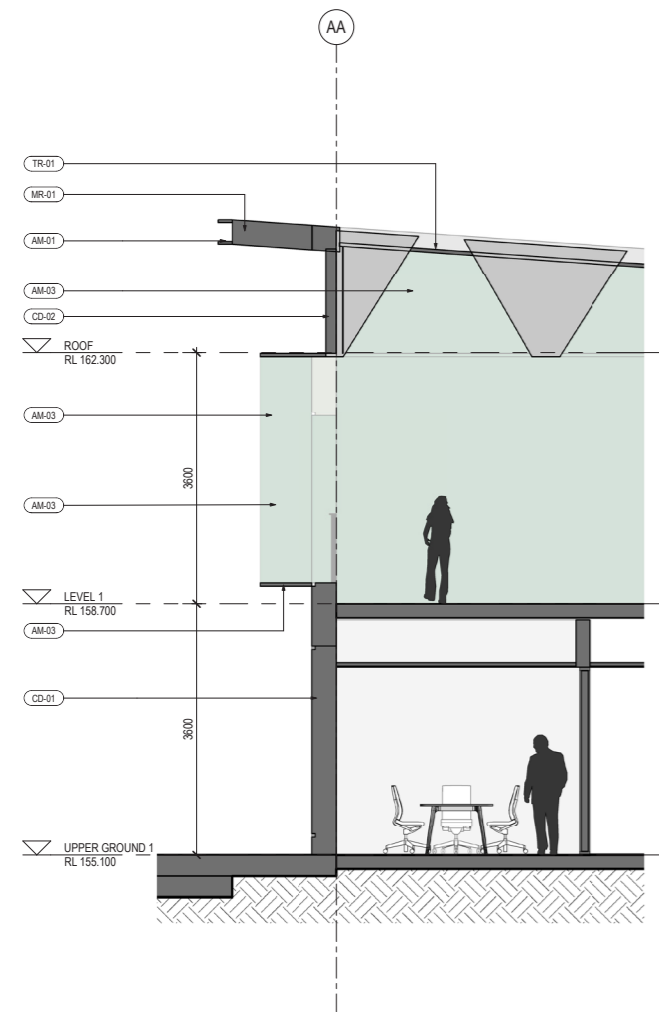
Typical Exterior Facade - Axonometric

Facade and Materiality

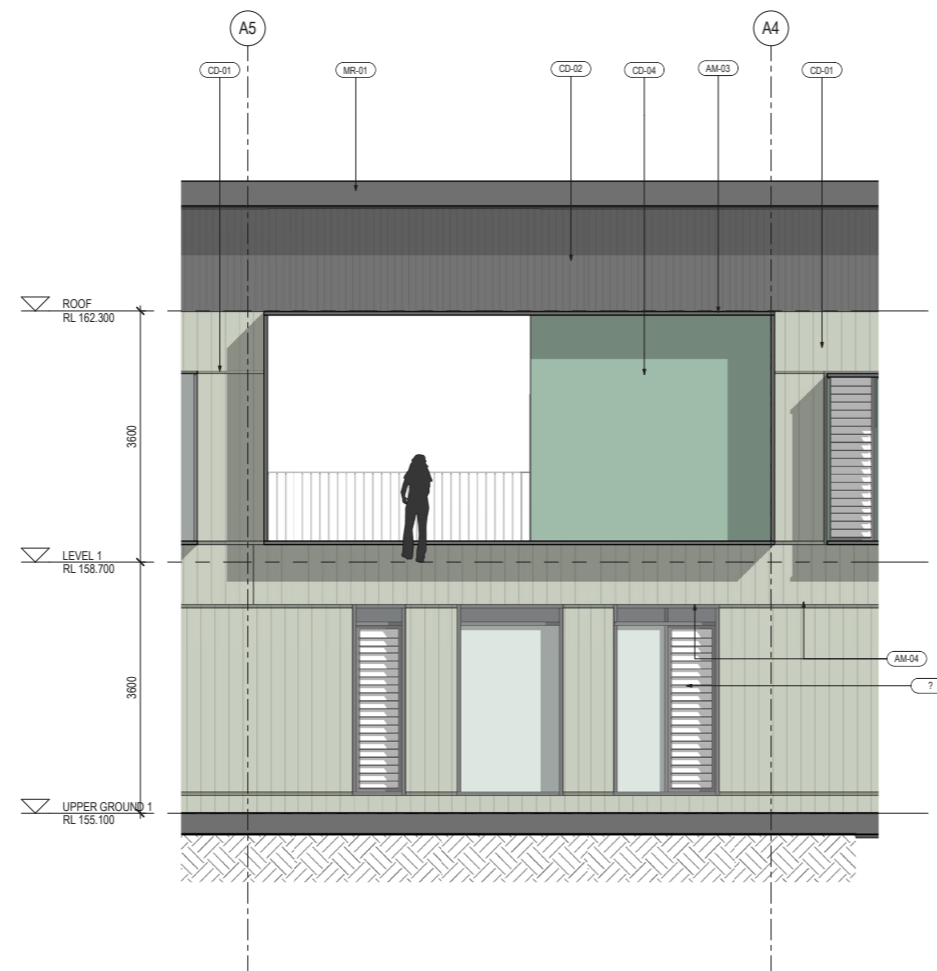
Type 2 - Typical External Facade - Outdoor Learning Commons

Outdoor learning commons are distributed across the school, providing an opportunity for 4 GLS spaces to open to a shared external covered learning environment.

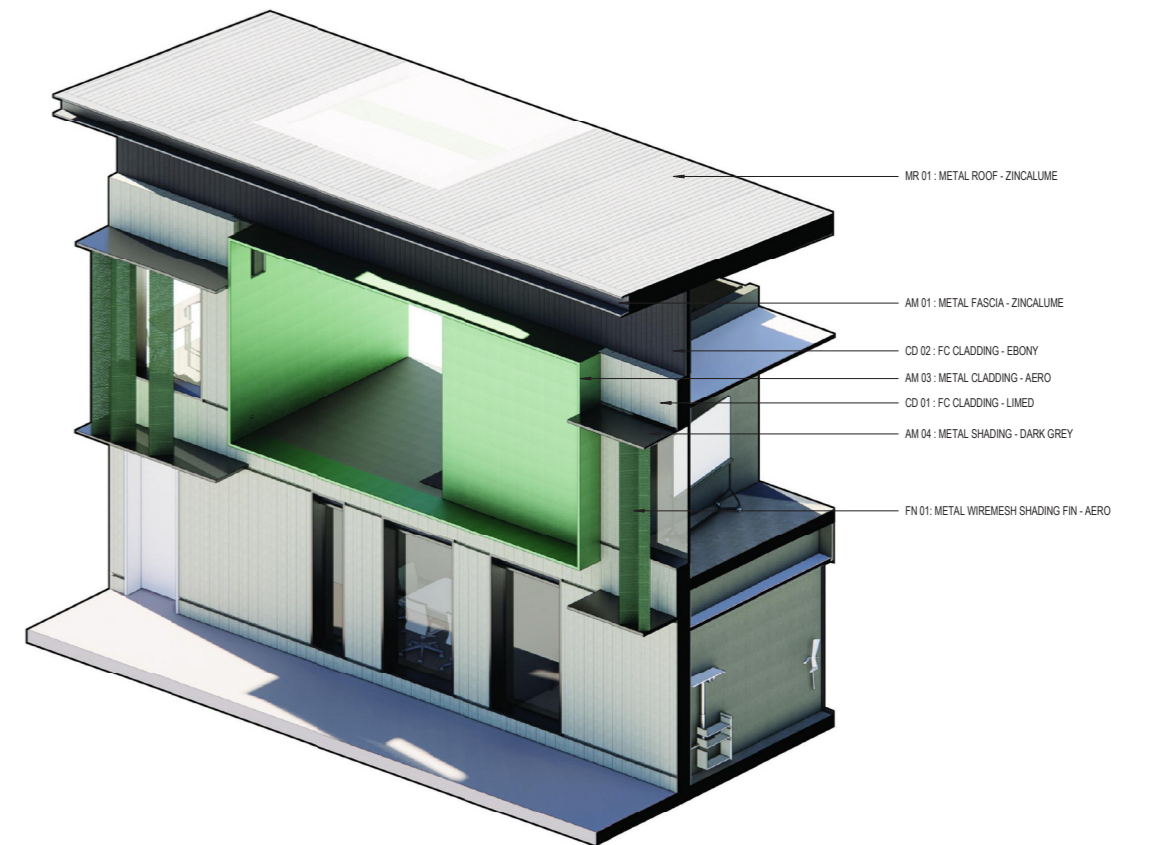
The colour of the learning loop soffit floods the walls of the OLC's, and the soffit of the OLC's on the upper level become more playful, opening up to draw light from the translucent sheeting above.



Typical Interior Facade - Section



Typical Interior Facade - Elevation



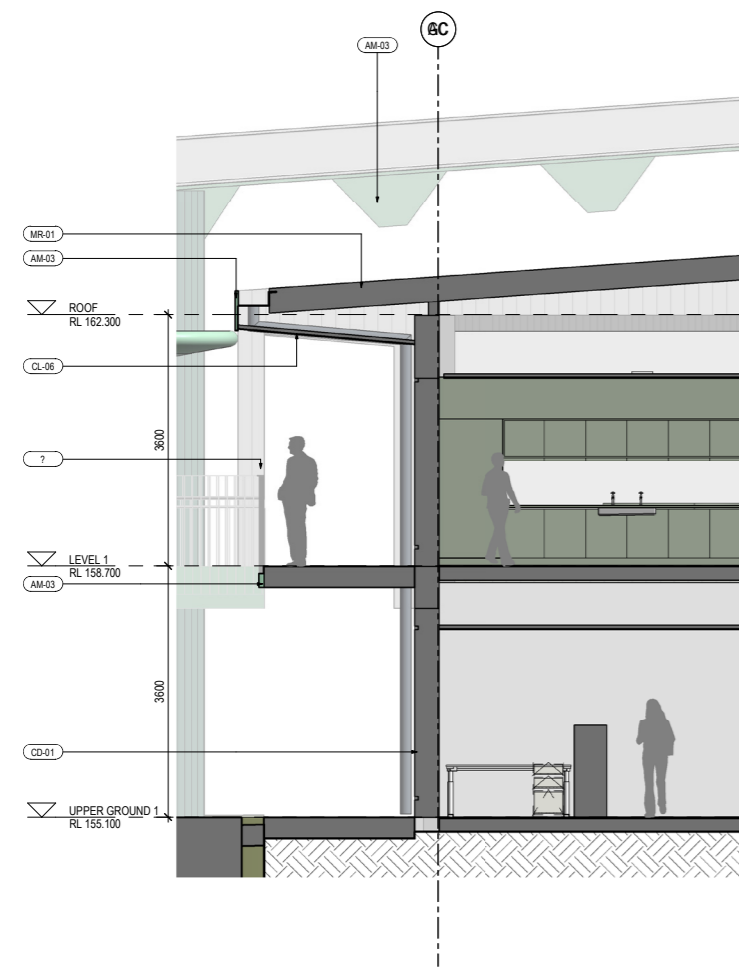
Typical Interior Facade - Axonometric

Facade and Materiality

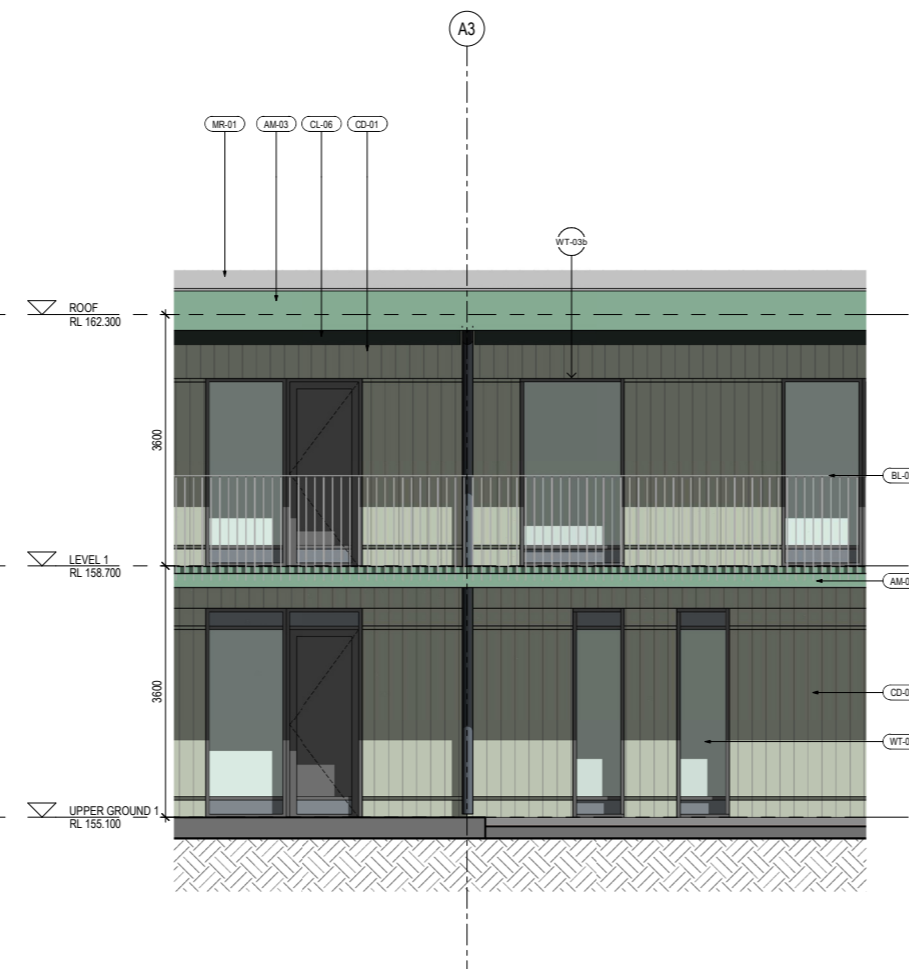
Type 3 - Typical External Facade - Corridors

The main circulation corridors for the proposed school are external covered walkways. The learning loop is defined here by the use of the vibrant coloured soffit and fascia lining. The main building roofs reaches out beyond the facade to provide protection for the corridor, and shading for the internal spaces. The skirting and ceiling datum continues on the corridor facade, with glazing and entry points

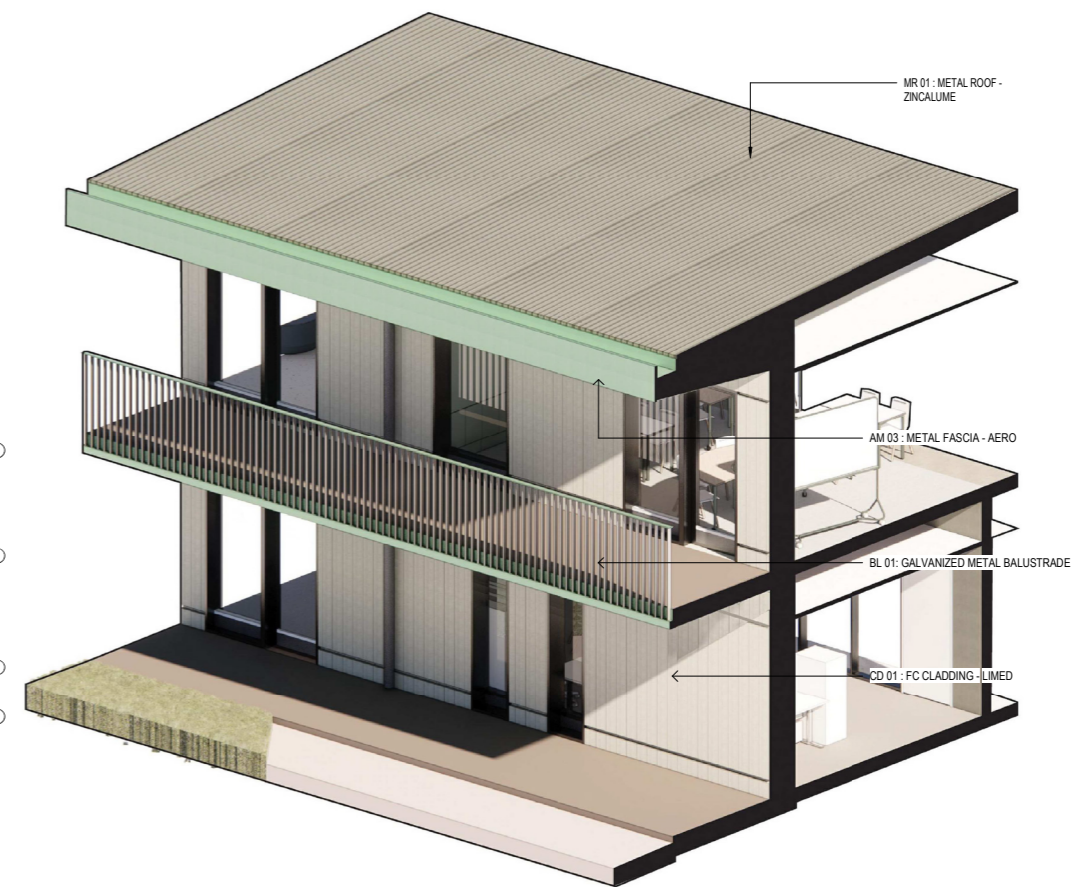
captured between them where required based on the type of learning space behind. The simple galvanised steel flat bar balustrades create a constant rhythm along the walkways, and where there is a need for full height protection from falling steel cables extend to the roof edge above.



Typical Interior Facade - Section



Typical Interior Facade - Elevation



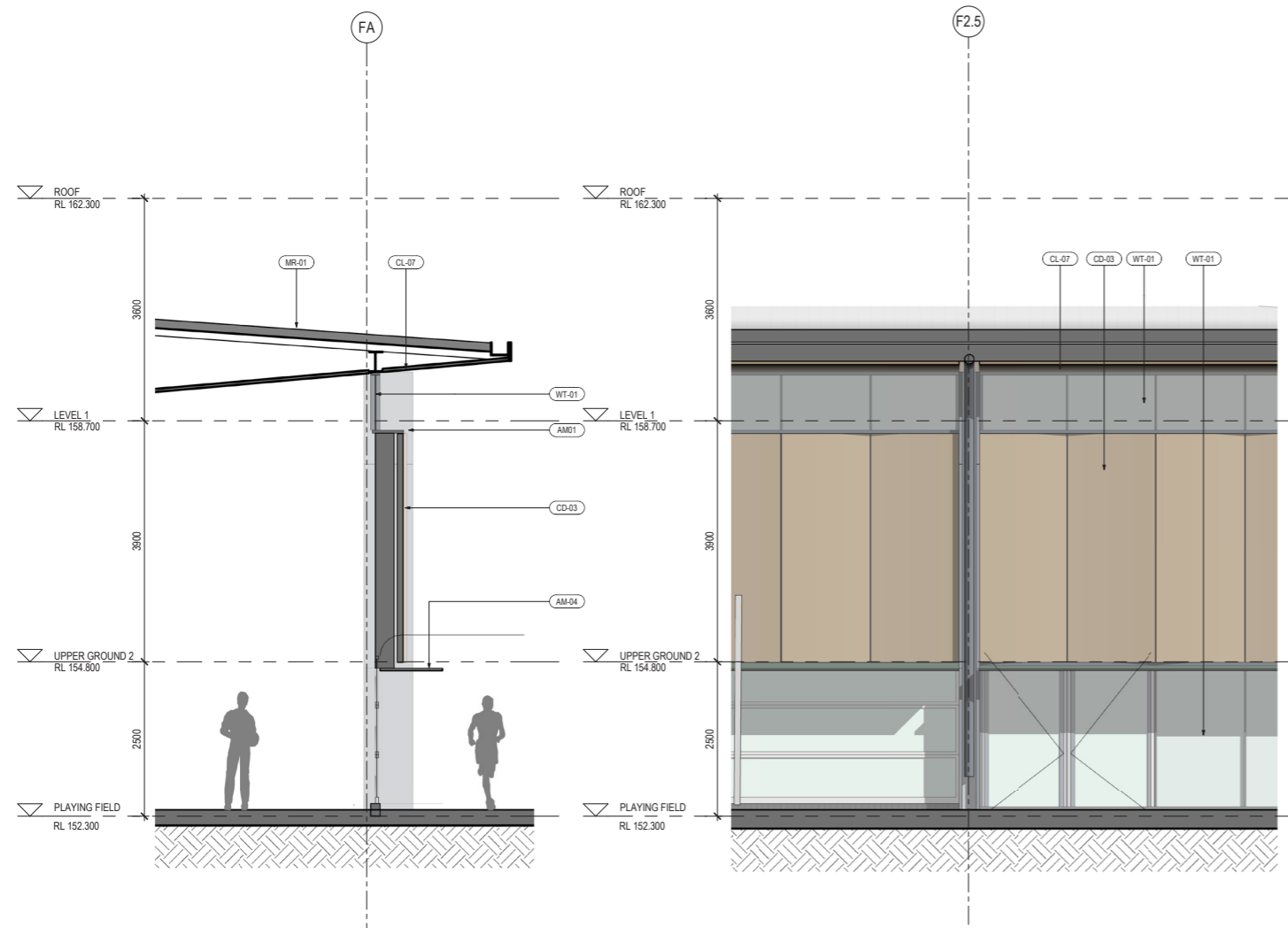
Typical Interior Facade - Axonometric

Facade and Materiality

Type 4 - Gymnasium - Typical Facade

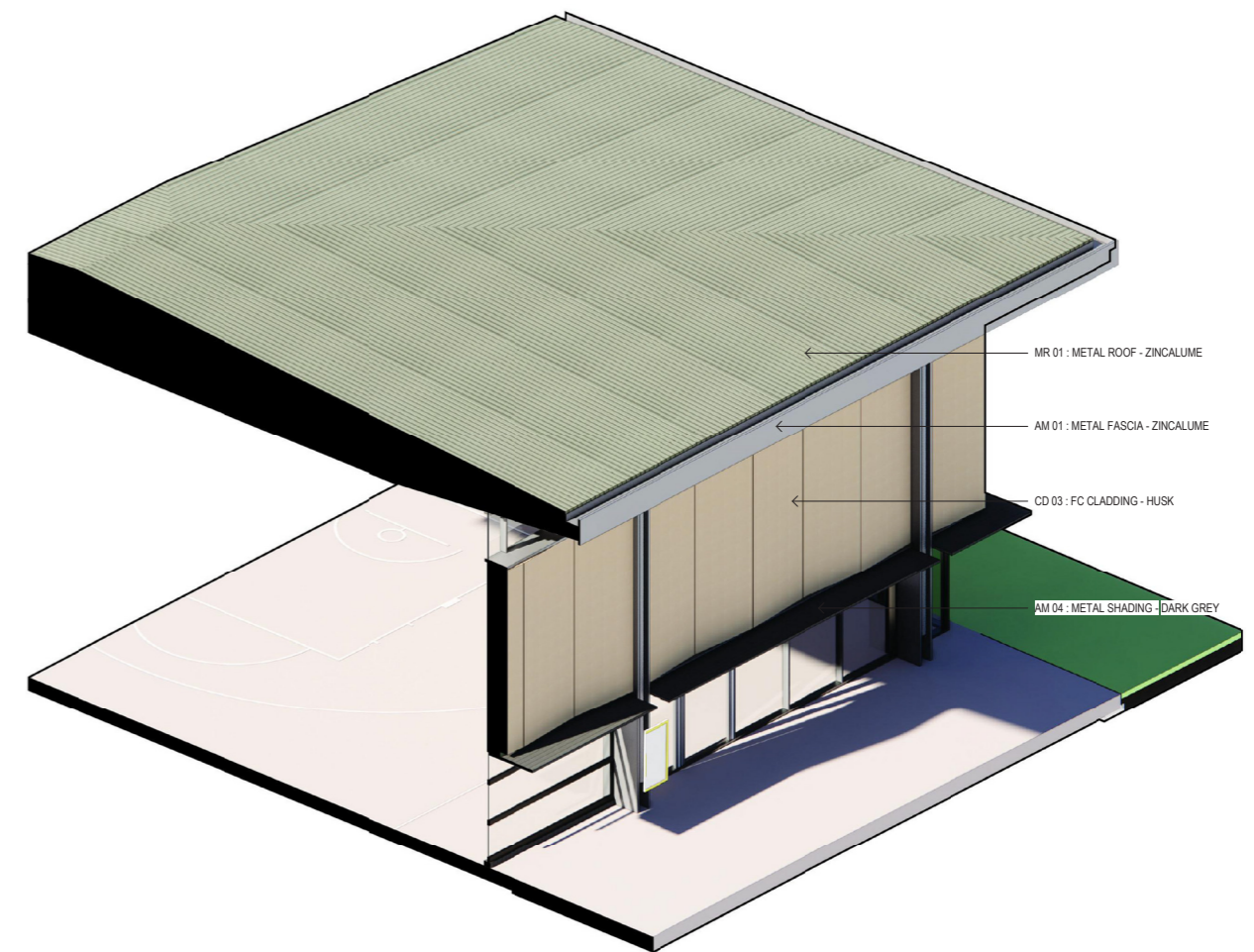
The Gymnasium sits as a pavilion structure facing the COLA space between the internal landscaped courtyard and the sports field. The roof floats over high level glazing where louvres can naturally vent warm air while drawing it back cooler air into the space from the low level glass louvres. Between the upper and lower glazing/louvres, faceted

fibre cement panels wrap around all 4 sides of the internal court reminiscent a sandstone outcrop where there is a clearing in the vegetation. Steel structure visible externally is boxed out in metal cladding providing a consistent rhythm around the pavilion. Large panel lift doors create the opportunity for the gym to open out onto the COLA space to the north.



Typical Gymnasium Facade - Section

Typical Gymnasium Facade - Elevation



Typical Gymnasium Facade - Axonometric

Facade and Materiality

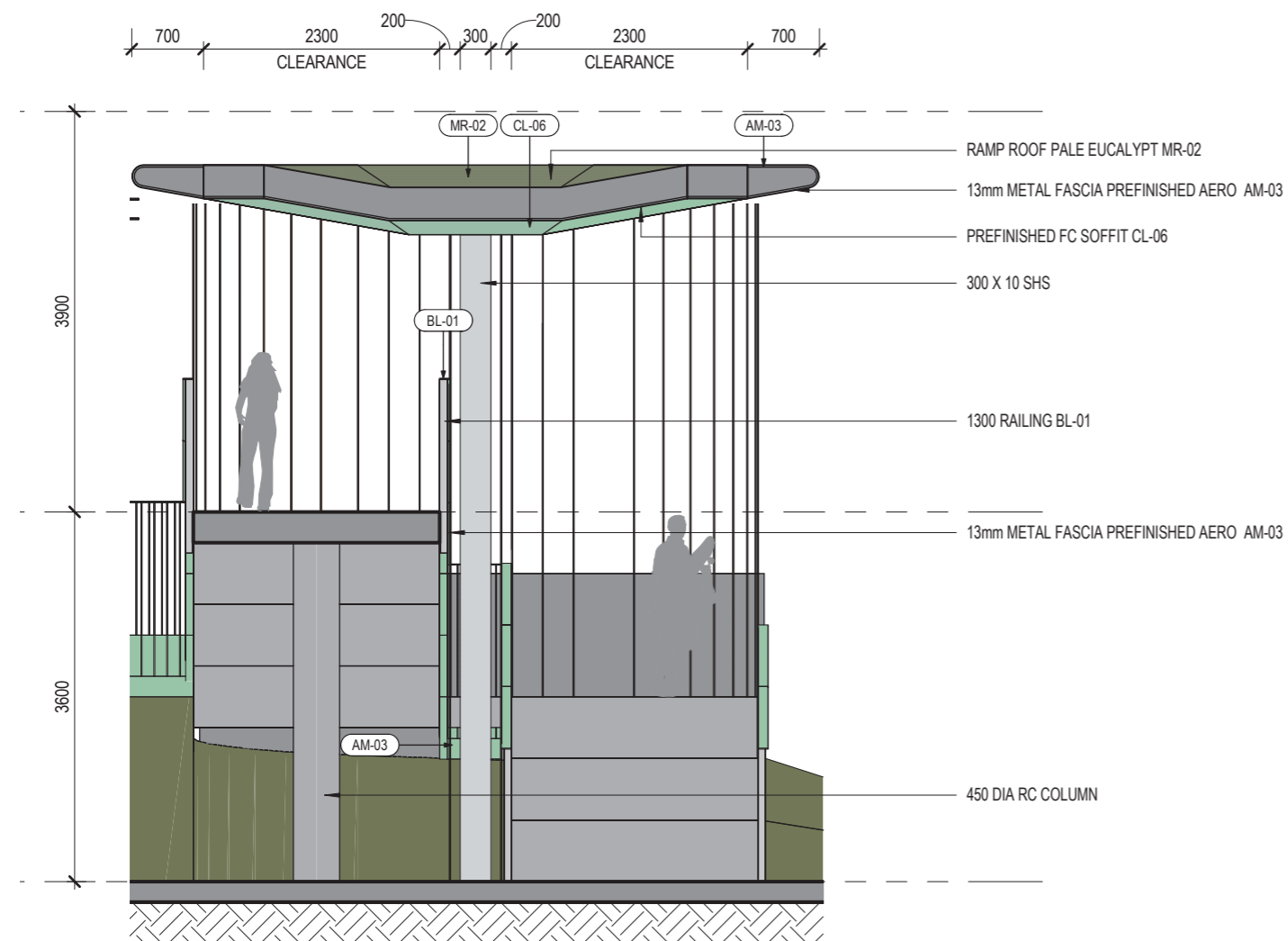
Ramp Details

The proposed school provides equitable movement to all areas by the use of accessible ramps to all levels of the school.

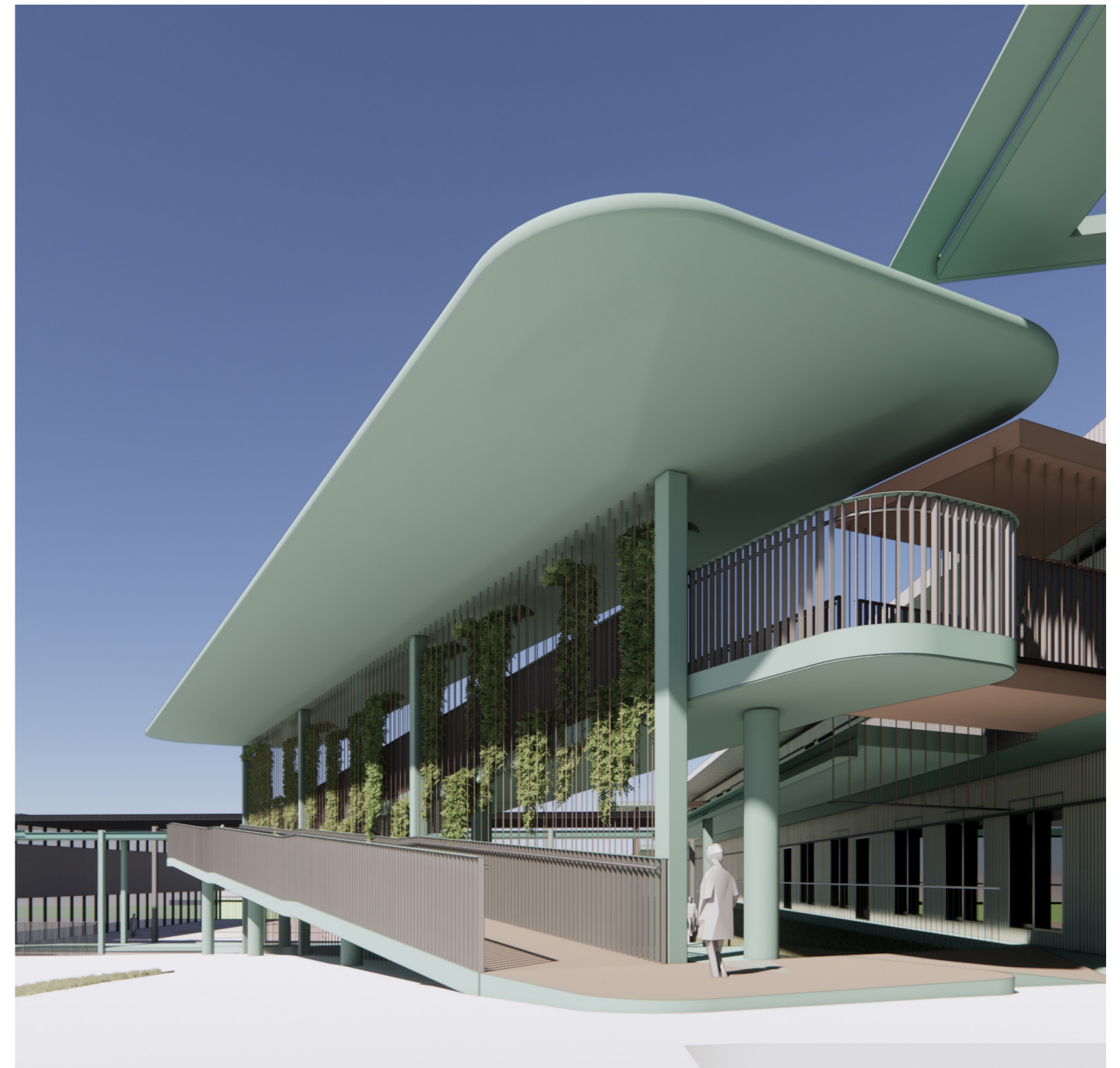
The ramp structures are expressed as plugged on elements to the 'learning loop'. Steel wires extend from the ground to the roof between the central steel structure, and offer an opportunity for the landscape to grow up onto the built from the ground plane.

The roof soffit is expressed as the same colour as the learning loop, and the concrete walkways continue the same galvanised steel flat bar balustrade from the buildings circulation walkway.

The stair structures shown on the following pages are designed in the same language, and are also placed as plug on elements to the 'learning loop'.



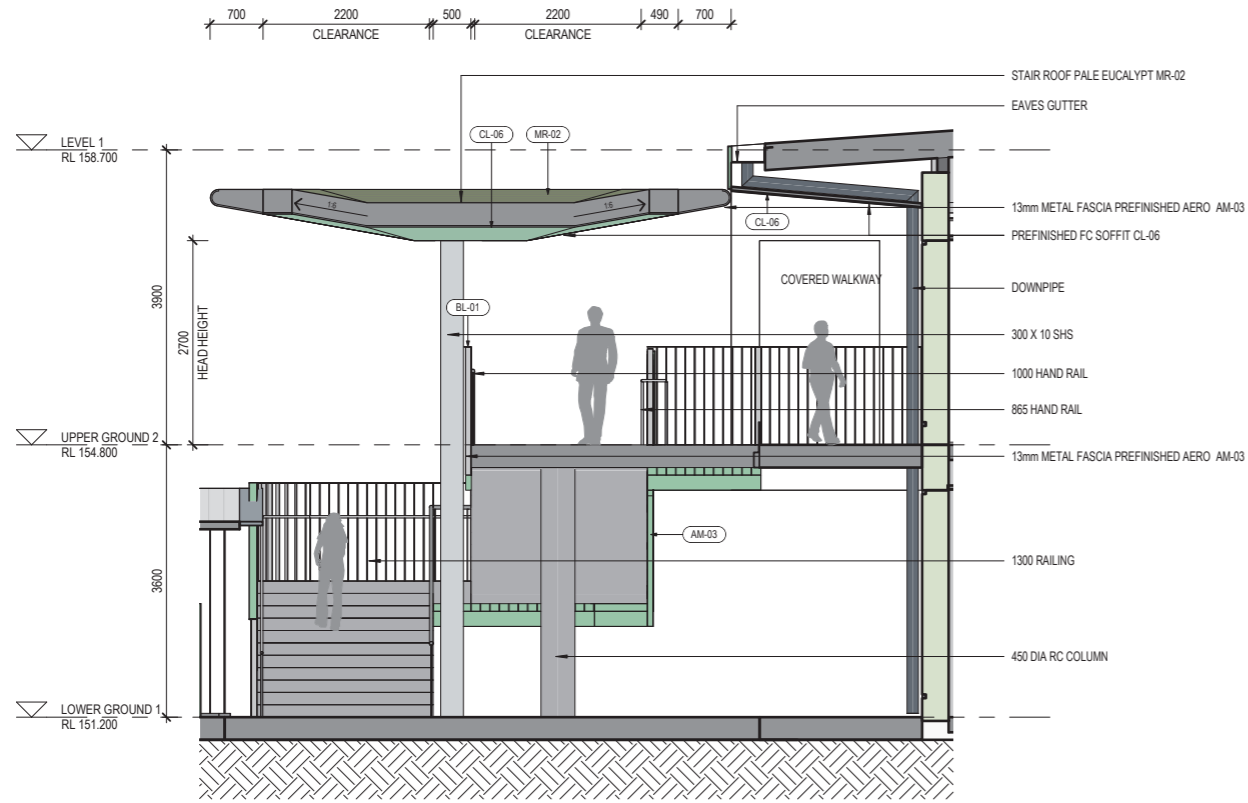
Typical Ramp - Section



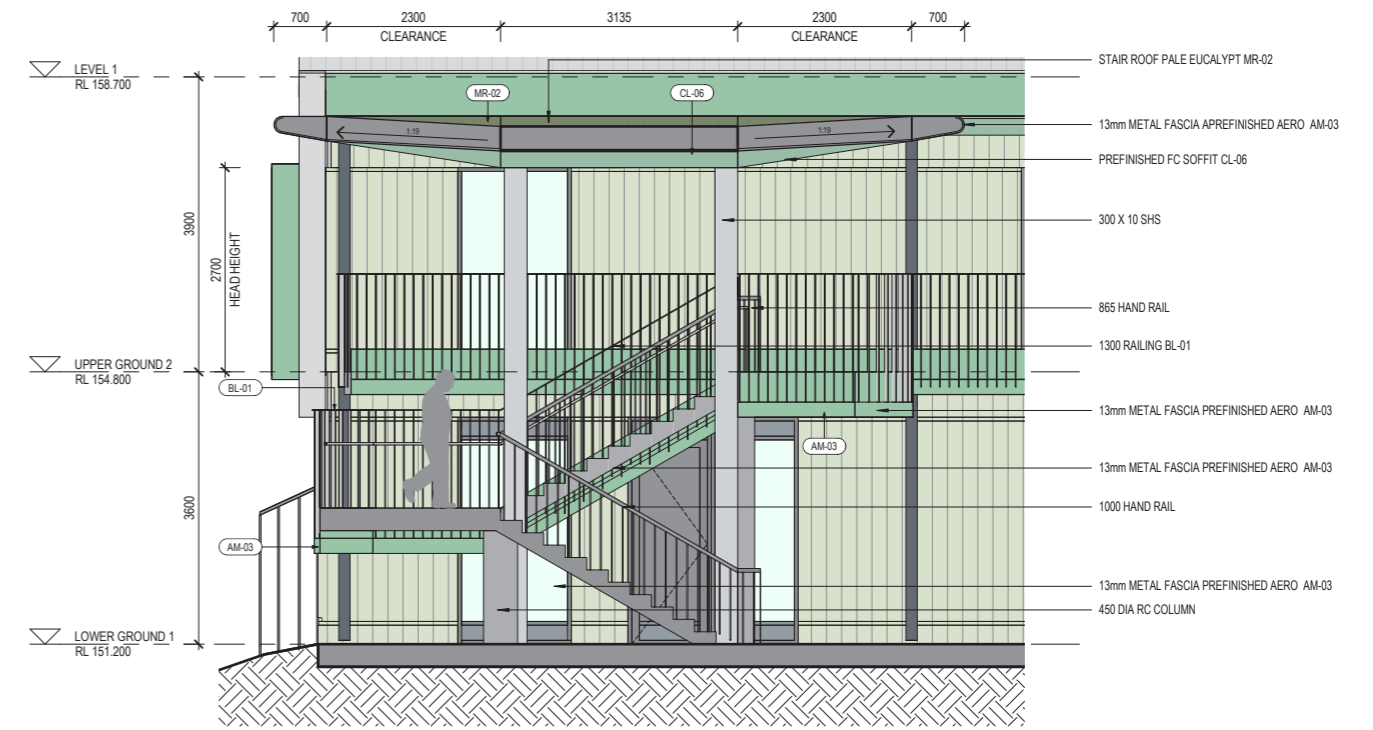
Typical Ramp - Perspective

Facade and Materiality

Stairs Details



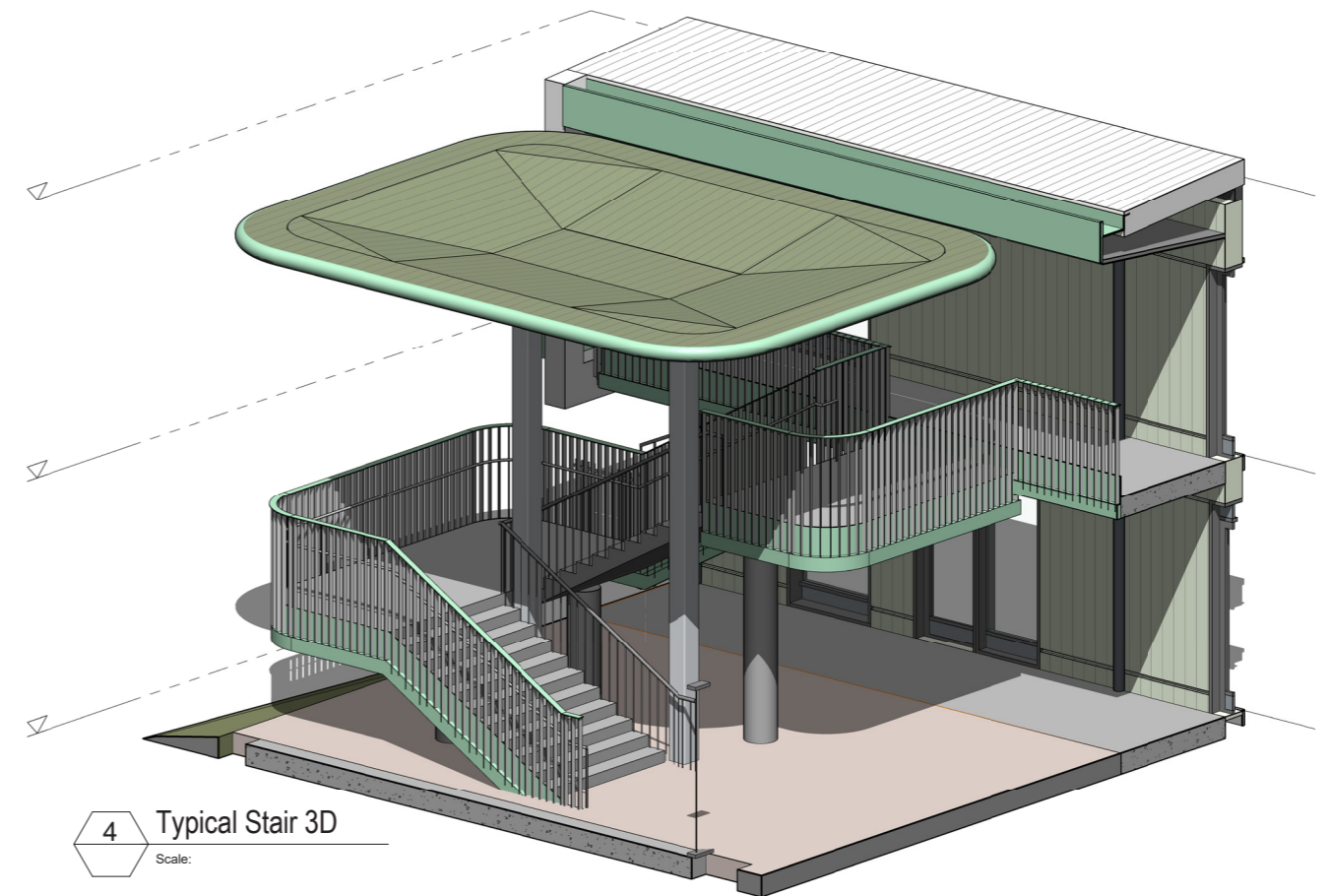
1 Typical Stair Section 1
Scale: 1 : 50



2 Typical Stair Section 2
Scale: 1 : 50



3 Typical Stair Elevation
Scale: 1 : 50



4 Typical Stair 3D
Scale:

Facade and Materiality



Facade and Materiality



View from the main entrance

Facade and Materiality



View from Sports Field Overlooking COLA & Gymnasium

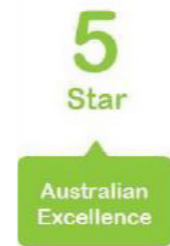


View from Outdoor Learning Commons

Facade and Materiality

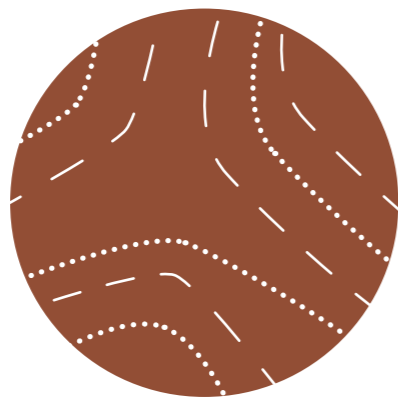
Ecologically Sustainable Design (ESD)

Sustainability Target
(Green Star Design & As Built v1.3 rating tool)



6.6 Interior Design Concept

Building Connections



Connect to Country

The design approach aims to connect to and show respect for the local Indigenous Community. We aim to encourage education and holistic learning through fostering a cultural experience of art, history and celebration of culture.



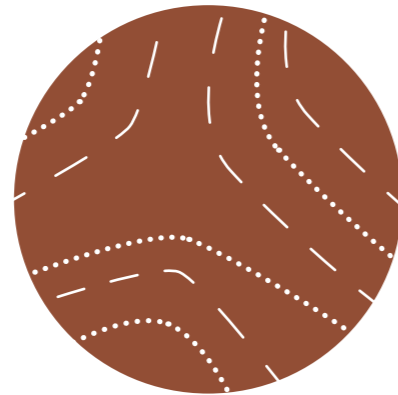
Connect with Nature

The proposed connections from the Interior design to the landscape design and through the Architectural envelope celebrate nature. By creating moments of vista, connectivity and pause we ultimately have the feeling of being WITHIN nature.



Connect to Community

Well-being is at the centre of the Interior thinking relating to Staff, Students and Visitors or members of the Community. Access to natural light and green space is important for maintaining healthy physical and mental well being. The school campus provides a unique opportunity with established existing trees as well as views out to the wider landscape which increase the appeal of all internal spaces.



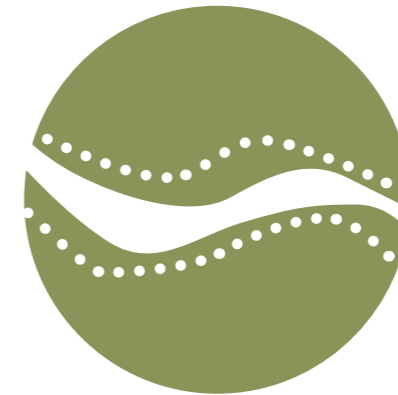
1. Connection to Country

The design approach aims to connect to and show respect for the local Indigenous Community. We aim to encourage education and holistic learning through fostering a cultural experience of art, history and celebration of culture.



2. Integration with Nature

The proposed connections from the Interior design to the landscape design and through the Architectural envelope celebrate nature. By creating moments of vista, connectivity and pause we ultimately have the feeling of being WITHIN nature.



3. Centred in Sustainability

Schools can be a powerful force in driving change towards sustainability within our communities. We can do this by considering the environmental impact of all our design decisions. From material selection, innovation in products and a circular considerate end of life.



4. Happiness + Well-being

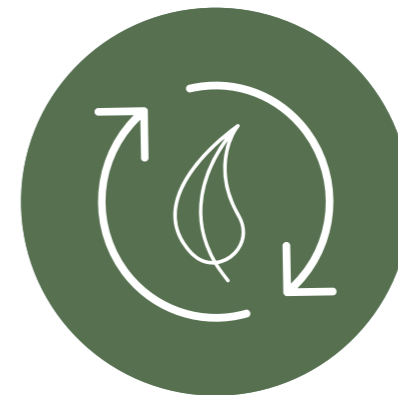
Biophilic design explores the role of natural elements in our interior spaces and seeks to influence our physical, mental, and emotional well-being in these spaces.

Access to natural light, natural ventilation, views to surrounding natural landscape and physical access to green space is important for maintaining healthy physical and mental well being.



5. Create Flexible Spaces

Drawing on the principles of contemporary teaching practices we will be able to incorporate new learning strategies for groups of different ages and sizes. A strong focus on the connections between indoor and outdoor learning spaces will cater for school groups of today and into the future for both learning and social interactions.



6. Inspire New Ways of Learning

We offer students an integrated and unique learning environment which provides opportunities for students to learn from multi-sensory indoor + outdoor experiences.

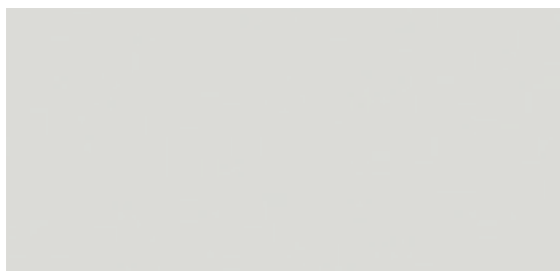
Outdoor environments are an extension of the internal learning space and can provide locally appropriate and inclusive pedagogies which stimulate inclusive learning and encourage all students to be involved in the learning process.

Facade and Materiality

Materiality - Identity Palette

Connecting to Nature creating access to natural light and green space is important for maintaining healthy physical and mental well being. A subtle use of colour to contribute to a visually calm environment. Building program can be identified by the Identity Colour Palette throughout the site.

Scribbly Gum - Native to area



School Entry, Staff + Admin

Ku-Ring-Gai Chase National Park



School Support, General Learning + Library

View from the site toward the City



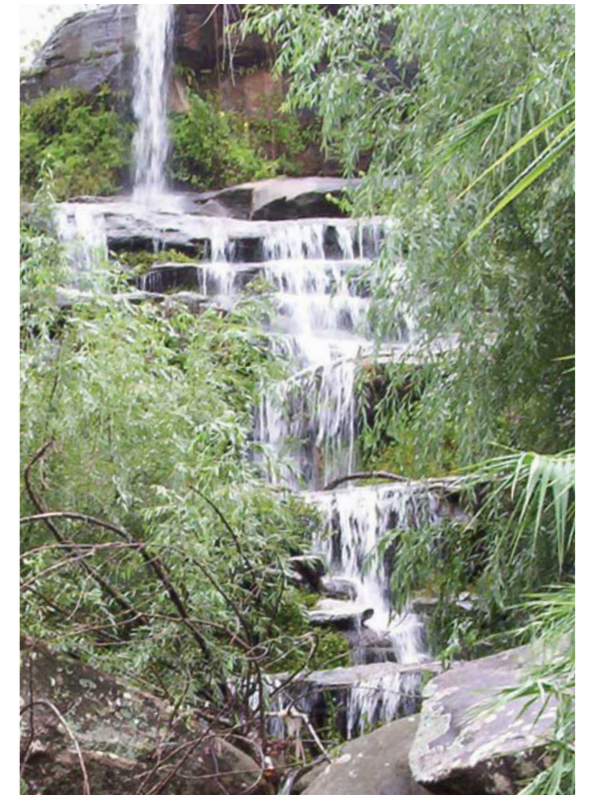
Science + General Learning

Natural Bridge Track



Technology - Wood + Metal, Food + Textiles

Frenchs Falls Upper



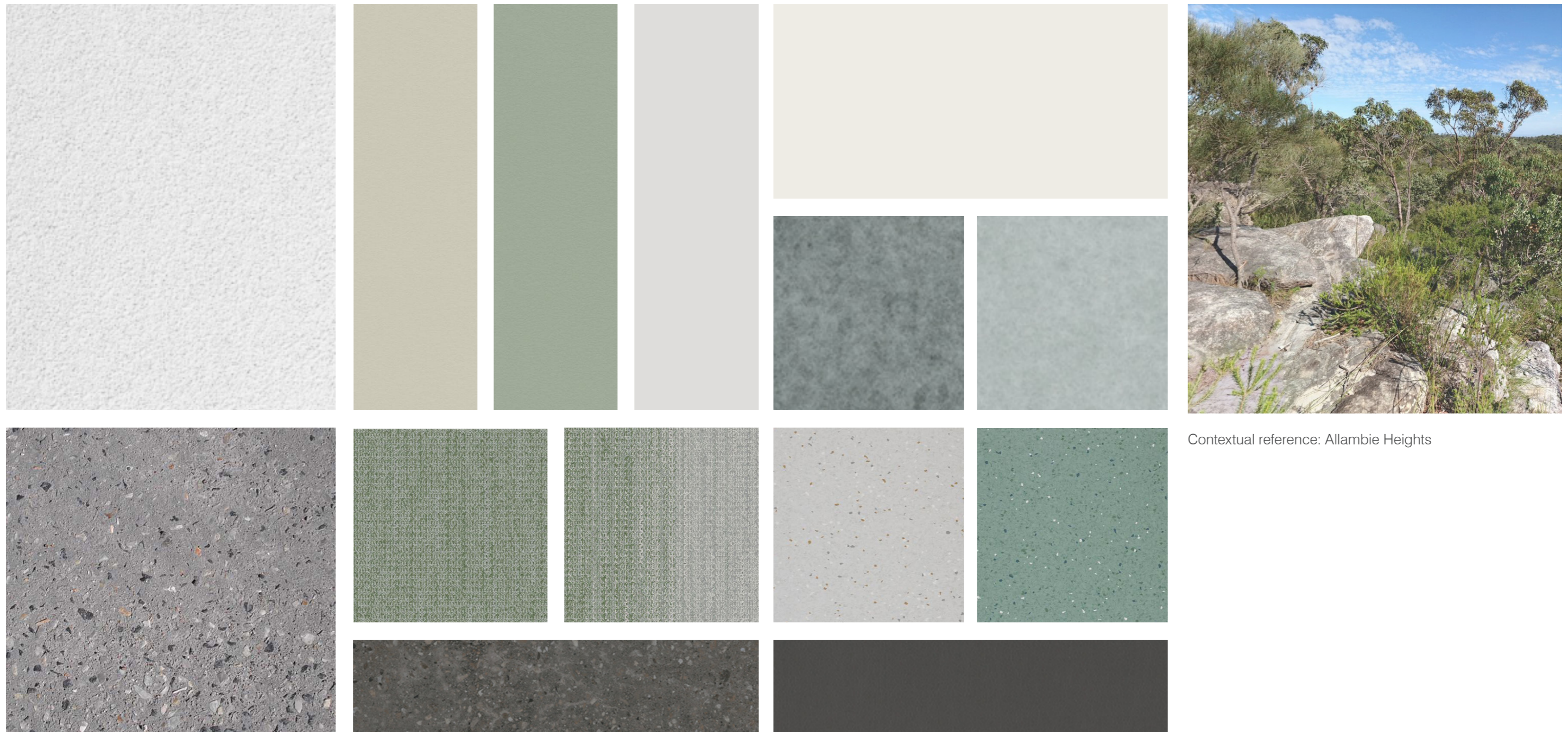
Gym, Hall, Movement Studio + Lecture Theatre

Facade and Materiality

Materiality - Base Palette

Connecting to Nature a robust, neutral palette represents the foundation of the interior environment, common across all building typologies.

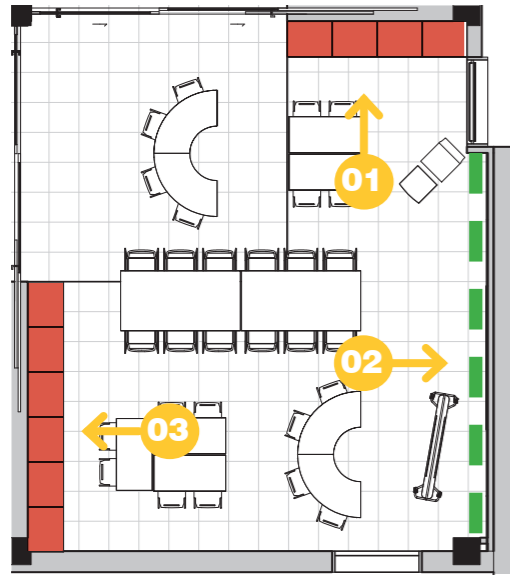
The base palette is typically applied to the fundamental aspects of the interior environment, providing spaces that are durable and timeless.



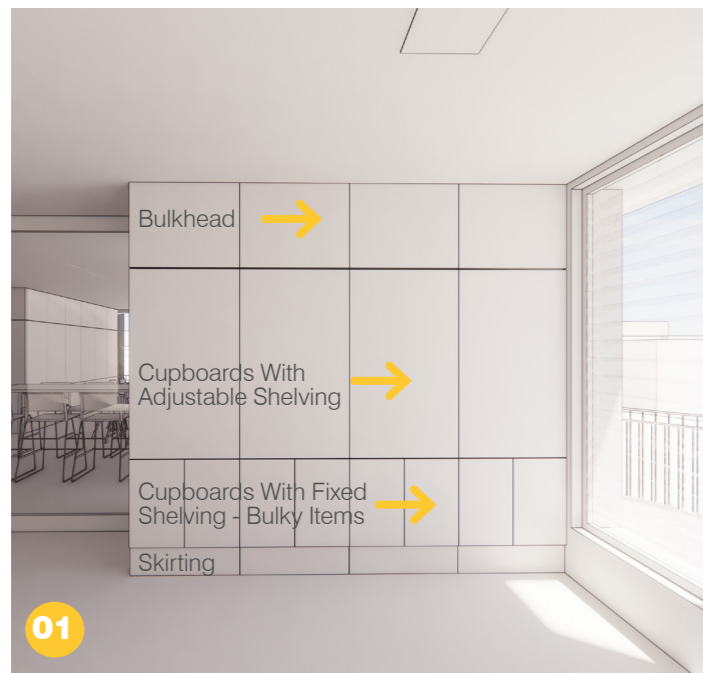
Contextual reference: Allambie Heights

Facade and Materiality

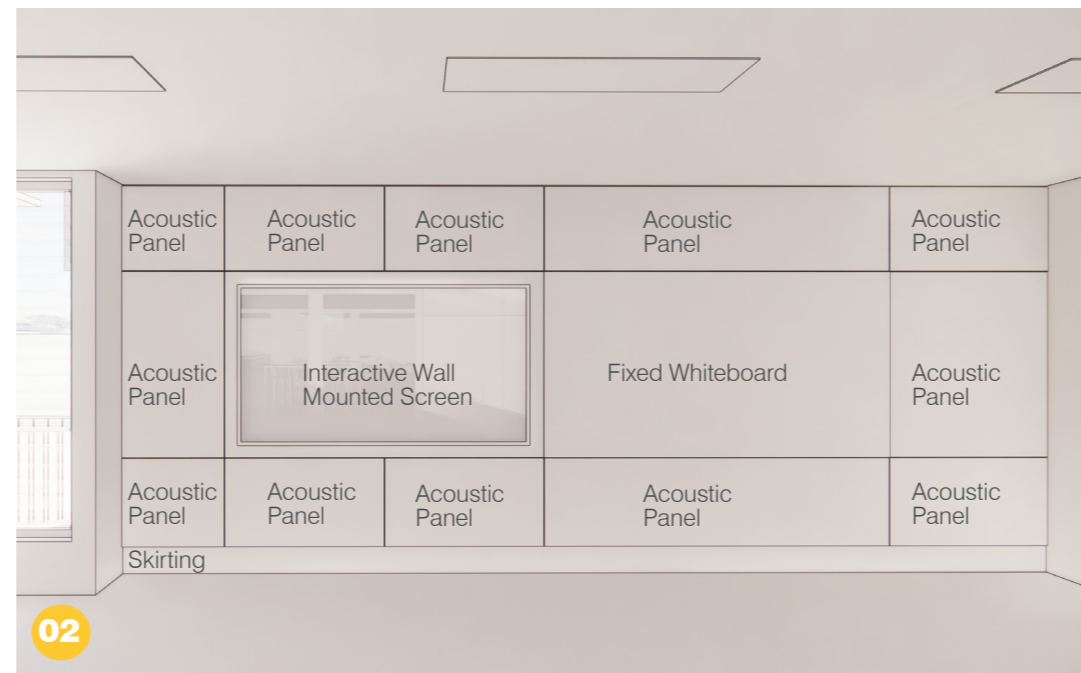
Typical General Learning Space Joinery



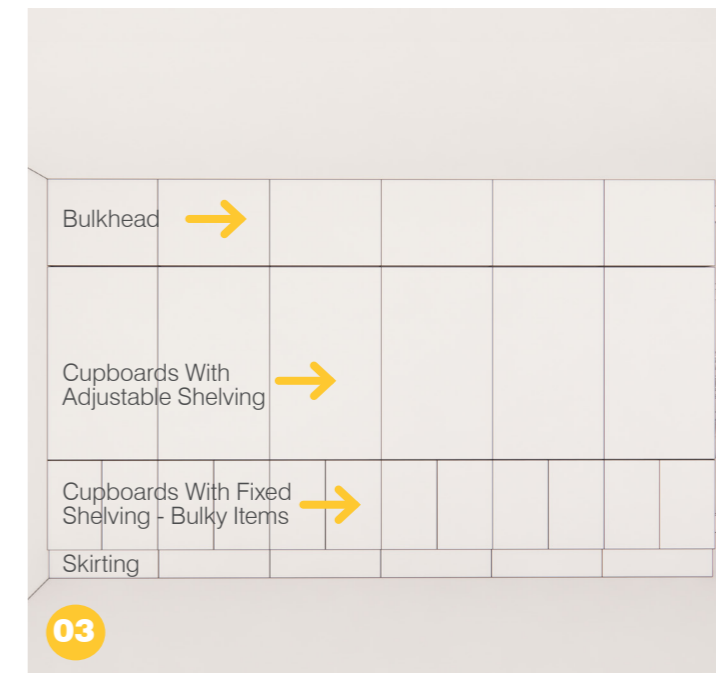
General learning spaces across the new school have been arranged to provide enhanced flexibility and collaborative teaching. Large glazed sliding doors are provided connecting the adjoining general learning space and the collaborative learning commons enabling classrooms to open up or close down depending on the type of activity. The joinery is located on the dividing walls providing a pocket for the large glazed sliders to disappear into. This enables a large uninterrupted learning wall with a mixture of whiteboards, pin boards, and the large interactive AV screen.



01 GLS Full Height Storage Elevation



02 GLS Project Wall Elevation



03 GLS Full Height Storage Elevation

Facade and Materiality



General Learning Space - 3D View

Facade and Materiality

Library Unit Plan - Finishes

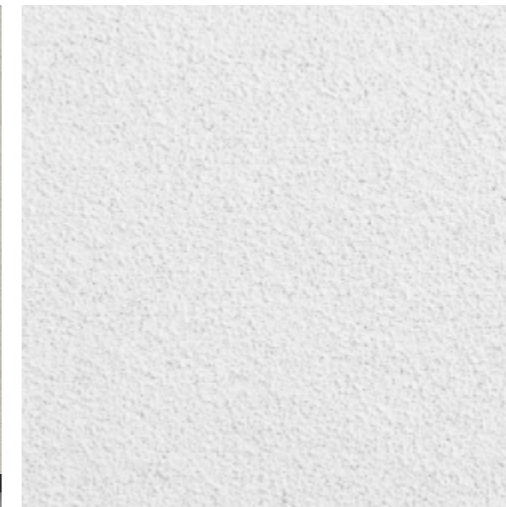
The library has been located at the south east of the site, to take advantage of the views both out to the ocean to east, and back to the city to the south. This is accessed on grade from the main entry point from the learning loop.

The internal planning of the library reinforces the views by arranging the administration, and fixed learning elements to the north and west, creating a large open flexible space opening out to uninterrupted views on the east and south.

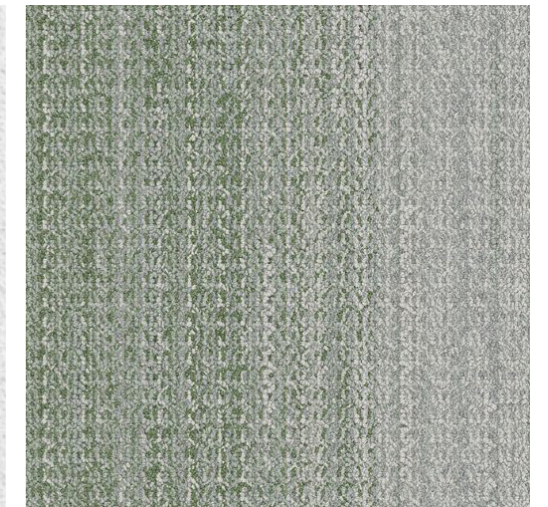
This is enhanced further by lifting the ceiling height on the southern facade and enabling light to enter the library via high level glazing.



Woven Image - Acoustic wall panel

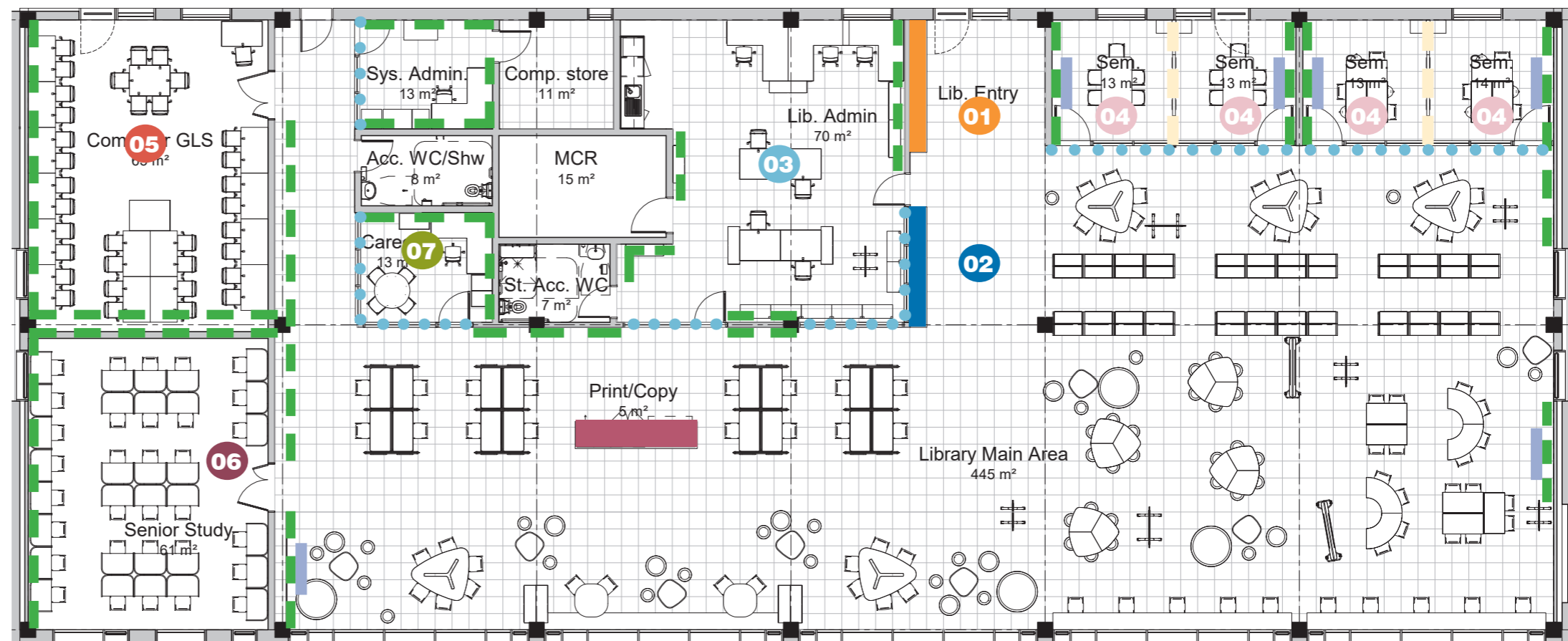


Ultima - Ceiling Tiles



Interface - Carpet Tiles

- 01 Library Entry
- 02 Library Service Desk
- 03 Library Administration
- 04 Seminar Room
- 05 Computer Learning GLS
- 06 Senior Study
- 07 Careers Office
- FH Acoustic wall panel, whiteboard
- Interactive AV Screen
- Print / Copy
- Operable wall
- Internal glazing system





Library - Sketch 3D View





7 Design Verification

7.1 Design Verification Statement

01 - Context, built form and landscape

- Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage, including Aboriginal cultural 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
- Respect and respond to its physical context, neighbourhood character, streetscape quality and heritage
- Respond to its natural environment including scenic value, local landscape setting and orientation
- Retain existing built form and vegetation where significant
- Ensure landscaping improves the amenity within school grounds and for uses adjacent to the school
- Consider height and scale of school development in relationship to neighbouring properties.
- The proposed high school campus has been design as a direct response to it's context. Drawing on its surroundings, and existing site context, including Duffy's Forest, Treetop views and view to ocean.
- The position of new buildings has been carefully considered to reduce the impact on the existing native mature trees, as well as working with the challenging topography by aligning to the existing contours.
- The proposed buildings have also been placed with consideration to reduce the solar impact on the learning spaces and create the best possible learning environments.

02 - Sustainable, efficient and durable

- Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.
- Be responsive to local climate including sun, wind and aspect
- The proposed education campus has been designed to maximise flexibility in learning. The general learning spaces for the high school has been designed to the EFSG planning grid enabling different modes of indoor, outdoor learning, sports and performance activities.
- The proposed buildings will be constructed using modern methods of construction utilising modular joinery elements, internal wall panels and even facade panels. Spaces can be adapted in the future to different uses and modes.
- The proposed buildings and facade systems provide adequate solar shading, while maximising daylight to learning spaces. Provision for natural ventilation is made in conjunction with mechanical ventilation systems.
- The proposed campus fosters use of renewable energy through use of solar panels .

03 - Accessible and inclusive

- Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.
- Establish security requirements early to ensure any required secure lines can be designed and integrated with built form
- Balance security with accessibility and inclusiveness by minimising the use of fencing particularly along street frontages
- Allow for passive and dynamic play of different age groups
- Provide school frontages and entrances that are visible, engaging and welcoming
- Encourage access for members of the community to shared facilities after hours
- Ensure accessibility for all users of the site
- The proposed Education Campus will engage with the local community giving them the opportunity to utilise the site after hours. The school performance space, gymnasium, sports fields and courts will be able to be opened to the community safely allowing the community to benefit and share the school site.
- Through the use of ramps, stairs and lifts, the entire site and buildings have been designed to provide an accessible and inclusive movement throughout. 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.

04 - Health and safety

- Provide covered areas for protection from sun and rain
- Clearly define access arrangements for after school hours
- This proposal ensures that natural light, ventilation & acoustics are used to create healthy and safe learning/teaching environments.
- The school site is to be fenced at the boundary as the perimeter security, and the access points have been designed to maximise pedestrian safety with independent entry points into the campus.
- The landscaping of the site and the articulation of the fence assists with integrating the fence into the site and public domain. The school has a main entry on Allambie Road and a secondary entres to the west, and also the east that are clearly identified.

Design Verification

05 - 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 located near busy roads or near rail corridors should incorporate appropriate noise mitigation measures to ensure a high level of amenity for occupants
- 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.
- Be integrated into, and maximise the use of the natural environment for learning and play
- Provide a diversity of indoor and outdoor spaces to facilitate informal and formal uses
- Provide buffer planting in setbacks where appropriate to reduce the impact of new development
- High rise schools should consider and seek to minimise the negative impacts of overshadowing and wind on surrounding built form and open space, and on school grounds.
- Ensure outdoor playground space is sufficient to accommodate the student population including future growth.
- The proposal has been designed to create a positive interface to the community. The primary entry is setback from the boundary providing a landscaped entry court.
- The community will use the secondary entry for after hours to access the performance space, gymnasium as well as the sports fields and playing courts.
- The site of the proposed campus is subject to

bushfire protection zone setback to the North and West and has a significant amount of dense landscape to the West which results in a natural buffer zone between the surrounding community and the proposed built forms. A generous setback is provided to maintain visual privacy to the residential developments along the eastern edge of the site and this setback combined with the low 2 storey built form ensures they are not subject to overshadowing. This is further enhanced with integrated landscape and fencing strategy.

- The proposed buildings comply with the ESD requirements for solar access and are designed to achieve the maximum amount of solar access without sacrificing thermal comfort.
- There is a large amount of natural vegetation on the existing site and the proposal has been planned to retain the existing high value mature native trees in the sites centre. The buildings, and their circulation have a strong visual connection to this nature to increase the visual amenity of the school and for its occupants. This also has enabled to active and passive open learning spaces of various scale and nature of activity.
- The topography and existing vegetation provide protection from wind and, given the proposal's integration into this topography through building placement, the buildings use this protection to decrease the wind impacts on the building.

06 - 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.
- Be based on a master plan of the school site that includes the testing of options for future potential growth
- Provide capacity for multiple uses, flexibility and change of use over time
- Respond to the findings of a site appraisal including in-ground conditions, contamination, flora and fauna, flooding, drainage and erosion, noise and traffic generation
- Understand the potential impacts of future local projected growth
- The proposed school is a result of a thorough design process following the brief requirements. The school will not be fully occupied when it opens, and has been sized to take into account the future capacity of the catchment it serves.
- Low maintenance and durability have been strong drivers of the proposed school design. The selection of materials and finishes has added another level of longevity to the new building by following an approach of prefinished and robust materials like galvanised steel, prefinished metal cladding and prefinished Fibre Cement.
- With regards to flexibility, the proposal has adopted the latest departmental design (MMoC) that is in line with the EFSG requirements and provide a standardization of spaces that can be interchangeable in the future, this provides the school with future focused learning spaces that can adapt to a potential shift in pedagogy.

07 - Aesthetics

- 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
- Provide an engaging environment for pedestrians visually and materially along public street frontages
- Seek opportunities to enhance public facing areas with landscaping and ensure landscape and building design are integrated
- Balance internal spatial requirements with an external mass and scale that responds to its environment
- From the very beginning the context has influenced the design approach. From the site topography to the indigenous narratives and views to the tree tops and ocean, the specificity of the place where the school is located has nurtured the design response.
- In addition, the colour palette and landscape strategy is based on the understanding of the indigenous history of the site and inspired by the presence of significant treescape, establishing a strong relation to country.
- The low scale building and retention of landscape provides a gentle and calm relation to the immediate neighbouring context. New outdoor learning environments at the centre of the school brings well-being and comfort for outdoor learning activities.

7.2 SDRP Feedback Review

The following section provides a response to the State Design Review Panel (SDRP) comments provided through consultations.

The associated table provides feedback from the most recent SDRP Panel conducted in July 2022.

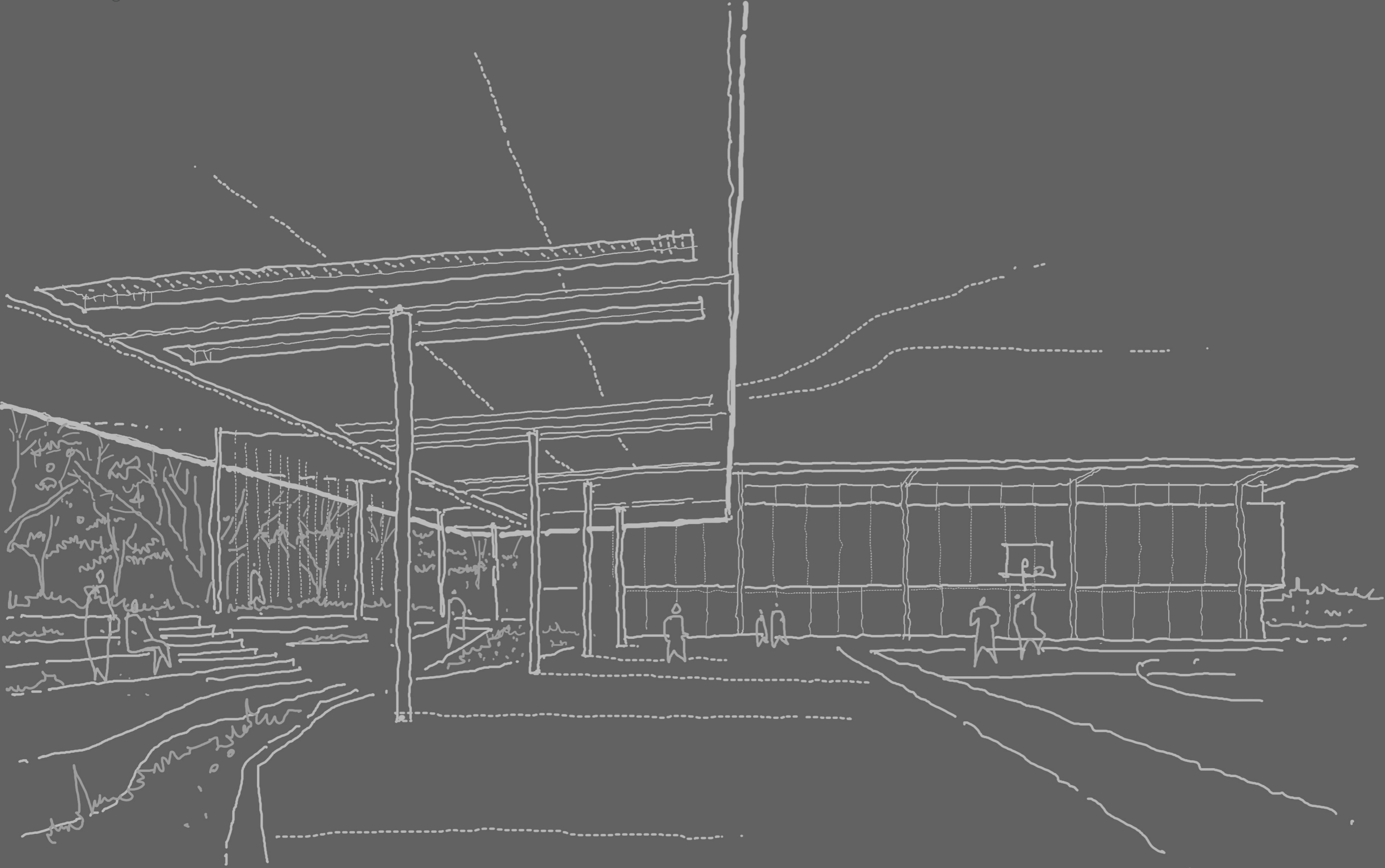
Item	SDRP Comment	Response
Connecting with Country		
1	Continue to explore opportunities for insight gained through engagement with Traditional Custodians to be expressed through all aspects of the masterplan design, for example through the design of communal spaces, site strategy and materiality.	We will continue to develop the design to provide opportunities for integration of indigenous narrative in the learning environments, Architecture and landscape. The Schematic design demonstrates opportunities to incorporate the 6 design principles identified in the CWC report and will evolve as the design progresses.
2	Incorporate Country-led thinking in the masterplan's environmental response to promote sustainability, for example in strategies for water management and through supporting the biodiversity of the site and surrounding context	Refer Landscape architects response
3	Continue to refer to the GANSW draft framework Connecting with Country.	Noted.
Masterplan and Landscape		
4	<p>Protection and retention of the existing mature vegetation in the remnant Duffy's Forest should be a primary driver of the masterplan's site strategy. Explore alternative options to respond to the new brief while also aligning with the masterplan's vision of connecting with 'Country, context and community', such as:</p> <ul style="list-style-type: none"> a. Explore alternative accessibility strategies to suit a denser building typology, e.g. in alignment with SDRPO2 building heights and footprint b. Revise site strategy to reinstate sporting facilities in the locations presented in SDRPO2, which had a significantly reduced impact on the forest c. Explore options to reduce the hardcourt area, including reduced brief d. Explore alternative locations for sporting facilities, such as co- location of courts & COLA or use of rooftops 	<p>The proposed scheme is the preferred approach from SINSW stakeholders, as it successfully addresses bulk and scale concerns raised from the previous scheme and connects the school learning environments more directly to the natural landscape setting on site.</p> <p>The Ecological, Biodiversity and Arborist reports outline that the western portion of the site has large areas of low retention value. There are strategies in place to balance the removal of existing vegetation with the planting of new vegetation. Please refer to reports.</p> <p>The school brief is to provide hard courts and playing field as shown in the current proposal, which requires the site footprint as indicated. These facilities are also seen as high value to the local community for access after hours.</p>
5	Consider strengthening the legibility and scale of the public/ after hours entry adjacent the sports field, which is currently noted as a 'secondary entry.' The importance of establishing a hierarchy of access points is acknowledged, however, it is expected that this secondary entry will have high use due to its proximity to transport links and as the after- hours entry. The entry should have clear wayfinding and be of suitably generous scale as the primary community access point	The secondary entrance has been enhanced by providing additional curtiledge and prominence along Aquatic Drive. It will be named with the school theatre name (TBC).
6	Develop the community access strategy to allow for extended use and futureproof access to other areas on campus in the design of secure lines.	The current proposal shows access to playing field, multipurpose courts, school hall/ gym, ancillary facilities and the performance Hall. Further access to school facilities can be explored as the project evolves.
7	Confirm retention of any areas of high biodiversity value as identified on the LEP biodiversity map.	Refer Landscape architects response and ecology report.

Design Verification

Item	SDRP Comment	Response
8	Provide detailed site sections to clarify landscape levels and connections across the courtyard.	Site sections provided within SSDA report and attached architectural drawings.
9	Increase permeable site area in line with water sensitive urban design principles and confirm percentage of permeable site area	Refer Landscape Architects response.
10	Explore the option of a natural turf sporting field, noting: a. The desire for frequent and extended use by external community stakeholders is acknowledged and encouraged, however, the comfort and usability for students should be the driving factor when considering options for a natural or synthetic turf field. Concerns were raised about the comfort of students in summer using a synthetic field with no shade. b. With good site preparation, natural turf fields are being designed to withstand more use, drain more effectively, and be available during or immediately after bad weather. Refer to DPIE's Synthetic Turf Study in Public Open Space and consider further consultation with Council and other stakeholders. c. Compare the environmental impacts between natural and synthetic turf options for the sports field on site, including water efficiency, stormwater management and water pollution/microplastics.	Refer Landscape Architects response.
11	Concern was raised regarding the reduction of tree canopy cover across the site. While the constraints of the bushfire protection zones are acknowledged, it is expected that the sports field will contribute to reduced canopy requirements in the buffer zone. Explore opportunities to increase tree canopy cover across the site towards a target of 40%, including retention of remnant forest and increased canopy cover along the eastern street frontage.	Refer Landscape Architects response
12	Increase planting along street edges. These areas located in the public zones of the site will have less wear and tear than internal courtyard landscapes and present an opportunity to reinforce the planting concept and palette proposed.	Refer Landscape Architects response
13	SDRP02 Advice letter, items 8, 9, 11, 18. 8. Consider the potential to create wildlife corridors through the site, linking with existing surrounding vegetation communities. 9. Take full advantage of the Duffy Forest remnant and further consider interpretive fencing, pathways and seating spaces and well as dedicated places for interpretation. 11. Ensure the proposed landscape strategy has an adequate construction budget to deliver design excellence outcomes. 18. Provide further details on water management including storage and water efficiency.	Refer Landscape Architects response Refer Landscape Architects response Refer Landscape Architects response Rainwater harvesting will be utilised for site irrigation purposes. On site detention will also be provided as per civil engineering design. Refer Landscape Architects response for further information

7.3 SDRP Feedback Review

Item	SDRP Comment	Response
Architecture		
14	Explore additional opportunities to introduce breaks in the linear form of the buildings for increased light penetration between blocks and to provide access to breakout spaces.	Breaks in the buildings have been incorporated to relieve the length of buildings, whilst also ensuring the programmatic adjacencies are achieved for the learning units and neighbourhoods. As the scheme is now 2 stories, the connection to nature is more successful and more accessible by students and staff. The built form is orientated to take advantage of this relationship, as well as affording expansive district views to the south and east
15	Maximise opportunities to internally express the raked roofs through the ceiling design of the upper levels.	Raked ceilings are proposed for the Library and the Visual arts units, which takes advantage of addition light and views accessible in both spaces.
16	Confirm proposed PV provision and renewable power supply will meet the operational energy demands of the school and is aligned with the number of learning spaces.	A 99KW PV system will be provided with the completion of the school and there is a space allocation on the roofs for the future expansion of the PV system.



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