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100% State Significant Development Application Report

Murwillumbah Education Campus

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1 Overview

This section offers an overview of the project and includes the SEARS requirements, providing a reference location within the report where the requirements are addressed.

Overview

1.1 Introduction

The proposed new school will be an amalgamation of four local schools into what will be named 'Murwillumbah Education Campus', a single K-12 campus. The four local schools are:

- Murwillumbah Public School
- Murwillumbah East Public School
- Murwillumbah High School (proposed campus site)
- Wollumbin High School

The vision for the Murwillumbah Education Campus is an inclusive, collaborative and inspiring environment where students are nurtured, known, and enabled to thrive.

The spatial brief is developed directly from both the SINSW ESFG, and the EFSG Hub Layouts (09062021), for both a Stream 7 High School (Medium HS), and Core 21 Primary School (with core 28 core facilities). The following brief elements have been previously agreed by SINSW.

Public School

- Core 21 (with core 28 core facilities)
- 24 Teaching Spaces
- 3 Support Units
- 582 Student Capacity

High School

- Stream 7
- 47 Teaching Spaces
- 6 Support Units
- Hospitality Unit
- Entertainment Unit
- Agriculture Unit
- 1,140 Student Capacity

Additional Brief Items

- Community health facilities
- Department of Education Offices

Applying the above vision to the agreed brief is reinforced by utilizing the School Infrastructure NSW DfMA guidelines.

Site Context

Murwillumbah is located between the mountains and the sea and is connected by the Tweed River. The proposed location of the future Murwillumbah Education Campus is on the existing Murwillumbah High School site (established in 1929). The context of this site can be described as a microcosm of Murwillumbah itself. Situated on the edge of town placing it in between Wollumbin and the town center, with the Tweed River running along its base. The future campus will be for Murwillumbah and is strategically positioned centrally to the population and in close proximity to the town centre.

The site has a steady fall to the river on the east and the first building on the site in 1929 has been identified as of heritage significance (Block A) sitting on top the pinnacle of the site affording views to Wollumbin, the planes, the river and town.

Site Constraints

Site constraints for the future campus could be reduced to three main points; Flooding, Heritage & Topography. The lower lying parts of the site are prone to flooding. However, the development rises above the 1 in 500 flood level, with the site, to mitigate the risk of flooding and to afford views to the surrounding shire. The site that remains outside of the flood mapping is occupied by existing school buildings, in particular 'Block A', at the peak of the site. Its heritage significance requires careful consideration. Restoring view lines and keeping the mass of any new buildings below that of Block A to ensure it retains its original prominence on the school site.

Topography is an important factor in the design of the future campus. The site falls more than 14m from West to East, and the access points are at the highest and lowest points. Equitable and accessible movement to and across the campus is a critical consideration in the concept design and will contribute significantly towards its success.

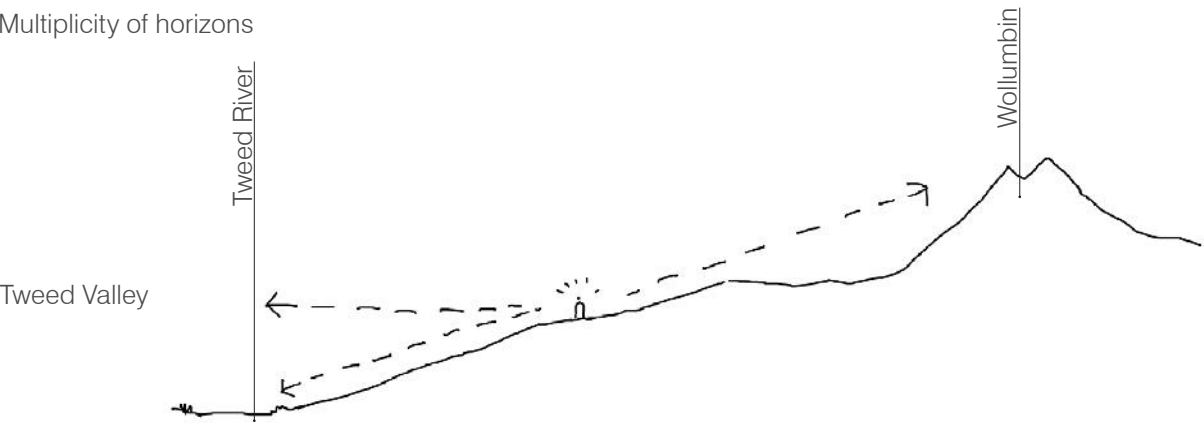


Overview

The site is inspired by its immediate context. Undulating subtropical terrain provides a constant backdrop for the school. The site itself is positioned between Wollumbin and the town center and is connected by the river. This location in front of the extension of the valley, places us before the freedom of the natural limits.

This narrative can be taken further to the new buildings themselves and how they respond to the sites unique topography, building a space in between height planes, connecting them to each other all with the constant backdrop of the surrounding landscape.

Multiplicity of horizons



The way of perceiving and inhabiting the place occurs through a multiplicity of horizons. Towards the valley and the river, the space fled into the distance, instead, towards the mountain, the vertical of its mass contains it.

This observation indicates the way to govern the exterior spaces. The patios unfold, contained within a greater order that seeks to form between the built mass and the mass of the mountain: a kind of great interior measured and graduated by the new built form that confer the condition of backdrop



Local vegetation contained by Wollumbin



Site location in relation to the natural landmarks



Views out to tweed valley

1.2 SEARS Requirements (Architectural Design Statement)

SEARS Requirements	Response Location
General	
A detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development	Section 02 - Site Analysis
Plans, elevations and sections of the proposed development	Section 05- Built Form and Urban Environment Refer to Architectural and Landscape drawing package
Cladding, window and floor details, including materials	Section 06 - Facade and Materiality Refer to Architectural and Landscape drawing package
A site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process)	Section 04 - Masterplan
Plans and details of any business identification signs to be installed, including size, location and finishes	Not Included
Policies	
Address the relevant planning provisions, goals and strategic planning objectives	Section 01 - Overview
in all relevant planning policies including but not limited to the following: • Crime Prevention through Environmental Design (CPTED) Principles. • Better Placed: An integrated design policy for the built environment of New South Wales (Government Architect NSW (GANSW), 2017). • Healthy Urban Development Checklist (NSW Health, 2009). • Draft Greener Places Design Guide (GANSW).	Refer to Architectural and Landscape drawing package
Built form and urban design	
Addresses the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, street scape and any public open spaces	Section 05- Built Form and Urban Environment Refer to Architectural and Landscape drawing package
Addresses design quality and built form, with specific consideration of the overall site layout, street scape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours	Section 05- Built Form and Urban Environment Refer to Architectural and Landscape drawing package

SEARS Requirements	Response Location
Addresses how Crime Prevention through Environmental Design (CPTED) principles are to be integrated into development	Section 04 - Masterplan Section 05- Built Form and Urban Environment Section 06 - Facade and Materiality Refer to Architectural and Landscape drawing package
Addresses how good environmental amenity would be provided, including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility	Section 05- Built Form and Urban Environment Section 06 - Facade and Materiality Refer to Architectural and Landscape drawing package
Addresses how design quality will be achieved in accordance with Schedule 4 Schools – design quality principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools (GANSW, 2018).	Section 07 - Design Verification Refer to Architectural and Landscape drawing package
Addresses how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Refer to Architectural drawing package
Provide a detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development	Section 02 - Site Analysis Section 04 - Masterplan
Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items	Section 05- Built Form and Urban Environment
Trees and Landscaping	
A detailed site-wide landscape strategy, that details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage.	Refer to Architectural and Landscape drawing package
A detailed site-wide landscape strategy, that provides evidence that opportunities to retain significant trees have been explored and/or informs the plan.	Section 04 - Masterplan Refer to Architectural and Landscape drawing package
A detailed site-wide landscape strategy, that considers equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation.	Refer to Landscape drawing package
Demonstrates how the proposed development would contribute to long term landscape setting in respect of the site and the streetscape.	Refer to Architectural and Landscape drawing package

Overview

SEARS Requirements	Response Location
Demonstrates how the proposed development would mitigate the urban heat island effect and ensure appropriate comfort levels on-site.	Refer to Architectural and Landscape drawing package
Demonstrates how the proposed development would contribute to objectives to increase urban tree canopy cover.	Refer to Architectural and Landscape drawing package
A detailed landscape plan prepared by a suitably qualified person	Refer to Architectural and Landscape drawing package
Relevant Policies and Guidelines: • Australian Standard 4970 Protection of trees on development sites. • Draft Greener Places Design Guide (GANSW). • Technical Guidelines for Urban Green Cover in NSW (Office of Environment and Heritage (OEH), 2015).	Refer to Architectural and Landscape drawing package
Environmental Amenity	
Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 05- Built Form and Urban Environment Section 07 - Design Verification
Provide shadow diagrams	Section 05- Built Form and Urban Environment
Provide a view analysis of the site from key vantage points and street scape locations and public domain including photomontages or perspectives showing the proposed and likely future development	Section 05- Built Form and Urban Environment
Provide an analysis of proposed lighting that identifies measures to reduce spill into the surrounding sensitive receivers	Refer to Lighting Statement provided
Demonstrates attempts to interpret the Aboriginal cultural heritage significance identified into the development.	Section 01 - Overview Section 05 - Built Form and Urban Environment Section 06 - Facade and Materiality Refer to Landscape package Referr to CWC Report by EMM Sydney
Plans and Documents	
Design report to demonstrate how design quality would be achieved in accordance with the above Key Issues including:	Refer to Architectural and Landscape drawing package

SEARS Requirements	Response Location
Architectural design statement	Section 01 - Overview Section 05- Built Form and Urban Environment Section 07 - Design Verification Refer to Architectural and Landscape drawing package
Diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal	Section 04 - Masterplan Section 05- Built Form and Urban Environment Refer to Architectural and Landscape drawing package
Detailed site and context analysis	Section 02 - Site Analysis
Analysis of options considered to justify the proposed site planning and design approach	Section 04 - Masterplan
Summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice	Section 07 - Design Verification
Summary report of consultation with the community and response to any feedback provided.	Refer to Architectural Feedback register

Overview

1.3 User Engagement

The architectural design of the campus has been informed by consultation with a range of internal and external stakeholders.

A total of 22 separate design consultation sessions were held with Project User Groups (PUGs), made up of principals and nominated teachers and staff. The broader staff group was also provided with the opportunity to view the design and provide feedback through a number of design update presentations.

The Project Reference Group, including the four school principals, two Directors, Educational Leadership, and other SINSW stakeholders, provided feedback on critical design elements at its regular monthly meetings.

Regular meetings were held with members of the department’s Technical Support Group (TSG) to gain specialist input in the areas of heritage, disability access and standards, IT services, safety and school transport.

During the latter part of the concept design phase, weekly meetings were held with an independent Executive Review Group, so the objective views of industry experts could be considered.

During the schematic design phase, a total of 22 separate sessions were held with the Project User Group to give the end users the best opportunity to shape the design. Review sessions were also held with the SINSW EFSG and DfMA teams throughout Feb and March, as well as sessions with the TSG (security & ICT). Weekly meetings were also held with the SINSW Executive Review Group, and the consultant team, which has helped shape the design and ensure that critical issues were being addressed as they came up. As there are a number of schools coming together to create the new campus, an extensive consultation process has been undertaken to ensure all the stakeholders were able to take part.

GANSW:

Presentations were given to the NSW Government architect and the State Design Review Panel (SDRP) throughout the design stages (of which three have occurred to date) , and feedback received has been incorporated into the design submission.

1.4 Designing on Country

SINSW and Architectus are committed to working with the local Aboriginal community to build their understanding of local cultural heritage and history, and strengthen cultural awareness within the project.

A series of three workshops have been held to seek input from the Aboriginal Education Consultative Group, Aboriginal teachers, students and community members, regarding how local Aboriginal heritage, culture and identity can be appropriately represented within the campus.

Workshop 1 generated initial ideas on what built or landscaping elements the community would most like to see at the campus and ideas on local flora, fauna, landmarks and stories that could be appropriately referenced in the campus.

Workshop 2 comprised a series of student voice sessions at all 4 schools to gain student perspectives on what they would like to see in the design of the campus to generate a sense of belonging.

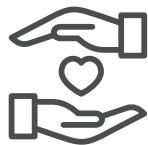
Workshop 3 involved sharing the concept design for the campus with community for feedback, reviewing the outcomes of earlier workshops and gaining more precise input on the preferred location and form of built and landscaping cultural references.

The outcomes of these workshops have informed the design of the campus.



1.5 Key Aspirations

The following design aspirations for the future Murwillumbah Education Campus have been articulated in the education rationale and inform the design.



A collective culture

- Every student is known, valued and cared for
- Collegial learning communities are enabled to build shared understanding and application of pedagogy K-12
- Learning is visible and celebrated, contributing to a culture of high expectations



Innovative education with a focus on deep learning

- Curriculum based on skills and learning dispositions
- Technology rich learning environments
- Student-driven learning to maximise engagement and meet individual learning needs
- Activity-based learning with ability for sustained projects



Community as an integral motivation

- Strong sense of renewed identity, whilst respecting the heritage and history of each school
- Support for health and well-being of students and their families
- Authentic consultation and collaboration with community



Campus as a place and space

- Opportunities for joint and shared use of school facilities between secondary, primary and the community
- Seamless connection across the site
- Collaborative culture across all staff
- Opportunities for student collaboration K-12

1.6 Reference Documents Significant to the Project



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.

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 - 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.

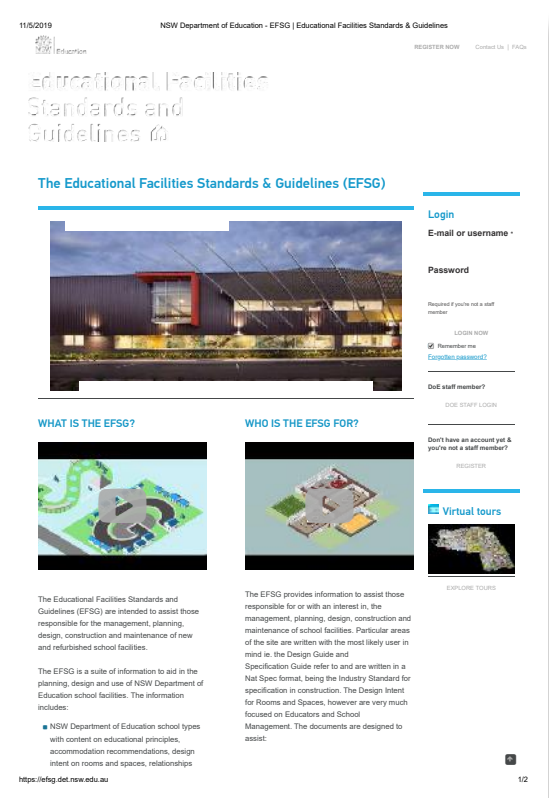
Better Placed - Design Guide for Heritage (GANSW) 2018 (Draft)

The Design Guide for Heritage is part of the suite of documents developed by GANSW to support the Better Placed Integrated Design Policy for the Built Environment of NSW. This document outlines principles to guide a broad range of design work in heritage places in NSW.

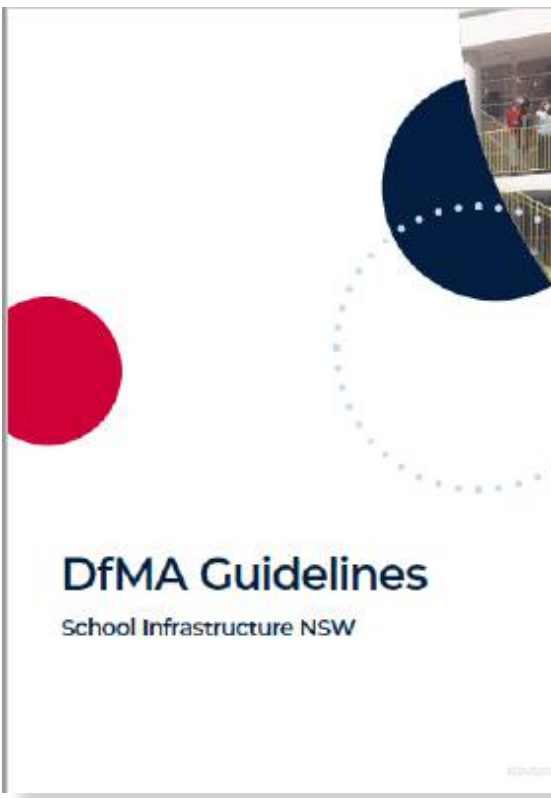
Better Placed - Environmental Design in Schools - (GANSW) 2018

Environmental Design in Schools has been developed by GANSW to provide a holistic understanding of environmental design for schools. It presents strategies for passive design as opportunities for making positive, sustainable change in the building or running of a school and advocates that student learning outcomes are closely relate to the environment in which they learn.

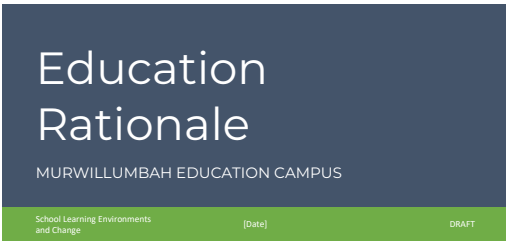
Overview



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.



DFMA System Guidelines
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.



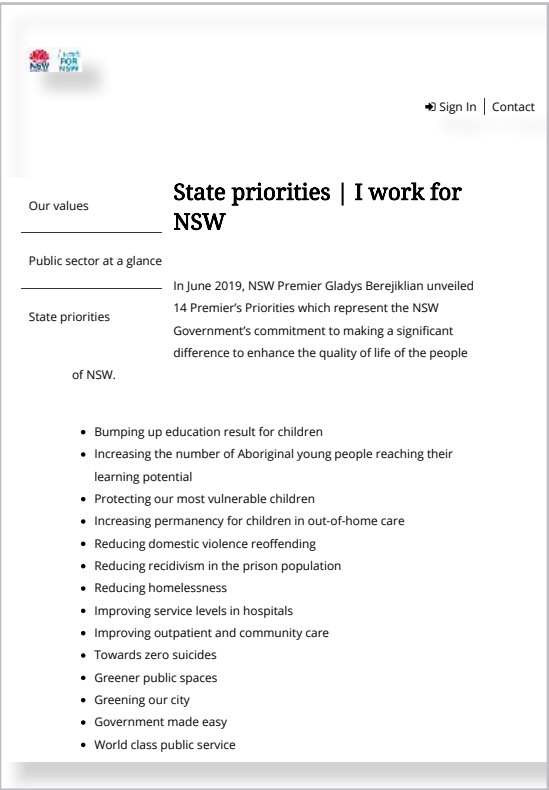
Murwillumbah Education Rationale
This document has been developed through a consultative process with senior leadership and staff of Murwillumbah PS, Murwillumbah East PS, Murwillumbah HS and Wollumbin HS. The outputs from this process have been synthesised by School Learning Environments and Change (SINSW) and presented in this document to outline:

- Highly valued and prioritised outcomes for students in this context
- Operational preferences
- Possible learning environments to support the desired education model in this vision of the future state.

EFSG DRAFT SoA (PS & HS)
This document has helped shape the projects schedule of accommodation, and has a direct relationship to the EFSG Draft Standard Hub Layouts.



EFSG DRAFT Standard Hub Layouts (PS & HS)
This document has helped shape the projects internal layouts. The layouts have been the basis for the development for the internal configuration of the learning spaces and relate directly to the EFSG schedule of accommodation.



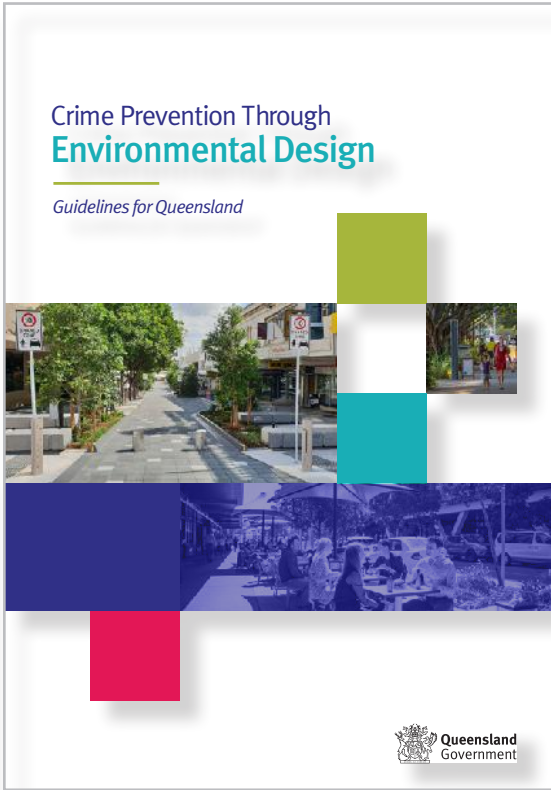
State Priorities

In June 2019, NSW Premier Gladys Berejiklian unveiled 14 Premier's Priorities which represent the NSW Government's commitment to making a significant difference to enhance the quality of life of the people



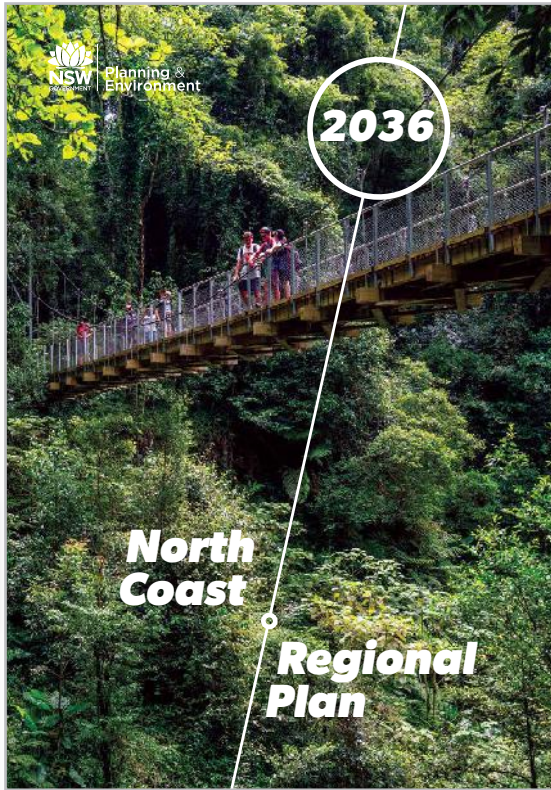
Future Transport Strategy 2056

Future Transport 2056 sets the 40-year vision, directions and principles for customer mobility in NSW, guiding transport investment over the longer term. It presents a glimpse of the large economic and societal shifts we will see in the future and places the customer at the centre of everything we do, to ensure we harness rapid advances in technology and innovation to create and maintain a world-class, safe, efficient and reliable transport system.



Crime Prevention Through Environmental Design

The fundamental theory of CPTED is that it is possible to use knowledge and creativity to design built environments in ways that lessen or prevent the incidence of such crime.



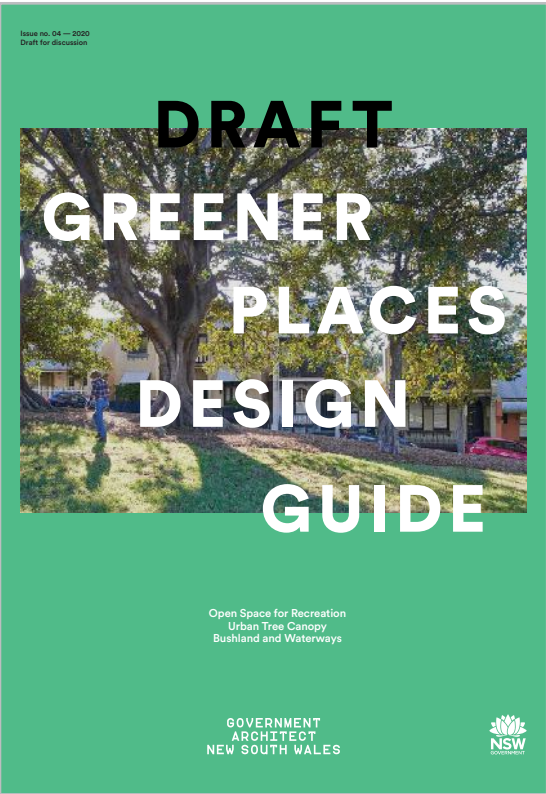
North Coast Regional Plan 2036

The Plan will guide the NSW Government's land use planning priorities and decisions to 2036. It is not intended to be a step-by-step approach to all land use planning. Rather, it provides an overarching framework to guide subsequent and more detailed land use plans, development proposals and infrastructure funding decisions. While a series of priority actions are included, medium-and longer-term actions will be identified to coincide with population growth and economic change.

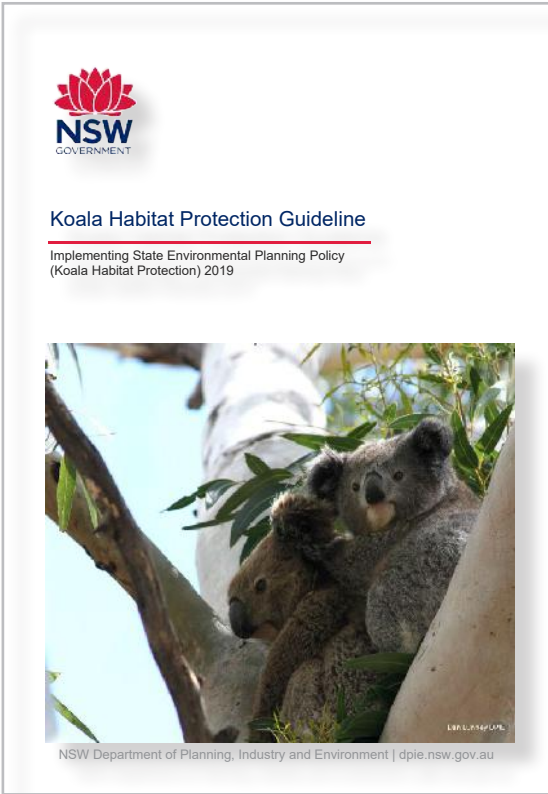


Healthy Built Environment Checklist

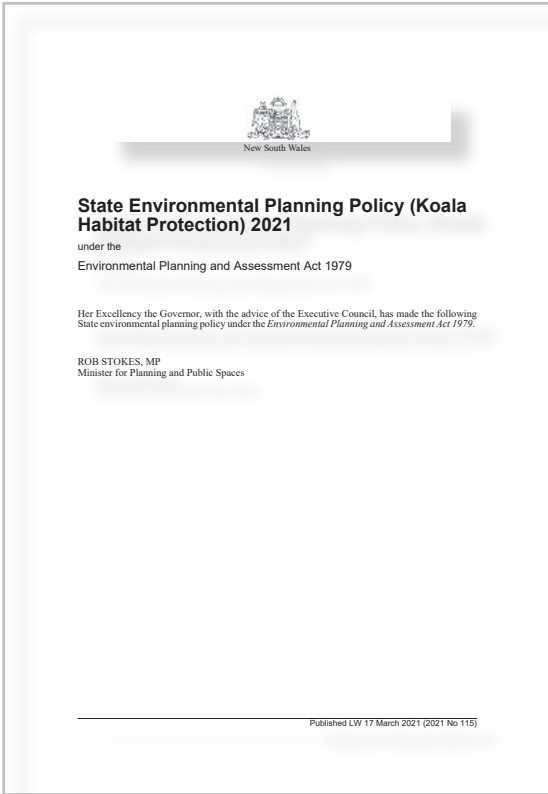
The Healthy Built environment Checklist is a practical tool to help NSW health professionals and those outside the health sector, assess built environment factors that impact on health. It is designed to support engagement with planning processes and guide feedback on development policies and plans.



Greener Places Design Guide
The Draft Greener Places Design Guide framework provides information on how to design, plan, and implement green infrastructure in urban areas throughout NSW. The draft guide provides a consistent methodology to help State and local government, and industry create a network of green infrastructure.



Koala Habitat Protection Guideline
The koala (*Phascolarctos cinereus*) is an iconic Australian marsupial. In NSW koala populations are in decline and vulnerable to extinction. As with many threatened species, koalas and their habitat are managed under a variety of legislation and policy. In the NSW planning system, a dedicated state environmental planning policy was introduced in 1995 to protect koala habitat.



State Environmental Planning Policy 2021
This Policy aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.



The Tweed Local Environmental Plan (LEP) 2014 & the Tweed Shire Development Control Plan (DCP) 2036.
The DCP aims to: achieve development that is consistent with the social, economic and environmental values of the shire;

The LEP aims to: The Plan aims to make local environmental planning provisions for land in Tweed in accordance with the relevant standard environmental planning instrument under section 3.20 of the Act.



Local Strategic Planning Statement - 2020
The Tweed Local Strategic Planning Statement ('the Statement') sets out the 20 year vision for land-use planning in the Tweed. It provides the roadmap for managing future development and growth pressures against the community's desire to retain the area's high scenic quality, biological and ecological values, iconic natural landscapes, sense of community and relaxed lifestyle.



2 Site Analysis

This section focuses on the site. It researches existing conditions, analyses key opportunities and constraints including planning, heritage and cultural overlays.

2.1 Location

The Murwillumbah Education Campus site is in the far north-eastern New South Wales town of Murwillumbah. Murwillumbah sits on the Tweed River within the Tweed Shire on the foothills of the McPherson Range in the Volcano Valley.

The site is located 13km south of the Queensland border, 132km south of Brisbane, and 23km west of the east coast. Murwillumbah has stunning natural scenery and is surrounded by world heritage-listed national parks, beautiful east coast beaches can be accessed in 15 minutes, and the domestic & international terminals at Coolangatta airport is only 20 minute drive away. Murwillumbah is one of the most affordable places to live between Sydney & Brisbane and in recent years this has made Murwillumbah an attractive 'sea change/tree change' destination.



2.2 Context

Murwillumbah is located between the mountains and the sea, connected by the Tweed River. The proposed location of the future Murwillumbah Education Campus is on the existing Murwillumbah High School site (established in 1929). The context of this site can be described as a microcosm of Murwillumbah itself. Situated on the edge of town placing it in between Wollumbin and the town centre, with the Tweed River running along its base. The future campus will be for Murwillumbah and is strategically positioned centrally to the population and in close proximity to the town centre.

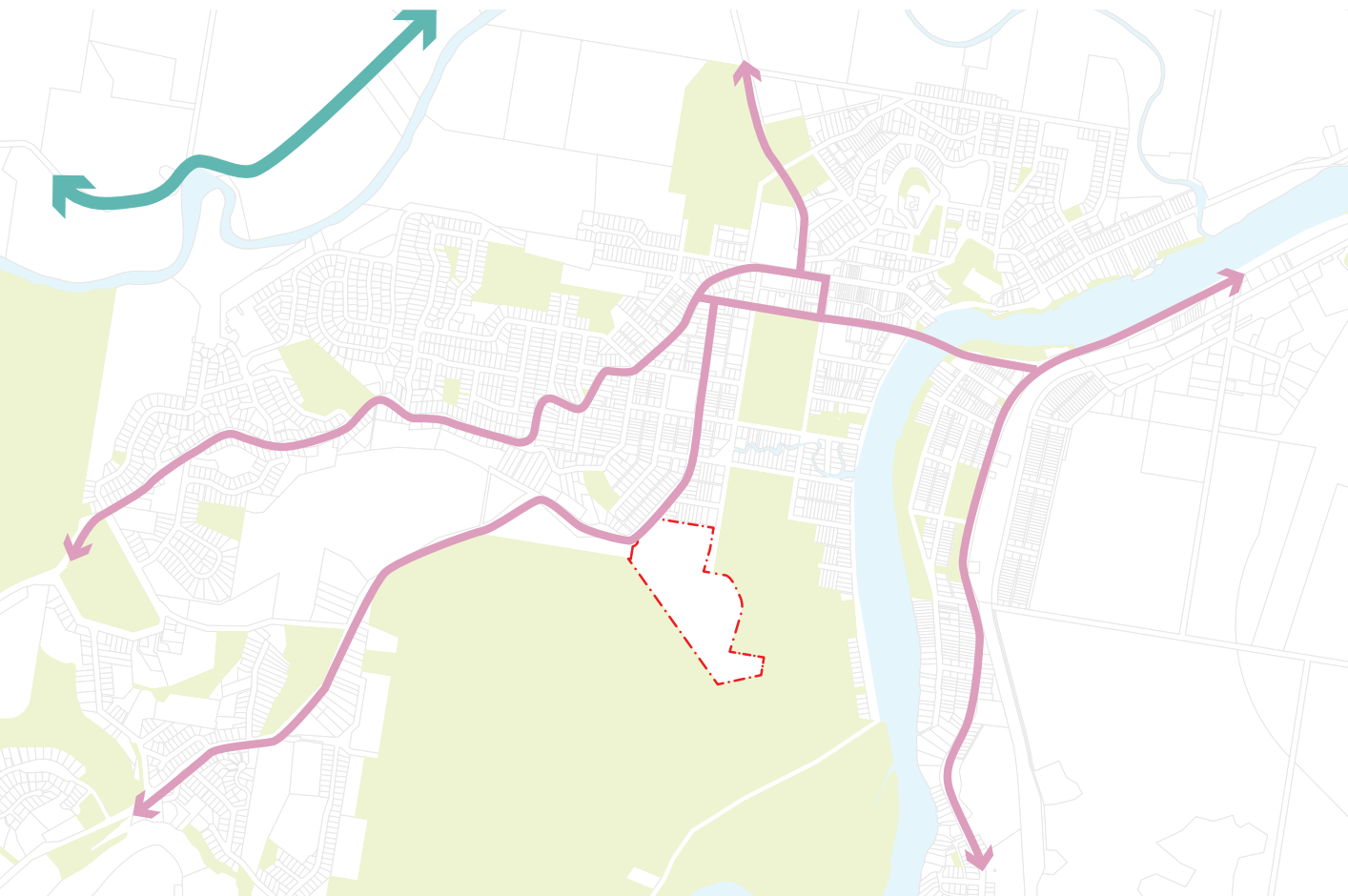
The site has a steady fall to the river on the east and the first building on the site in 1929 has been identified as of heritage significance (Block A) sitting on top the pinnacle of the site affording views to Wollumbin, the planes, the river and town.



Existing Topography



2.3 Road Hierarchy



The Murwillumbah Education Campus site addresses both Riverview Street to the West, and Nullum Street to the East, as well as High School Lane which runs along the northern boundary.

Riverview Street is the main regional arterial that travels from the east crossing over the Tweed River passing through the town centre, the school site, and continuing to the south west past Mt Wollumbin. Existing bus routes use Riverview to connect Murwillumbah town to Murwillumbah West. There is an existing vehicle drop off/pick up bay accessed on the junction of Riverview St and Kyogle Road. There is existing street parking running opposite to the school on Riverview Street.

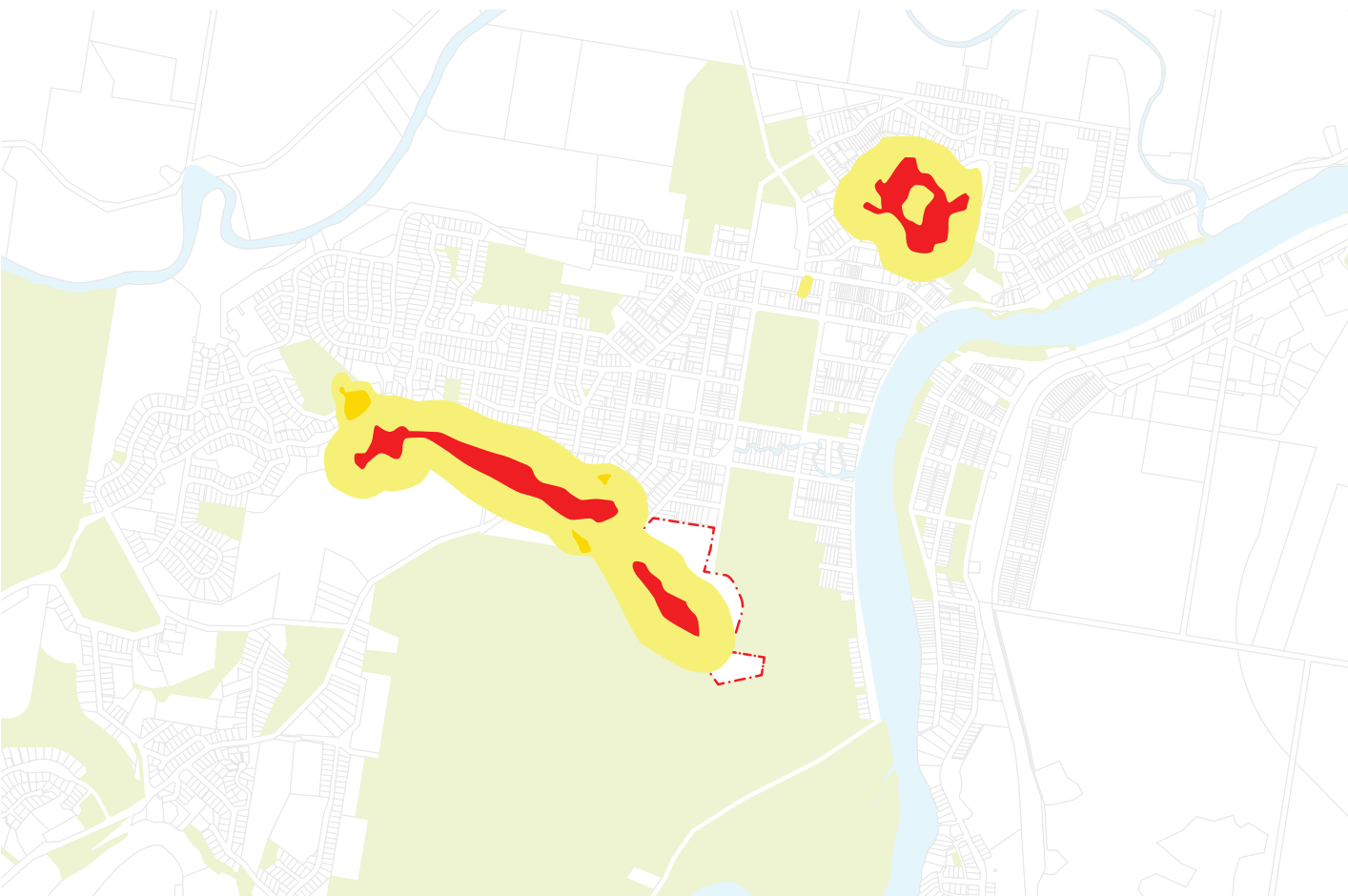
Nullum Street to the east is a secondary street in the town, running north south between Murwillumbah Street, and finishing at the school site. The southern end of Nullum Street has a bus turning head and

currently operates as the main drop off/pick up for the existing school. It also has a driveway for accessing the lower southern portion of the existing school site. There is no street parking along Nullum Street for the length of the school boundary.

High School Lane runs along the northern boundary, accessed from Nullum Street, and does not continue through to Riverview. It's a narrow lane-way that acts as a front door to several properties as well as providing access to the rear of properties fronting James Street and Riverview Street. There is an existing access point for the loading bay for the current school hall.

- Legend
- - - Site Boundary
 - Green Open Space
 - Primary Road
 - Secondary Road

2.4 Bushfire Zone



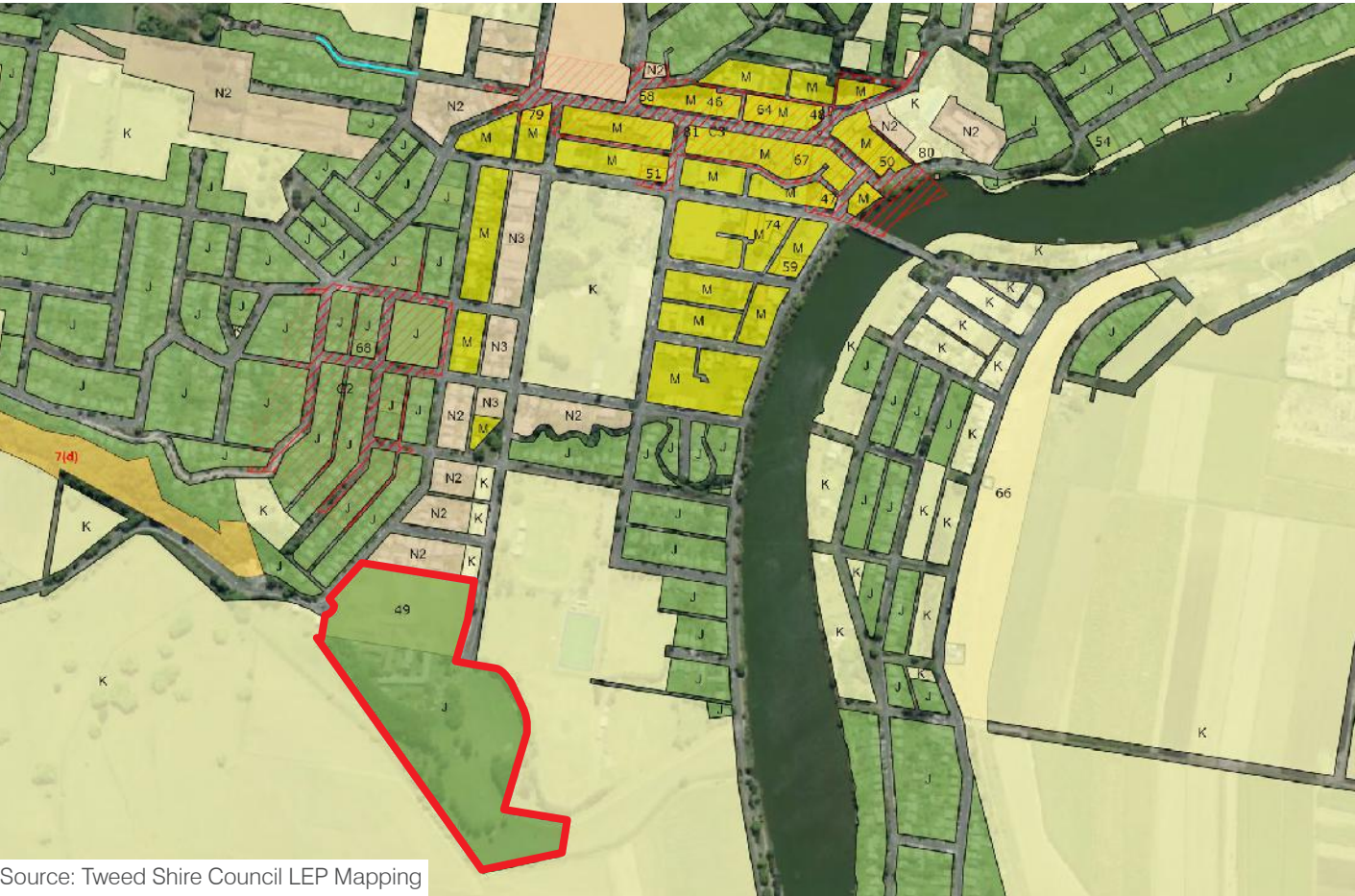
An area of vegetation within the school boundary to the south west is mapped as 'Vegetation Category 1' and 'Vegetation Category 3' and is classified as Bush Fire Prone Land. The nearest bushfire prone vegetation outside of the school boundary is mapped greater than 100m to the north west (approx. 160m).

A bushfire assessment has been undertaken and a resultant 'Landscape management Plan (Bushfire)' has been produced which demonstrates how the vegetation and surrounding landscape within the school boundary can be managed to a low threat mitigating the risk of bushfire. This is detailed within the landscape management plan prepared by 'Blackash Bushfire Consulting' Aug 2020.

Further to this there are avenues discussed within the Landscape Management Plan that discuss the possibility of modifying the Tweed Shire Council Bushfire Prone Land mapping to represent the low bushfire risk with the low threat vegetation that results from the ongoing maintenance and management.

- Legend
- - - Site Boundary
 - Green Open Space
 - Vegetation Category 1
 - Vegetation Category 2
 - Vegetation Category 3

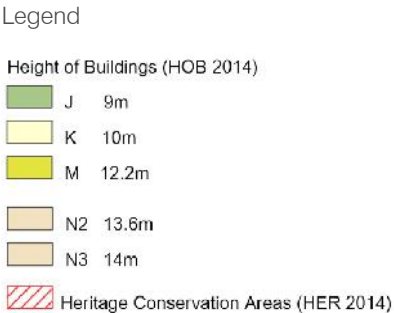
2.5 LEP Height Control



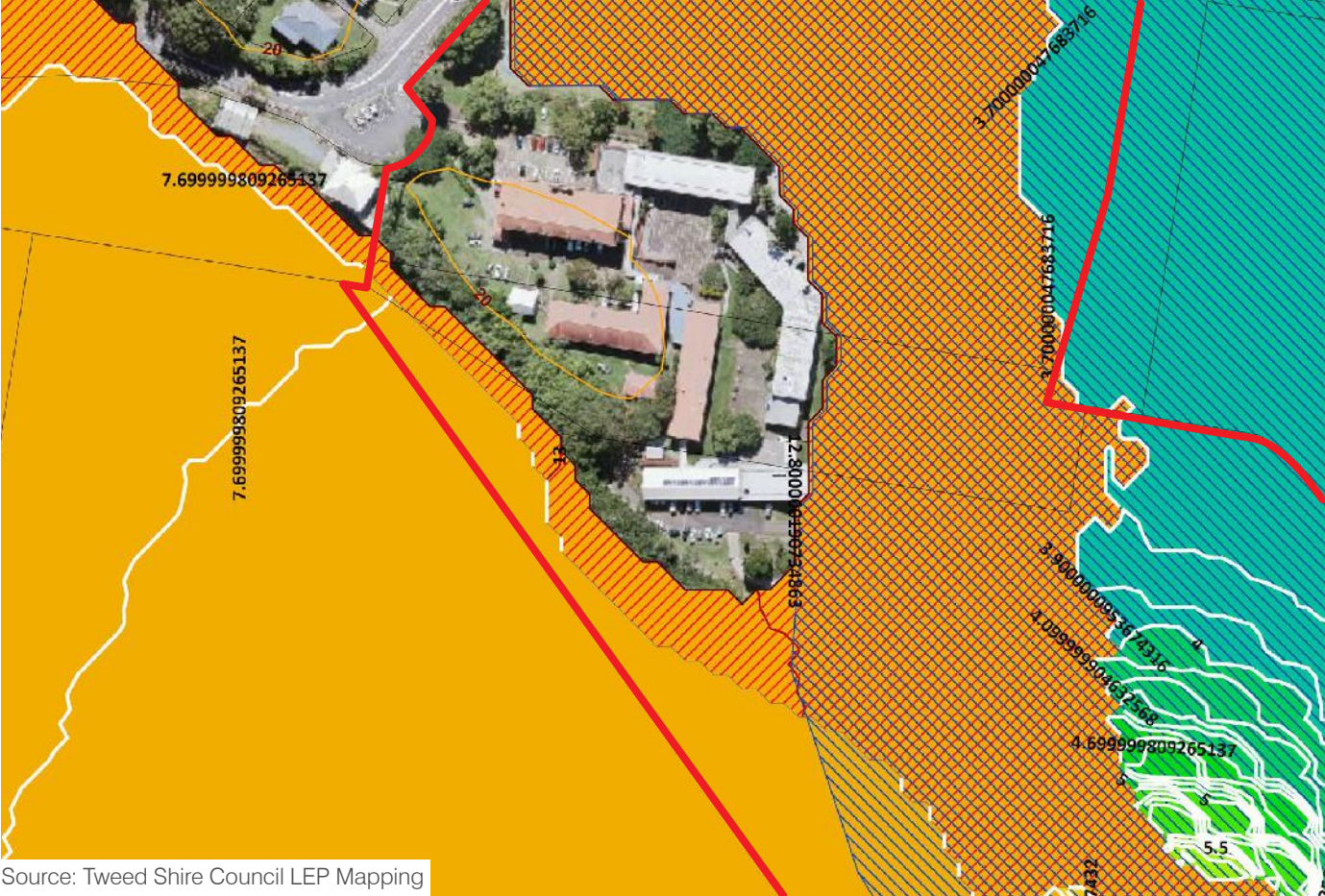
The maximum building height for the school site as shown in the Tweed Shire Council LEP 2014 is 9m, at odds with this is block A which was completed in 1929, sitting atop the high point of the site with its ridge line 14m above the natural ground plane. Similarly Block D constructed around 1968 has an effective height in excess of 10m.

The Statement of Heritage Impact recommends that new buildings constructed on the site should not sit higher than the ridge-line of Block A.

The surrounding land to the south and east have a 10m height limit, and the medium density zone to the north has a higher maximum limit of 13.6m.



2.6 Flooding



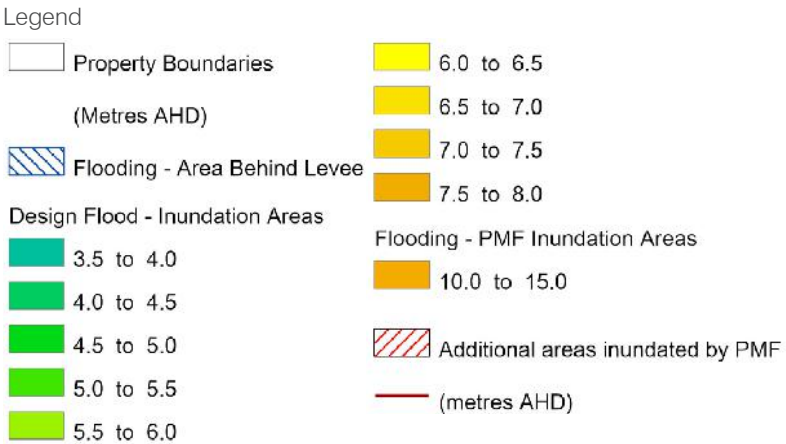
Murwillumbah has a long history with flooding. The Tweed River is a constant threat and it's difficult to ignore its impact when confronted by the levee walls that run along the riverbank, constructed after yet another major flood in caused significant damage to the town in 1974.

Careful consideration must be taken with it comes to mitigating the risk of flooding for these new schools.

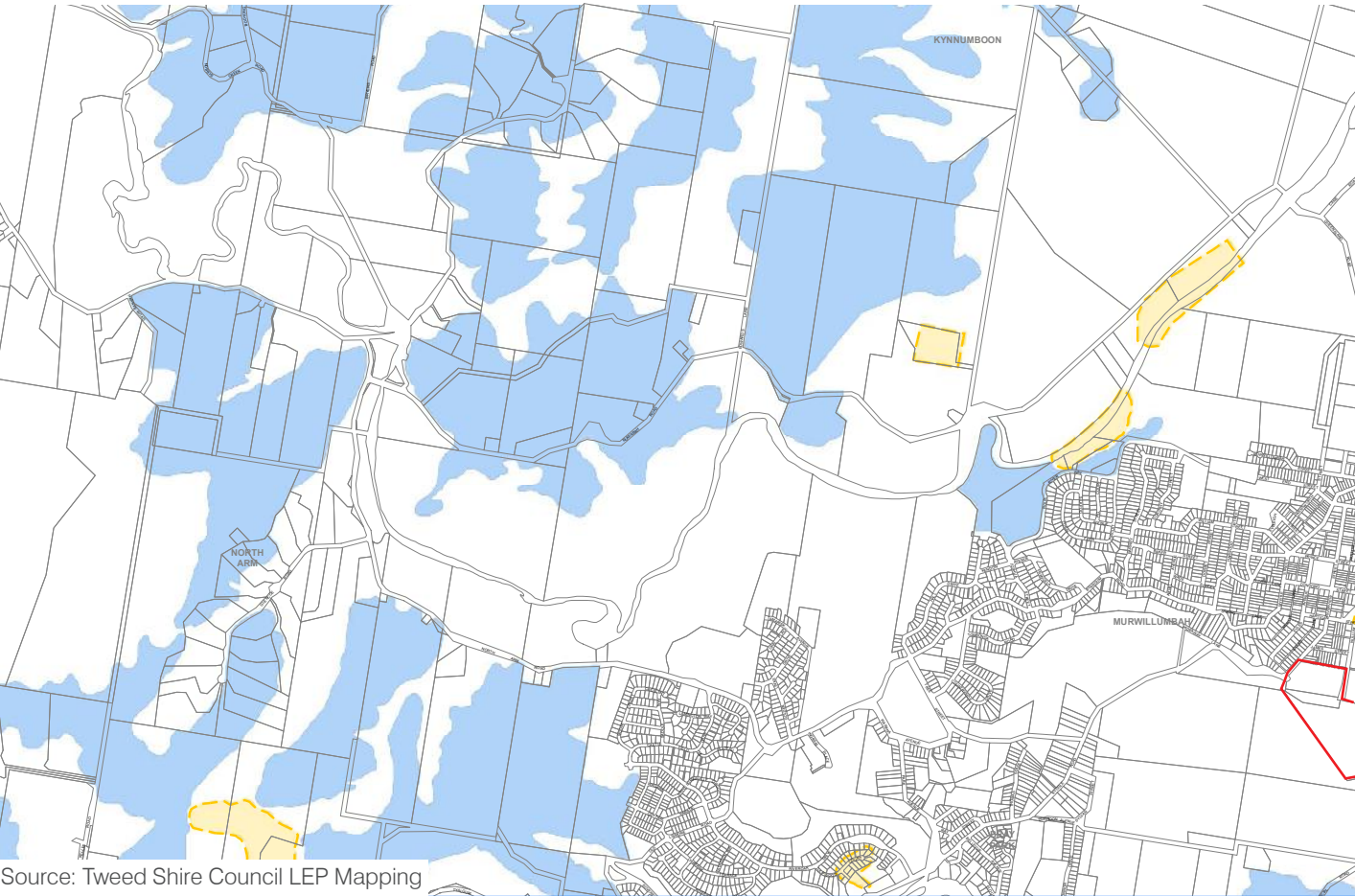
The level of probable maximum flood line (PMF line) in the Tweed Shire Council mapping leaves a portion of the site un-impacted. Most of the existing school buildings are in this area at the higher levels of the site, although there are several existing buildings that step down from the ridge that fall within the PMF zone.

The 1:100 year flood level would often be used as a

safe level to build above, but taking into account the flooding history and its frequency in Murwillumbah, during the masterplan phase a develop-able area boundary was created utilizing the 1:500 year flood line to mitigate the risk.



2.7 Indigenous Heritage Areas



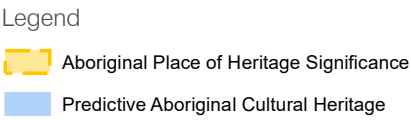
When referring to the ‘Map of Indigenous Australia’ Murwillumbah sits within the area of the Bundjalung people.

The Bundjalung people lived for many thousands of years in the Tweed Valley in the shadow of Wollumbin, an important and sacred site. Towering 1100m above sea level, Wollumbin is said to be Warrior Chief of the mountain. The existing school has great views of Wollumbin, the new school looks to retain and cater to these views. This varied landscape ranged from mountains to the sea, providing an abundance of food and materials that met all their needs

The foundation of the Bundjalung people’s beliefs was the Dreamtime. They learned from their fathers over the centuries that the land was created through the movement and creation of spiritual beings and the creatures of nature.

The following design Considerations were derived from the early consultation workshops with the local elders:

- Engaging with the community and Elders for consultation on the appropriate design initiatives that will respect the traditional owners and their practices of caring for country.
- Encouraging connection to nature with outdoor learning opportunities surrounded by native planting of the area
- Spaces to gather for sharing knowledge and stories of country
- Providing opportunities for learning from the land.



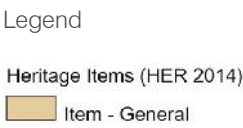
2.8 Heritage Areas



The school site was purchased in 1924 and ‘Block A’ a Georgian Inter-War style brick and concrete building was designed for the school and completed in 1929.

This building along with its surrounding brick podium is listed as of Local Heritage Significance in the Tweed Shire Council 2014 LEP mapping.

Block A sits at the highest elevation of the site and is therefore a prominent structure on the existing site with views to and from its setting. The Statement of Heritage Impact recommends that these views to Block A be maintained and restored in locations where new school structures have been built around it.



Site Analysis

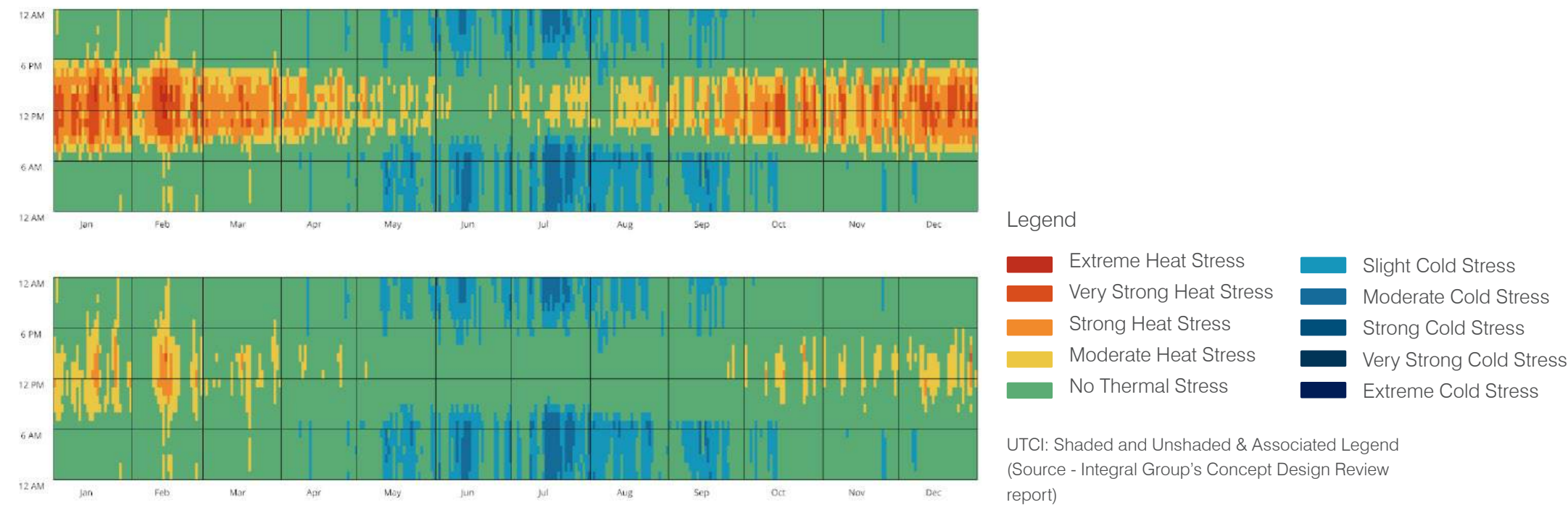
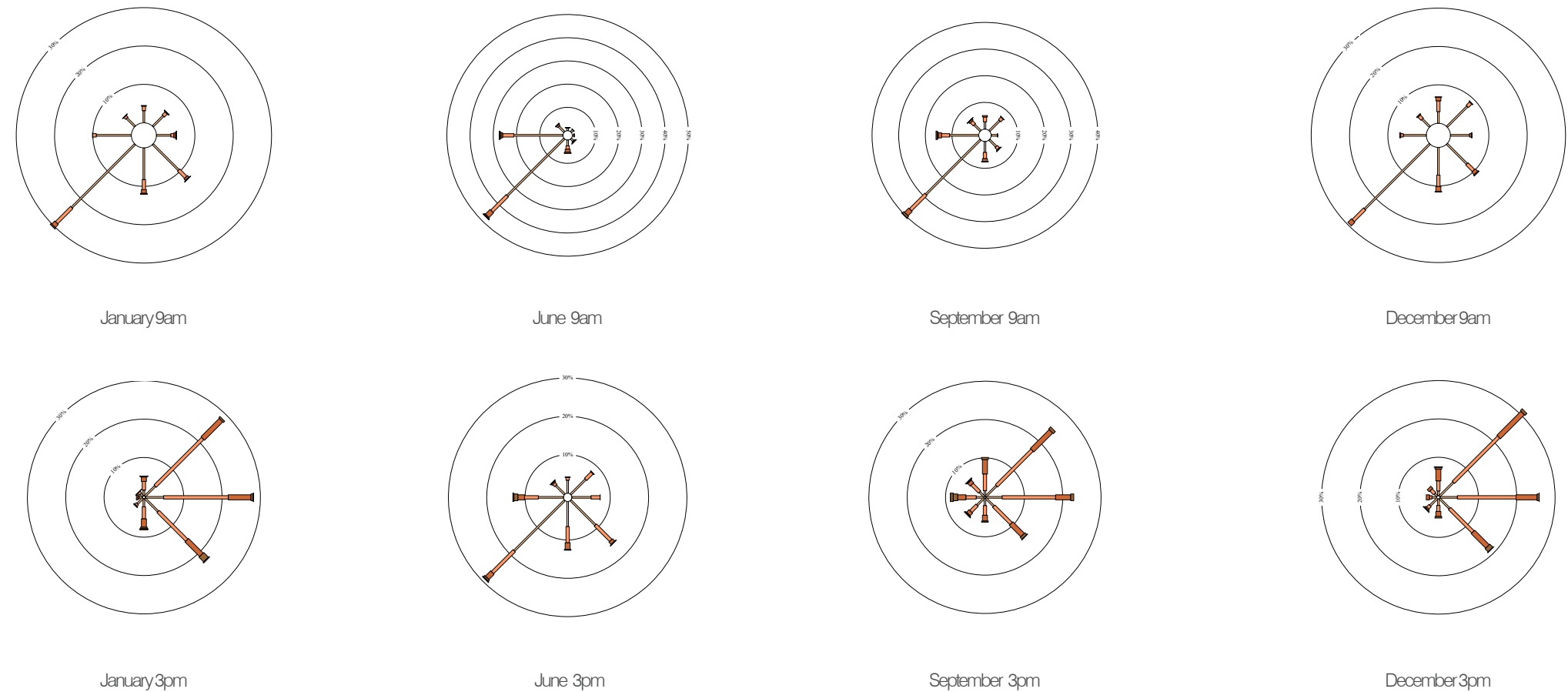
2.9 Climate - Wind and Solar Analysis

Situated in Regional Northern New South Wales, Murwillumbah's climate is temperate with yearly average temperatures of 19 degrees and an average rainfall of 1215mm.

Winds:
The adjacent wind rose diagrams explain the frequency of wind from different directions. Each branch makes up a part of the whole and together they amount to 100% of the wind during the allotted time frame.

These diagrams illustrate that, throughout the year, Murwillumbah experiences strong morning winds from the South-West, however, afternoon winds in the warmer months (September - December) come from the Northern and Eastern end of the site. The built environment will respond accordingly to capitalise on summer afternoon winds.

Solar Conditions:
The site experiences consistent moderate heat at midday throughout the year. Without shade, extreme heat stress will be experienced from October to April, however the application of shade can significantly reduce this heat stress. The adjacent diagram "UTCI: Shaded and Unshaded" demonstrates the reduction of heat stress in shaded areas.



Site Analysis

2.10 Character

Murwillumbah is located on the North Coast of New South Wales (NSW), approximately 130km south of Brisbane, and 13kms from the QLD/NSW border.

The majority of the surrounding built context of Murwillumbah follows an architectural typology known as the Queenslander, which utilizes a lightweight construction that provides natural ventilation and elevates the houses to allow for them to be built on the steep and complex terrain of the existing landscape.

The figure ground diagram illustrates the built form, scale and density in Murwillumbah and demonstrates the importance of the landscape and open space in between built form.



Existing local housing situated within the landscape



Existing local housing, Queenslander construction



Murwillumbah urban figure ground character including existing site.

Site Analysis

2.11 Heritage Building A

Building A is a Heritage listed building on the site and will be maintained as part of the proposal.

The buildings is a Georgian Inter-war style with a brick and concrete form. Construction was finished in 1929 and the school opened soon after.

After a review of Building A, the following opportunities and constraints have been identified:

Opportunities

- 1. Active Heritage re-use - good condition, regular maintenance
- 2. Picturesque views from upper floors
- 3. Generous, high ceilings and daylight provision - passive ventilation of circulation space

Constraints

- 1. DDA compliant access challenge - connection to other buildings
- 2. Proposed new finishes require careful consideration
- 3. Terrace to north falls to heritage wall
- 4. Lack of services - bathroom / amenities
- 5. Mechanical AC interventions aren't sympathetic to Heritage



2.13 Constraints

The existing campus is situated on steep terrain that poses difficulty for equitable circulation throughout the campus. The density of existing buildings poses complications to refurbishments.

The diagram to the right highlights identified key constraints on the existing site which have influenced design development.

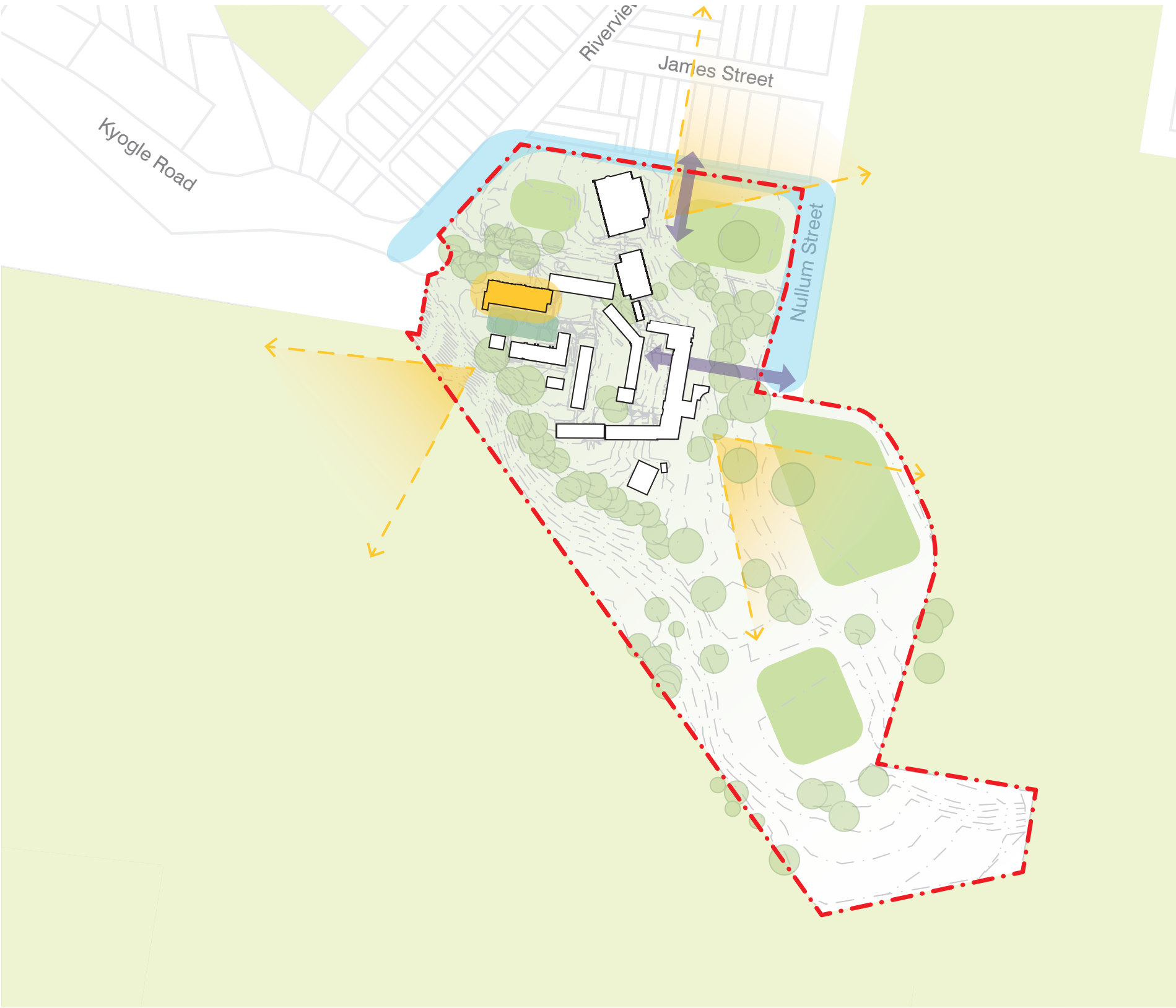
-  – Level of 500 year flood (RL 7.5)
-  – Level PMF
-  – Topography / Accessibility (14m fall across the site, existing buildings sitting at multiple independent levels)
-  – Bushfire prone area (along South Western boundary)
-  – Proximity of neighbours to the Northern boundaries
-  – Site Access (Riverview Road, drop off on busy corner)
-  – Heritage (Block A and 3-4m high retaining wall in front of block A)
-  – Built height of new buildings must not exceed the roof height of Block A (As per the Statement of Heritage Impact)
-  – Existing building A & F to be retained and incorporated into the new campus
-  – Numerous existing mature trees.
-  – Easement



2.14 Opportunities

The site presents opportunities illustrated in the the diagram to the right with the accompanying legend highlight identified opportunities.

-  – Opportunity to reinforce connection to landscape in all directions.
-  – Opportunity to improve connections between buildings and landscape
-  – Existing natural platforms can be used for collective gatherings and sports fields
-  – Retention of mature trees on the site
-  – Potential to improve clarity, safety of traffic network, and access to the site
-  – Opportunity to enhance school identity through clear entry points







3 Design Vision & Approach

This section includes the key principles and project vision driving the approach for the concept design.

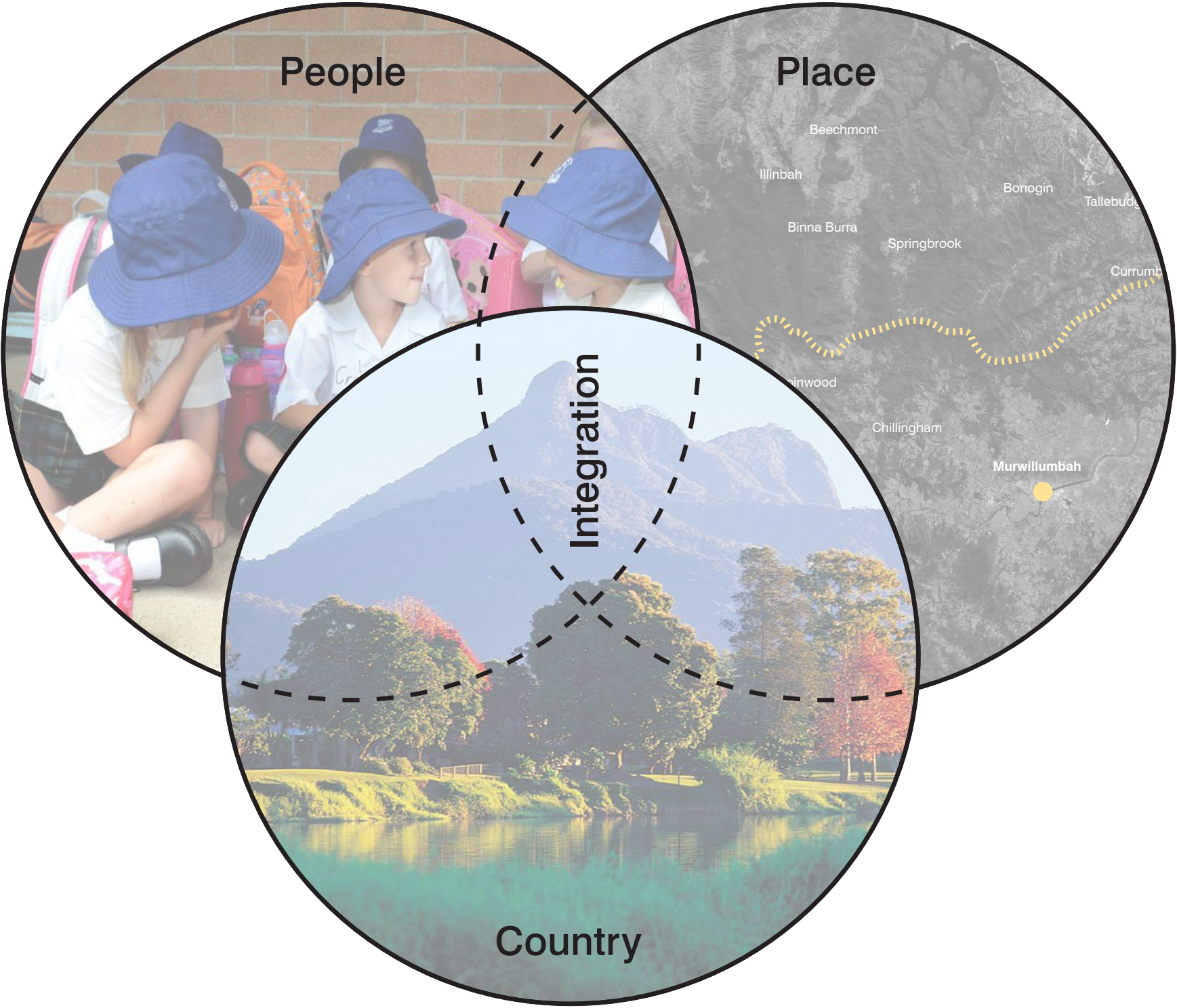
MEC Vision

Murwillumbah Education Campus is an inclusive, collaborative and inspiring environment where students are nurtured, known and enabled to thrive. Our students succeed and positively contribute to a dynamically changing world.



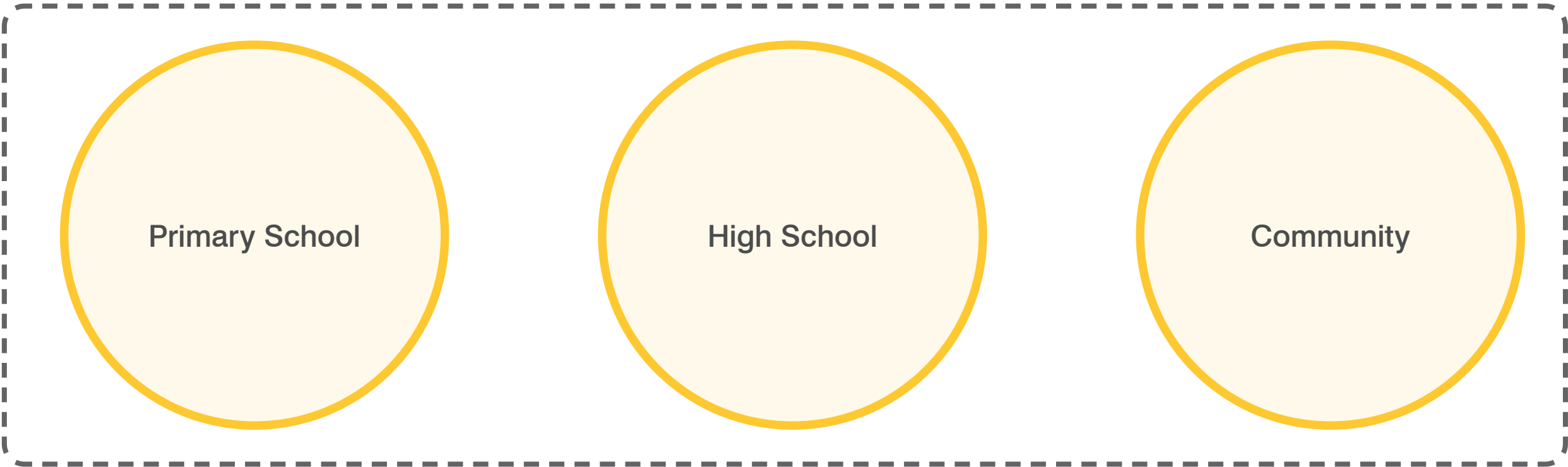
3.1 Design approach

The design is developed through three aspects derived from the existing context including; people, place, and country. The design therefore exhibits an inclusive, balanced and comprehensive approach.

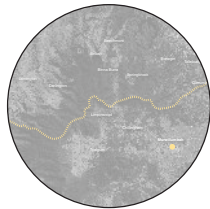




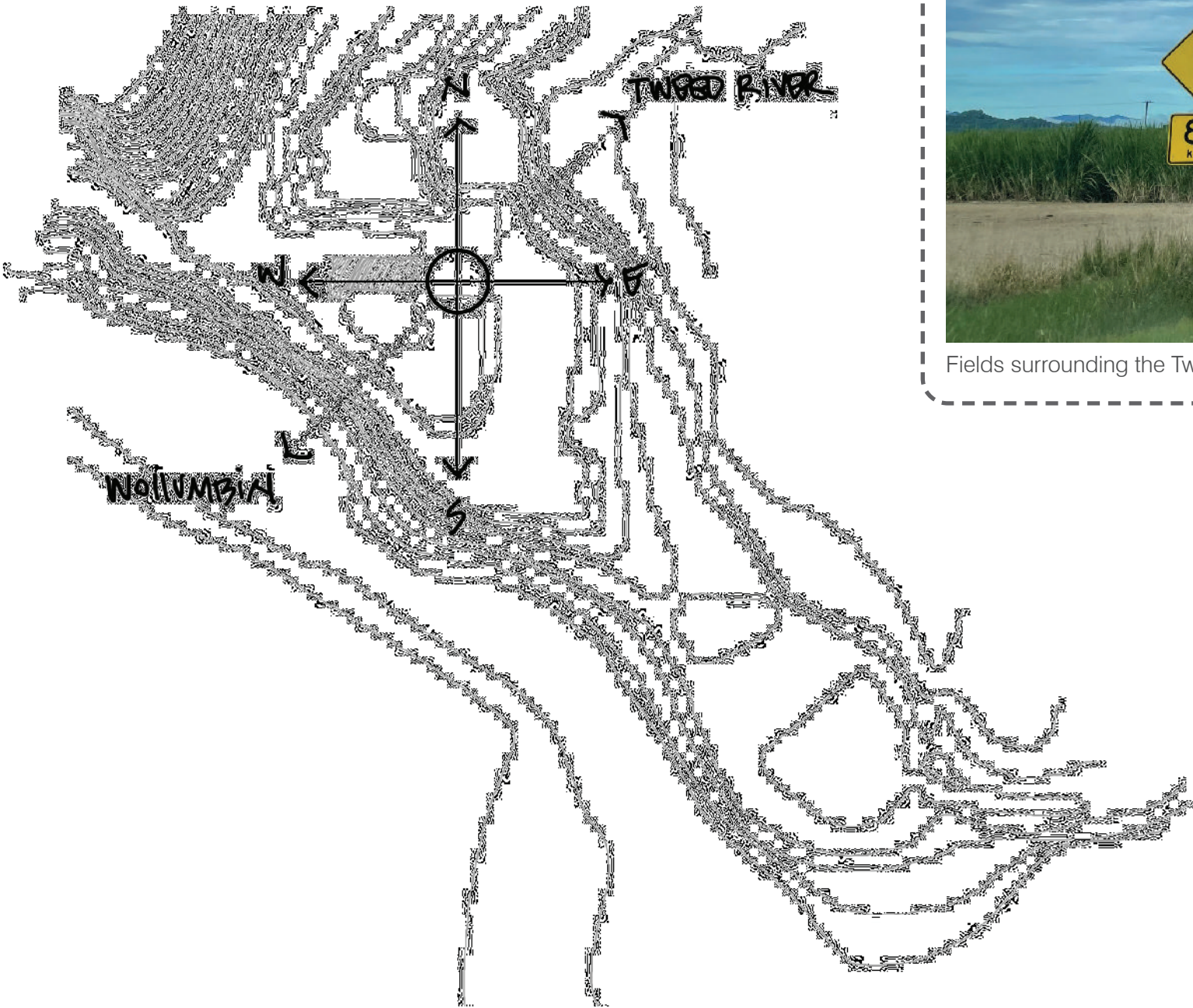
People



The people that will be using these buildings are made up of the Primary School students, High School students, and the surrounding community, and will all be integrated into a singular campus that is used by all.



Place



Fields surrounding the Tweed River



View towards Wollumbin

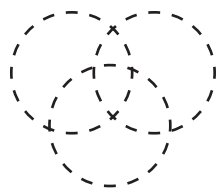
The site has a deep relationship with the surrounding environment. Due to its topography there is a visable connection towards the surrounding natural landmarks.



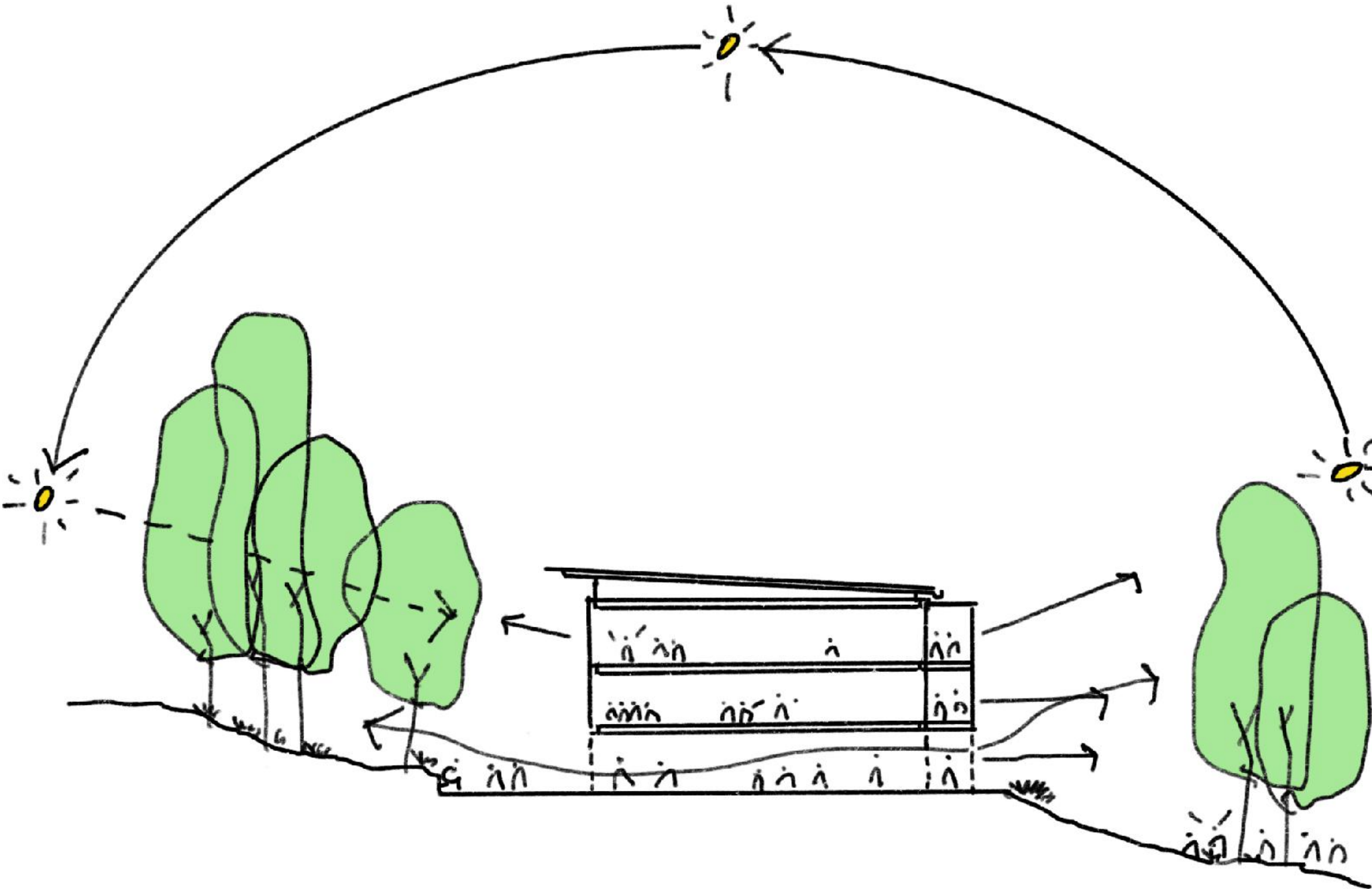
Country



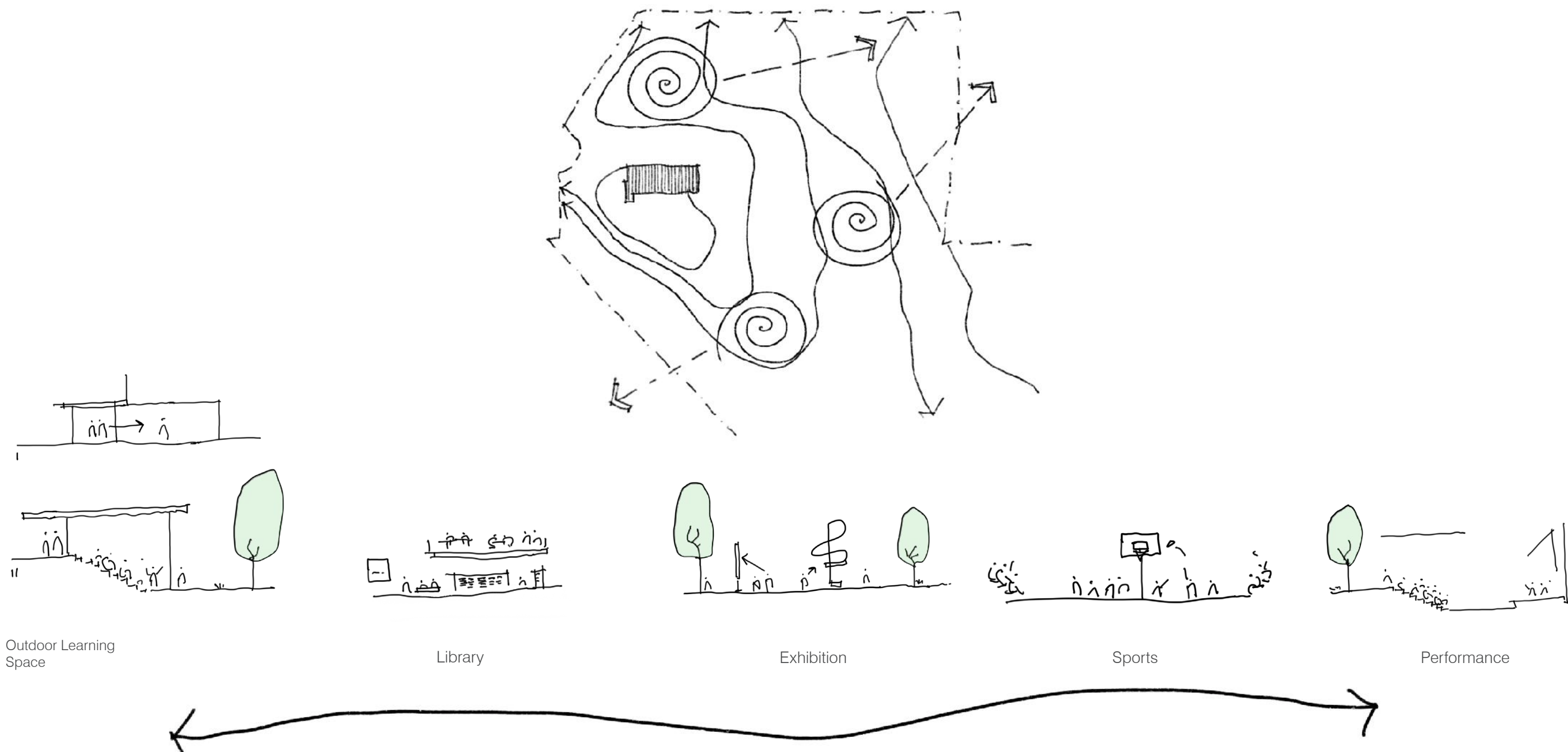
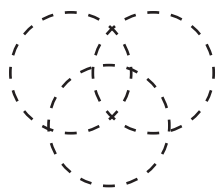
Murwillumbah is located between the mountains and the sea, connected by the Tweed River. The design pays homage to this taking advantage of views to the Wollumbin, the river and the town.



Integration



Architecture that integrates people and place by encouraging students and staff to occupy the spaces in between



The school experiences are linked through the existing contours on site and outdoor gathering spaces are in direct relationship to place

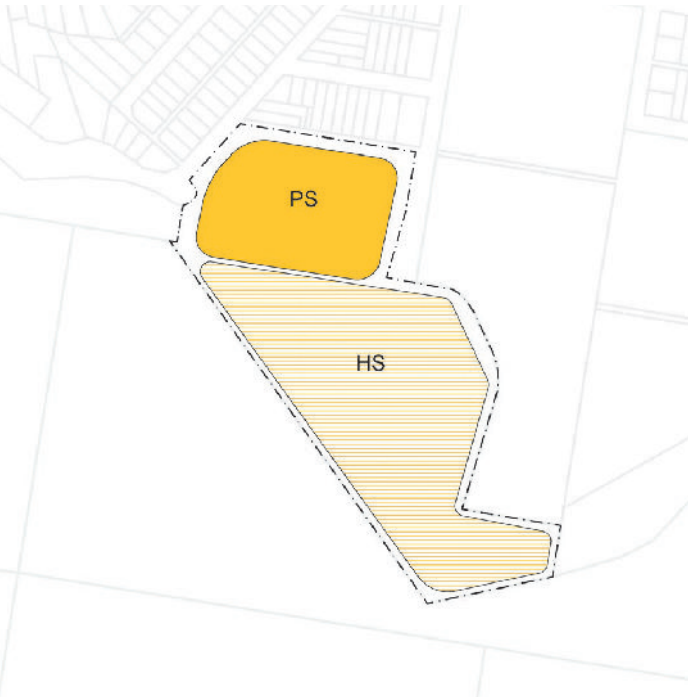


4 Masterplan

The following pages describe the Masterplan developed by Architectus

4.1 Masterplan - Strategies

In the development of the masterplan and built form, the following key moves were identified and have guided the exploration of the campus footprint.



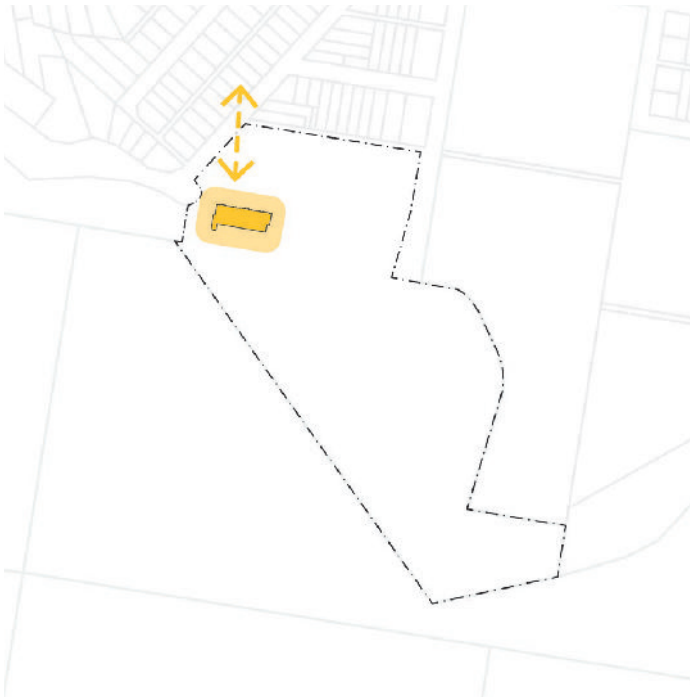
PS & HS Zones

The Site is split to accommodate both PS & HS.



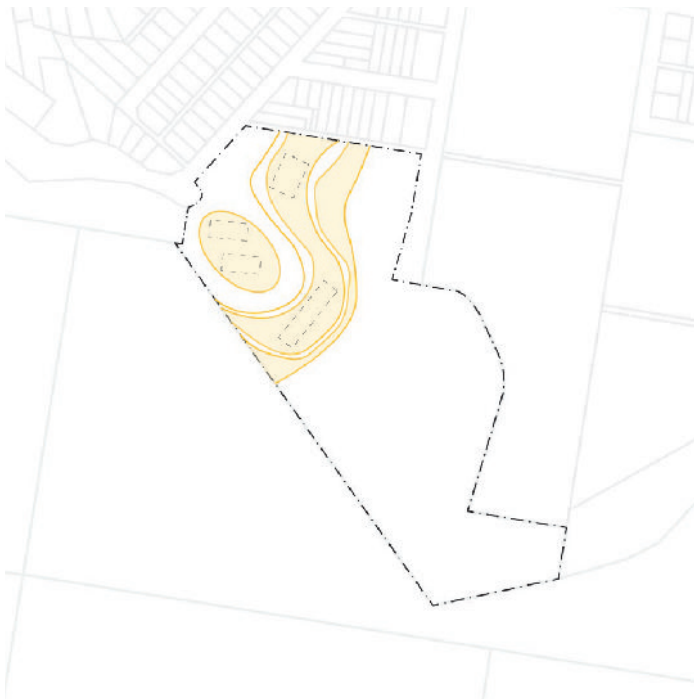
Entries

The entries are located at the lower end of the site off Nullum Street for ease of access and are clear, consolidated access points to the campus.



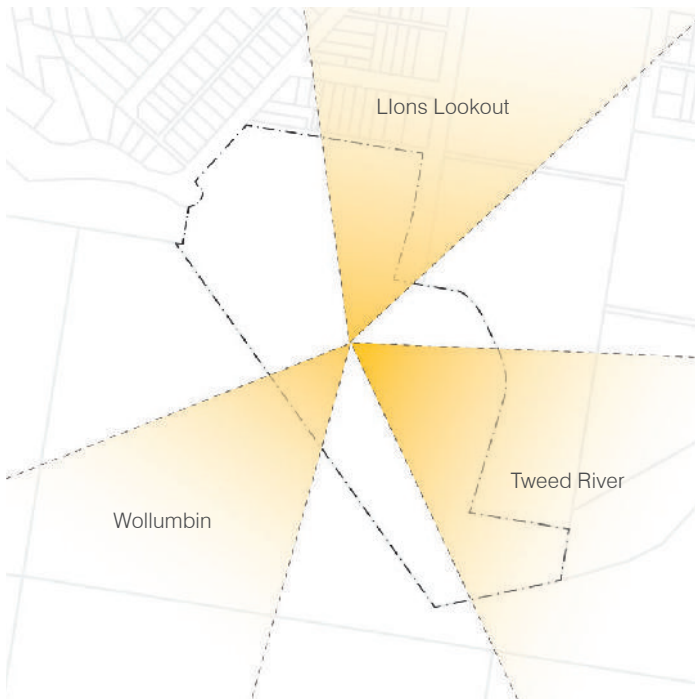
Heritage

The existing heritage building A is retained and celebrated through the retention of existing views from Riverview Street.



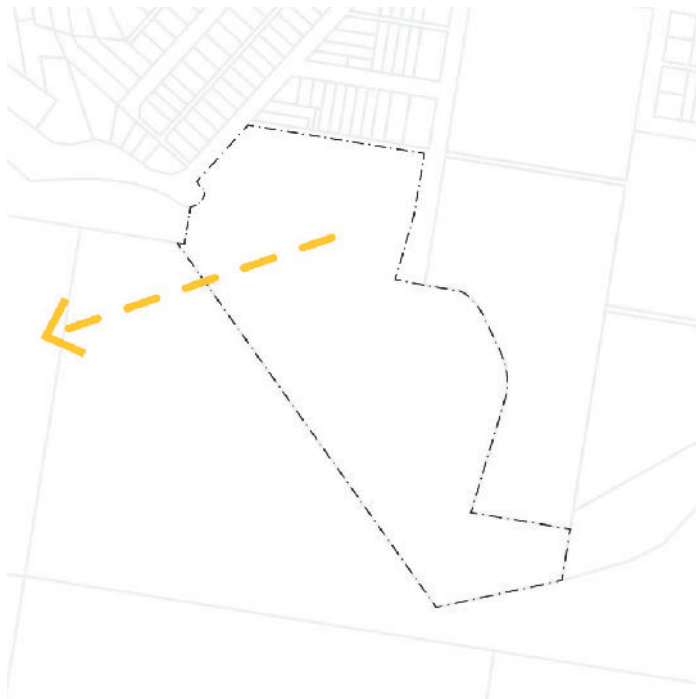
Common Grounds

The existing contours are utilized to influence natural connections through the site.



Views

View to the existing natural landmarks and surroundings are encouraged and enforced.



Wollumbin

Wollumbin is a very strong feature in the surrounding landscape. The future school campus creates views towards the mountain to engage with its presence.

4.2 Masterplan - Built form analysis

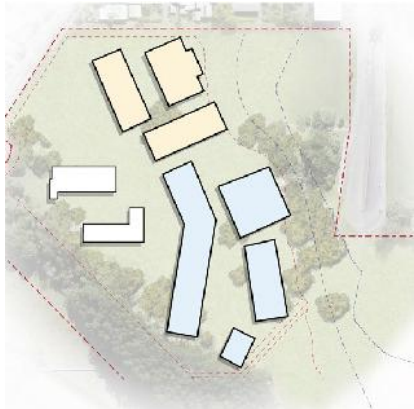
Architectus explored multiple options before proceeding with an approved masterplan. The following pages indicate the variety of proposals analysed throughout the concept design phase.

On the sequential page, an assessment of three options (option 9, 10 and 13) was undertaken. The page provides key advantages and disadvantages of each scheme.

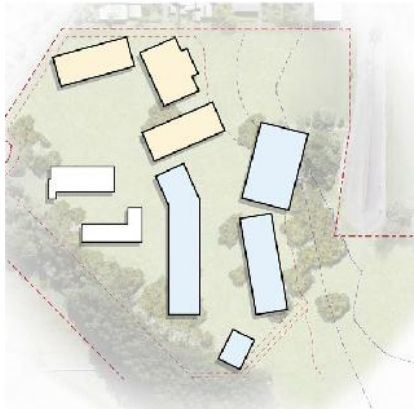
A variation of option 10 has been endorsed and used to develop the proposal in concept and schematic design.



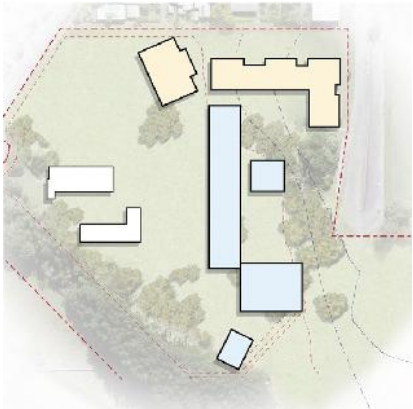
OPT 1



OPT 2



OPT 3



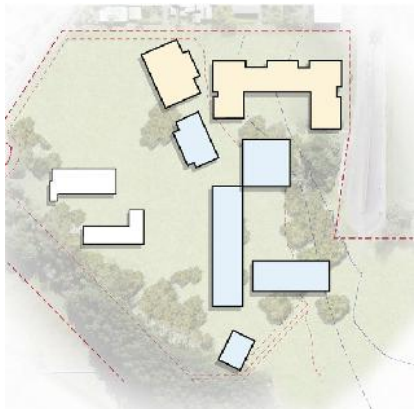
OPT 4



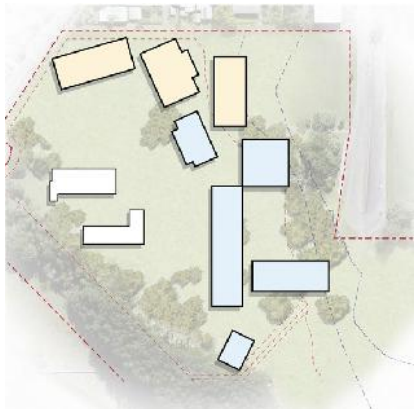
OPT 5



OPT 6



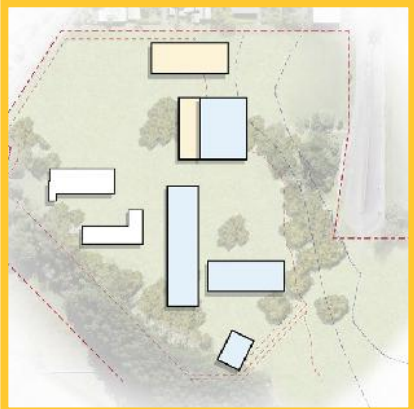
OPT 7



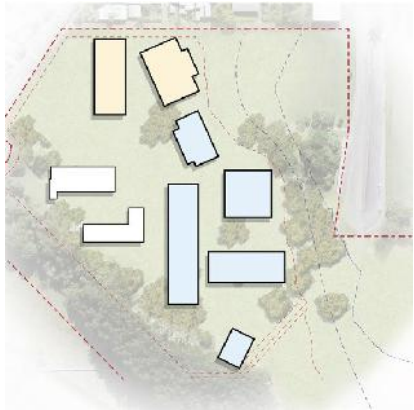
OPT 8



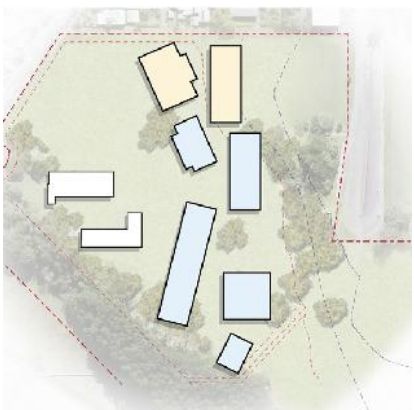
OPT 9



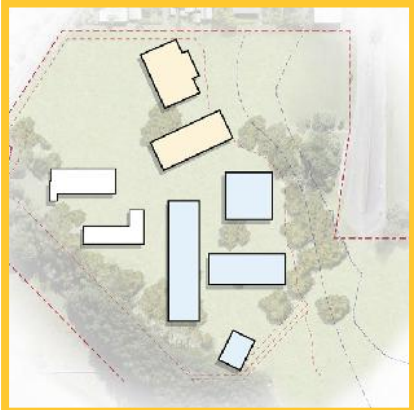
OPT 10



OPT 11



OPT 12



OPT 13

Legend

- PS

- HS

OPT 9



Advantages

- Creates clear arrival from Nullum Street
- Creates new identity for school with new buildings

Challenges

- Fit out of existing buildings creates departures from EFSG
- Connection from Primary school to building A is circuitous
- Providing on-site parking
- Removal of 2 trees adjacent memorial cluster
- High school assembly cannot expand

Preferred Option 10



Advantages

- Creates clear arrival from Nullum Street
- Creates new identity for both schools with new buildings
- Creates a K-12 arrangement on the campus, allowing for shared spaces
- Combined hall provides for large school and community events
- Large central campus assembly area
- All buildings are new – DfMA and future focused learning for all spaces
- Creates a campus heart
- High school outdoor central space is large and contiguous
- Primary school has a clear school heart
- Future expansion completes coherent masterplan

Challenges

- Connection from Primary school to building A is circuitous
- Providing on-site parking

OPT 13



Advantages

- Creates clear arrival for primary school and high school from Nullum Street
- Creates new identity for school with new buildings

Challenges

- Fit out of existing buildings creates departures from EFSG areas
- 6 storey primary school building could appear like mega school
- Connection from Primary school to building A is circuitous
- Providing on-site parking
- High school assembly cannot expand

4.3 Masterplan - Site Plan

The adjacent plan is reflective of the further development of the preferred masterplan. This option was selected to proceed and is represented in the architectural drawing set.

After further discussion, the preferred masterplan option, represented on the previous page, was altered by demolishing existing building H, adjacent to building A, to provide additional car parking on the site. The resulting masterplan design creates a school campus that is connected to place and integrates with its existing landscape by working with the topography of the site and locating buildings on common contours across the site. This connection to landscape provides opportunities for indoor outdoor learning environments, and explores the notion of the space “in-between”.

The overall strategy will create a new identity for MEC. along Nullum Street, while maintaining heritage views from Riverview Street.

Primary School

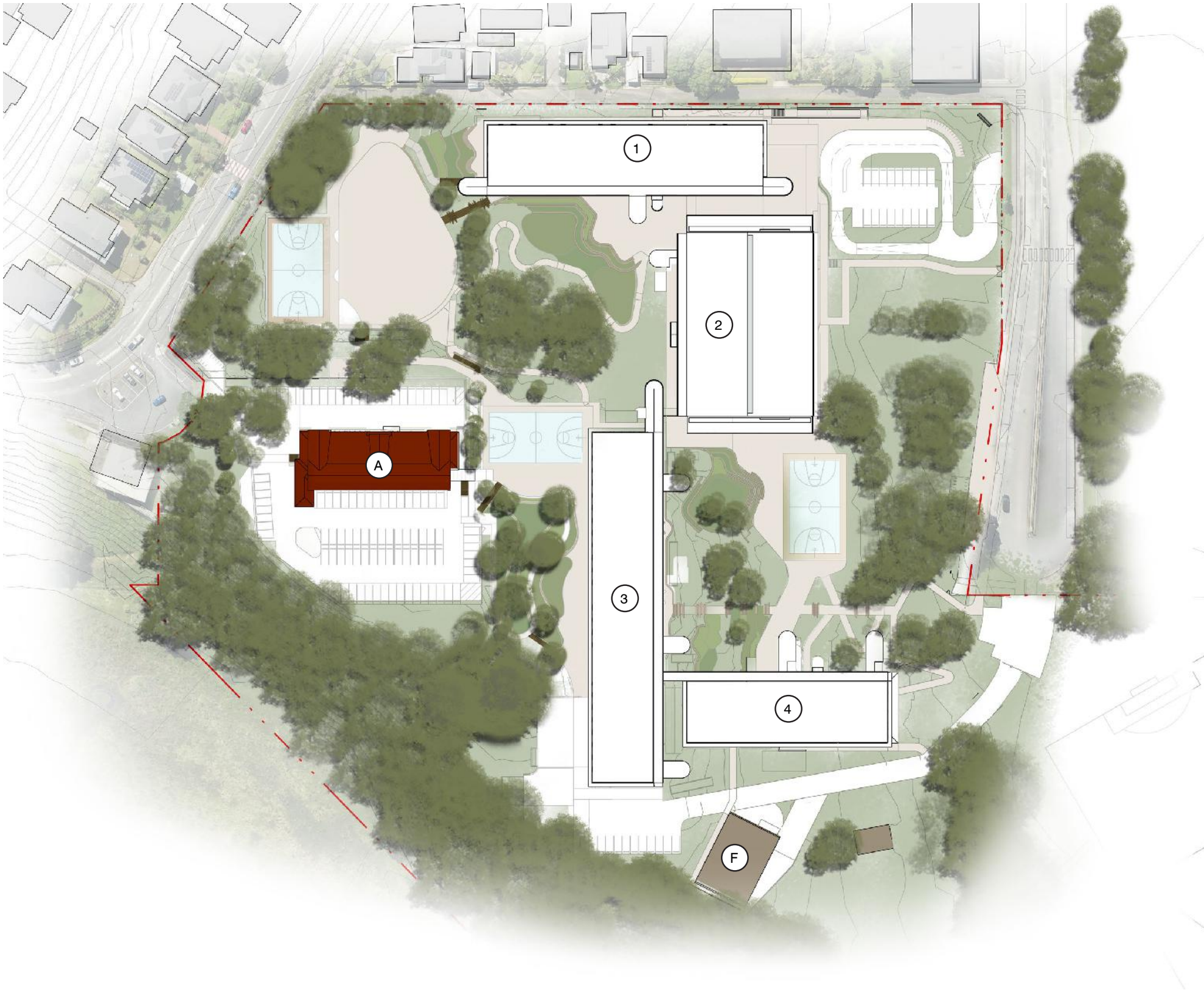
- ① GLS + Admin + Special Support Unit + PS Library + PS Staff

Hall & Gym Facilities

- ② PS Hall + PS Canteen + OSHC + Kiln + HS Gymnasium + Performance/Fitness + Health and PE + Movement Studio + HS Canteen + HS Staff

High School

- ③ HS Support + HS General Learning + HS Library + Workshop + HS Staff
- ④ HS Admin + HS Staff + HS General Learning + Specialist Spaces + Science
- Ⓐ Department of Education + Health Hub + MCR
- Ⓕ Agriculture Learning Unit



4.4 Landscape Masterplan

The drawing to the right illustrates the landscape design.

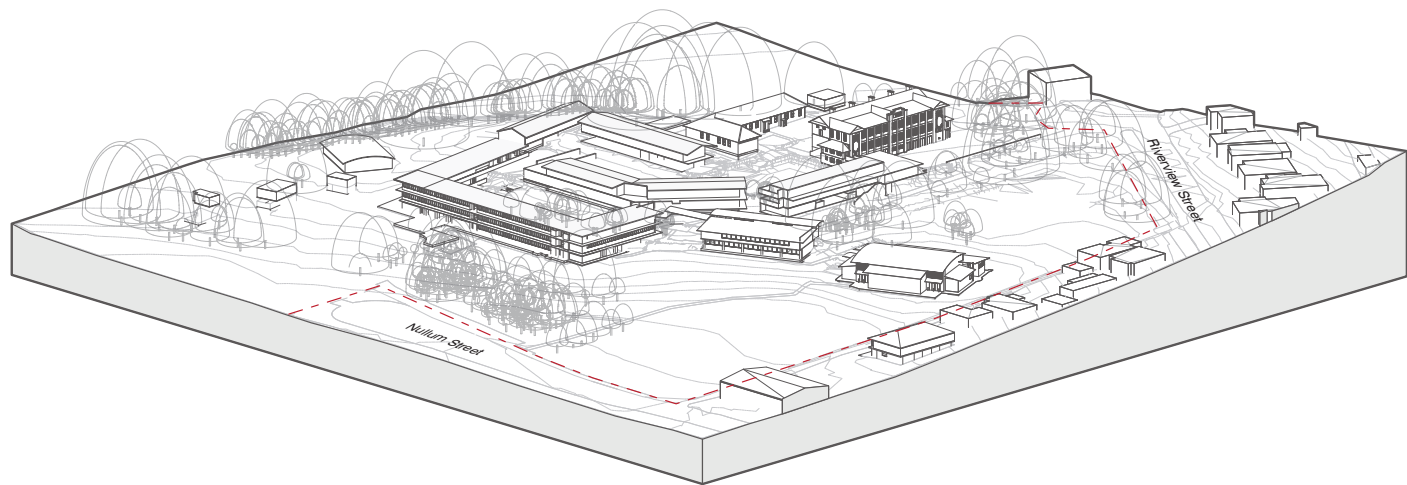
The masterplan design creates a school campus that is connected to place and integrates with its existing landscape by working with the topography of the site and locating buildings on common contours across the site. This connection to landscape provides opportunities for indoor outdoor learning environments, and explores the notion of the space “in-between”.

The overall strategy will create a new identity for MEC along Nullum Street, while maintaining heritage views from Riverview Street.



4.5 Built Form Development

The following section evaluates the existing site conditions and how the proposed campus generates opportunities from the identified site constraints.



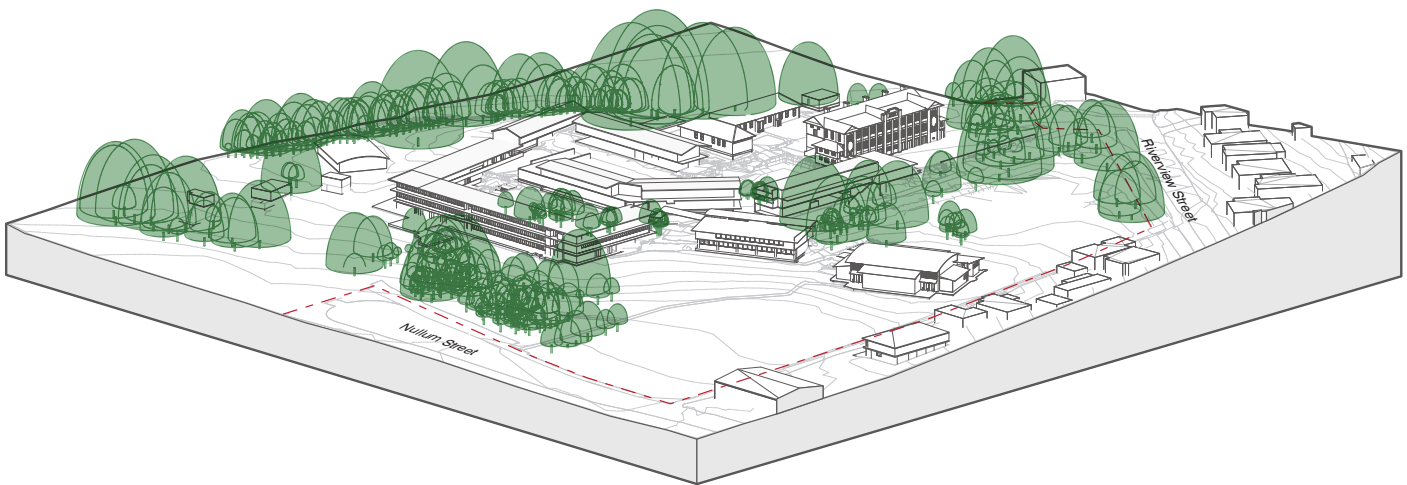
Existing Site

The existing site is crowded with a large number of existing trees and buildings. This allows for a little amount of room for the new proposal.

The site is also subject to flooding, bush fires, and has existing services running through the site. All of which required a specific setback

Legend

- - - - - Site Boundary



Existing Trees

The existing trees on the site cover a large majority of the site and are comprised of mostly high to medium value trees that should be retained.

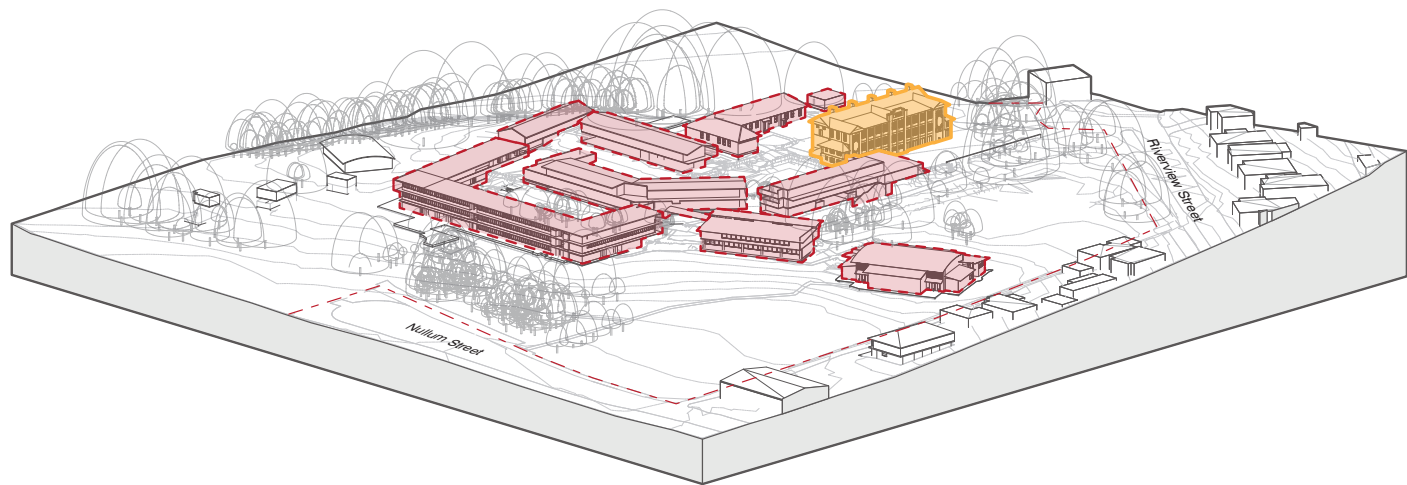
The trees within the cluster to the east near Nullum Street are the “Memorial Trees” and are highly valued by the local area. The large cluster to the south is comprised of mostly pine trees which creates the need for a bushfire setback.

Legend

- - - - - Site Boundary

Existing Trees

Masterplan

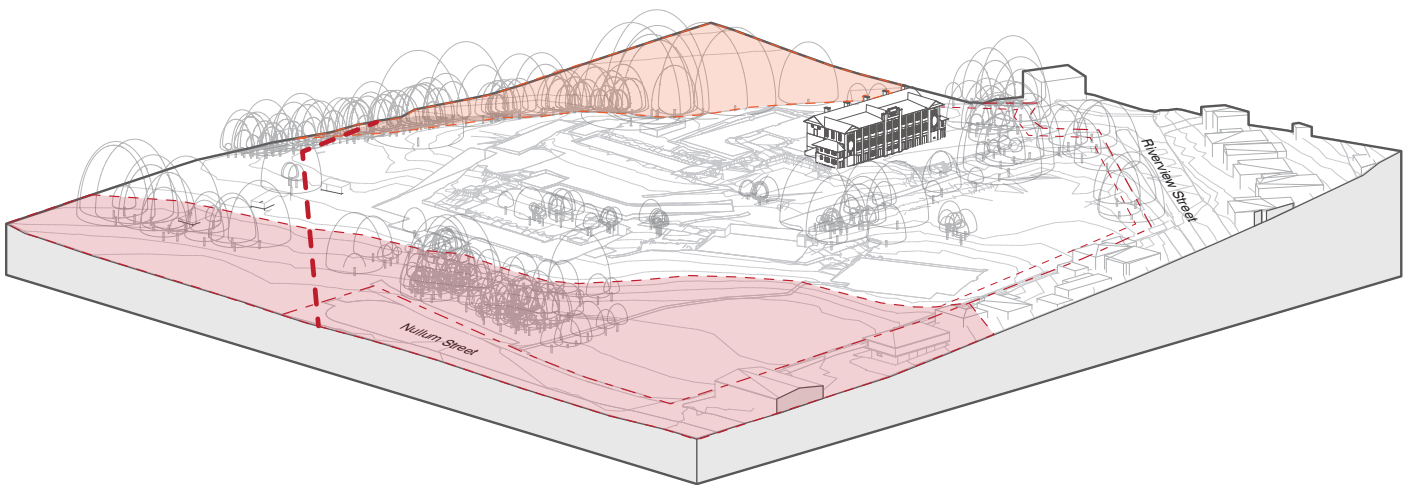


Existing Buildings

Given the majority of the site is covered by high valued trees on steep topography, a large amount of the existing buildings are set to be demolished in order to make room for the new proposal.

The existing heritage building A is at the top of the site and the existing agriculture facility, building F, are to be retained and utilized within the scheme.

- Legend
- - - - - Site Boundary
 - Existing Trees
 - - - - - Existing Buildings to be Demolished
 - Existing Heritage Building

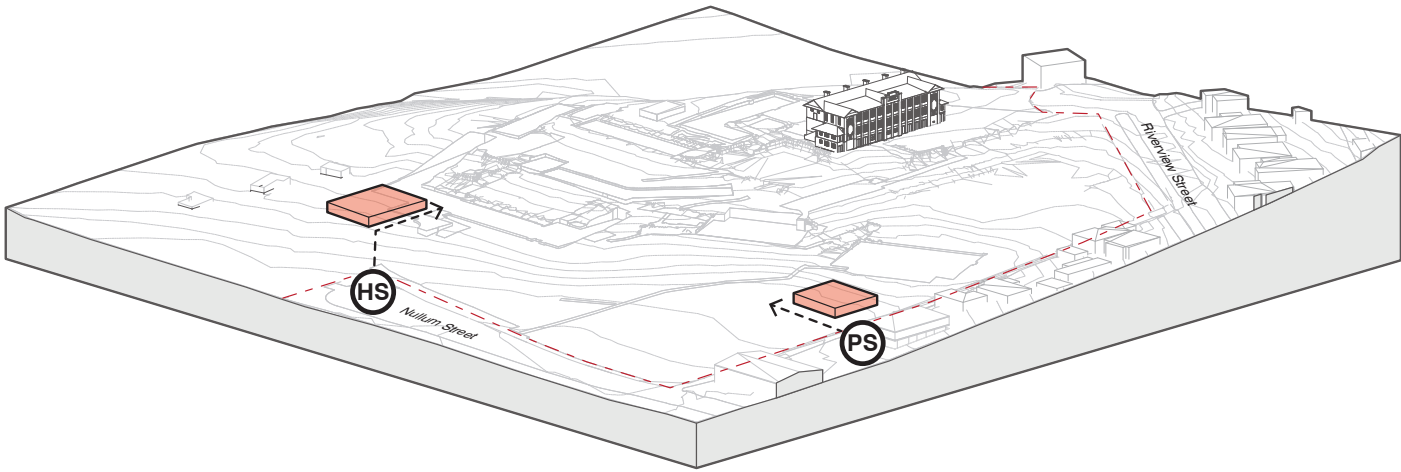


Setbacks

Due to the sites geographical location it is subject to flooding. The area shown in red is the 1 in 500 year flood level (RL7.5) and sets the boundary/ level for any proposed building in the vicinity.

The large cluster of pine trees to the south create the need for a bushfire setback, which is shown in orange, and there is an existing services line which runs from the east to the west near building F and along the southern boundary of the site.

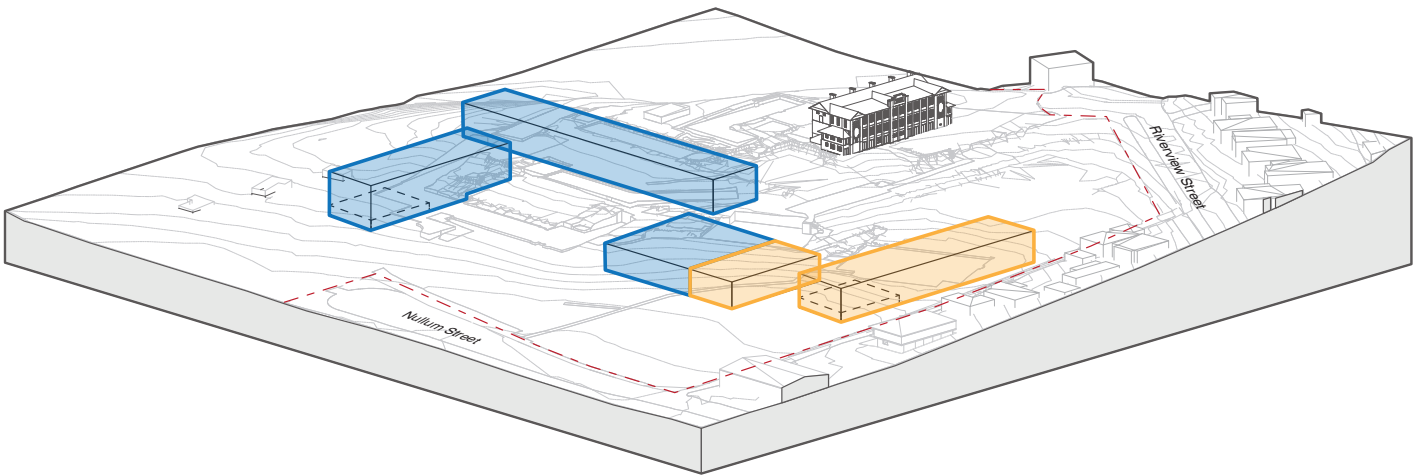
- Legend
- - - - - Site Boundary
 - Flood Setback
 - Bush Fire Setback
 - - - - - Existing Services
 - - - - - General Setback



Admin/ Entry Placement

The steepness of the topography poses an issue of accessibility to the buildings so admin is placed at the lower end of the site. The primary access is directly off Nullum street or the lower end of High School Lane to allow for clear front doors and easy access to a lift or pathway to each level the proposal.

- Legend
- - - - - Site Boundary
 - Admin
 - > - Entry

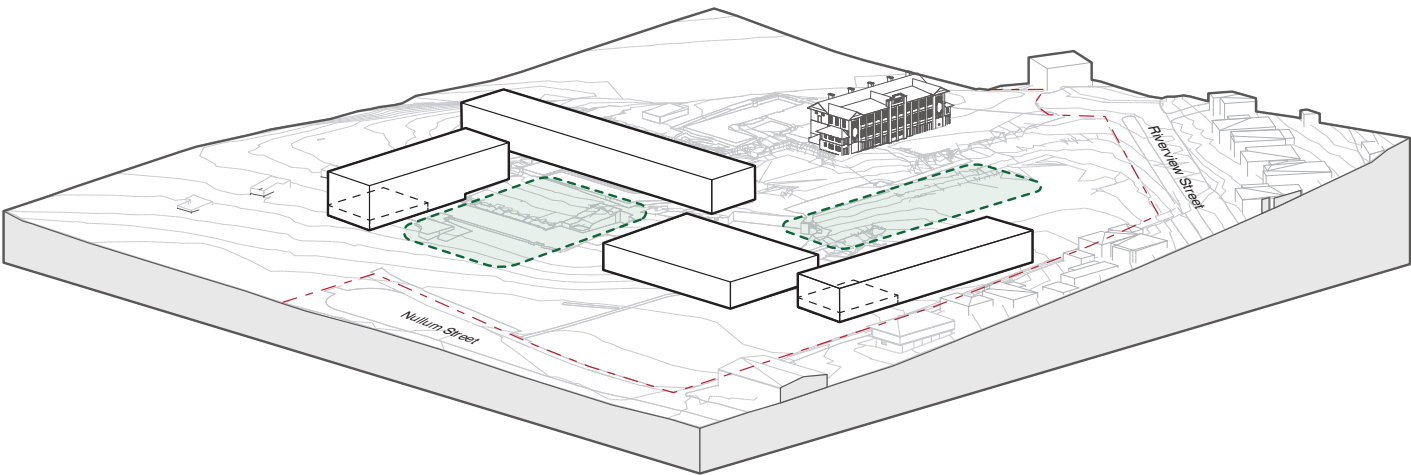


Building Placement - Along Contours

The large buildings with the most amount of program and area are placed along the contours of the site to minimise any impact on the surrounding site through cut, fill, and the like.

- Legend
- - - - - Site Boundary
 - PS Building Location
 - HS Building Location

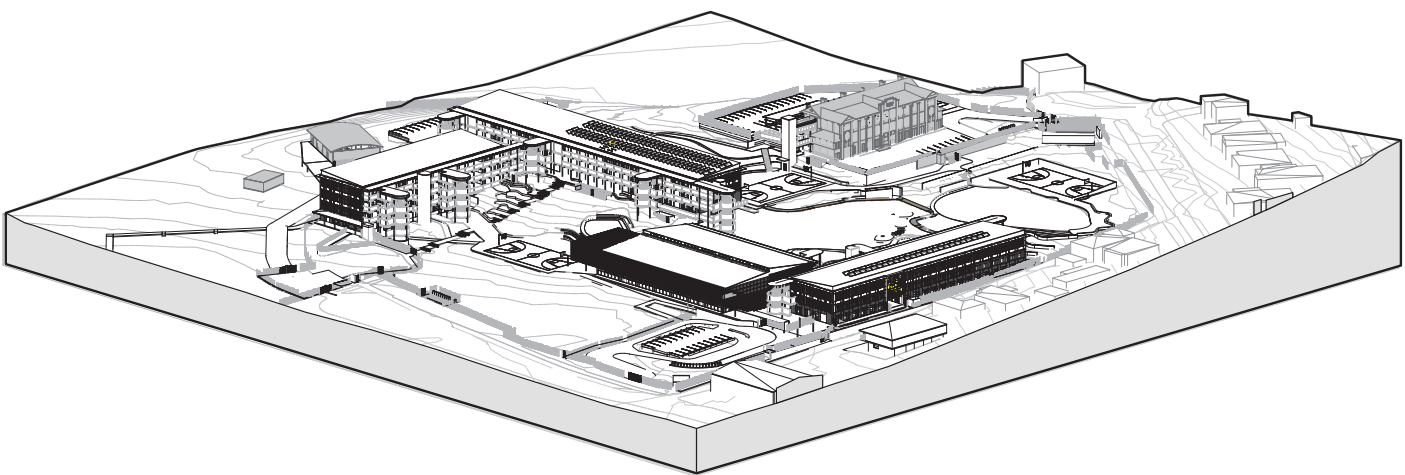
Masterplan



Building Placement - Creating School Hearts

The smaller buildings are placed as “book ends” to the primary axis created by the larger buildings and create two separate, protected hearts for each school

- Legend
- - - Site Boundary
 - Proposed Building
 - Open Space



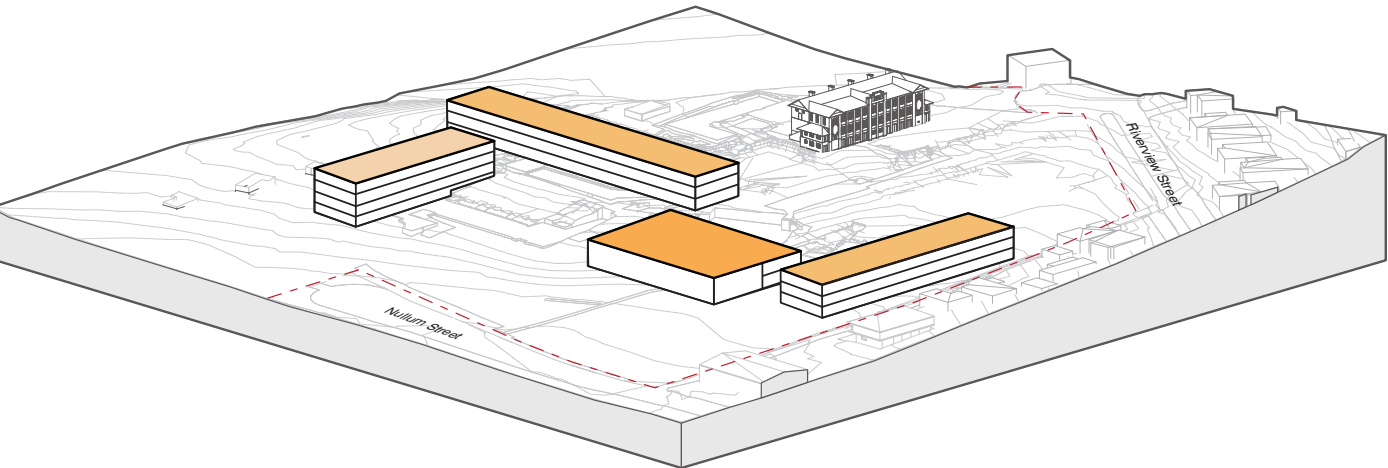
Final Proposal

The resulting proposal rests on the natural topography of the site with a minimal impact on the existing trees, while also avoiding any services or bush fire setbacks. Where the buildings push into the flood effected area they are raised above the prescribed 7.5 m level.

Each school then harnesses the landscape into a protected, natural environment to allow for an outdoor learning experience.

- Legend
- - - Site Boundary

4.6 Reponse to Urban Context



Height

The integration with the surrounding developments, topography, and context is an important consideration when it comes to building height.

The proposed buildings are all positioned at the lower end of the site and, given its steep topography, the natural buildings' overall heights are below or slightly above the natural ground line at the upper end of the site.

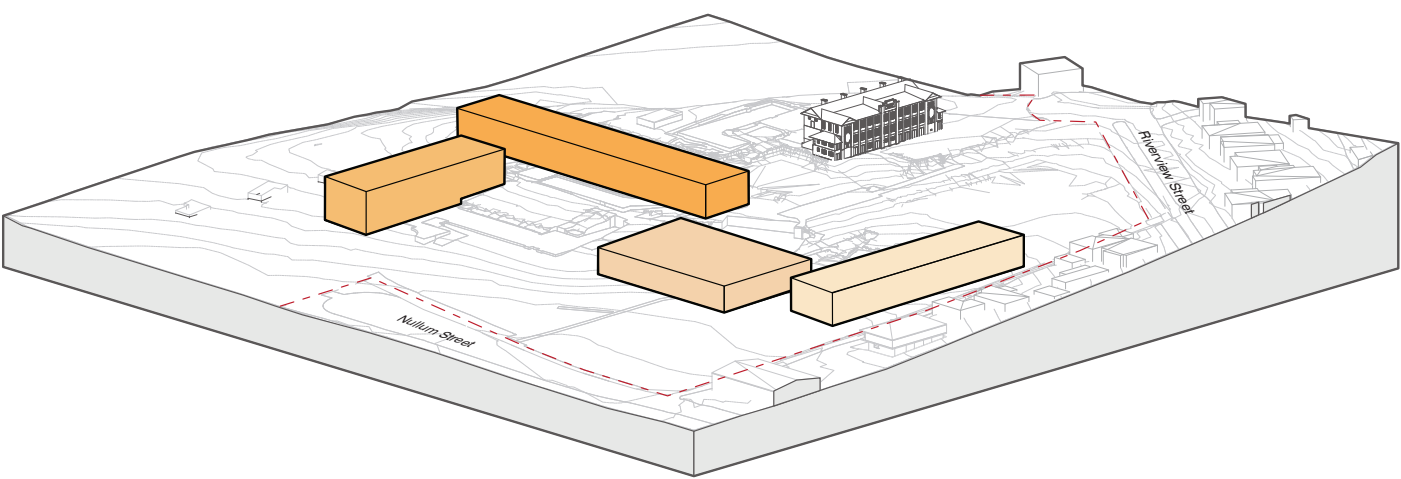
The building heights are set by a universal floor to floor height of 3.6 m. The performance hall and gym is two storeys with a double height space. The remainder of the buildings are maximum 3 storeys, with the exception to building 4, which is 4 storeys and includes a level that's half the size of its footprint on ground.

Legend

- 2 Storeys @ 3.6 m Floor to Floor

- 3 Storeys @ 3.6 m Floor to Floor

- 4 Storeys @ 3.6 m Floor to Floor



Density

Building density was a large consideration during the design process due to the importance of how this development is integrated into the existing community.

The density of the buildings is determined largely by the division between the HS and PS areas. The HS, being the larger portion of the two, is positioned further to the centre of the site while the PS is closer to the boundary. This not only allows the buildings to efficiently sit on the topography but also helps alleviate any adverse affects to the neighbouring developments.

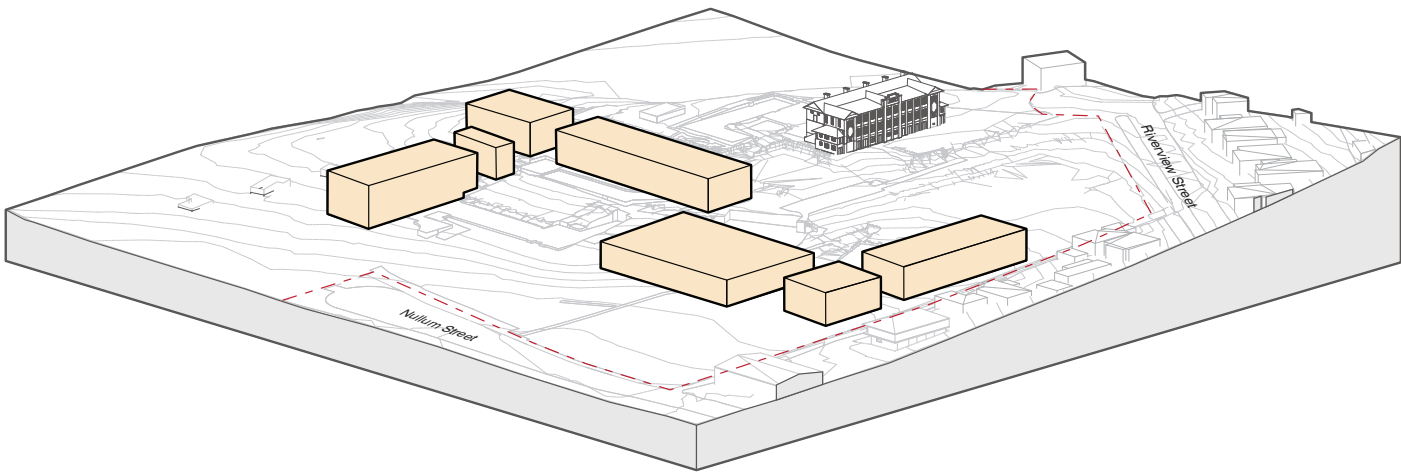
Through the integration of open space with the proposed buildings, the density is broken up and allows for extensive views, and physical connection to outdoor space.

Legend

- High Density of Program

- Medium Density of Program

- Low Density of Program



Bulk and Scale

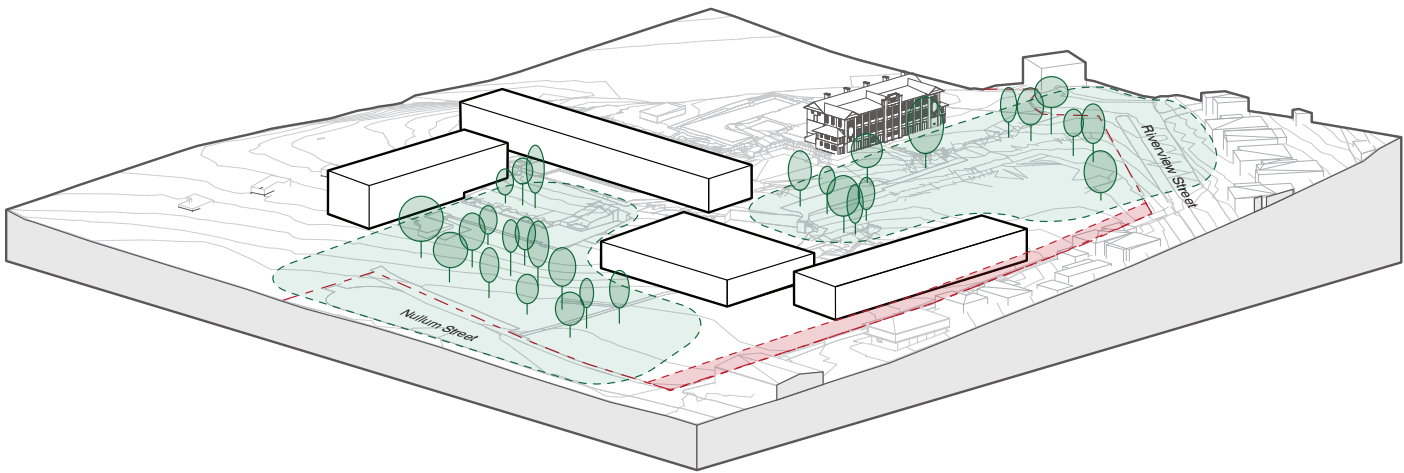
The Bulk and scale of the development helps break down the density of the project further.

The building typology is prescribed by the DfMA guidelines, which dictates an 18 m wide floor plate with a single loaded corridor on one end. This typology creates a long building form when trying to fit an extensive amount of program into the layout.

Given the constraints of this typology, the bulk and scale is best improved through the implementation of breaks in the long forms of the building. This allows for breezeways, outdoor learning commons, and break out spaces in the overall layout.

Legend

- Built Form



Integration with Context

Through the integration of the development with the context, the proposal can become an integral part of the surrounding community.

The campus is entegrated with the community, through their ability to access the development for events, and is physically integrated with the context, by celebrating the nature that is surrounding and is within the site.

A large majority of the existing trees are retained in the proposal and this, in turn, allows for a familiar street address. These trees are connected with the open space that is proposed as part of the campus and expands into the site from the street frontage.

Where a building meets a boundary there is a 6 m setback that is adheared to in order to increase privacy, reduce noise, and limit impeding shadows on the surrounding developments.

Legend

- Open Space

- 6 m Set Back

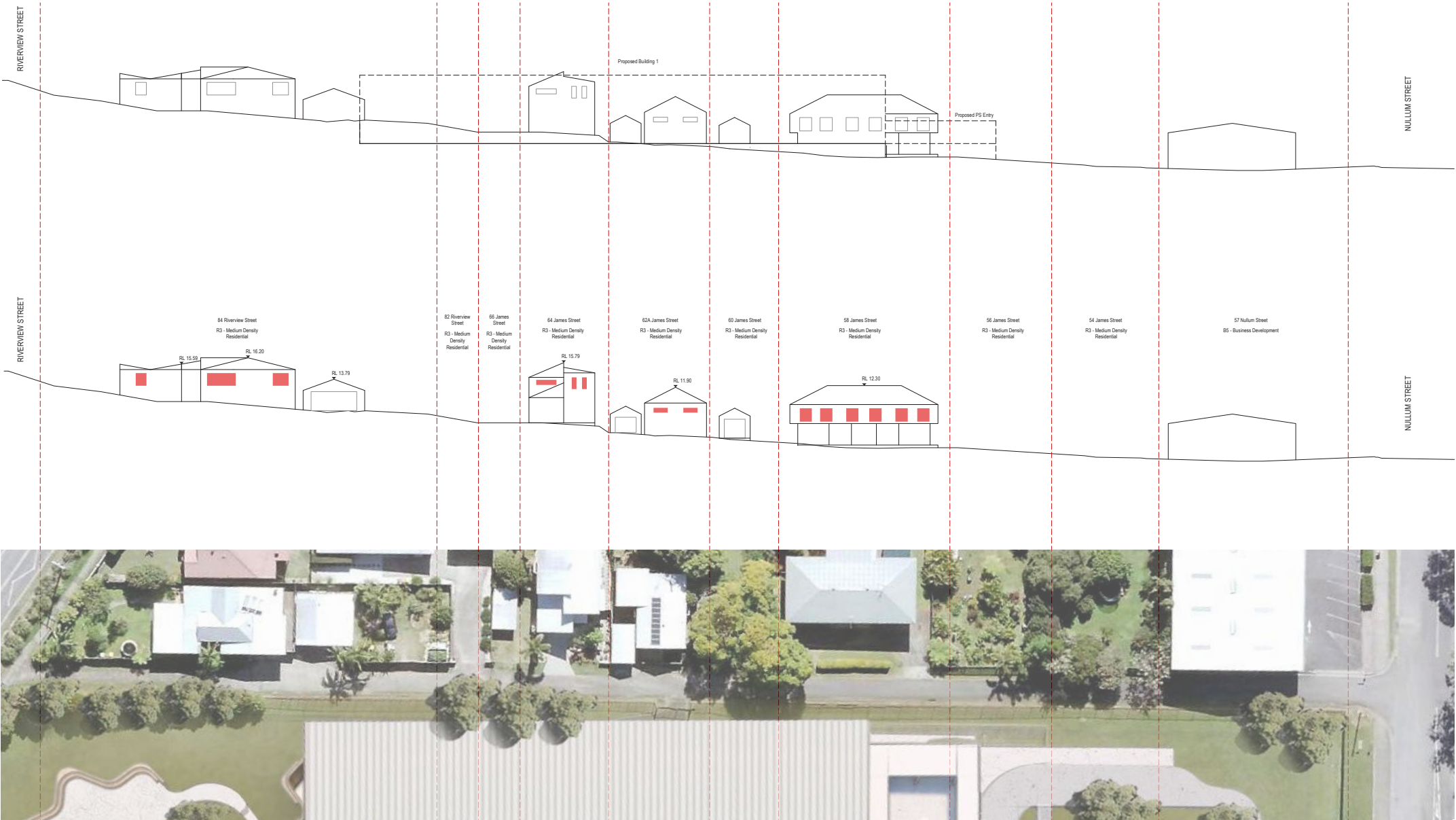
- Retained Existing Trees

4.7 Reponse to Urban Context

The primary school building 1 is positioned to the north of the site facing High School Lane.

The diagram on the right illustrates a study of the existing windows facing the building.

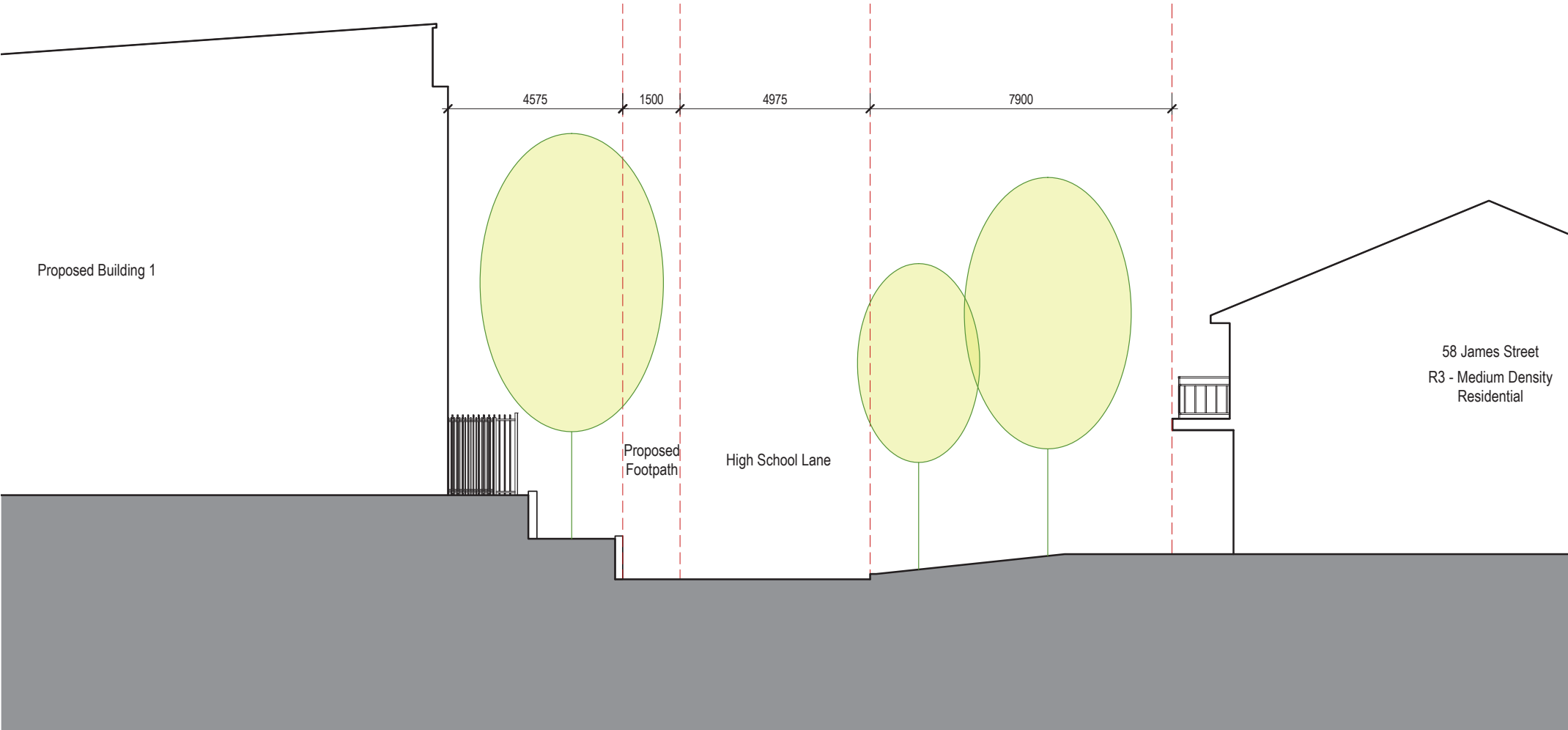
High School Lane provides access to the road of properties in James street , most of which have openings that are rear windows of garages



Masterplan

In order to provide a flood safe building, the ground floor levels are located over a 500 year flood, RL 7.5m.

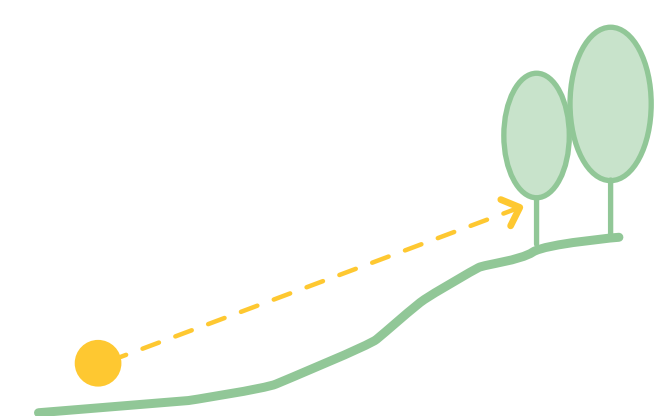
The section shows how the Landscape design can improve privacy for the neighbouring property at 58 James street. It also shows the provision of a new footpath for High School Lane that will allow for safe pedestrian access to the school.



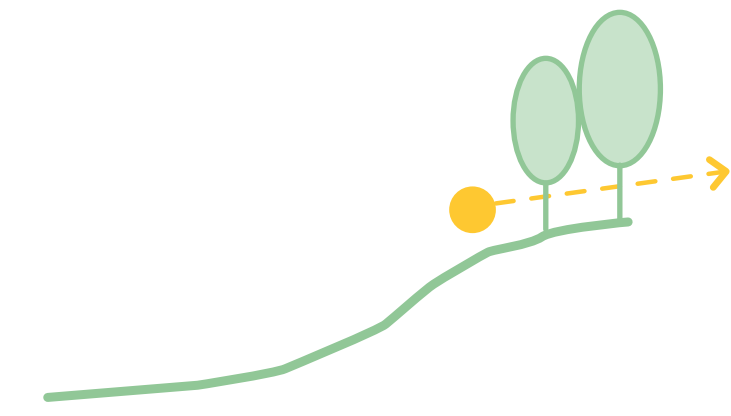
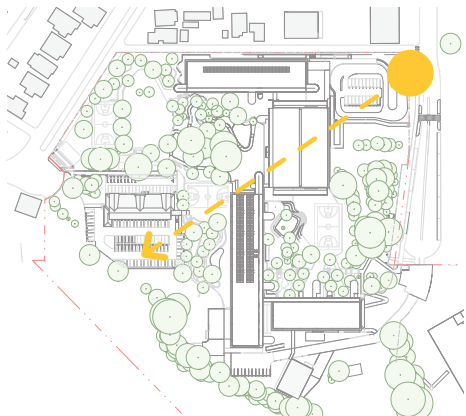
4.8 Wollumbin

Existing Condition

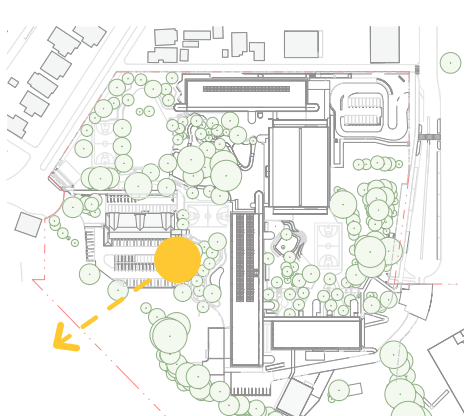
The site currently has no clear views to Wollumbin. Given the steep topography the views from the surrounding properties at the lower part of the site do not have clear views over the landscape towards Wollumbin. From the top of the site, the only clear views of the mountain are through the base of the trees.



View From the Bottom of the site



View From the Top of the site

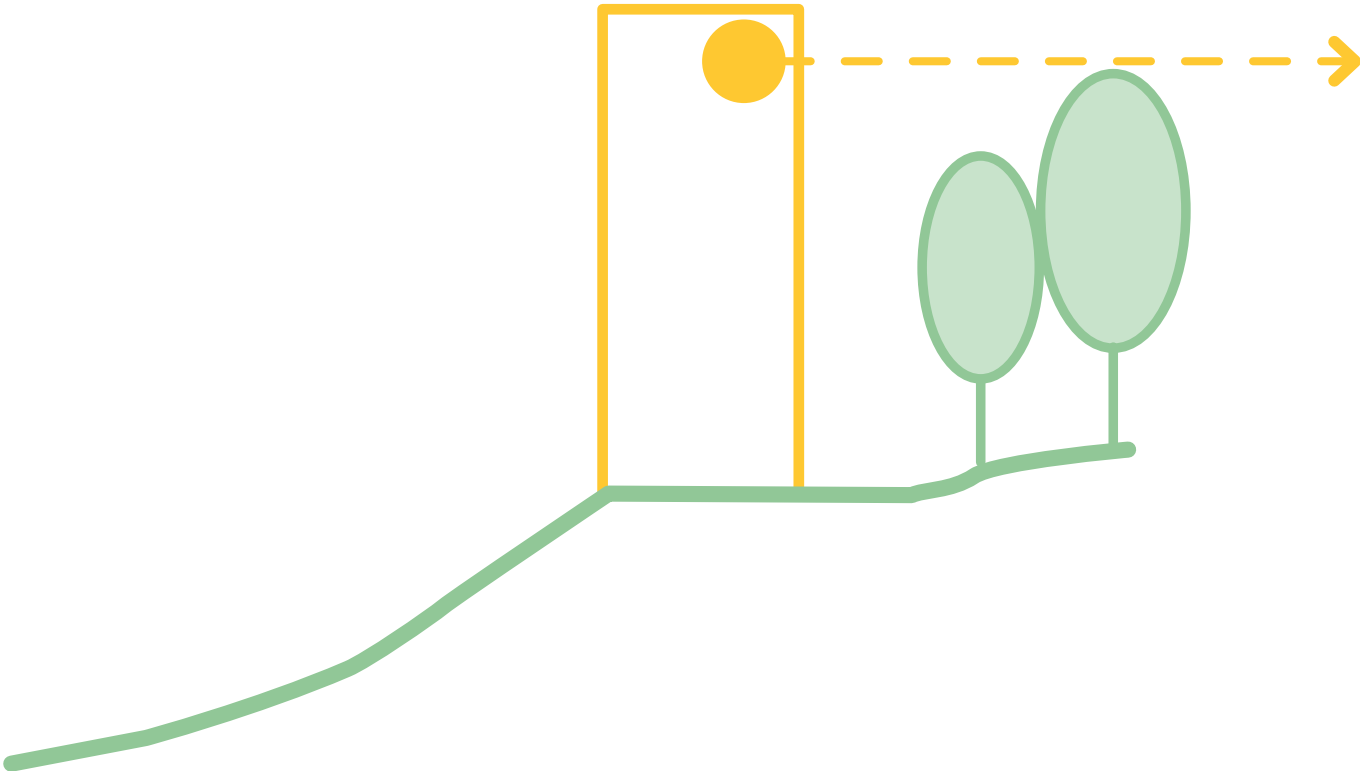


Masterplan

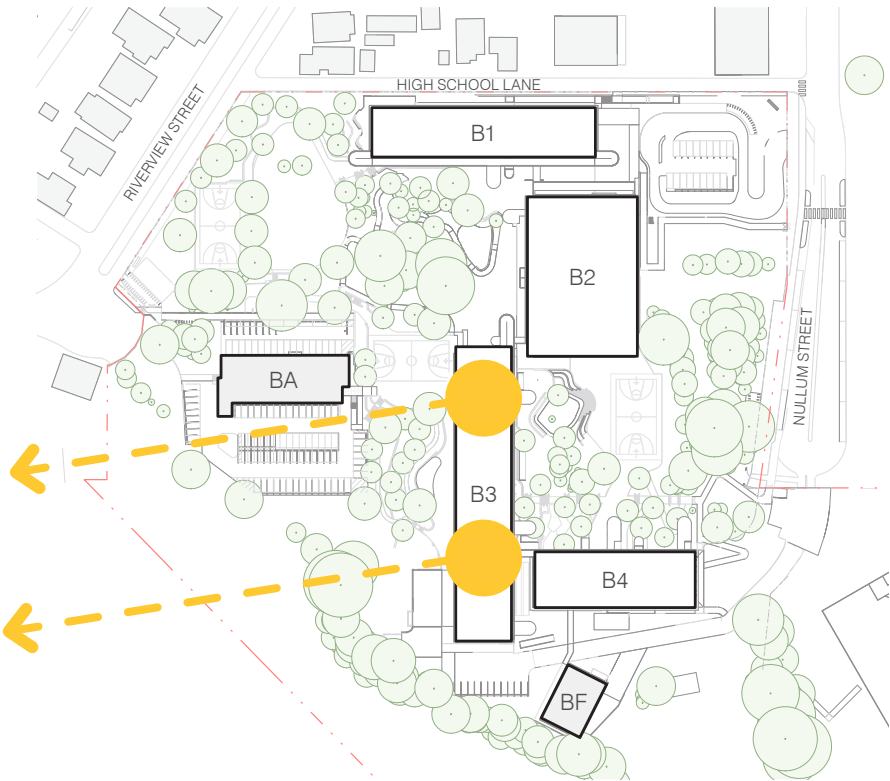
Proposed Condition

The proposal enhances the view towards Wollumbin through preserving the views that are preset on the top of the site and through enhancing the visibility of the mountain through the integration of the views in the built form and layout of proposed building 3.

Views are present and incorporated within the HS Library and Outdoor Learning Commons on the top floor of the building.

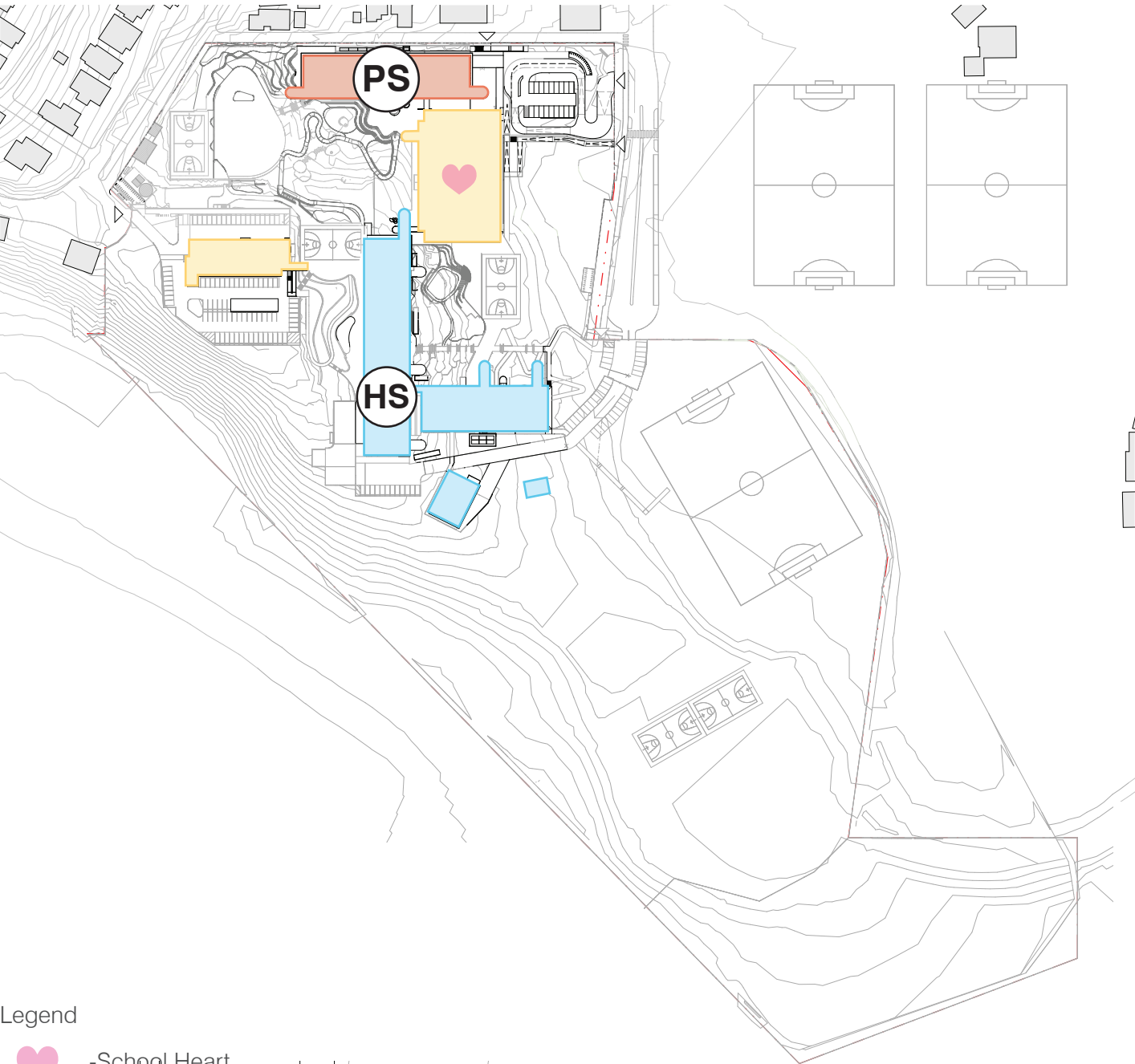


View From the Proposed Building



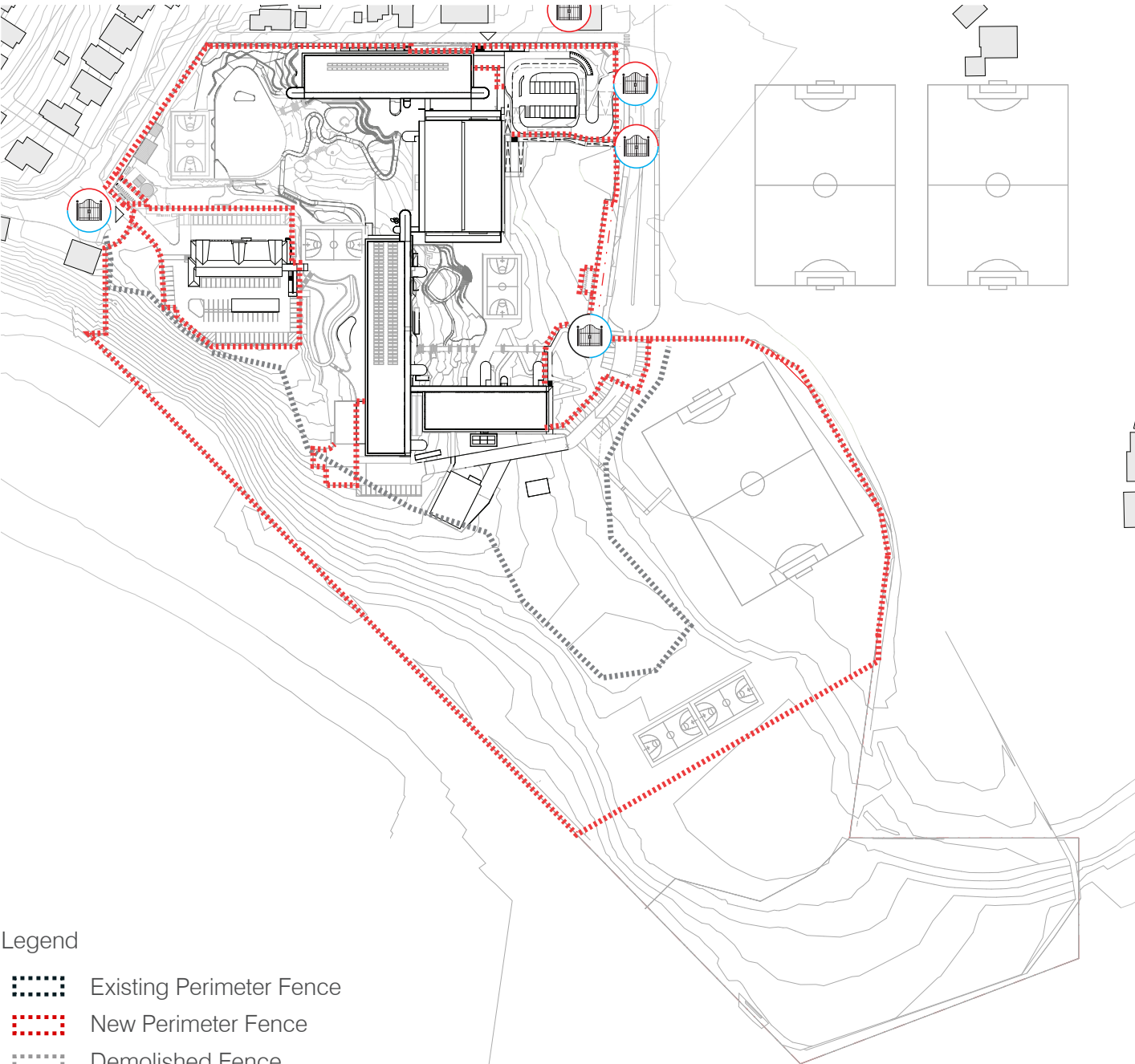
4.9 Day in a life Diagrams

Zoning



- Legend
- Heart icon - School Heart
 - Blue rectangle - HS Building
 - Orange rectangle - PS Building
 - Yellow rectangle - Joint Use

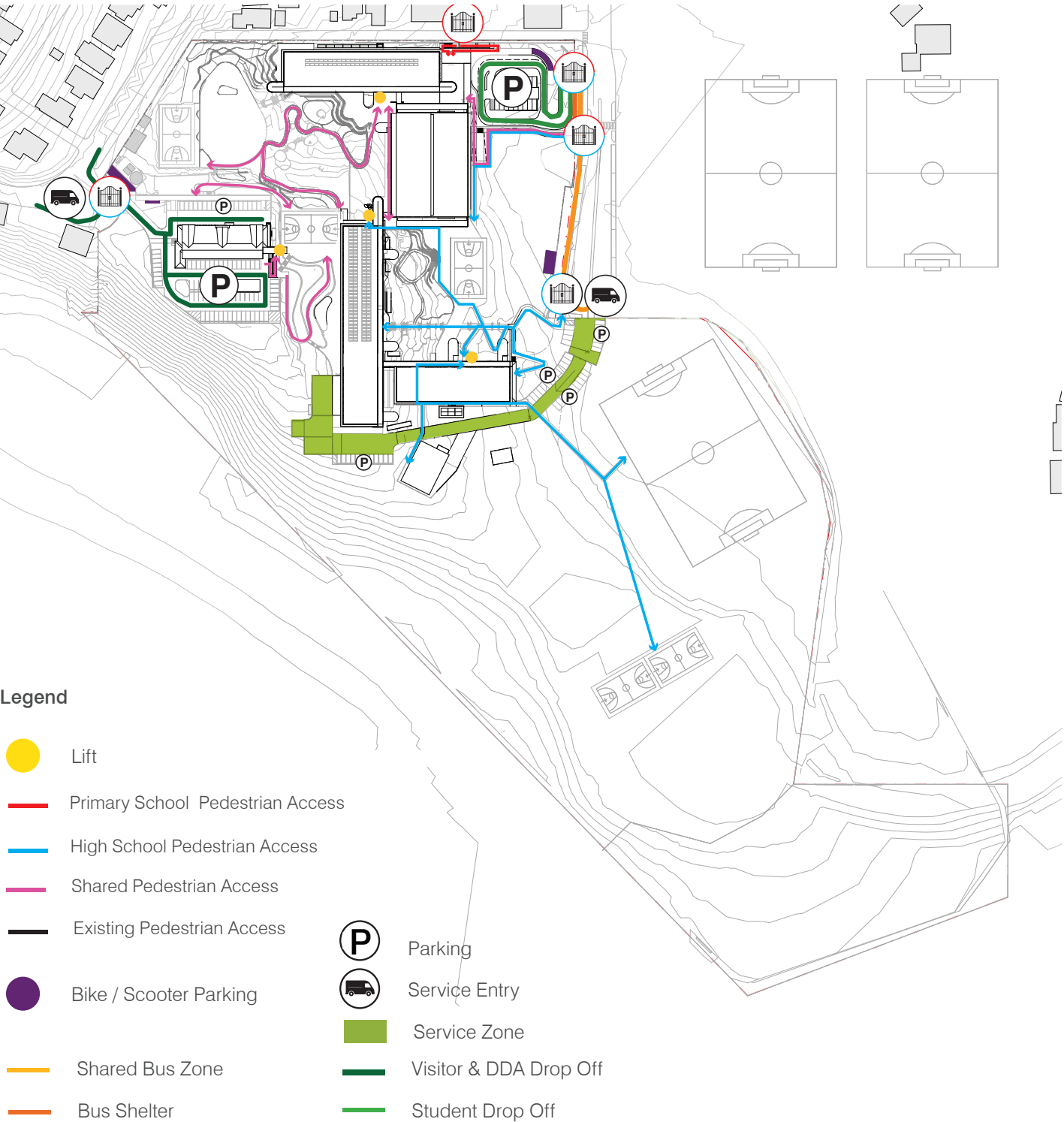
Security



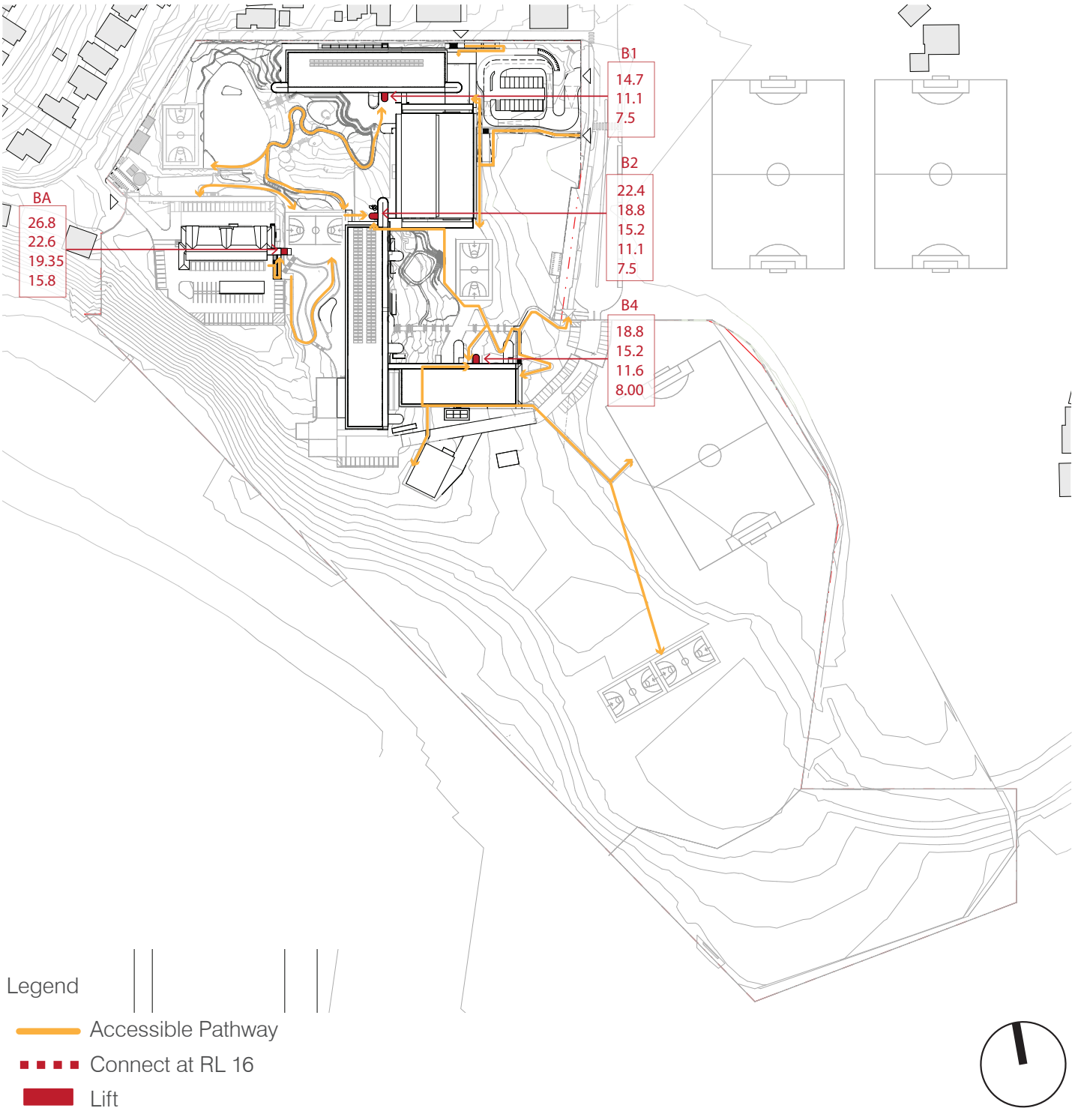
- Legend
- Black dotted line - Existing Perimeter Fence
 - Red dotted line - New Perimeter Fence
 - Black dotted line - Demolished Fence
 - Blue circle icon - High School Gate
 - Red circle icon - Primary School Gate
 - Blue circle icon - Shared Access Gate

Masterplan

Traffic and Accessibility

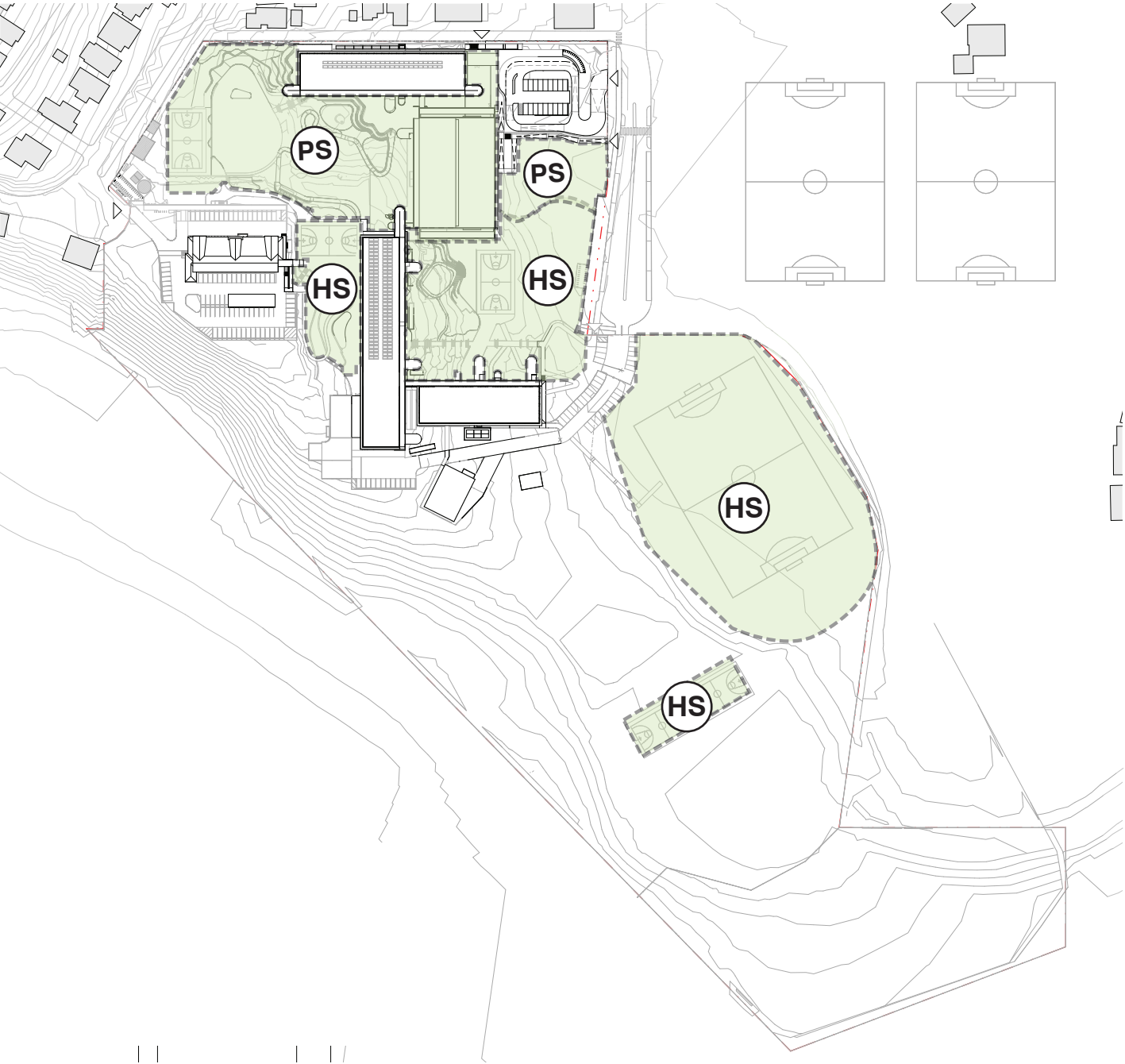


Accessibility



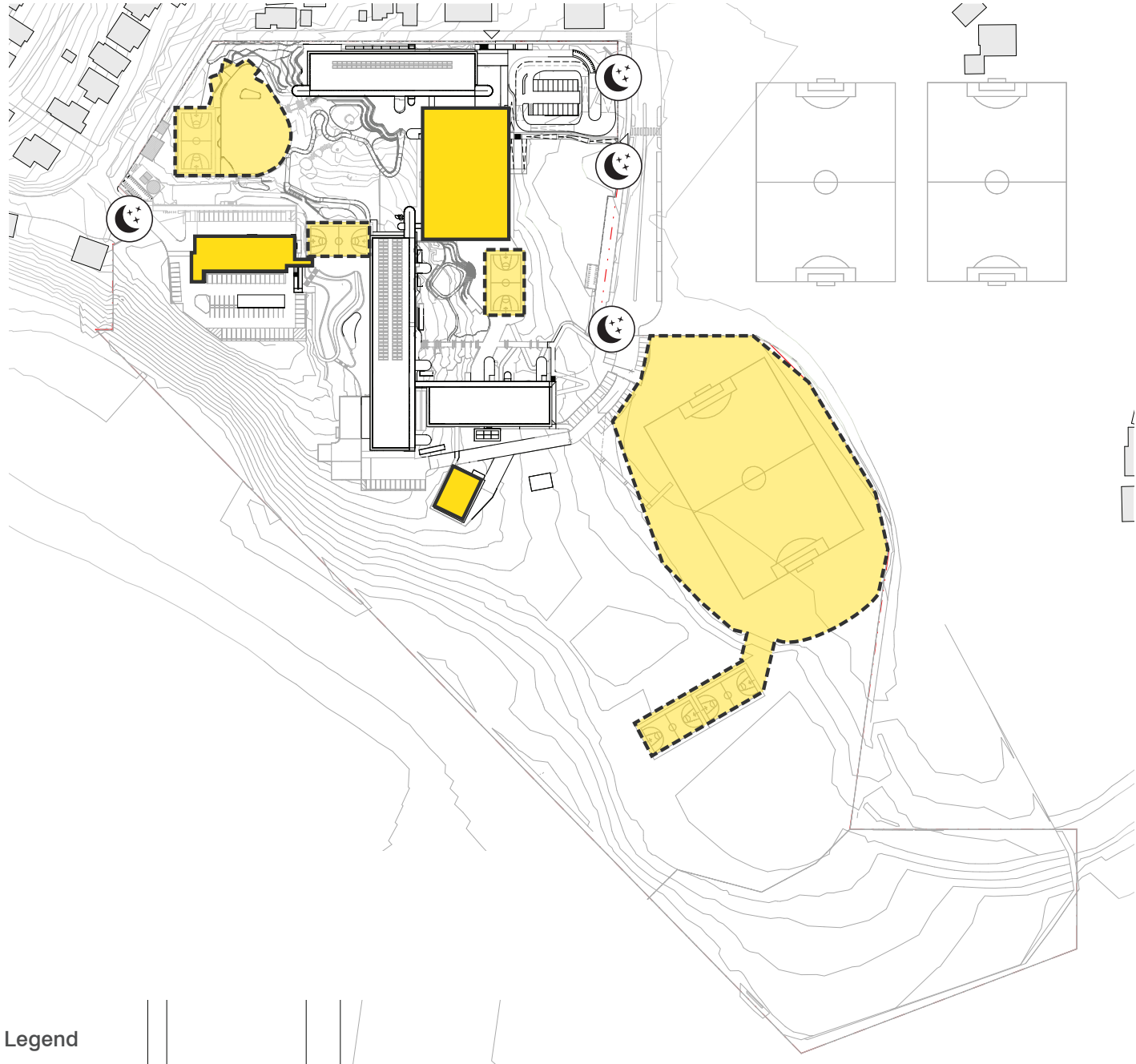
Masterplan

Open Space



- Legend
- (HS)** - HS Open Space
 - (PS)** - PS Open Space

Out of hours Access



- Legend
- Out of Hours Gate
 - Buildings with out of hours access
 - Outdoor Areas with out of hours access



4.10 Campus Play Space

Existing Playspace

Play space must be available for students to access during recess and lunch breaks. Each student is allocated 10m² of play space. Understanding the full expansion of the school, playspace has been allocated to cater for the following:

PS: 1,000 Students = 10,000m² min. requirement

HS: 1,340 Students = 13,340m² min. requirement

Covered outdoor areas & open play space been calculated based on the requirements and definition provided by the EFSG. This definition outlines inclusions and exclusions for play space on the campus.

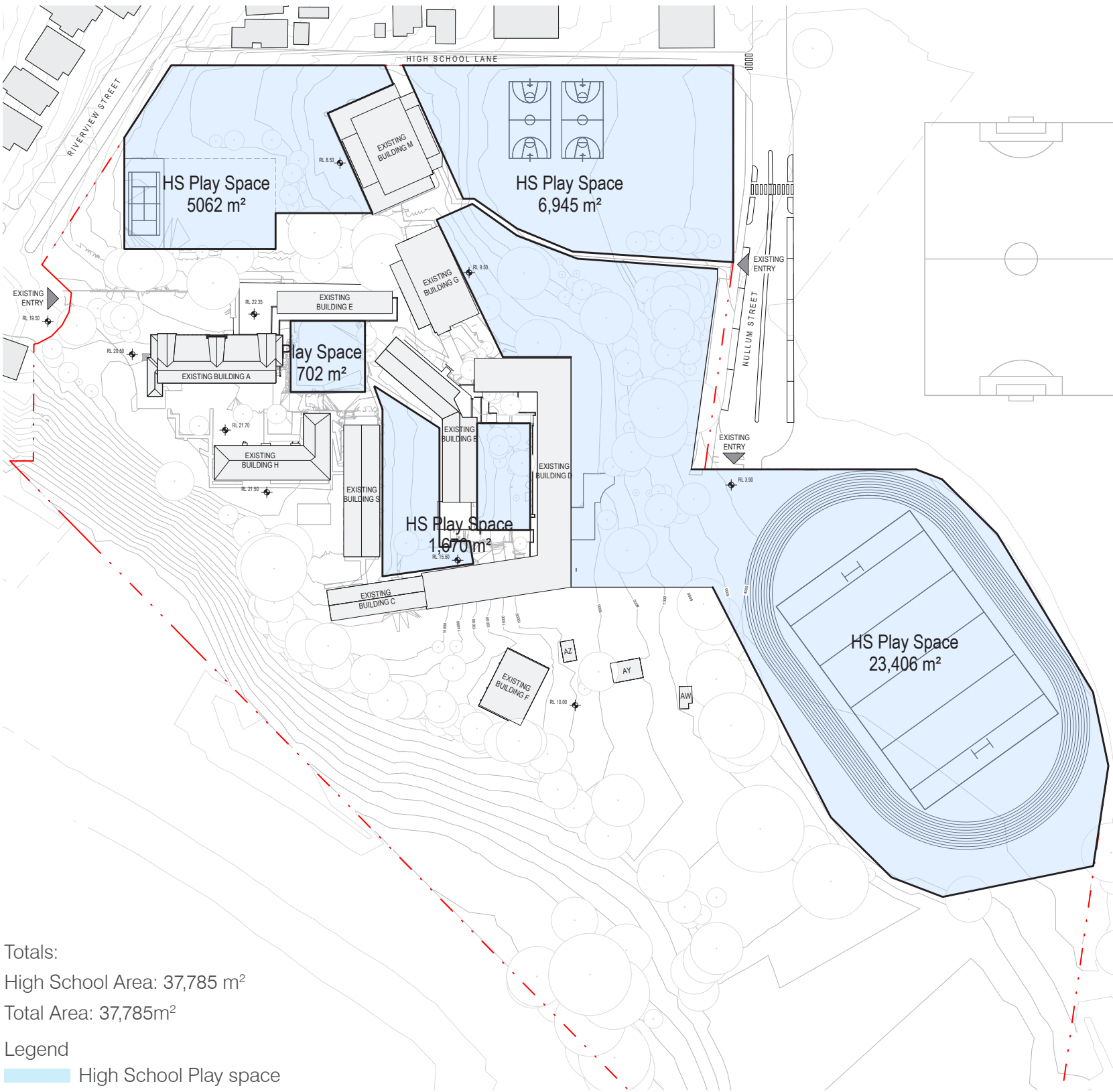
Inclusions:

- Paved and grassed areas
- Rooftops and terraces
- Covered outdoor areas

Exclusions:

- Areas that cannot be easily supervised
- Primary walkways

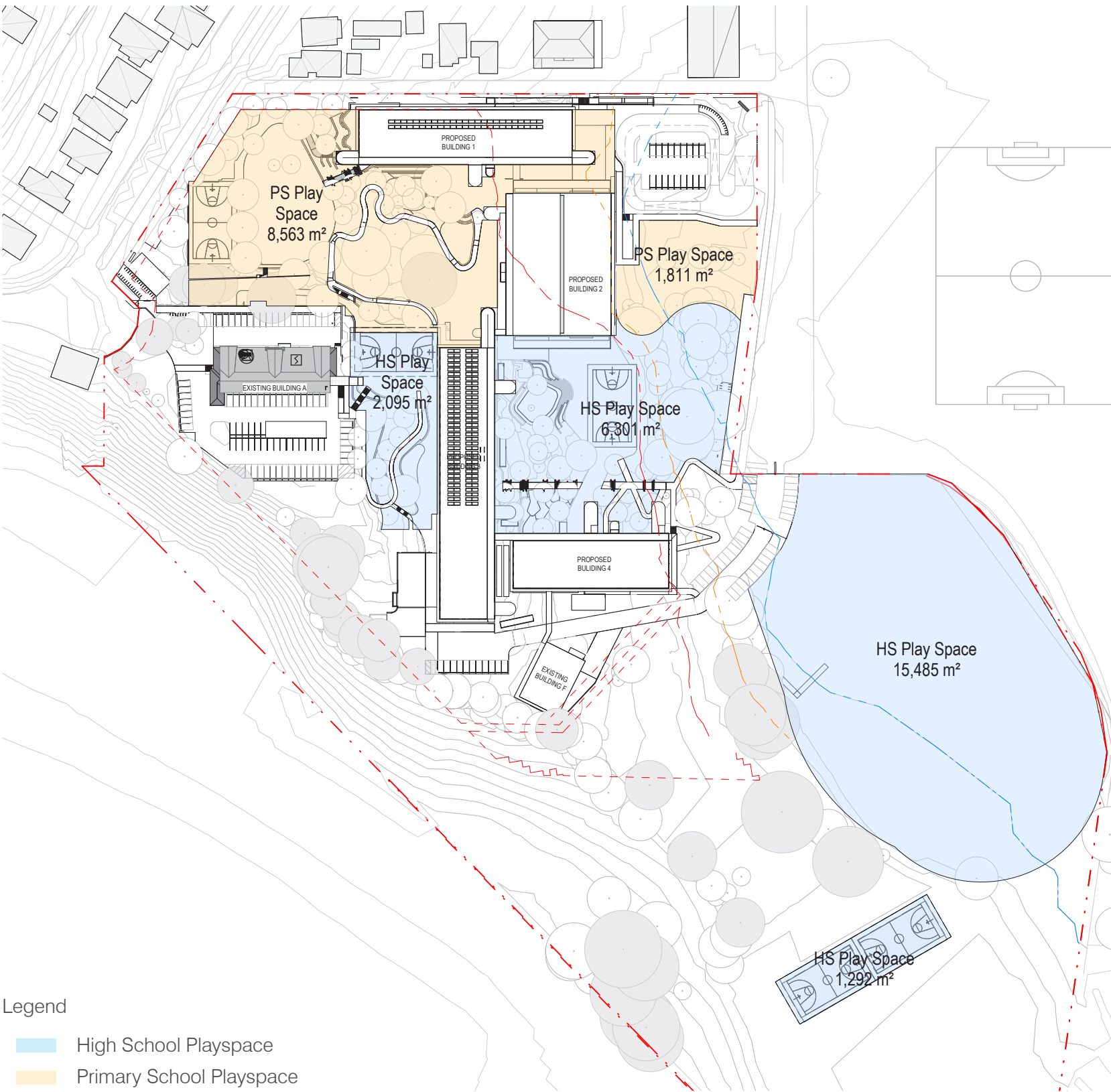
For comparison, the following pages provide both existing play space of Murwillumbah High School and the proposed play space of Murwillumbah Education Campus.



Proposed Play space

The adjacent diagram shows the total open space allocated for the proposed primary school and high school. The following table shows a comparison between what is currently existing on the site, what is proposed, and what is required:

	Existing	Proposed	Required
PS	N/A	10,374	5,820
HS	37,785	25,173	11,400
Total	37,785	35,547	23,340



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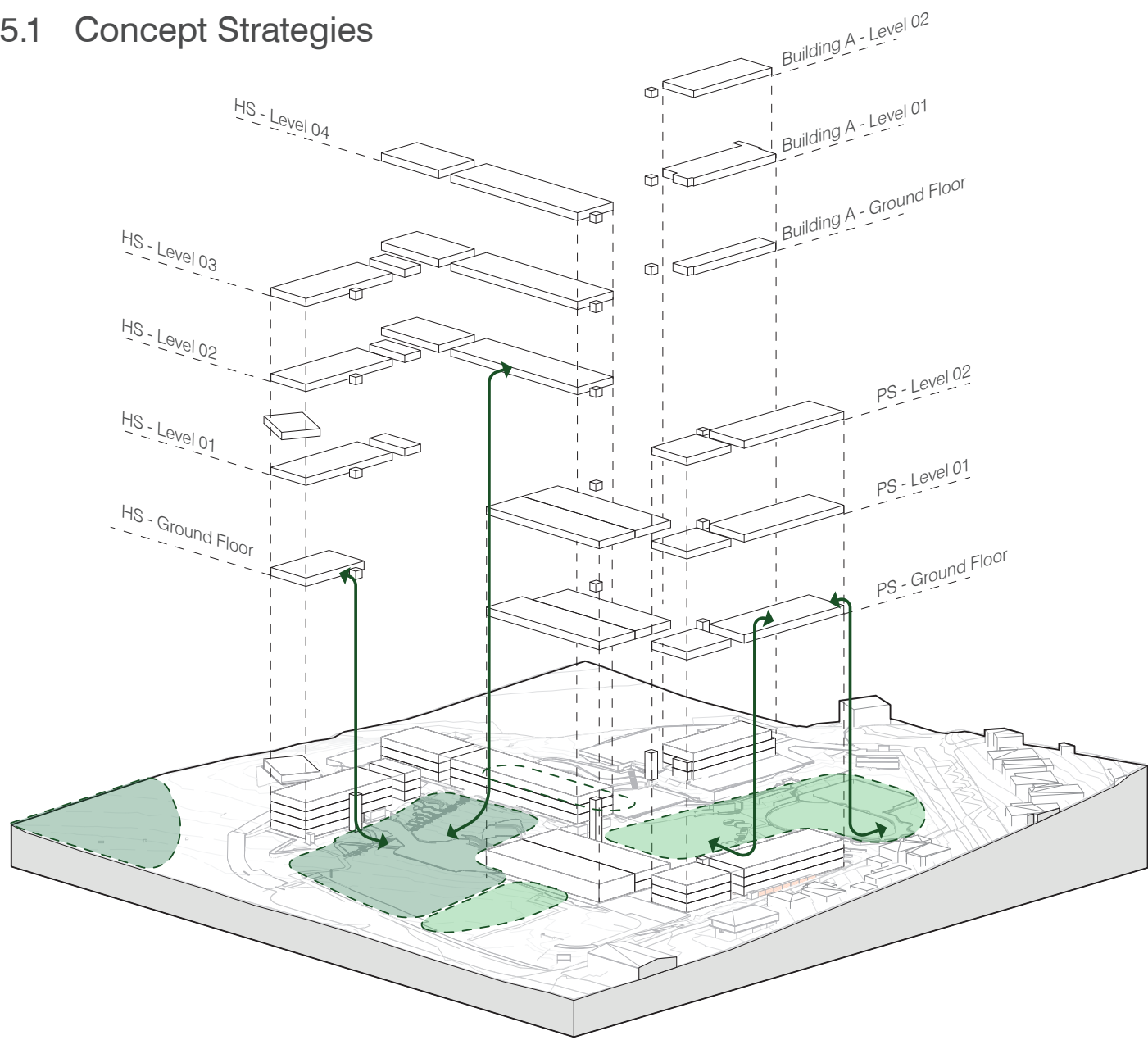




5 Built Form & Urban Response

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

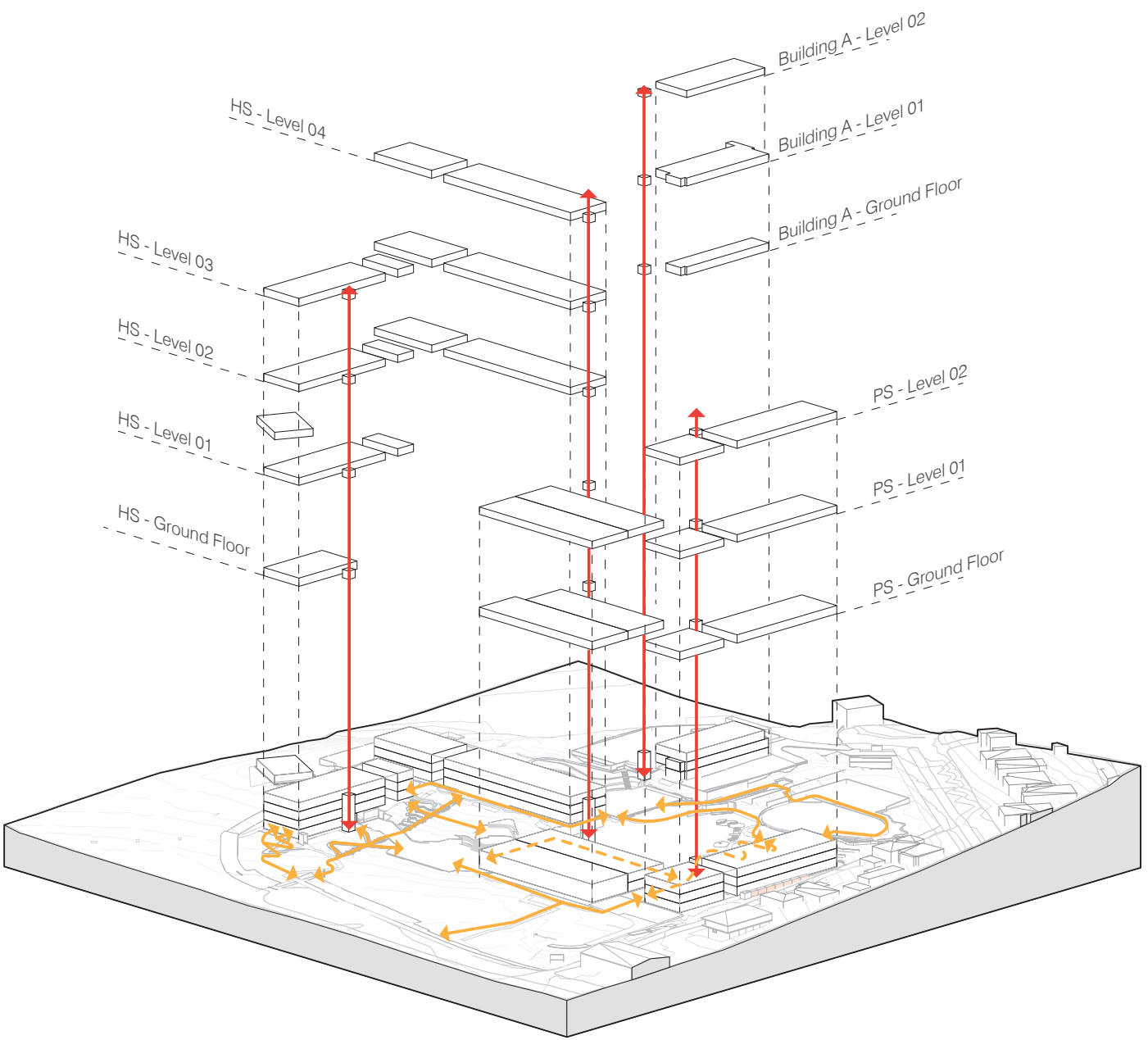
5.1 Concept Strategies



Key Landscape Connections

The open space is framed by the surrounding buildings and has a strong visual and physical connection to the surrounding learning spaces

- Legend
- HS Open Space
 - PS Open Space
 - Connections to Learning Units

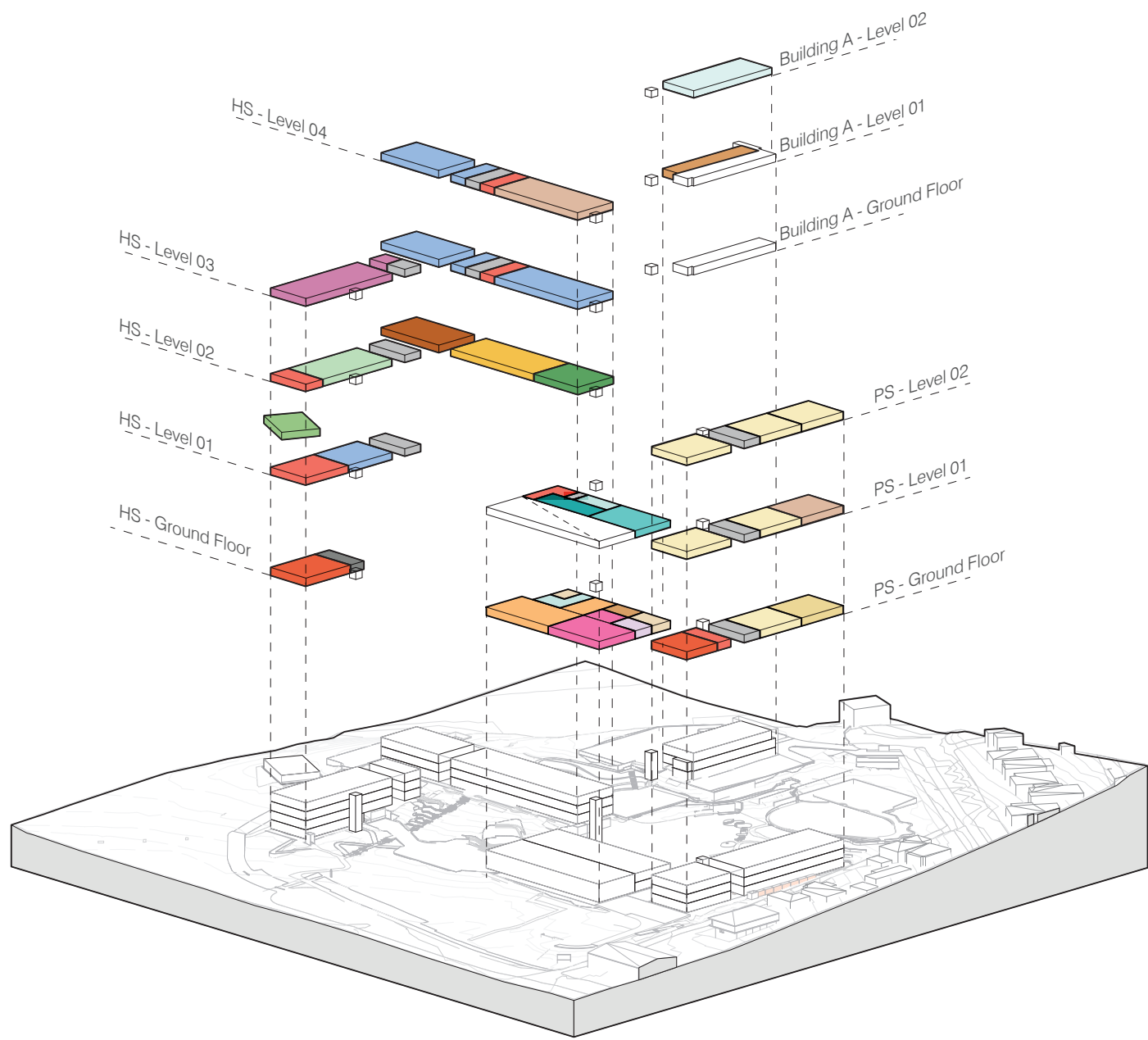


Campus Circulation

The campus circulation is designed to utilize the existing contours of the site and interweaves the landscape with the campus through thorough connections.

- Legend
- Vertical Circulation
 - Key Access Paths
 - Key Access Paths (Behind)

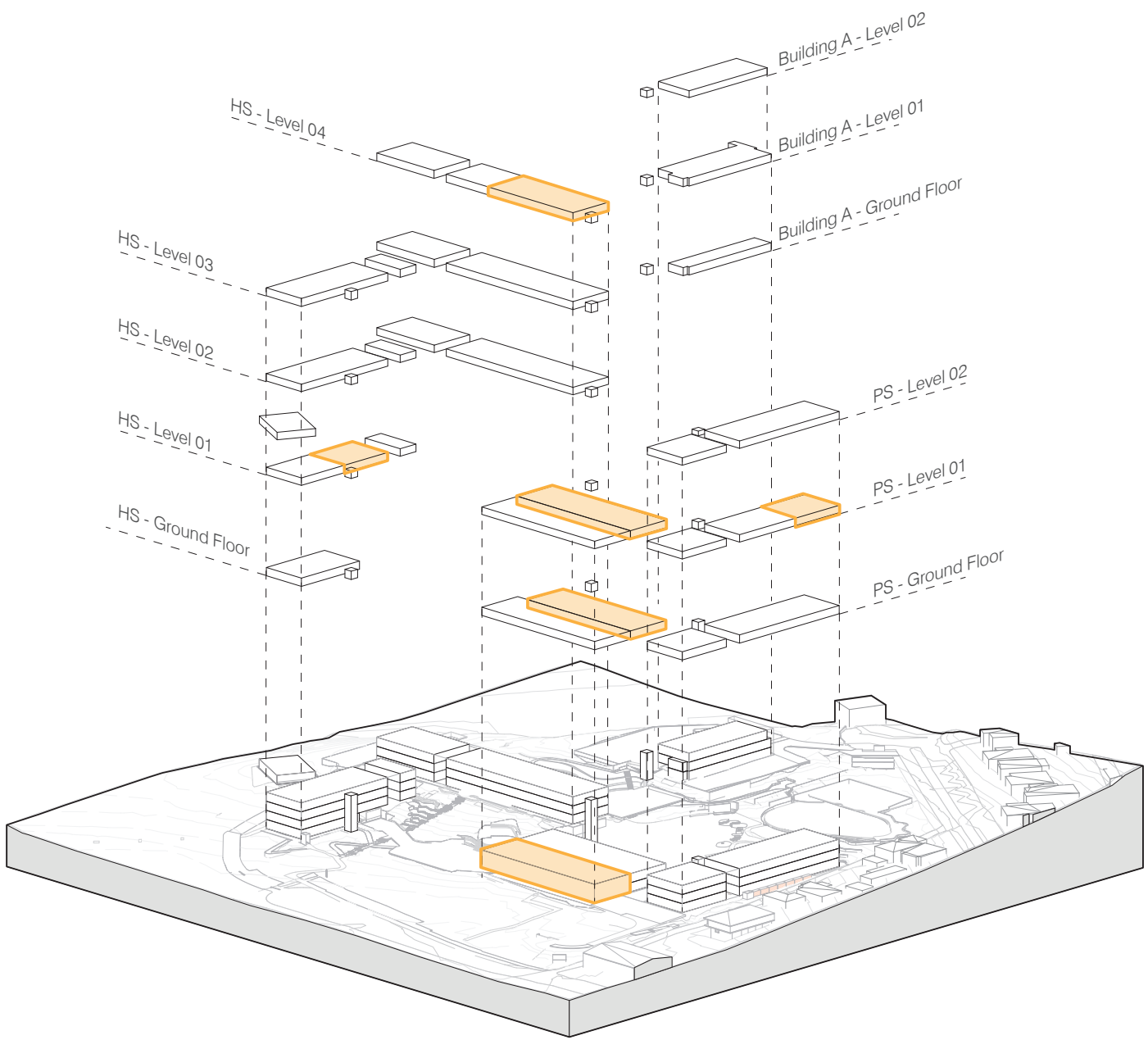
Built Form & Urban Response



Learning Neighbourhoods

The organization of learning neighbourhoods in the campus is shown in the diagram above

Legend			
- Administration	- Maths	- OSHC	- Storage Unit
- Agriculture	- Gym	- Performing Arts	- Amenities
- Canteen	- Health/ PE	- PS Support	- Entertainment
- Communal Hall Unit	- HS Support	- Science	- Visual Arts
- Food & Textile	- Home Bases	- Services	- Wood & Metal
- General Learning	- Library	- Special Programs Unit	
- DoE	- Health Hub	- Staff	



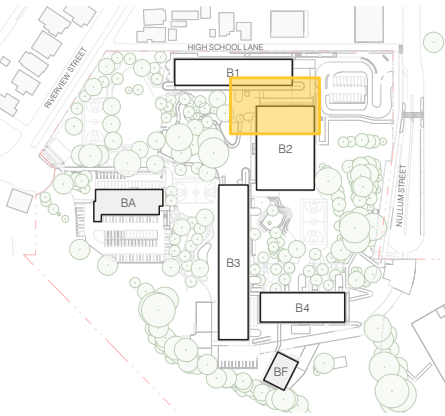
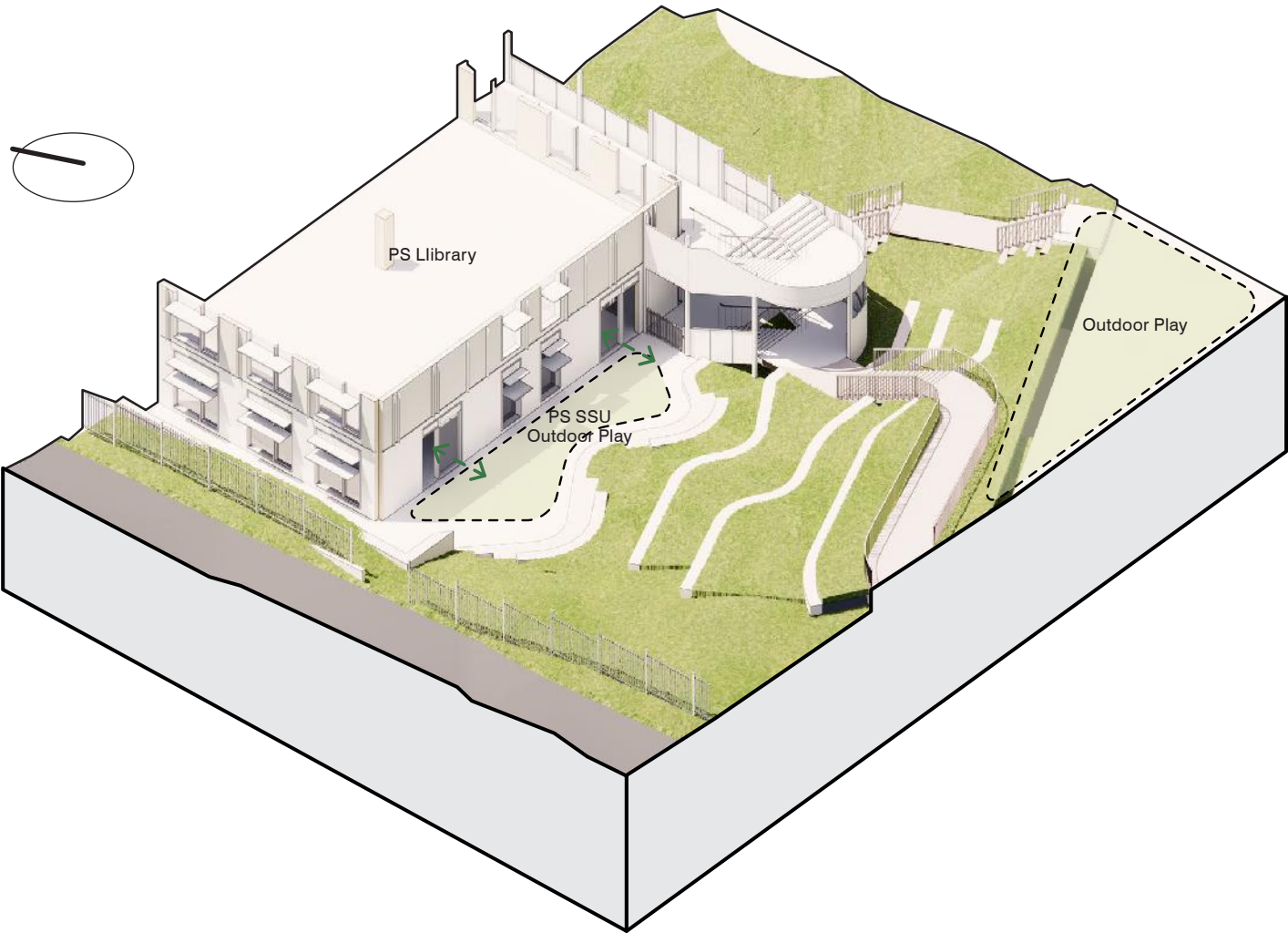
Shared Program

The areas shown above are shared by the entire campus. These spaces include all performing spaces, the gym, hall, libraries, and the food & tech unit.

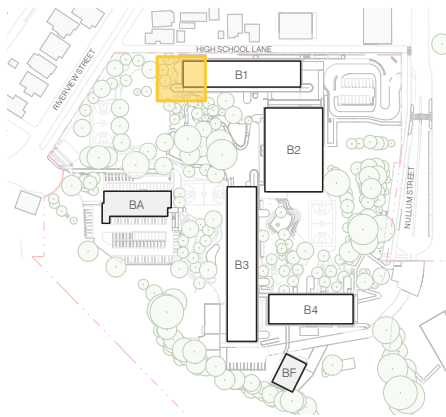
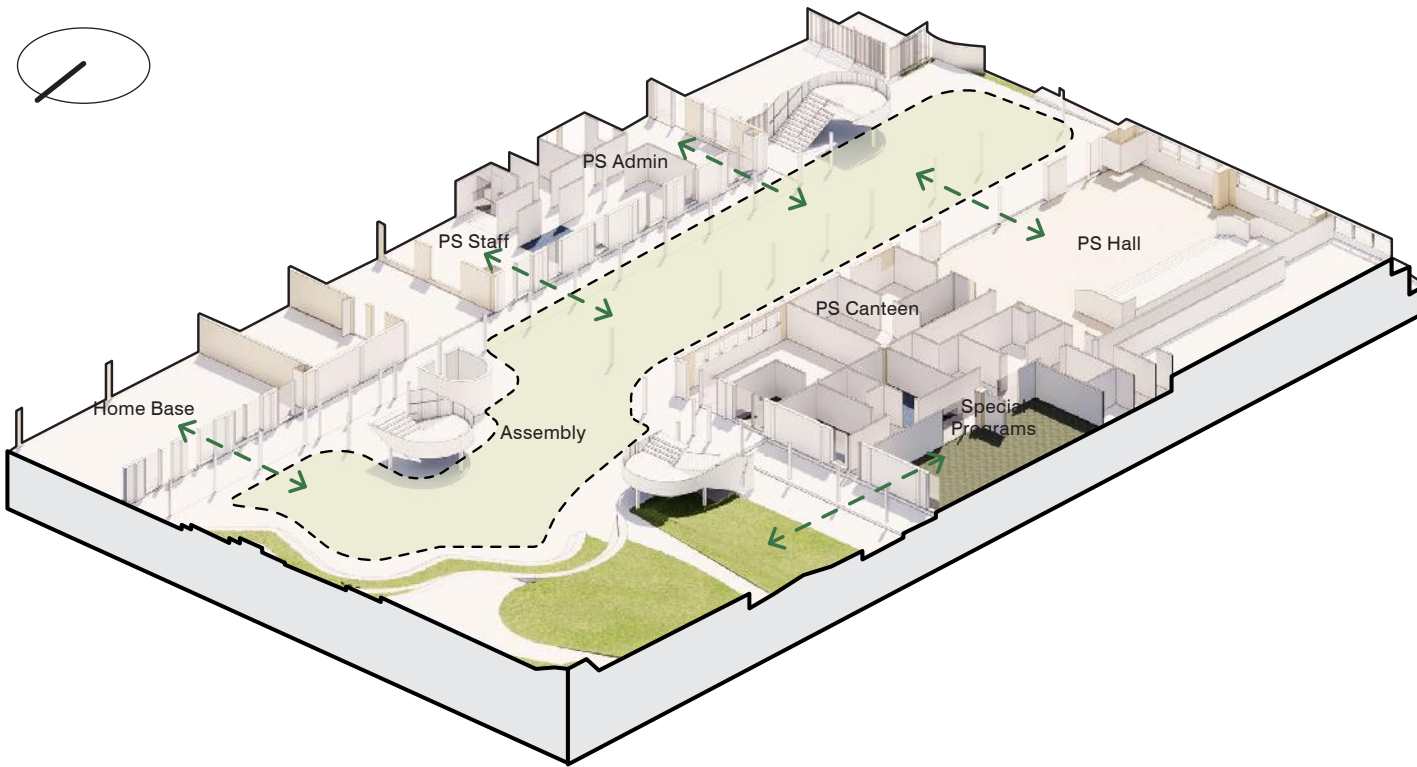
Legend
- Shared Program

5.2 The Space In-between

PS Assembly

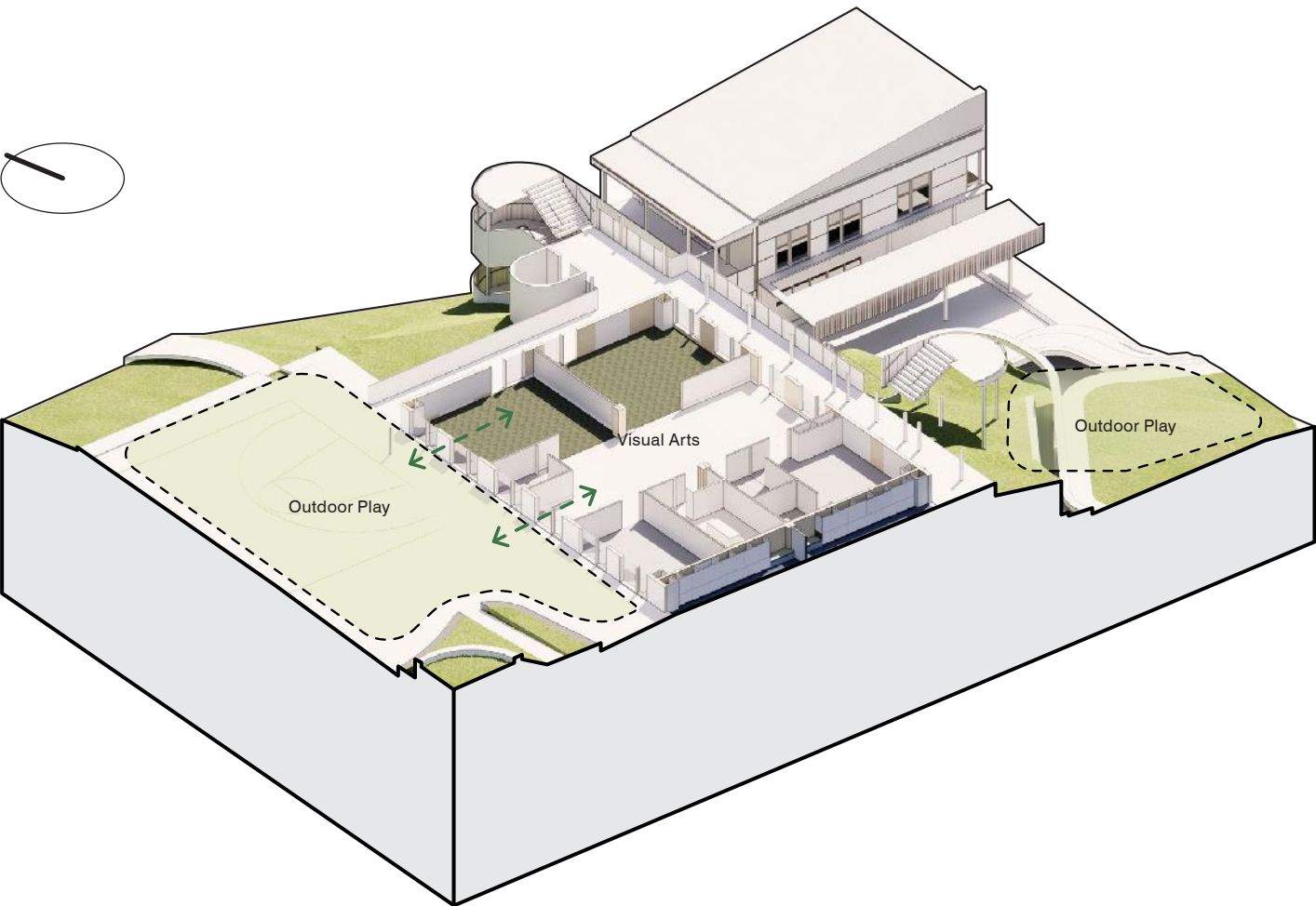


PS Library and SSU Outdoor Play

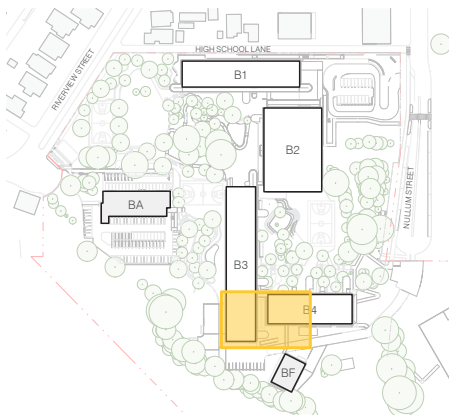
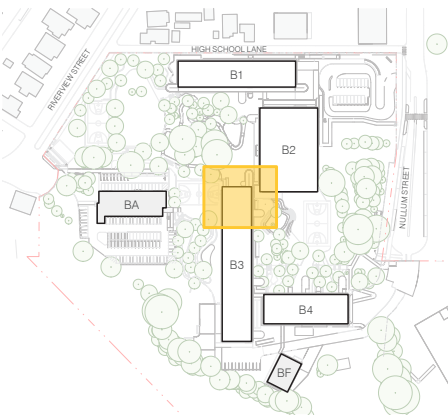
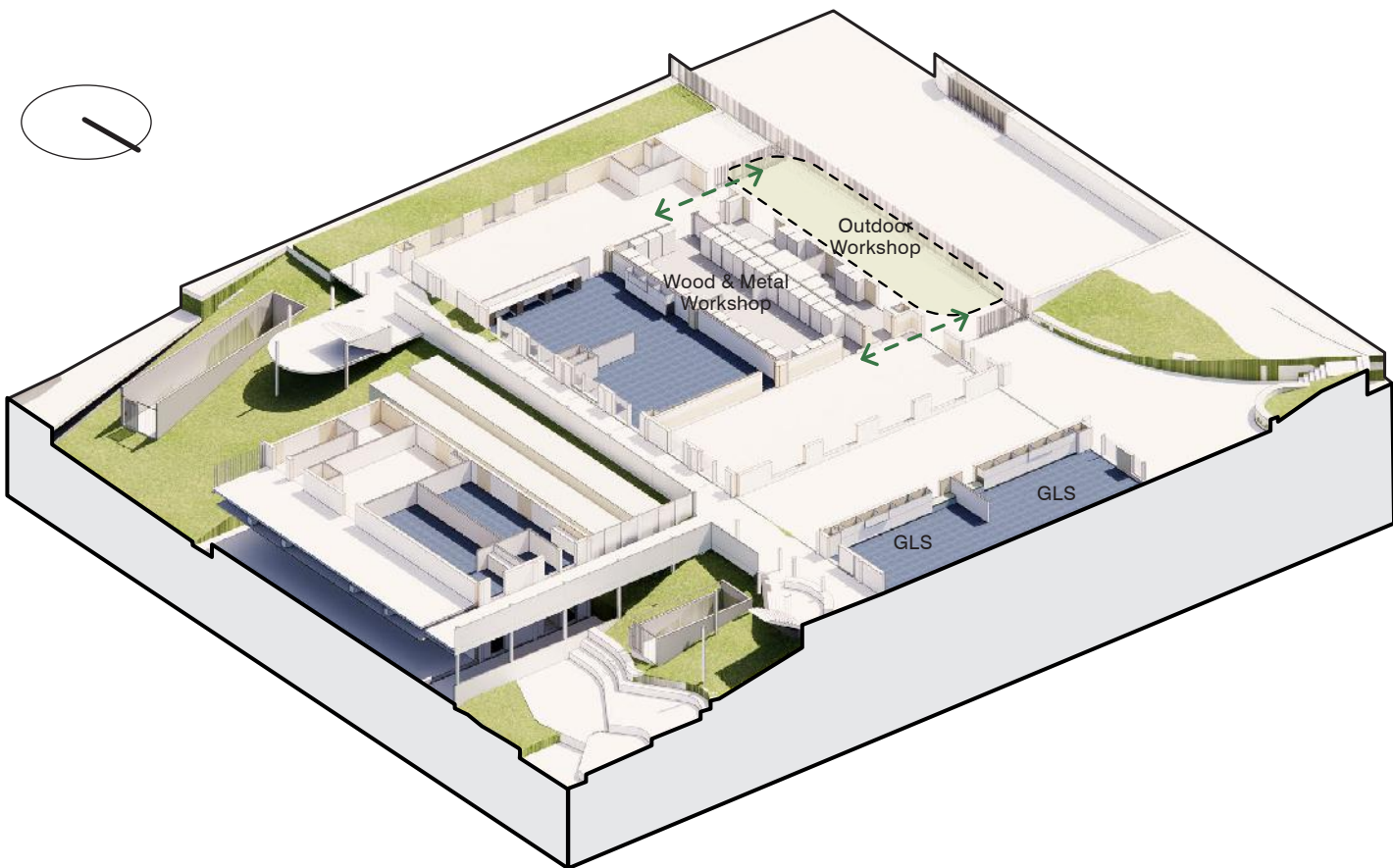


Built Form & Urban Response

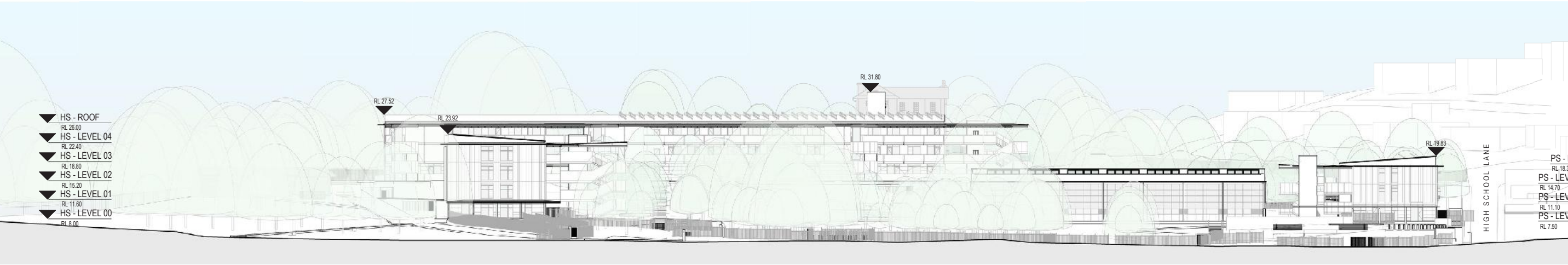
HS SSU



Wood + Metal Workshop + Outdoor Play



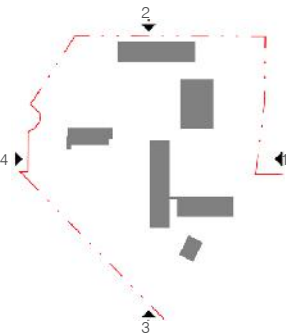
5.3 Site Elevations



1. Elevation from Nullum Street (site elevation East)



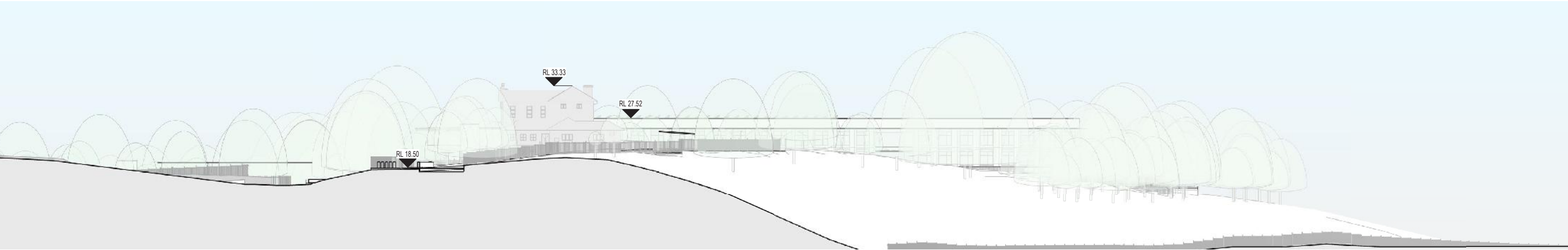
2. Elevation from High School Lane (site elevation North)



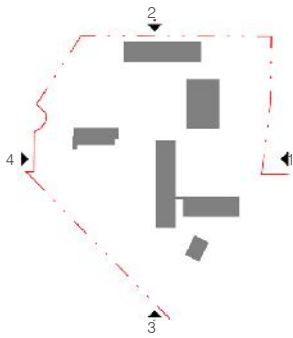
Built Form & Urban Response



3. Elevation from Lower Cane fields (site elevation South)

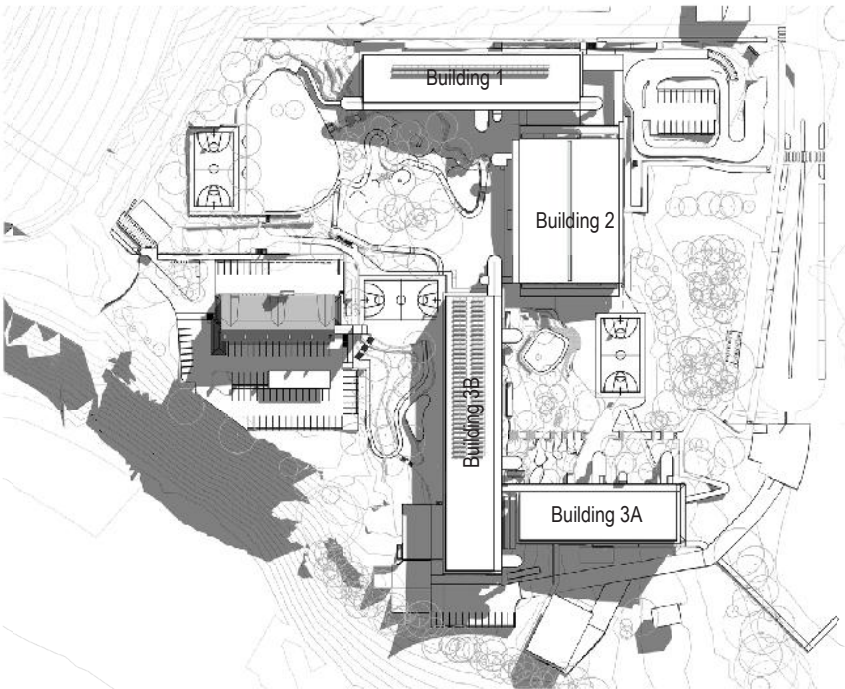


Elevation from Riverview Street (site elevation West)

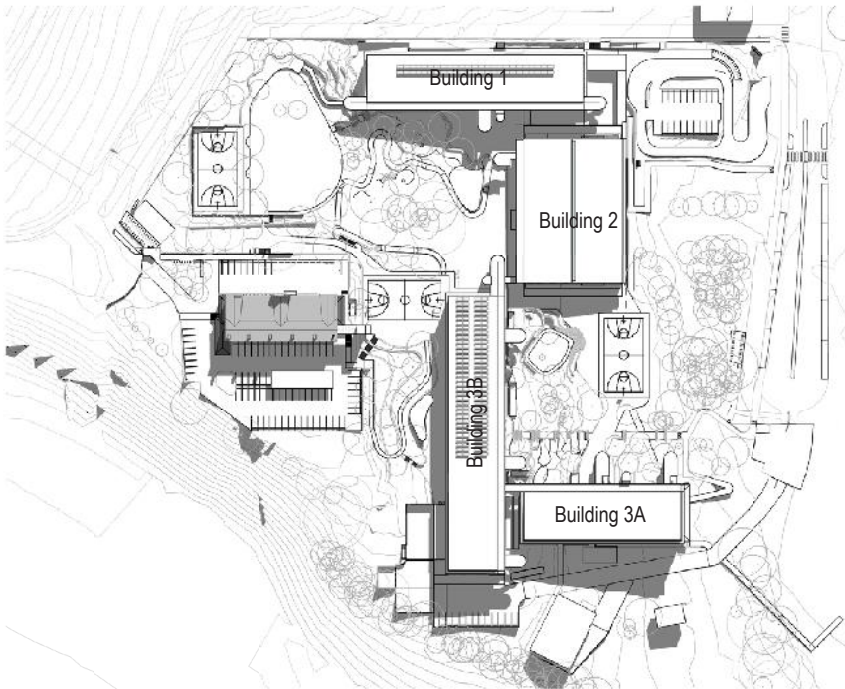


5.4 Shadow Diagrams

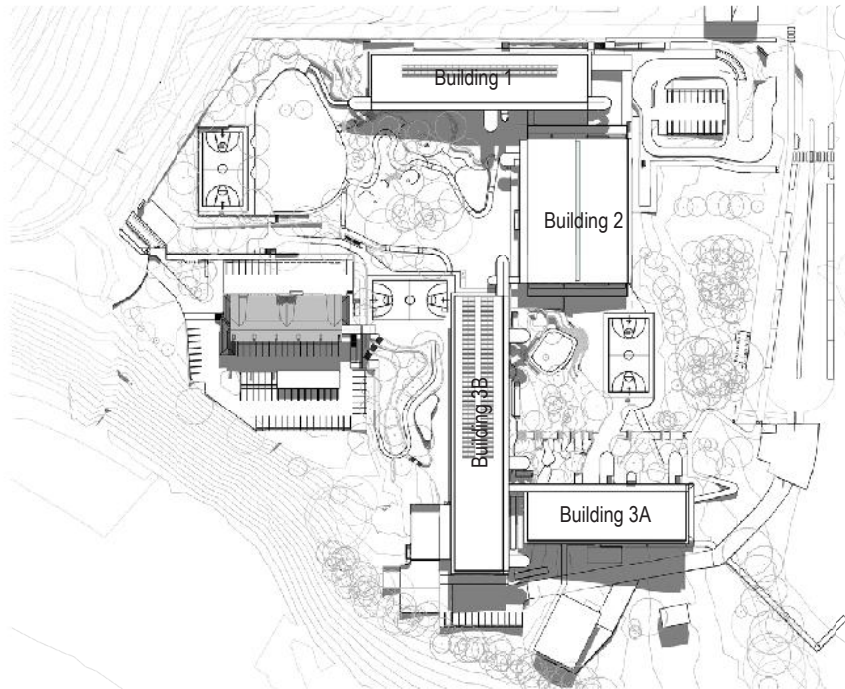
Winter Solstice



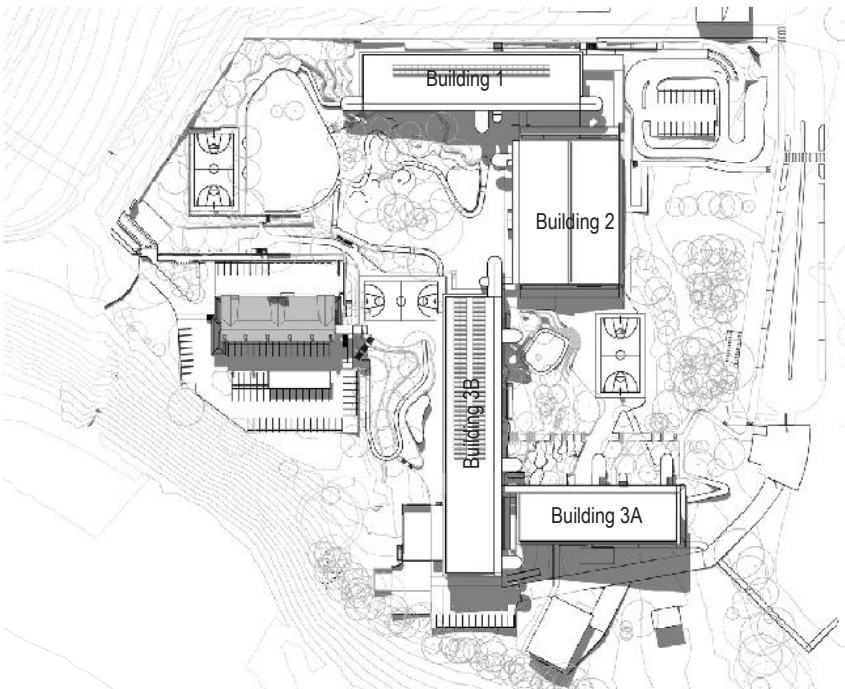
Existing - 9am



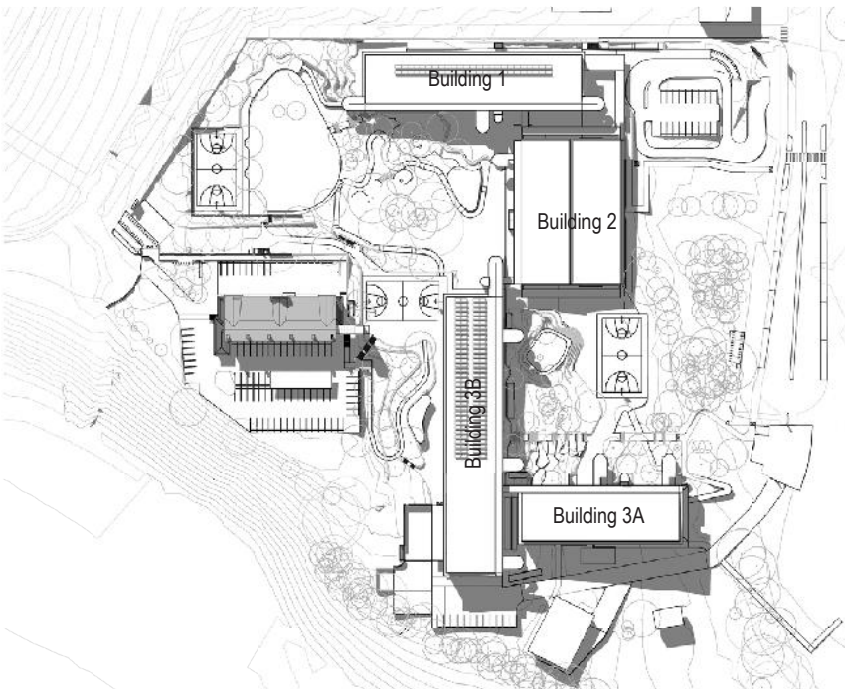
Existing - 12pm



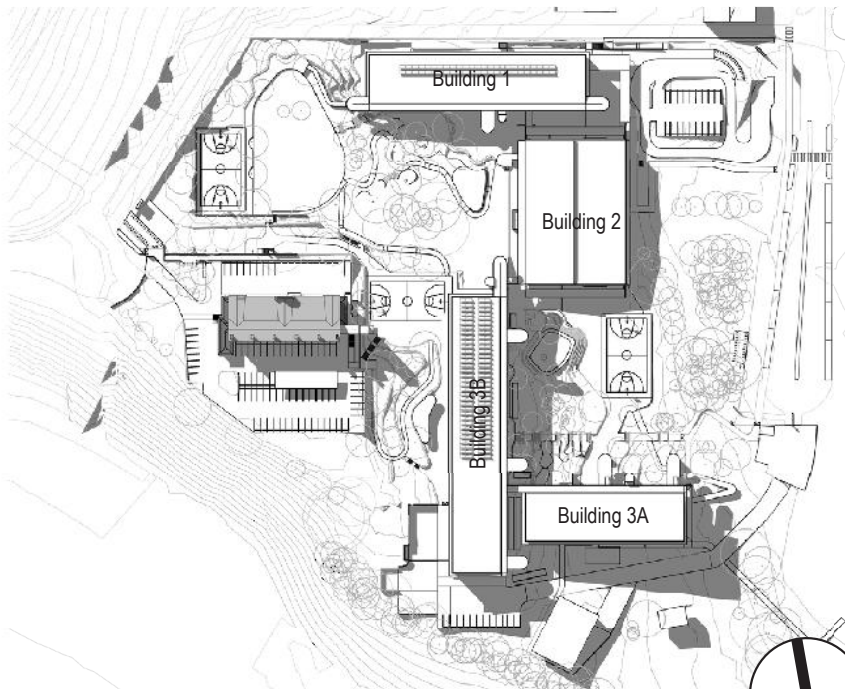
Existing - 3pm



Proposed - 9am



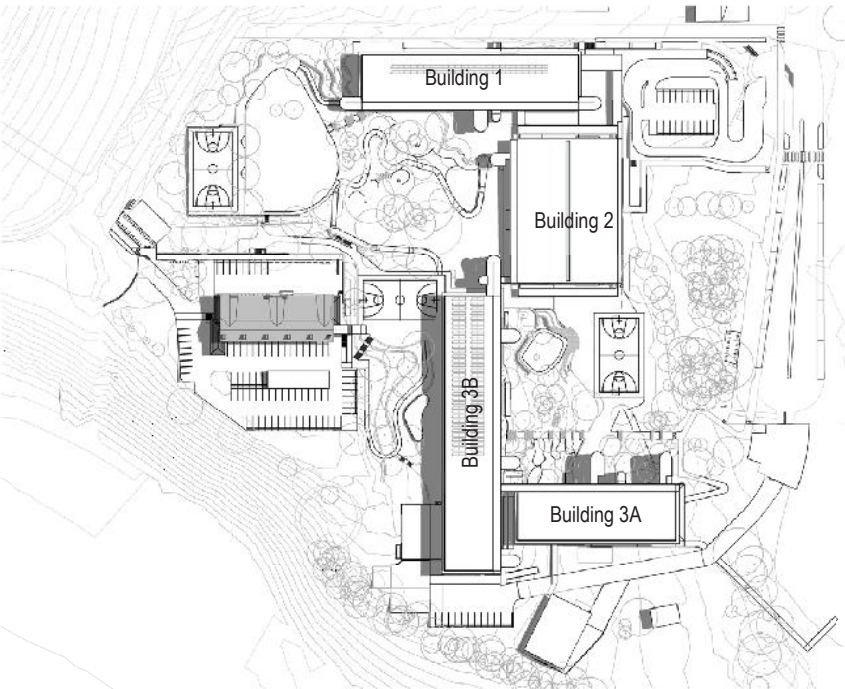
Proposed - 12pm



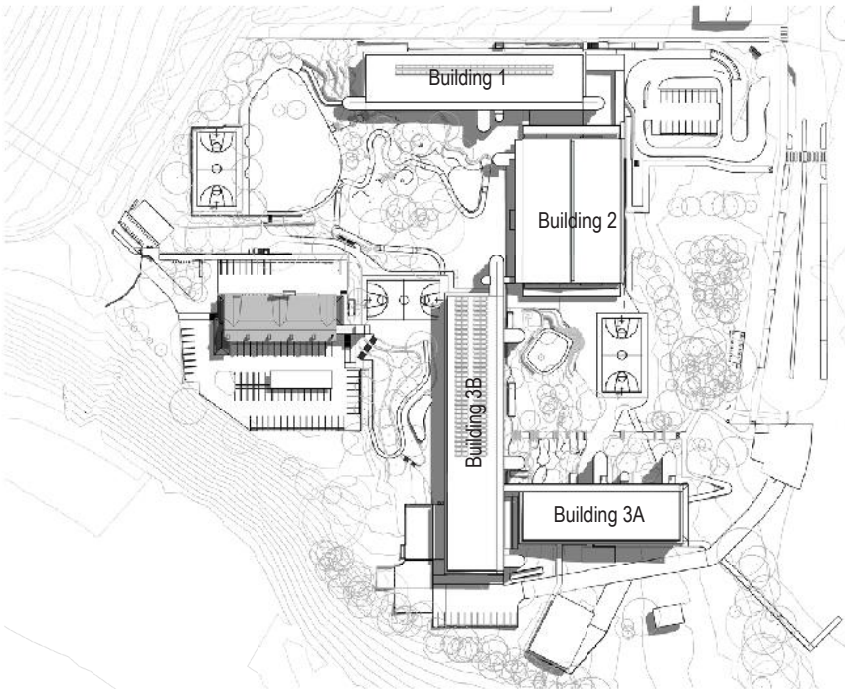
Proposed - 3pm

Built Form & Urban Response

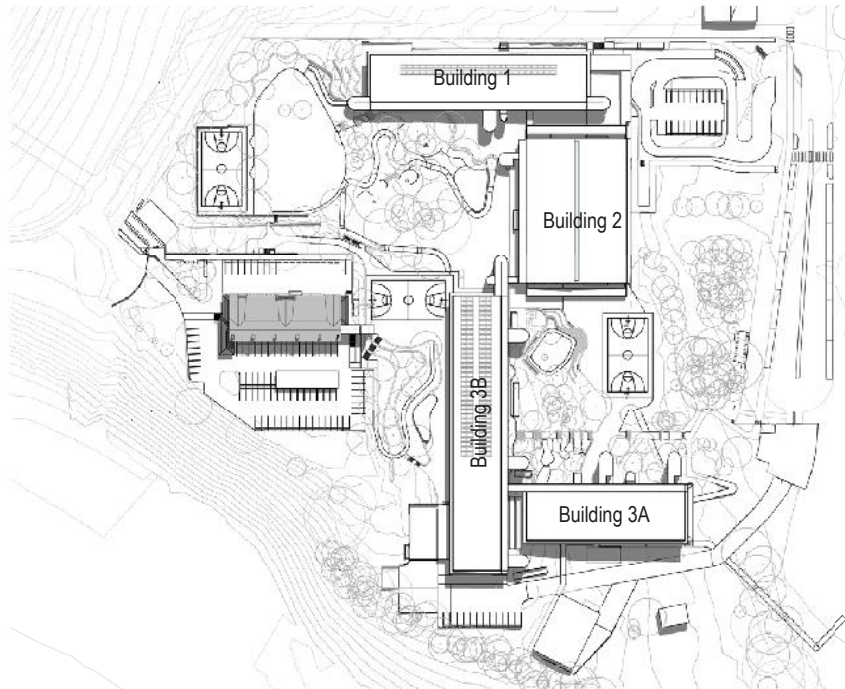
Summer Solstice



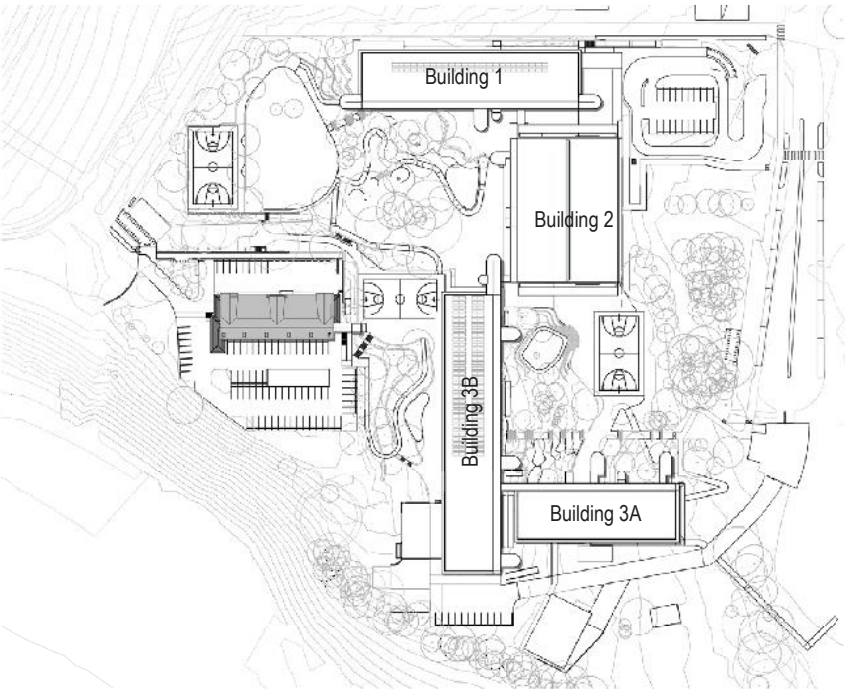
Existing - 9am



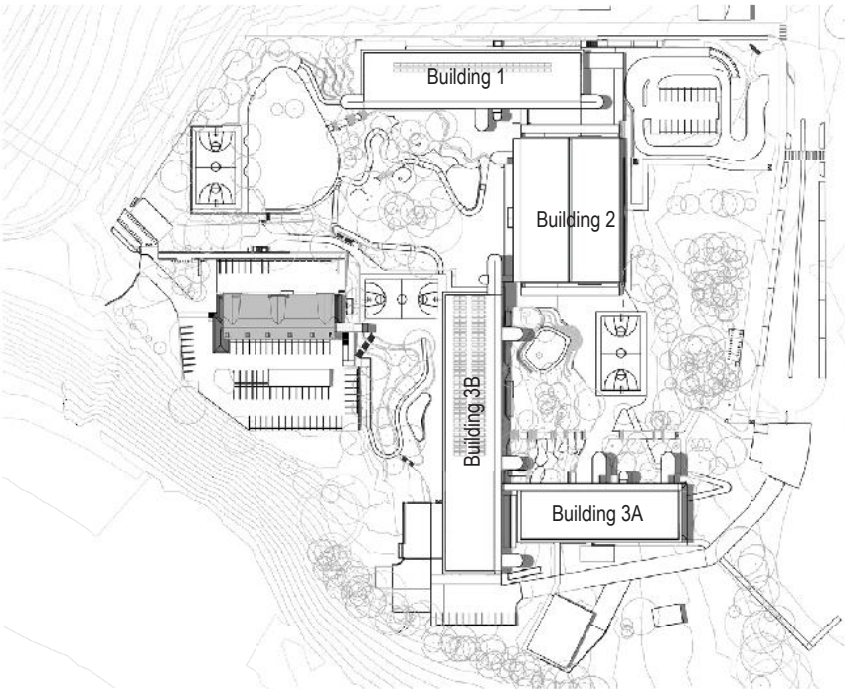
Existing - 12pm



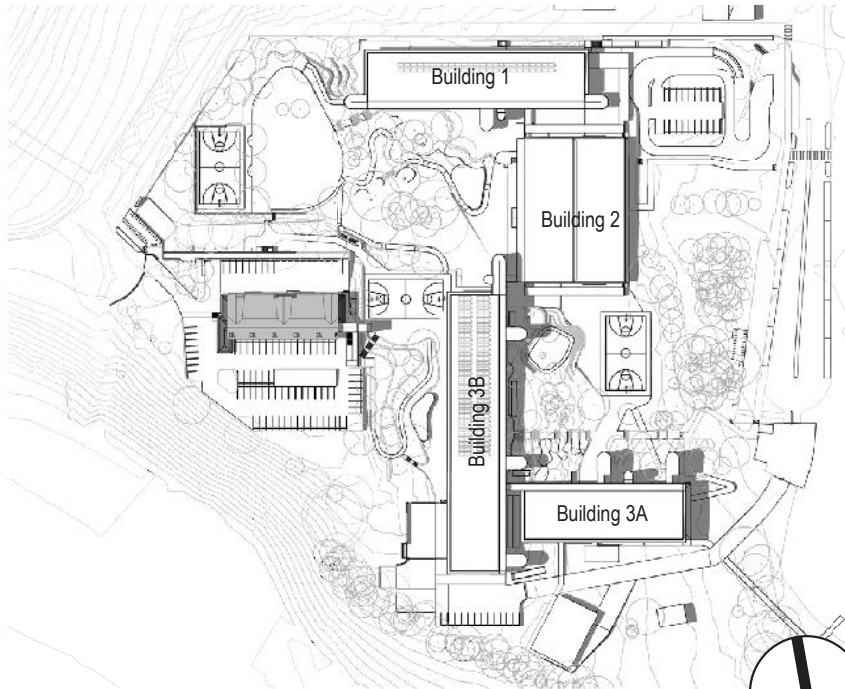
Existing - 3pm



Proposed - 9am



Proposed - 12pm



Proposed - 3pm

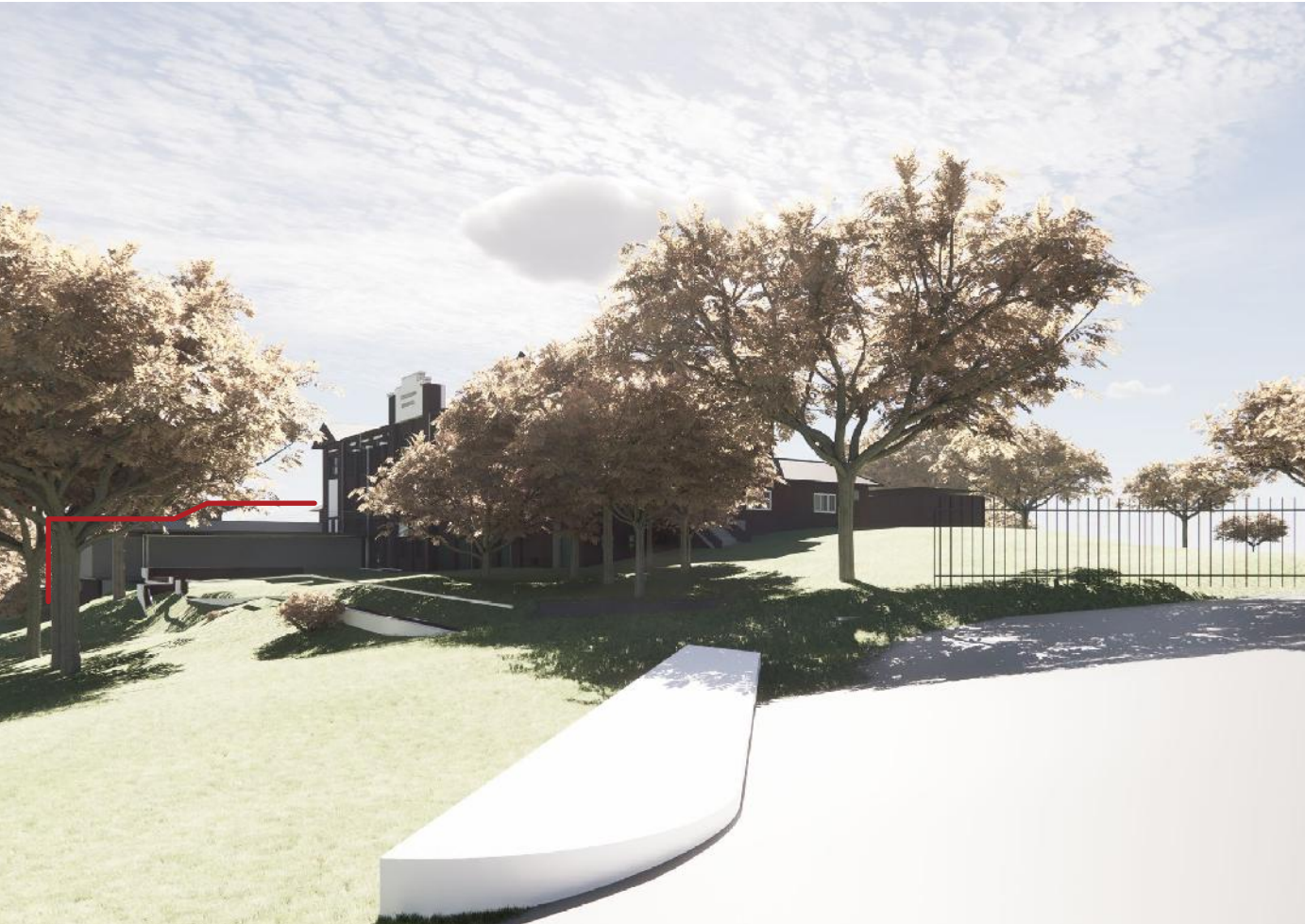
5.5 Visual Impact Analysis

View Table

View Name	Description
View 1	View towards building A from existing drop off on Riverview Street
View 2	View towards Building A from existing tennis courts
View 3	View towards Building A from corner of Riverview Street and High School Lane
View 4	View towards existing buildings from corner of Nullum Street and High School Lane
View 5	View south towards existing building A from neighbouring lot, 84B Riverview Street - Existing Image



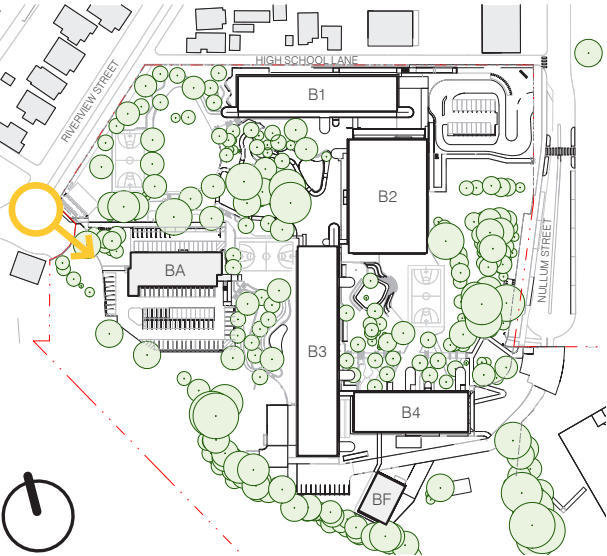
View 1 - View towards building A from existing drop off on Riverview Street



Existing



Proposed

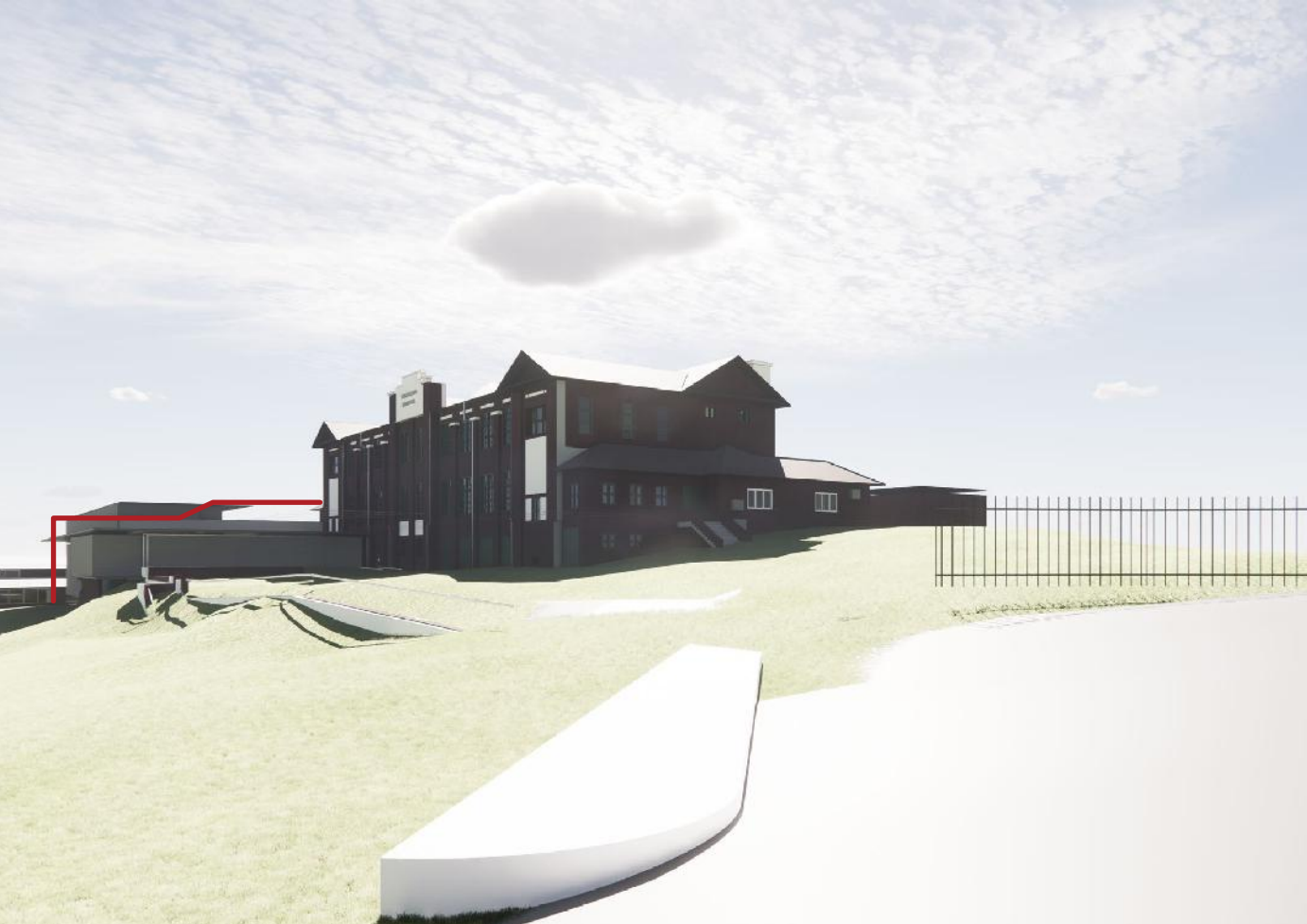


- Legend
- View Location & Direction
 - Outline of Proposal

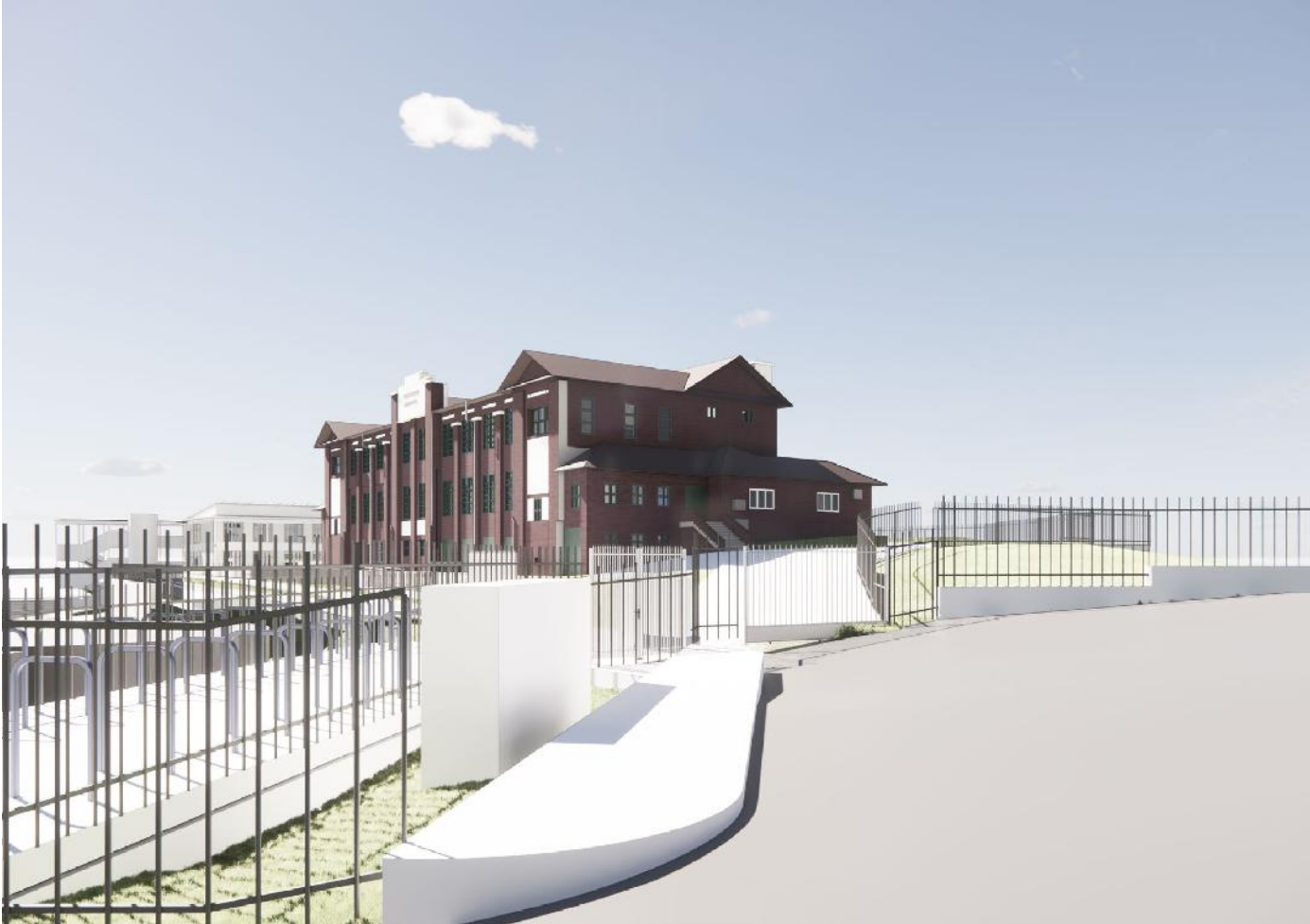
- Notes:
- Existing trees size and location is based on current survey information and are represented by an indicative species
 - Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

Built Form & Urban Response

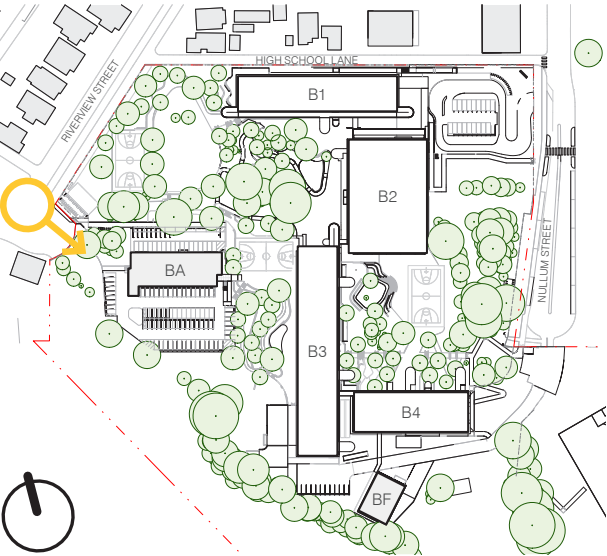
View 1 - View towards building A from existing drop off on Riverview Street (Without Trees)



Existing



Proposed

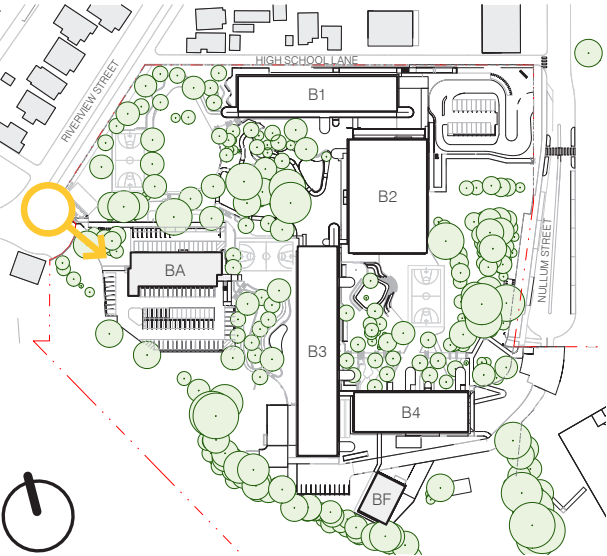


- Legend
-  - View Location & Direction
 -  - Outline of Proposal

- Notes:
- Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

Built Form & Urban Response

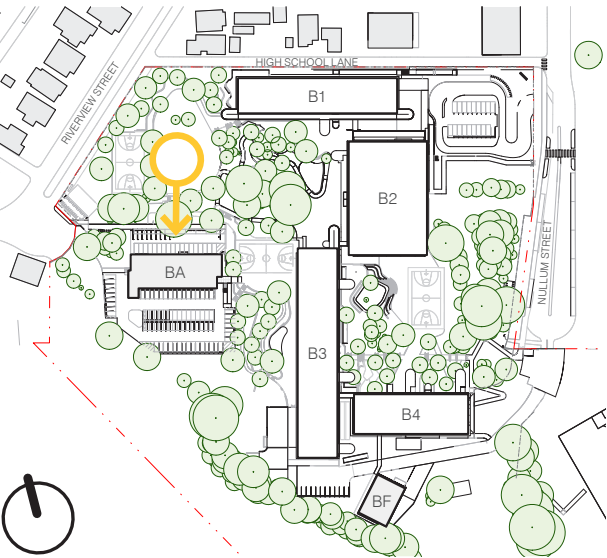
View 1 - View towards building A from existing drop off on Riverview Streets - Existing Image



View 2 - View towards Building A from existing tennis courts



Existing



- Legend
- View Location & Direction
 - Outline of Proposal



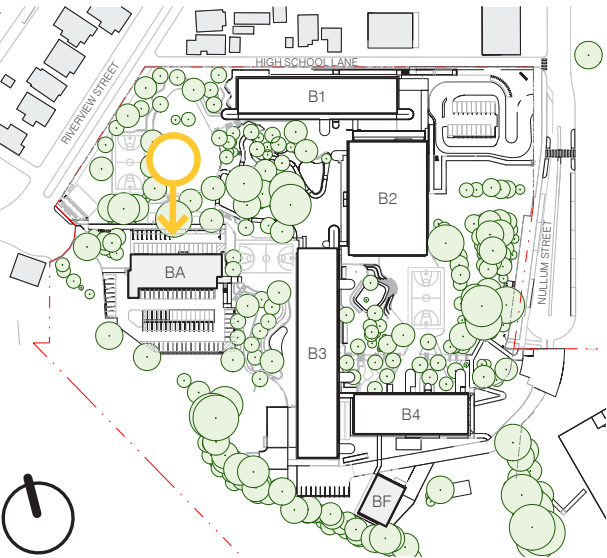
Proposed

- Notes:
- Existing trees size and location is based on current survey information and are represented by an indicative species
 - Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

View 2 - View Towards Building A From Existing Tennis Courts (Without Trees)



Existing



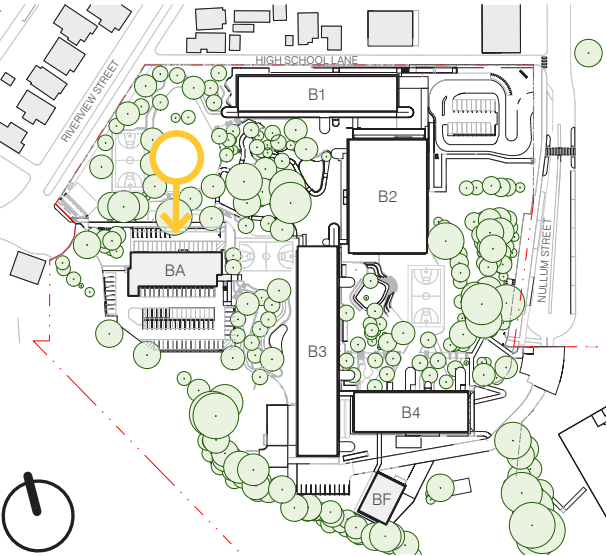
- Legend
-  - View Location & Direction
 -  - Outline of Proposal



Proposed

- Notes:
- Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

View 2 - View Towards Building A From Existing Tennis Courts - Existing Image



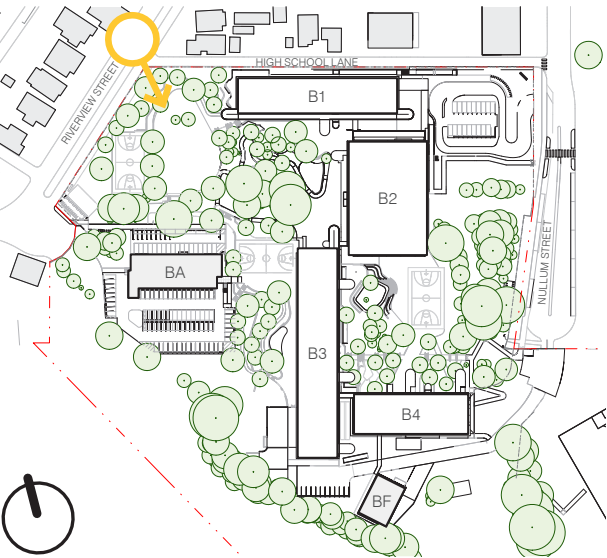
View 3 - View towards Building A from corner of Riverview Street and High School Lane



Existing



Proposed



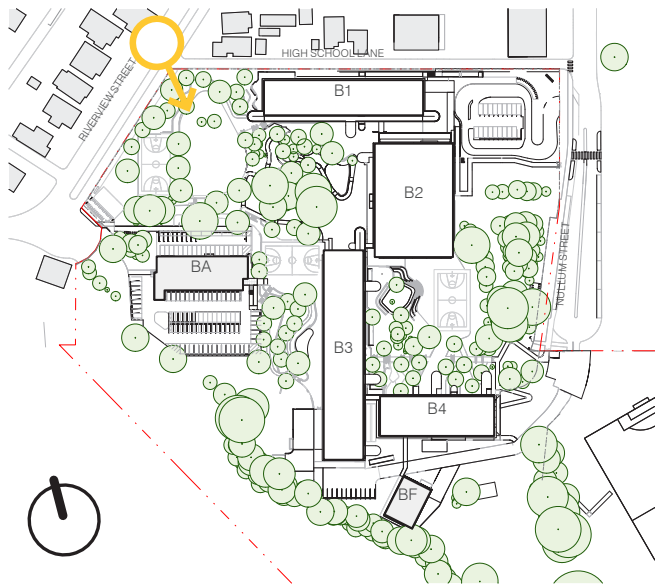
- Legend
- View Location & Direction
 - Outline of Proposal

- Notes:
- Existing trees size and location is based on current survey information and are represented by an indicative species
 - Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

View 3 - View towards Building A from corner of Riverview Street and High School Lane (Without Trees)



Existing



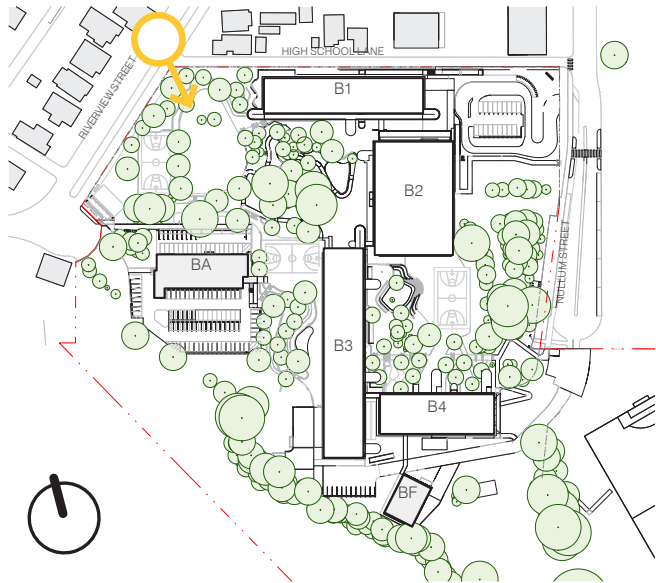
- Legend
-  - View Location & Direction
 -  - Outline of Proposal



Proposed

- Notes:
- Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

View 3 - View towards Building A from corner of Riverview Street and High School Lane - Existing Image



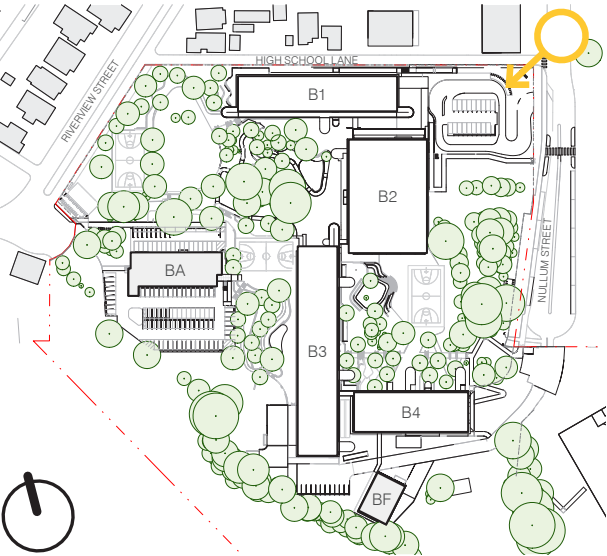
View 4 - View towards existing buildings from corner of Nullum Street and High School Lane



Existing



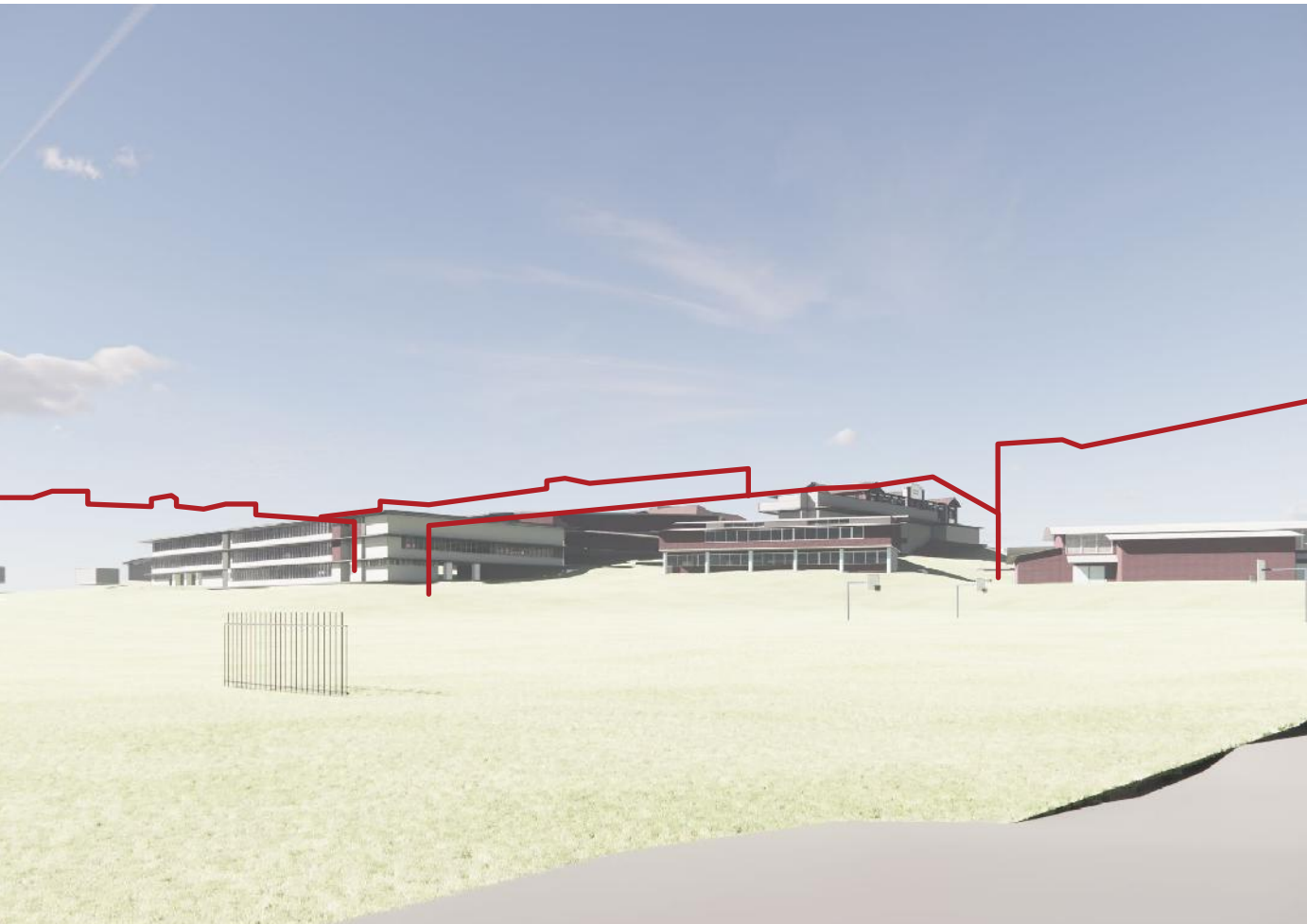
Proposed



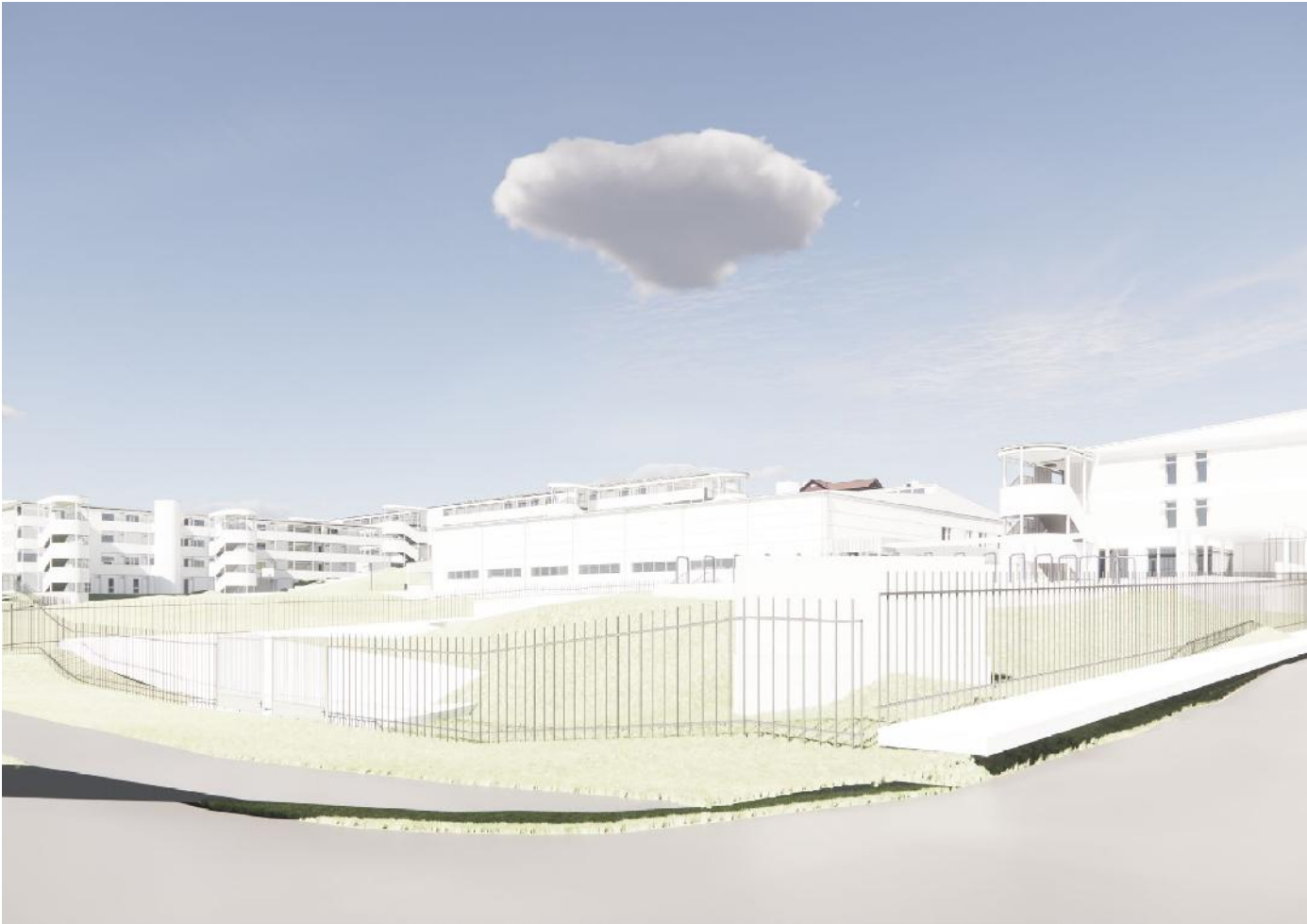
- Legend
- View Location & Direction
 - Outline of Proposal

- Notes:
- Existing trees size and location is based on current survey information and are represented by an indicative species
 - Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

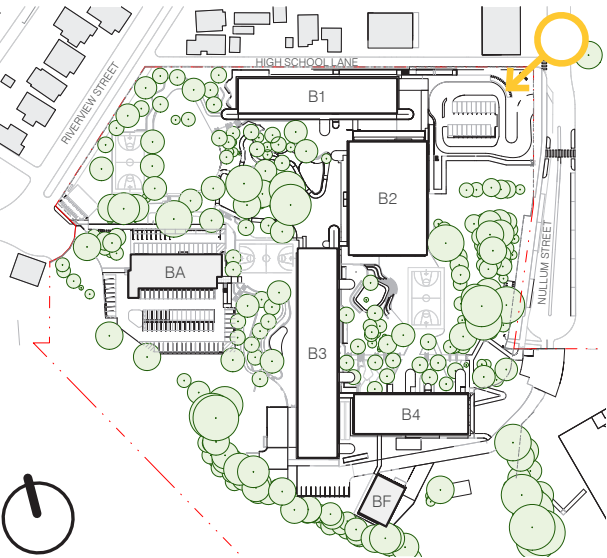
View 4 - View towards existing buildings from corner of Nullum Street and High School Lane (Without Trees)



Existing



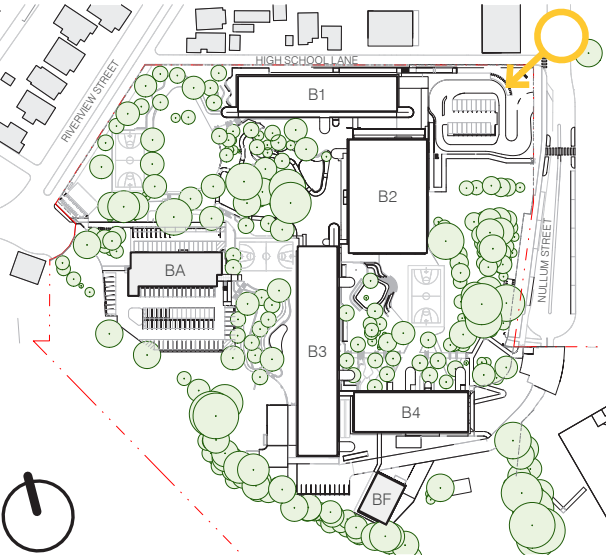
Proposed



- Legend
- View Location & Direction
 - Outline of Proposal

- Notes:
- Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

View 4 - View towards existing buildings from corner of Nullum Street and High School Lane - Existing Image



Built Form & Urban Response

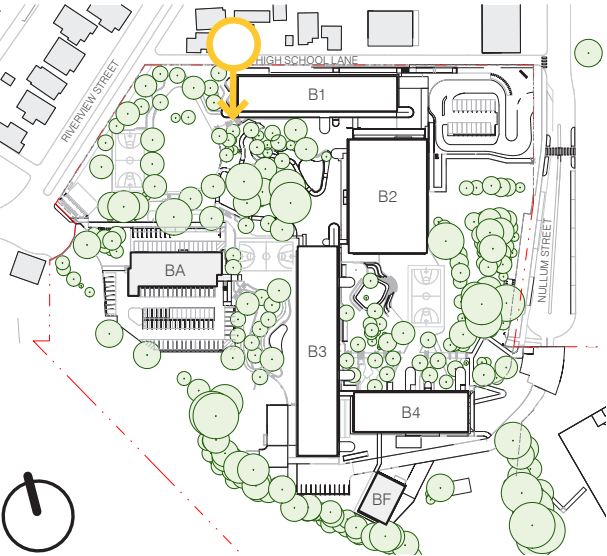
View 5 - View south towards existing building A from neighbouring lot, 84B Riverview Street



Existing



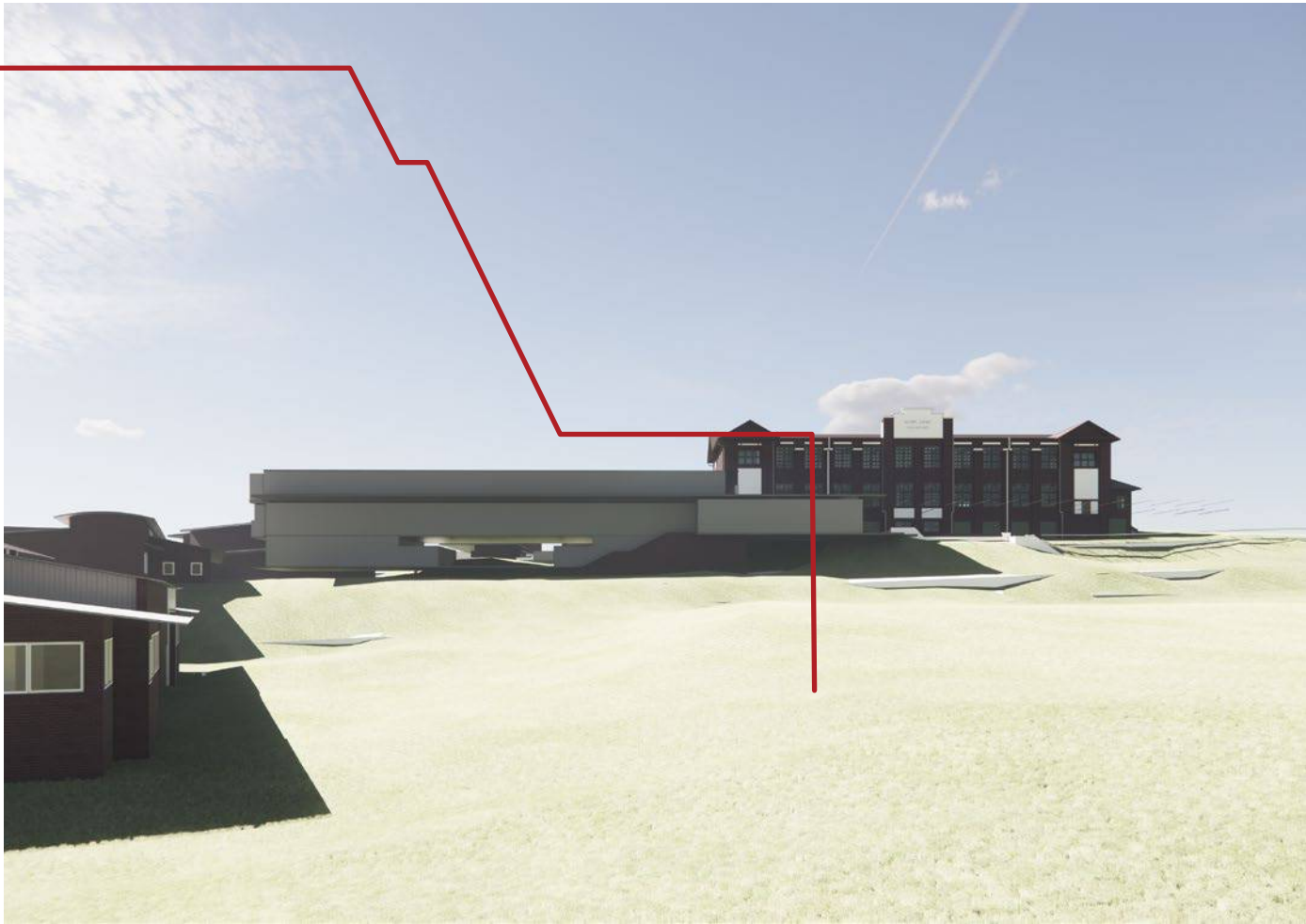
Proposed



- Notes:
- Existing trees size and location is based on current survey information and are represented by an indicative species
 - Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

Built Form & Urban Response

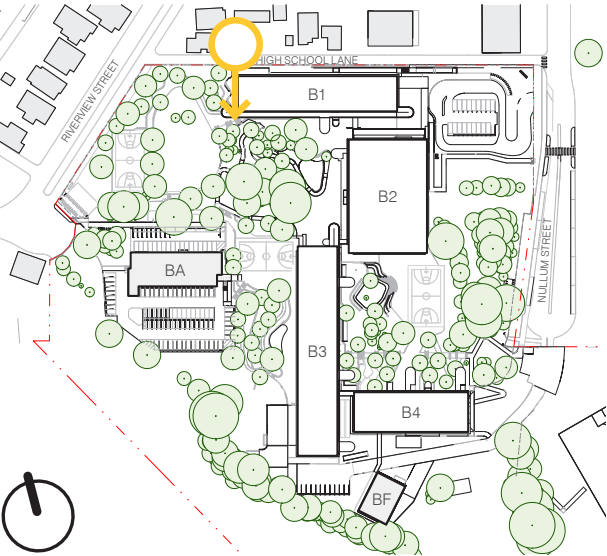
View 5 - View south towards existing building A from neighbouring lot, 84B Riverview Street (Without Trees)



Existing



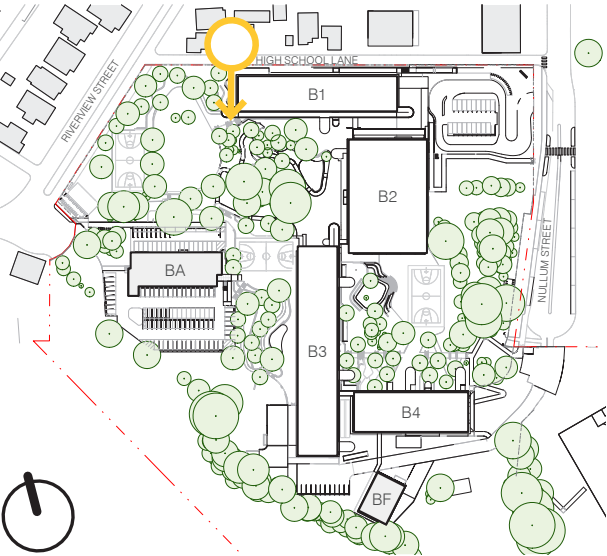
Proposed



- Notes:
- Materiality of existing buildings are indicatively matched to existing photos
 - Materiality of proposed buildings is not shown and is represented by an all white envelope

Built Form & Urban Response

View 5 - View south towards existing building A from neighbouring lot, 84B Riverview Street - Existing Image



- Notes:
- The view above is taken from a position that is slightly further east than the views depicted above due to the unavailability of an image directly from the prescribed view.

5.6 Wayfinding and signage

Wayfinding strategies have been explored by our wayfinding consultant .

Key strategies have been identified on section 1.2 “The wayfinding Strategy” on the adjacent report excerpt.



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

1.0 SITE ANALYSIS: Circulation and nodal points

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

	Circulation pathways
	Nodal points: Primary / Secondary / Tertiary
	Primary destinations
	Primary site lines
	Primary school section of site
	High school section of site

MURWILLUMBAH EDUCATION CAMPUS WAYFINDING AND SIGNAGE
WAYFINDING STRATEGY

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

TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8
ENTRY PYLON PRIMARY SCHOOL AND HIGH SCHOOL	BLOCK SIGNAGE	DIRECTIONAL PLINTH	DIRECTIONAL BOLLARD	DOOR SIGNAGE	FLOOR NUMBERS	SUPER GRAPHICS	IDENTIFICATION SIGNAGE
IDENTIFICATION	IDENTIFICATION	DIRECTIONAL	DIRECTIONAL	IDENTIFICATION	IDENTIFICATION	ARTWORK	IDENTIFICATION
Supports the clear identification and branding of the school at main entry visible on both approaches.	Supports the clear identification and branding of school blocks visible from the central grounds within the site.	Ensures provision of high level information supporting navigation to and from primary destinations within the site.	Ensures provision of detailed information supporting navigation to and from secondary destinations within the site if required.	Signage system that supports the clear identification of classrooms detailing the floor level and room number.	Signage system that supports the clear identification of floor levels in each building adjacent to vertical circulation.	A range of site specific large scale graphics that contribute broadly to the site aesthetics and amenity and specifically to learning and placemaking.	Signage system that supports the clear identification of destinations throughout the site.
3000mm x 850mm x 150mm	1200mm x 600mm x 50mm	2000mm x 400mm x 50mm	1600mm x 150mm x 150mm	300mm x 150mm	1200mm x 800mm	2700mm x 800mm	200mm letter height
2 x sided sign form comprising 3 x vertical panels 50mm depth. Panels and graphics to be durable powder coated paint finish. The 2 outer panels have different colours to the centre panel. Dimensioned lettering to the front and reverse sign faces from 10mm aluminium finished in durable powder coated paint finish. Engineering and footing details to be resolved.	1 x sided sign form with graphics to face that may wrap around the corner of a building. Sign face as 3mm aluminium sheet finished with durable powder coated paint finish. Graphics to sign face as vinyl with clear protective coating over to seal. Fixing details to be resolved.	2 x sided sign form with graphics to front and reverse faces. Sign face as 3mm aluminium sheet, finished with durable powder coated paint finish. Graphics to sign face as vinyl with clear protective coating over to seal. Fixing details to be resolved.	2 x sided sign form with graphics to front and reverse faces. Bollard is standard SHS post finished with durable powder coated paint finish. Graphics to sign face as vinyl with clear protective coating over to seal. Fixing details to be resolved.	A. Fixed Room Identification as per AMS System B. Variable Room Identification compliant with EFGG SG-581. Sign forms mechanically fixed to wall or glazed surface. Graphics to sign face with clear protective coating over to seal.	1 x sided sign form with graphics to front face only. Letters to be cut from 6mm aluminium, finished with durable powder coated paint finish. Base plate mechanically fixed to wall surface with sign face mechanically fixed to base plate.	Graphic to be digitally printed die sublimation to synthetic wallpaper product such as 3M. Require drops in 1200 or 1500mm width to full heights of walls. Require means to conceal ends of graphics to avoid lifting or picking.	1 x sided sign form. Dimensioned lettering from 10mm aluminium, finished with durable powder coated paint finish, mechanically fixed to wall.

1.1 SIGNAGE REQUIREMENTS AND SPECIFICATION: SCALE 1:50

1.2 THE WAYFINDING STRATEGY

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

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

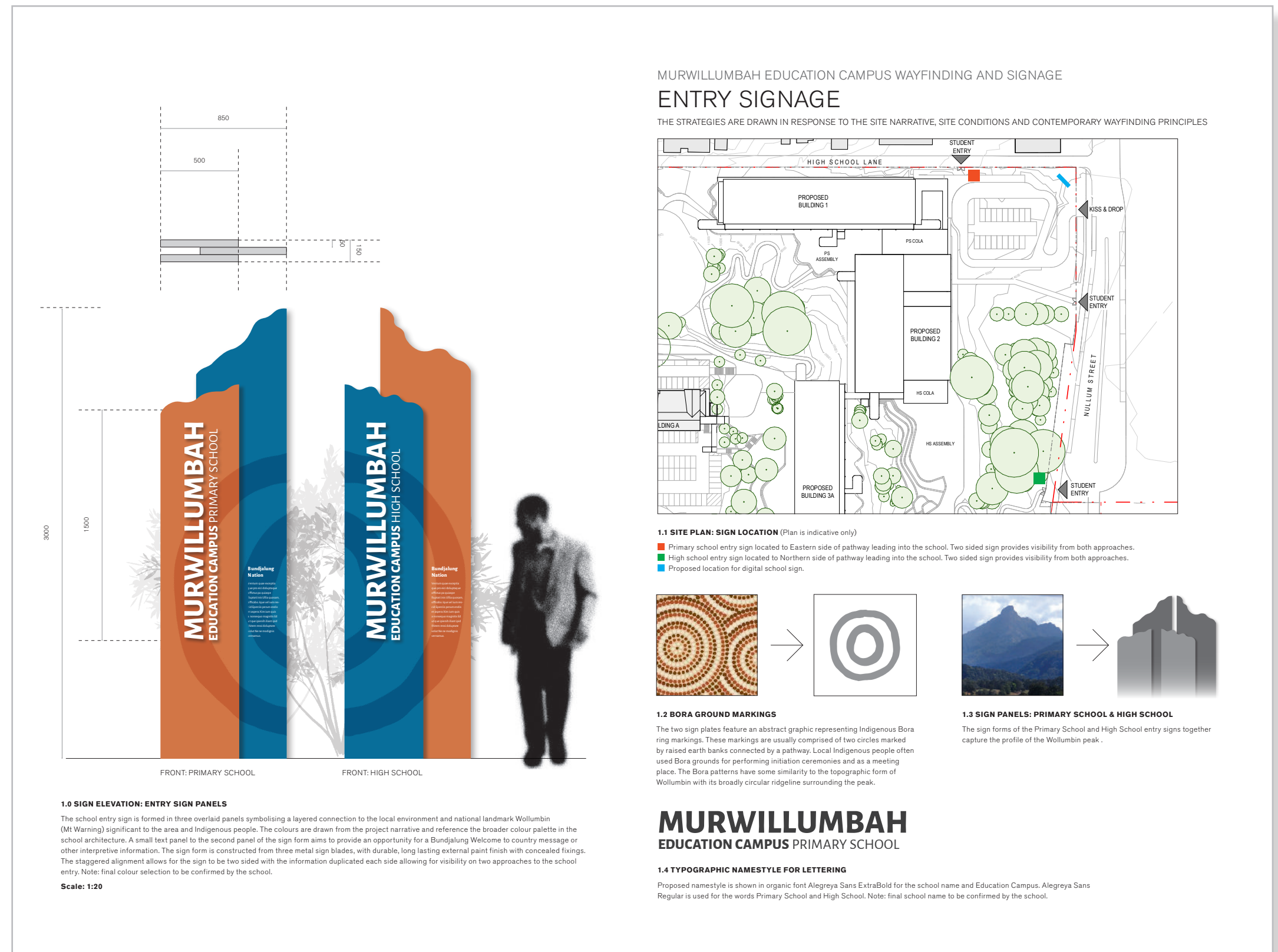
CIRCULATION AND NODAL POINTS: A range of circulation pathways are evident within the site typically tracing the movements from a number of entries to a range of key destinations. As the school site contains no through vehicular access the signage will preference pedestrian movement and, where relevant,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

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

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

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

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



5.7 Connecting with Country

The following Excerpts from the Connecting with Country report by EMM Sydney outlines the strategies for addressing the Aboriginal cultural heritage that has been identified in the development.



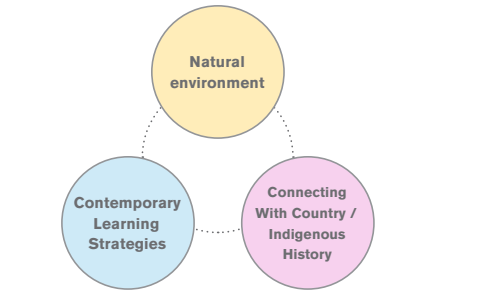
School site showing adjacent Tweed River 3-500m to the East (Google Earth)



School site and views to Wollumbin 7km to the South West (Google Earth)



Colour palette: A base colour palette is drawn from the landscape topography section featured in the ARCADIA landscape report document.



Value of environment: Activation of these elements renders them visible to site users and provides learning opportunities through tangible links to Indigenous culture.

CONNECTING WITH COUNTRY: ACTIVATION OF A RICH LANDSCAPE
Site narrative and concept for Murwillumbah Education Campus.

1. About Connecting With Country
Connecting to Country means much more than a connection to land.¹ It evokes the enduring connection to the environment and its role in forming Indigenous Culture, Community and Identity² but within the scope of this school project we are constrained in our ability to capture this in all dimensions. Our goal is therefore to establish a meaningful connection within the context of the school site – whereby the life and culture of Indigenous peoples that occupied the site (Budjalung) can be acknowledged and expressed. ‘Aboriginal people believe that Country has a spirit and is living’³ and that ‘Country is continuously speaking to us’⁴.
The living environment has a central place in Indigenous culture⁵ but also with contemporary western learning strategies⁶ –reflecting on the importance and care for the natural world and its inhabitants linking to our wellbeing and its importance to deepening awareness of climate health. Connection With Country imparts to us the importance of this connection to environment and to place – contextualising and making meaningful our place in our society and the wider world.⁷

The Murwillumbah site has a landscape significantly disrupted from the time of permanent Indigenous occupation ⁸. In the much changed present landscape with a need to draw tangible connections to place, the narrative task is to find a way to *bring the environment and history to life* – to understand its language – so we can all learn from it.

2. Site narrative
This document draws together a range of material to establish clear definition of Aboriginal links to the school grounds and surrounds. These will form a site narrative through activation of these elements in a range of visual and design elements. This will support the creation of tangible links to a living Indigenous history. A clear directive has been established for the suitability of the site as ‘a prime location for an education campus and to ‘allow future cultural heritage opportunities’.⁹ The narrative presented here draws primarily upon a rich and layered history of Indigenous occupation of the region drawn from a review of material describing the significance of Indigenous culture and history of the Budjalung People.

3. Site analysis
Murwillumbah Education Campus will be comprised of four local area schools joining to create one school. The site is adjacent to the Tweed River 3-500m to the East in a rural environment that has been farmed since early Western settlement following John Oxley’s journey up the Tweed River in 1823¹⁰. Through ongoing settlement, land clearing and subsequent farming the site is now devoid of much of the original landscape – flora and fauna – and evidence of Indigenous occupation that was in abundance¹¹ has also been erased. The site has proximity and views to Wollumbin (Mt Warning) and the Wollumbin National Park 7km to the South West – a World Heritage listed reserve of highly significant Gondwana Rainforest. Wollumbin National Park is noted as having exceptional biological diversity and links to earth’s evolutionary history¹² and has great cultural significance to the Budjalung People¹³.

4. Concept and Connecting With Country
In contrast to other school sites in NSW, Murwillumbah has a

rich and layered landscape of environmental and Indigenous history that we can draw upon to establish tangible links that will enable meaningful Connections to Country. Surveying Aboriginal Heritage reports and other relevant sources we have established 9 distinct thematic elements.

1. Sacred places: Wollumbin and Hospital Hill: ‘The Wollumbin area, including Mount Warning, provides Aboriginal people with a strong sense of cultural identity and belonging’. In line with this, links to Wollumbin are recognised as a priority for the site narrative and thematic elements symbolised by the distinctive peak formation and maximising views to the mountain. RAPs consulted during the project thus far advised of the importance of showcasing Wollumbin to promote teaching of cultural heritage by the school through written and visual elements¹⁴. A number of dreaming stories are acknowledged and these are seen as contextual depending on the direction of observance.¹⁵ Wollumbin name meaning warrior Chief; the spirits of the mountain were warriors and when lightning flashed it signified a fierce battle with rock escarpments seen as scars on the warriors; the peak was the head of one of Three Brothers that brought original people to the country in a large canoe; a brush Turkey standing on its peak being speared and a chunk taken out of the peak where the spear hit. The circular form of the mountain and surrounding ridges recall earth mounds. Hospital Hill is another Dreaming and Aboriginal Ceremonial site 1.3km North East of the school. The elevated position has views over the valley and to Wollumbin to the South East.

2. Dreaming stories and Red Soils: Red soils are associated with the nearby Cudgen Plateau and thought to be present on the site by the RAPs consulted. The red soils are associated with the Young Man and Kangaroo Dreaming story where a speared kangaroo spilt blood over the landscape turning the soil red as it went¹⁶. Local RAPs also spoke of a Dreamtime story that speaks of the ‘Bloody Nose Place’. The colour red may be used on the site to symbolise these stories.

3. Tweed River: Acknowledged as a significant food source comprising pipis and a range of fish such as bream, snapper and flathead with fish being speared by men or caught with scoop nets cast from the bank or a canoe¹⁷.

4. Flora: A range of distinctive flora is endemic in the vicinity of the school site and in particular the Wollumbin National Park. Trees including Black Booyong, Climbing Palm, White Booyong, Hoop Pine, Bangalow Palm, Australian Cedar, White Mahogany, Small Fruited Grey Gum, Tallow Wood and Sydney Blue Gum¹⁸. Trees and other species may be represented by their flowers and leaves.

5. Plant foods and medicines: Plant foods, seeds and fruits also played an important role in Bundjalung subsistence practices. Plants such as midgin berry, blue flax lily, pigface, saltbush, bunya, quandong, lilly pilly, Davidson plums, finger limes, Midyim, lemon aspen, orange berry, native Wampee, Bungwall fern and native tamarind grew abundantly¹⁹. Aboriginal women and girls also collected and used plants for medicinal purposes such as oils from the leaves of the Paper bark treated headaches, coughs and colds. A range of medicinal plants may be represented by their leaves or flowers.

6. Three Tweed River Clans: It is generally accepted amongst the Tweed Aboriginal community that three main clans existed within the Tweed River Valley – these being the Coodjinburra, the Tul-gi-gin and the Moorung-Moobar. The Coodjinburra clan took stewardship of the land between the Tweed and Brunswick Rivers and approximately 16 km inland to Murwillumbah; the Tul-gi-gin for the north arm of the Tweed River, and the Moorung-Moobar the southern and central arms of the Tweed River, around Wollumbin (Mt Warning) (Steele 1984:85)²⁰. The three clans may be represented conceptually by visual means or delineation of spaces.

7. Tracks and pathways: In the densely forested early landscape tracks are recorded as being maintained by burning methods²¹. Tracks were practically and symbolically important for facilitating exchange and communication and connecting local tribes and more distant groups.

8. Bora ground markings: Initiation ceremonies took place on Bora grounds that were noted as being distinguished by ground drawings or mouldings of people and deities²¹. One early description of a Bora Ceremony or ‘Boori’ noted ‘a two-ring earth complex that may take three to four weeks to construct’²². The bora patterns have some similarity to the topographic form of Wollumbin with its broadly circular ridgeline surrounding the peak.

9. Stone arrangements: The Wollumbin area is acknowledged as having an abundance of ceremonial arrangements of stones but very little evidence remaining of these through disturbance through farming and urbanisation. The best known was located in the Tweed Range and the ‘Brummies’ on the Western slopes of Wollumbin. All comprised standing or resting stones placed in circular formation²³.

4. Conceptual approach for design elements
The eleven thematic elements noted form a broad narrative for the school site. It is anticipated that a range of features may be incorporated into the various built elements including architecture, landscape and signage forms contributing to the activation of space and Connecting With Country. These will emerge through the use of symbols, illustrations, colour, imagery and language to support the tangible links to environment and Indigenous history. The thematic elements are represented symbolically below.



1. "Country" (capital C) has a specific and significant meaning for Aboriginal peoples. In the Aboriginal sense of the word, Country relates to the nation or cultural group and land that we belong to, yearn for, find healing from and will return to. **However, Country means much more than land**, it is our place of origin in cultural, spiritual and literal terms. It includes not only land but also skies and waters. Country incorporates both the tangible and the intangible, for instance, all the knowledges and cultural practices associated with land. People are part of Country, and our identity is derived in a large way in relation to Country.
— Dr Danièle Hromek, Budawang/Yuin, Researcher and spatial designer, 2019

Pg 14 / Draft connecting with country framework 2020 11 12.pdf

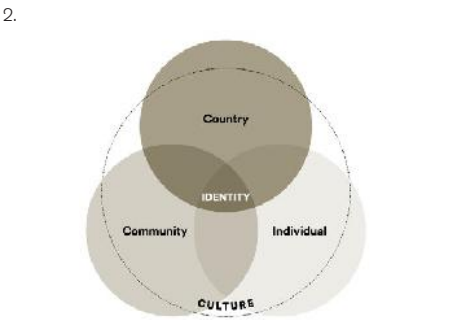


Figure 6: Interrelationships between Country, community and individuals. Reciprocal relationships with Country and community form cultural practices, which in turn shape individual identities. All are also influenced by external factors including environment, politics, and wider society.

Pg 16 / Draft connecting with country framework 2020 11 12.pdf

3. Pg22 / draft connecting with country framework 2020 11 12.pdf

4. Pg21 / draft connecting with country framework 2020 11 12.pdf

5. For many Indigenous people in Australia, land is much more than soil, rocks or minerals. It's a living environment that sustains, and is sustained by, people and culture.
<https://australian.museum/about/history/exhibitions/Indigenous-australians/>

6. Abstract: Learning in the outdoors has significant educational advantages for children in the Primary School years and the need to connect with nature is becoming increasingly prominent in research worldwide. Pro-environmental behaviour, especially in the early years, has been shown to have a causal relationship with connectivity with the natural environment. Place-based outdoor learning promotes a relationship with the natural environment and constructs deep environmental knowledge and understanding of the world that surrounds learners. Embedding Indigenous culture and knowledge into outdoor learning within Primary School programs enables local knowledge and understanding to permeate throughout activities in explicit and experiential ways. A place-based pedagogy recognises the importance of forming intimate relationships with place through regular visitations to the same outdoor environment.
Place-based outdoor learning and environmental sustainability within Australian Primary School « Journal of Sustainability Education

7. The deep connection between humans and nature is well-documented. There are studies which suggest that all humans have capacity for a special relationship with the environment and that we thrive when connected to nature. This is well understood in the Japanese practice – shinrin-yoku – sometimes referred to as “forest bathing”6. By extending this idea of individual connection to nature, the connection between culture and place becomes clearer. We all have a degree of awareness of how our cultural identity is linked to a sense of place – whether that be in nature or in the built environment.

Pg 22 / Draft connecting with country framework 2020 11 12.pdf

8. Previous land disturbance has a significant impact to the survivability of cultural materials if present. While there are natural processes that can disturb and destroy cultural material, more frequently it is increasing urbanisation over the past 200 years that has resulted in the most significant impacts. The history and land use of the study area is outlined in detail in EMM's historical assessment of the proposed development activity.

Murwillumbah Education Campus, Aboriginal cultural heritage assessment, EMM Sydney: PG14: 3.7 Previous disturbance and land use:

9. While no intangible values were present on the site, the RAPs did highlight the view-lines to Wollumbin (Mount Warning), a significant cultural place, some 7 km south-west of the study area and Hospital Hill, another significant cultural place located 1.3 km north-east of the study area. As such, they advised that the study area was a suitable location to allow the school to provide opportunity for connection and teaching of this site and broader cultural

CONNECTING WITH COUNTRY: REFERENCES

history.
Murwillumbah Education Campus, Aboriginal cultural heritage assessment, EMM Sydney: PGE3: 3.7 Previous disturbance and land use:

10. The first white man generally believed to have journeyed up the Tweed River was John Oxley, who travelled about 7km upstream from Fingal Head in 1823. Several of his companions, John Uniacke amongst them, made some of the most detailed and astute observations of the people who then occupied the Tweed.

Tweed Shire Council Heritage Study. Thematic History. Report for Tweed Shire Council, September 2004. Joanna Boileau, Heritage Consultant. PG21: 2.2 Mid and late Holocene landscapes and people.

11. (Ian Fox in the 1970s) conducted a study of a traditional Aboriginal pathway between the coast and the hinterland, extending from Billinudgel Nature Reserve on the coast, through Mount Jerusalem National Park to Mount Warning, recorded 64 sites in the study area, including 13 new sites. These include rock shelters, open camp sites and artefact scatters, mainly on ridgelines or elevated riverine terraces inland, middens and fish traps in coastal areas, and ceremonial sites.

Tweed Shire Council Heritage Study. Thematic History. Report for Tweed Shire Council, September 2004. Joanna Boileau, Heritage Consultant. PG23: 2.2 Mid and late Holocene landscapes and people.

12. The study area is located ~4 km north-east of Wollumbin National Park, a UNESCO World Heritage site, which is listed as a natural place for comprising a portion of the Gondwana Rainforests of Australia. The Wollumbin National Park fulfils its UNESCO World Heritage listing by containing species of plants and animals that have lineages and communities with ancient Origins in Gondwana, and for presenting outstanding examples of Earth's evolutionary history, ongoing geological and biological processes, and exceptional biological diversity (UNESCO 1994). The Gondwana Rainforests of Australia provide habitat for many species of plants and animals including more than 270 threatened species as well as relict and primitive species (UNESCO 1994). Stands of cool temperate Antarctic beech trees can be found above 1000 m (Mitchell 2002:147).

Murwillumbah Education Campus, Aboriginal cultural heritage assessment, EMM Sydney: PG14: 3.6 Past flora and fauna

13. Wollumbin is a place of cultural and traditional significance to the Bundjalung people and contains sacred sites, where particular ceremonies and initiation rites are performed. The summit area of the Mountain is a declared Aboriginal Place under the National Parks and Wildlife Act.

https://en.wikipedia.org/wiki/Mount_Warning

14. The interpretation strategy and interpretation plan must include consideration of three main components identified though the ACHA process: - input and feedback from the RAPs, which to date includes the importance of showcasing Wollumbin to promote teaching of cultural heritage by the school. This should include consideration of the establishment of a yarning circle or teaching area in the north-western portion of the site (refer to photo location 26 and 27 in Figure 6.1), removal of vegetation to assist view-lines, and incorporation of written/visual information on the history and importance of Wollumbin;

Murwillumbah Education Campus, Aboriginal cultural heritage assessment, EMM Sydney: PGE4: Executive Summary

15. While now spelt Wollumbin, the Aboriginal word had numerous alternative spellings which are recorded in the historic record including; Walumban,[9] Walumbin,[10] and Woolloombin,[11] all referring to the same place. In 1873 reference can be found to the Mountain being referred to by Aboriginal people as “Wollumbin”, signifying “big fellow mountain”.[12] The Aboriginal significance of the area is contextual and dependant on direction of observance, gender, and status of whoever is telling the story.[13] Several different stories exist about Wollumbin including reference to the Mountain as the Warrior Chief,[14] a special place of significance for brush turkey,[15] and the cloud catcher.[16] Many more stories exist that are not in the public record.

https://en.wikipedia.org/wiki/Mount_Warning

16. It was noted on site by the RAPs that there are red soils found in the region (typically associated with the Cudgen soil landscape) that are associated with a Dreaming story (the Young Man and the Kangaroo). There is information in the ethnographic recorded that the wounded kangaroo leapt from place to place to evade capture, and that those places where the kangaroo landed were stained with the kangaroo's blood. While no red soils were identified during survey, RAPs noted that if red soils are found below the bitumen and concrete during the development of the education precinct, that it would spiritually link the study area through song lines to several other locations in the region between Kingscliff and Teresa Mountain, in the Richmond Ranges in Kyogle.

Murwillumbah Education Campus, Aboriginal cultural heritage assessment, EMM Sydney: PG51: 8.2 Statement of significance

17. Along the Tweed River, the subsistence likely had a strong marine base, primarily consisting of fish, crustaceans, oysters, pipis, cockles and other shellfish and fern -root gathering (Virtus Heritage 2019:16). Popular fish consumed

5.8 CPTED: Lighting Strategy

The adjacent lighting strategy has been provided by JHA consultants. It highlight all external lighting on campus in accordance to the AS 1158 P category lighting requirements and classification.

Key CPTED Strategies for lighting design include:

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

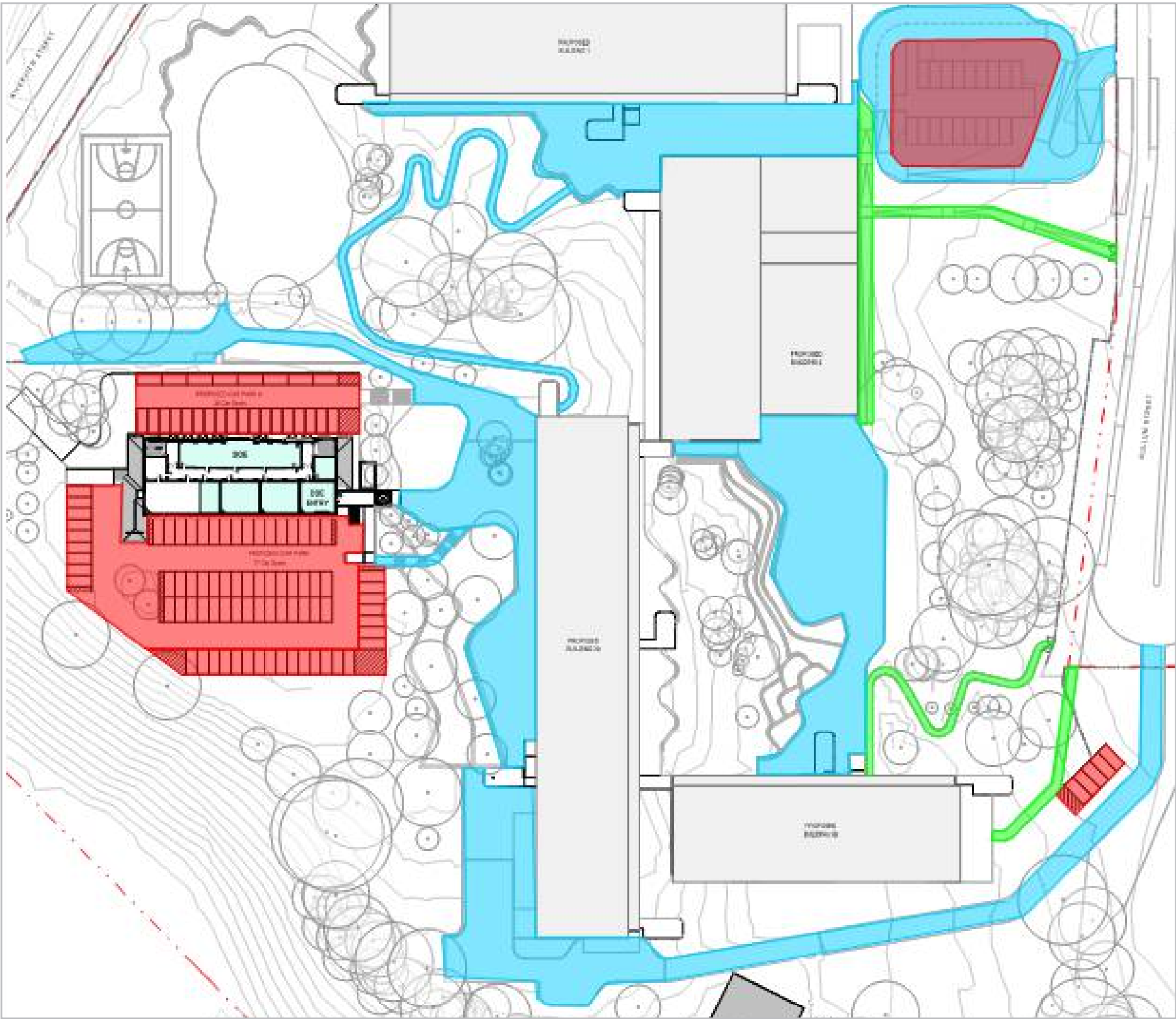
For further information on lighting strategies, refer to the full lighting strategy report.

Legend
(External Lighting AS/NZS 1158.2 P category Classification)

- PC3
- PP3
- PP4
- PCD

The describes lighting above correlates with the categories specified in AS/NZS 1158.2.

PC3 and PCD are standard lighting categories for outdoor car parks, while PP3 and PP4 are standard lighting categories fro pedestrian and cyclist paths based on the Australia Standard for Pedestrian Area Lighting (AS/NZS 1158)



5.9 CPTED Principles

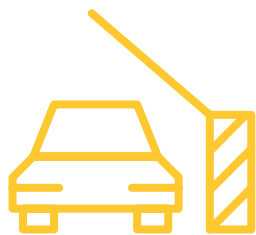


Passive Surveillance

Natural surveillance refers to the passive observation of others without the need for an intentional act to do so. Natural lines of sight play an important role in achieving this and were an important consideration in the MP, CD, and SD phases of the design.

The following measures were taken to make sure natural surveillance is achieved in the proposed scheme:

- Open play space is positioned close to learning areas.
- Admin spaces face the main entries for a clear line of sight towards entering visitors and students
- Spaces are well lit to improve transparency
- Staff spaces are spread throughout the building to allow staff to be dispersed throughout the campus and near their primary teaching spaces.



Access Control

Access control is paramount in the design of an education campus. Access to the school, by car or by foot, is to be maintained and monitored at all times

The following measures were taken to improve access control to the site:

- Boom gates are placed along the service road to stop cars from crossed the secure line of school.
- Gates are to be monitored by intercoms and buzzers that are connected to the admin spaces.
- Lighting is directed towards designated areas to reinforce the secure line of the school and direct visitors to the entry.
- Access through the secure line is only achieved through two access points near the PS and HS admin spaces.



Territorial Reinforcement

Territorial Reinforcement is achieved through the distinction between public and private property. This insures that external visitors that enter the site, are directed to the entries and check in with admin.

The following measures were taken to enforce the distinction between public and private property:

- The proposal includes a mixture of existing and new fencing to insure that the secure line covers the site in its entirety.
- Clear and concise lighting insures that the distinction between the interior of the site and exterior of the site is articulated.
- Entry points are equipped with large signage to indicate the entrance to the school.



Space Management

Space management goes hand in hand with territorial reinforcement and refers to the maintenance, observation, and the dexterity of the school to enforce the idea of a design that is looked after and cared for. This prevents vandalism or destruction of the property.

The following measures were taken to prevent graffiti and destruction of the proposed campus:

- Materials that are proposed are robust and easily maintained. They are also easily cleaned if any vandalism occurs
- All site elements are made up of strong materials to cope with the weather of the surrounding climate, purposeful destruction, or general wear from ongoing use.

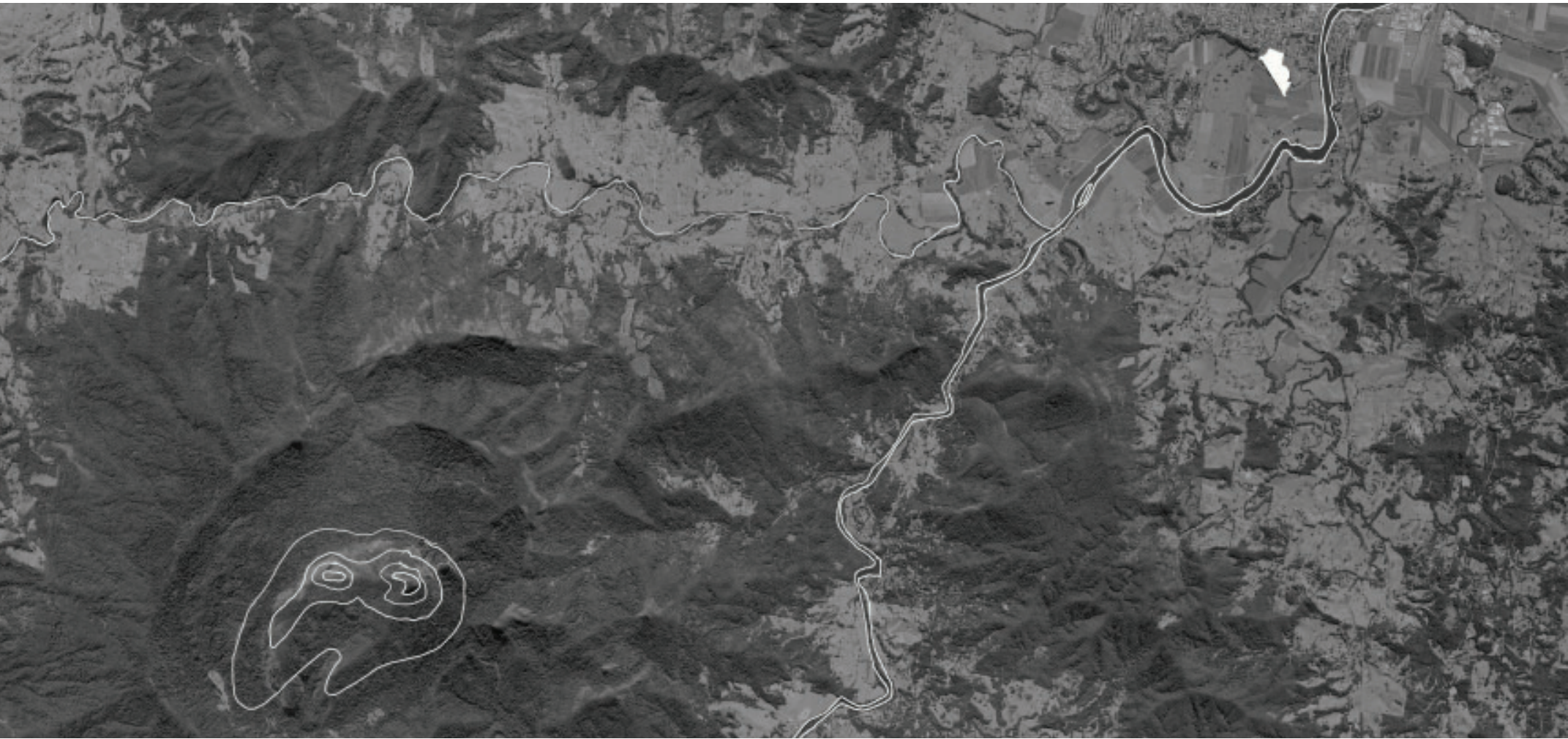


6 Facade and Materiality



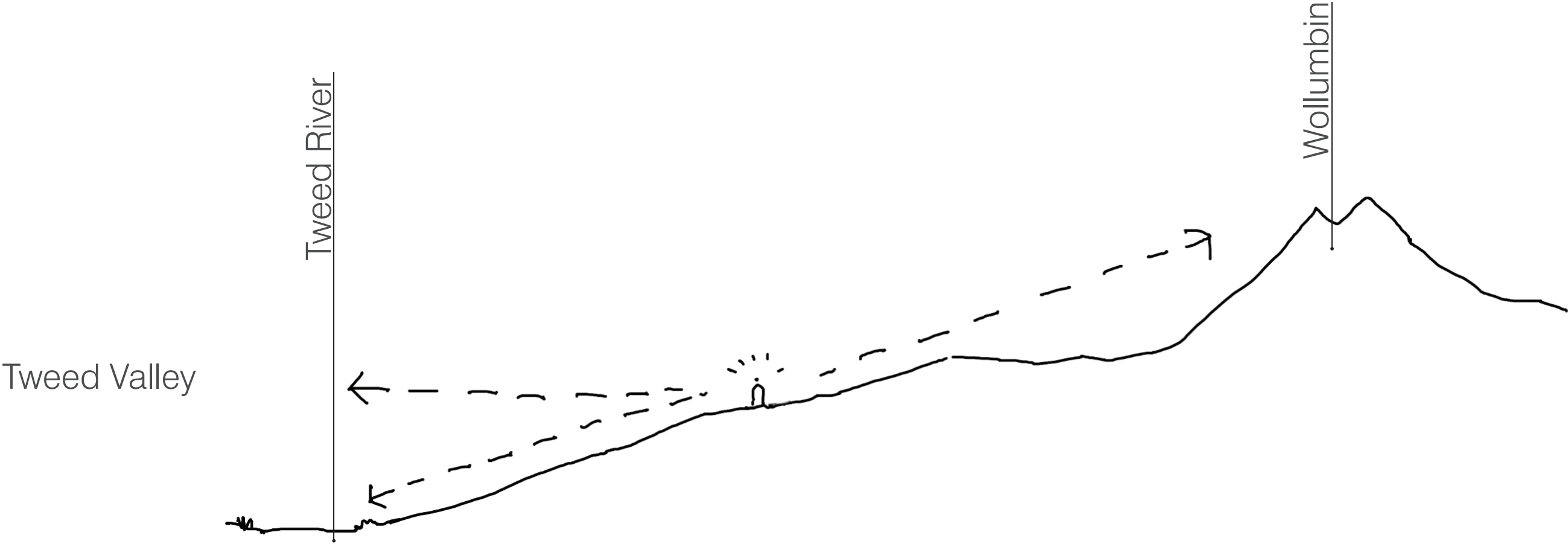
6.1 Facade Narrative

The site is inspired by its immediate context, undulating subtropical terrain provides a constant backdrop for the school. The site itself is positioned between Wollumbin and the town centre connected by the river. This location in front of the extension of the valley, places us before the freedom of the natural limits. .



Facade and Materiality

Multiplicity of Horizons



6.2 Materiality

The colour scheme is derived from the surrounding environment through the implementation of amber red of the soil from the Cudgel Plateau and the greens to replicate the surrounding nature throughout the seasons.



Cudgel Plateau - Natural Colour Palette

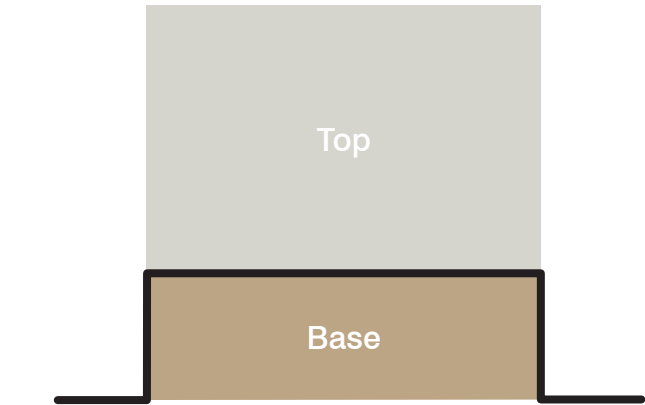


Wollumbin National Park - Natural Colour Palette



Facade and Materiality

These colours are replicated in the design through an amber red base ground the building. The base consists of hard elements, including terracotta, brick, and tile. The upper levels of the buildings consist of a series of greens articulated by intricately bent metal.



Circulation Facade Colour Scheme

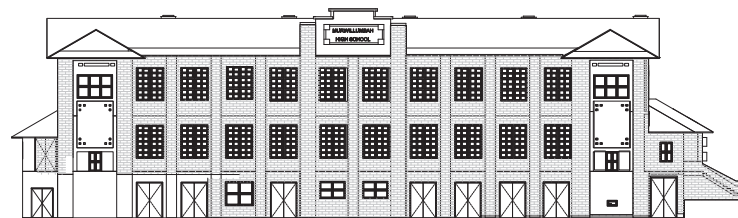
	Building 1	Building 2	Building 3	Building 4
Roof	Metal Roof Kingspan	Metal Roof Kingspan + Kingspan Day-Lite Trapezoidal	Metal Roof Kingspan	Metal Roof Kingspan
	Dulux Powdercoated Fluoraset Xtreme - Surfmist			
Balustrades and lifts	Interpon Color Vitality Brilliant Yellow 100%	Interpon Color Vitality Brilliant Yellow 50% Interpon Color Vitality Lycra Strip 50%	Interpon Color Vitality Lycra strip 50% Interpon Color Vitality Viper Green 50%	Interpon Color Viper Green 50% Interpon Color Vitality Shamrock Green 50%
Ground Floor	Cemintel Surround Husk	Cemintel Surround Husk	Cemintel Surround Husk	Cemintel Surround Husk

External Facade Colour Scheme

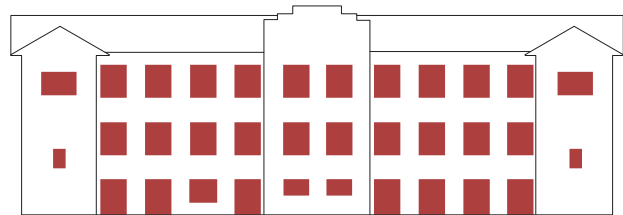
	Building 1	Building 2	Building 3	Building 4
Roof	Metal Roof Kingspan	Metal Roof Kingspan + Kingspan Day-Lite Trapezoidal	Metal Roof Kingspan	Metal Roof Kingspan
Walkways and OLC	Cemintel Surround Maya Cemintel Barestone external original	Cemintel Surround Quinta Cemintel Barestone external original	Cemintel Surround Greenback Cemintel Barestone external original	Cemintel Surround Garb Cemintel Barestone external original
Non-Walkways – external walls and sunshades	Dulux Powdercoated Fluoraset Xtreme - Surfmist Dulux Powdercoated Duratec eternity-linen-pearl	Dulux Powdercoated Electro-gold-pearl Dulux Powdercoated Electro-fresh gold	Dulux Powdercoated Fluoraset Xtreme - Surfmist Dulux Powdercoated Duratec eternity-linen-pearl	Dulux Powdercoated Fluoraset Xtreme - Surfmist Dulux Powdercoated Duratec eternity-linen-pearl
Ground Floor	Cemintel Surround Husk	Cemintel Surround Husk	Cemintel Surround Husk	Cemintel Surround Husk

6.3 Heritage

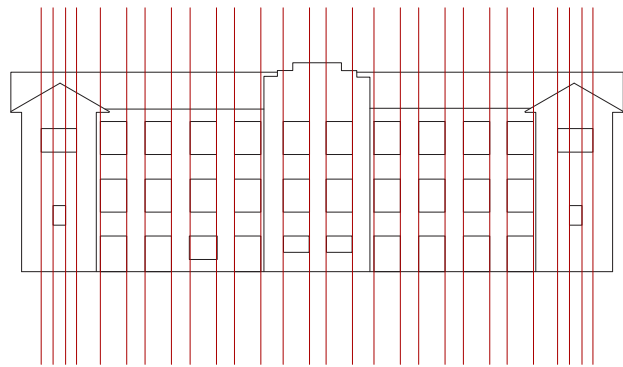
The north elevation of Building A illustrates a symmetric expression with repetitions of openings and vertical structures defining a Georgian Inter-War style with a brick, timber and concrete form.



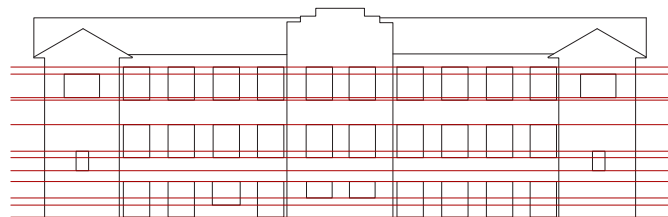
North Elevation



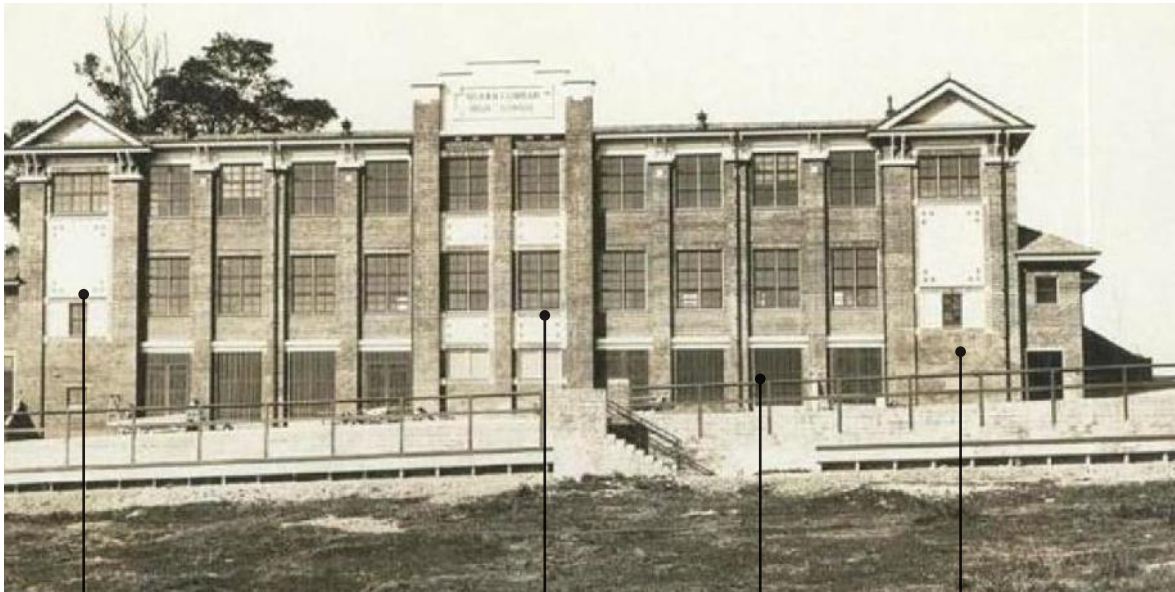
Degree of Opening



Vertical Rhythm



Horizontal Rhythm



Painted Panels



Timber Framing



Brick

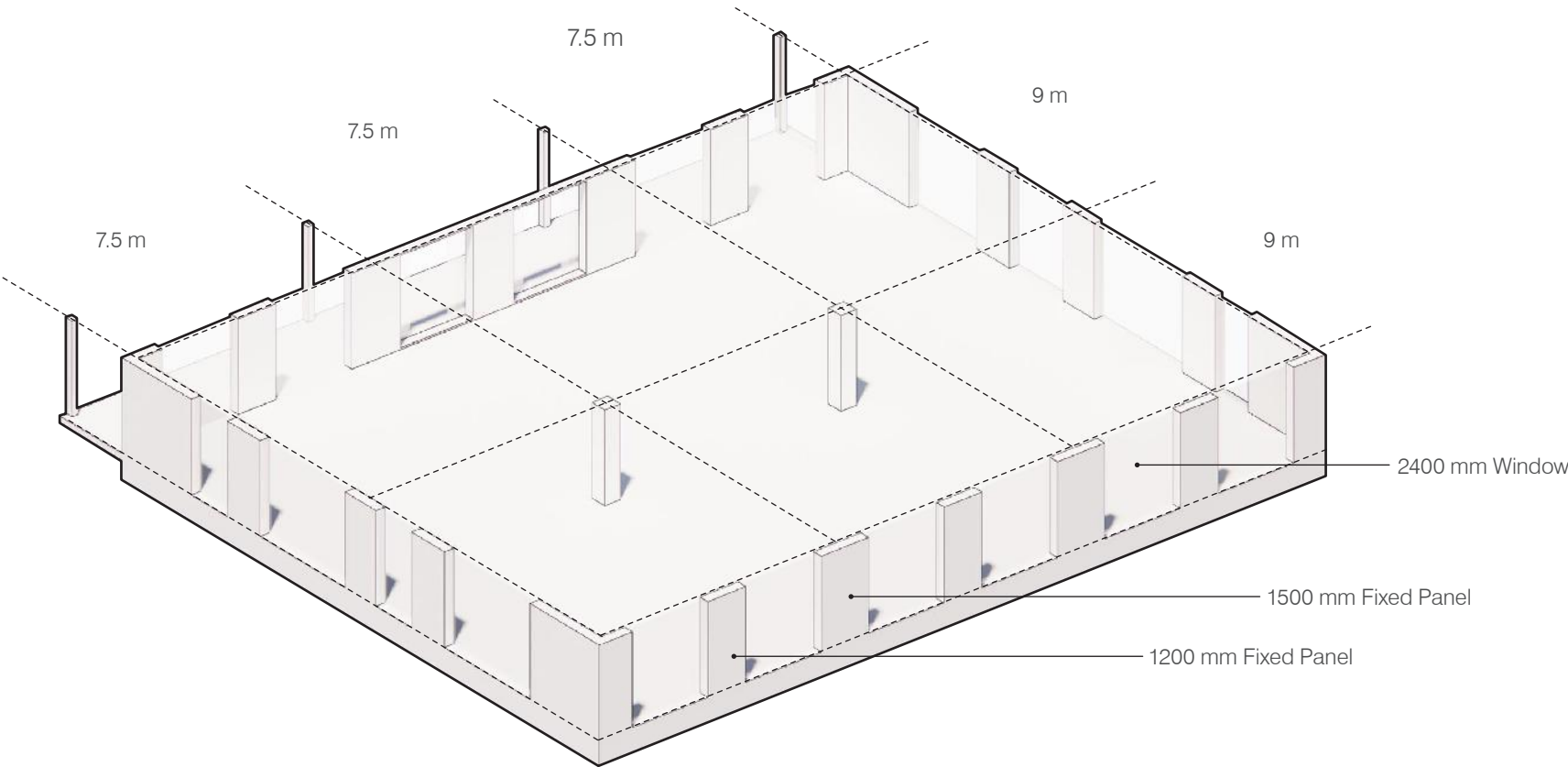
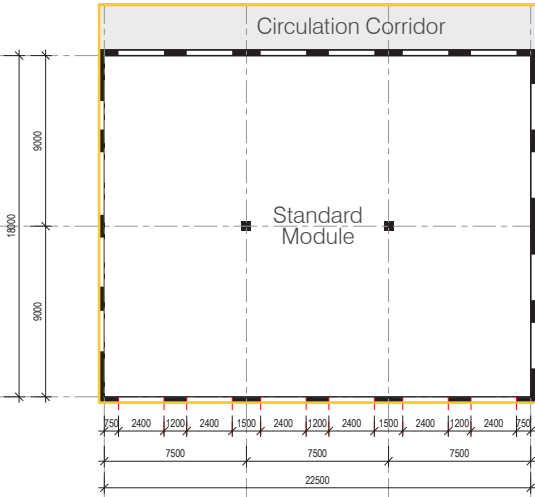


Green Timber Doors

6.4 Structural Kit of Parts & ESD

All proposed buildings have been designed, and will be constructed, using DfMA. The kit of parts proposed is set module of 7.5 m x 9 m and is comprised of a series of load bearing walls around the perimeter and 2 centrally located columns in the centre.

The module allows for 1.2 m & 1.5 m fixed panels along the structural elements and a 2.4 m wide opening



Both the DfMA guidelines and NCC (Section J) outline specific requirements for the minimum window to wall ration (WWR) and required amount of area receiving daylight and ventilation.

Requirements are as follows:

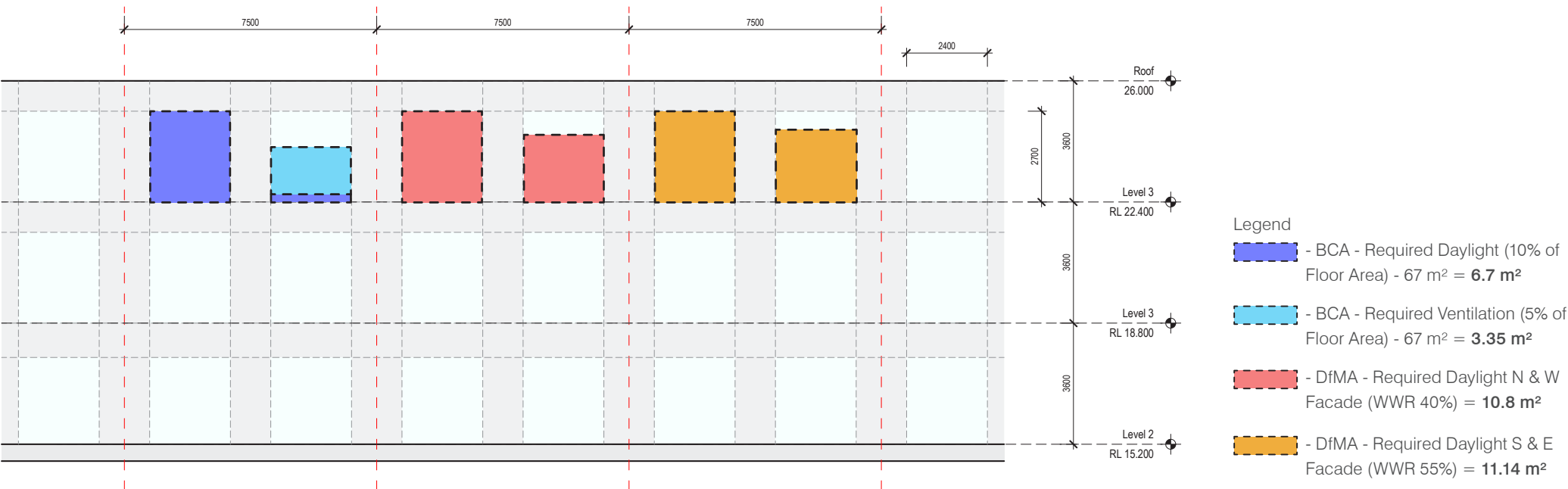
BCA Required Daylight - 10% of floor area

BCA Required Ventilation - 5% of floor area

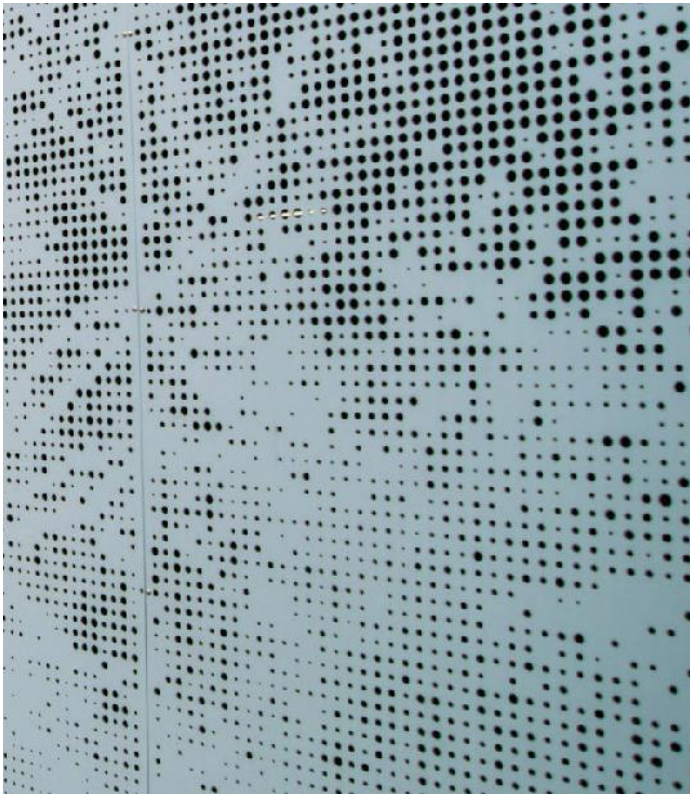
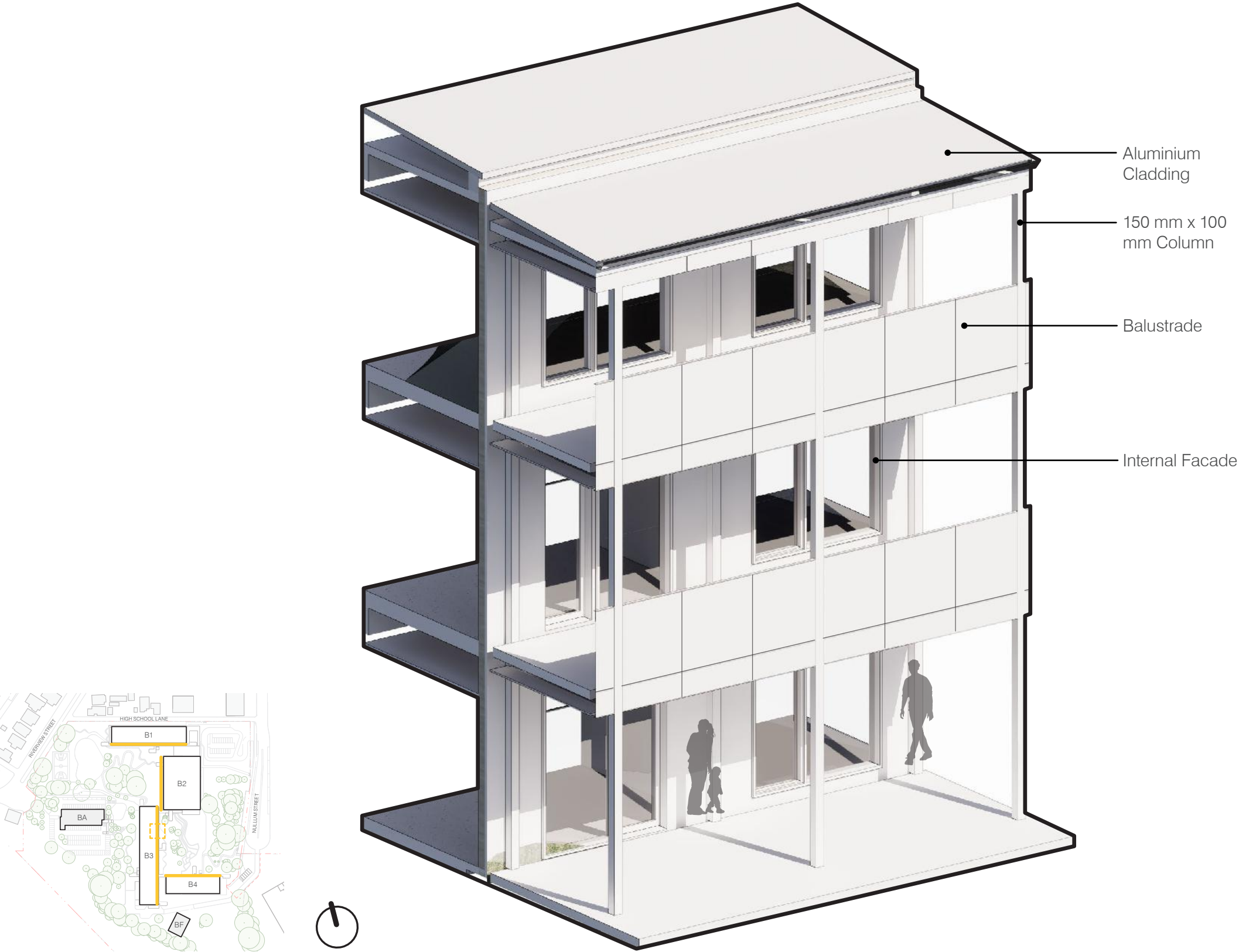
DfMA - Required Daylight N & W - WWR 40%

DfMA - Required Daylight S & E - WWR 55%

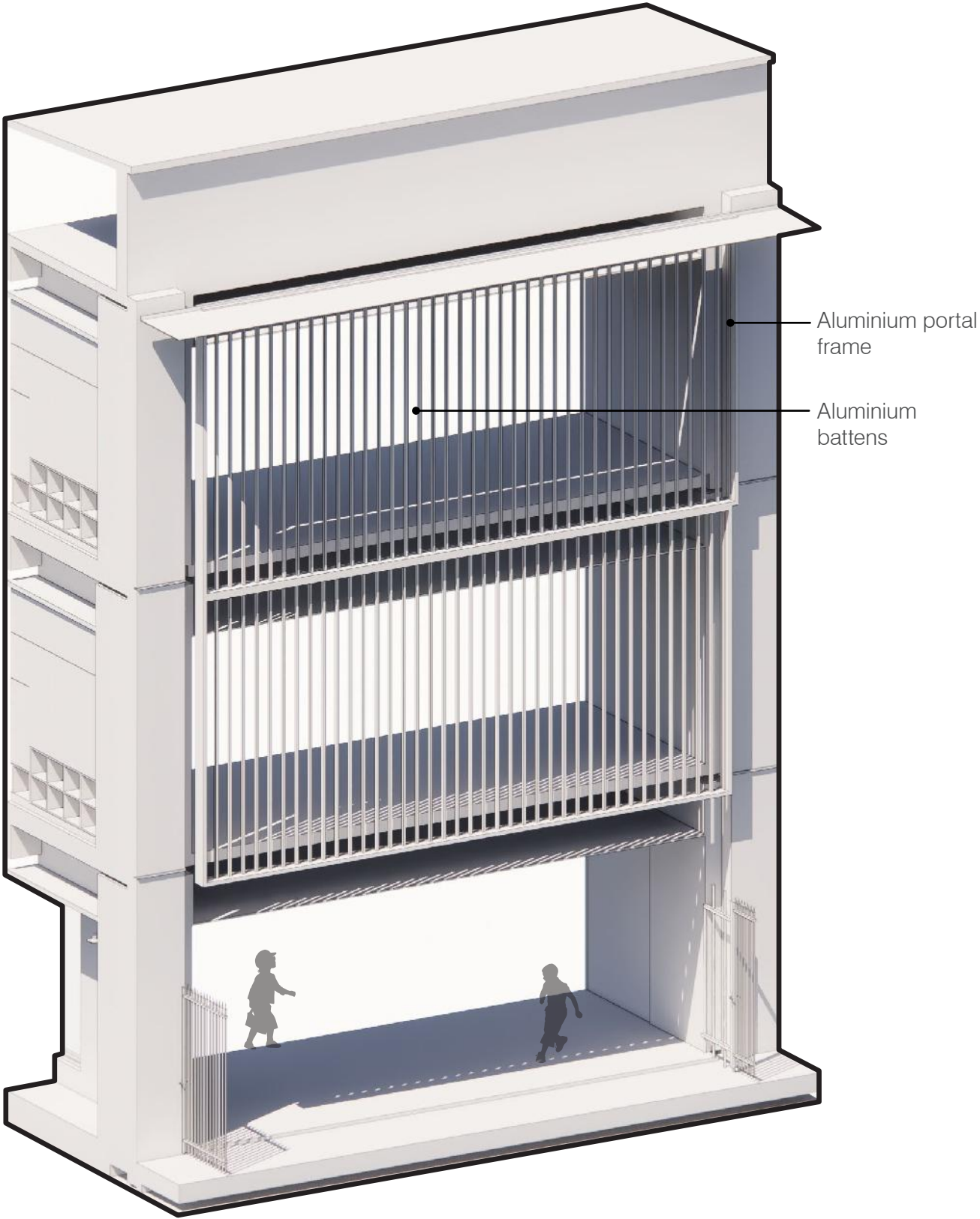
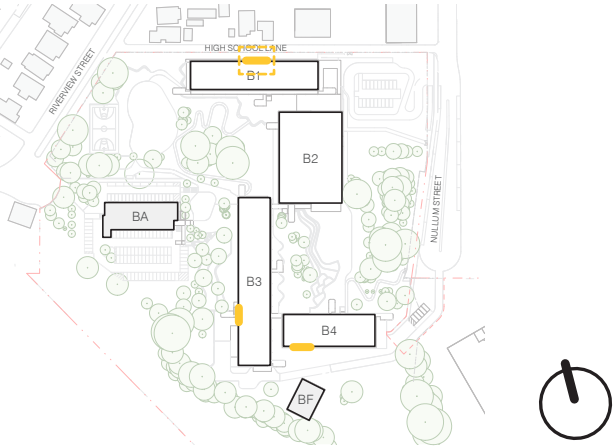
The section below shows the current set out of the floor structure, services allocation, and opening sizes.



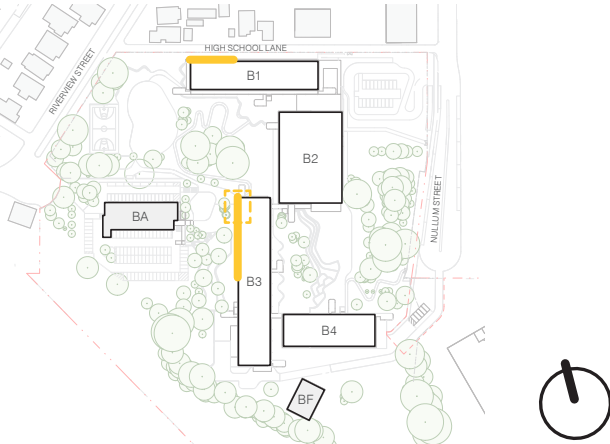
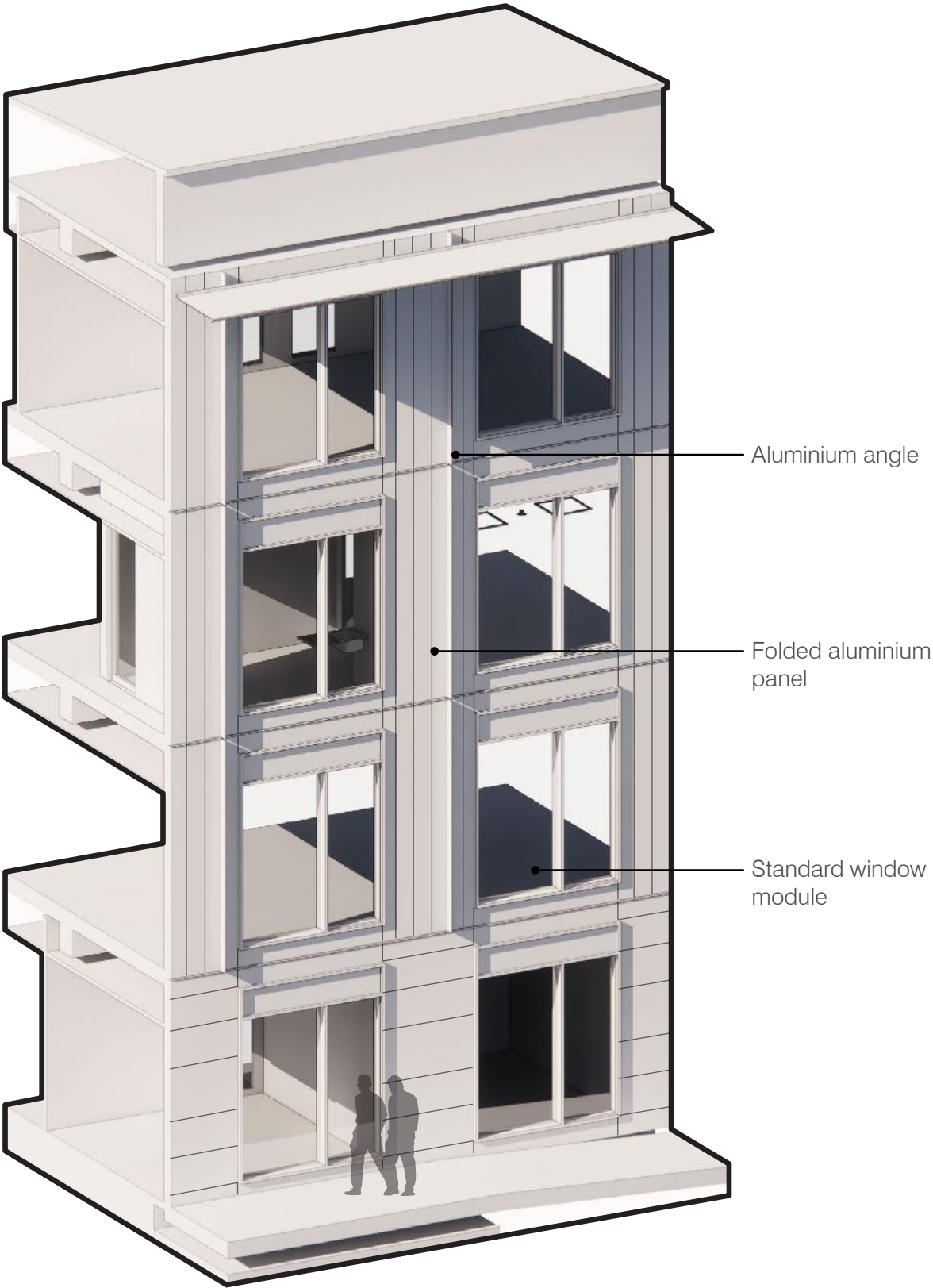
6.5 Circulation Corridors



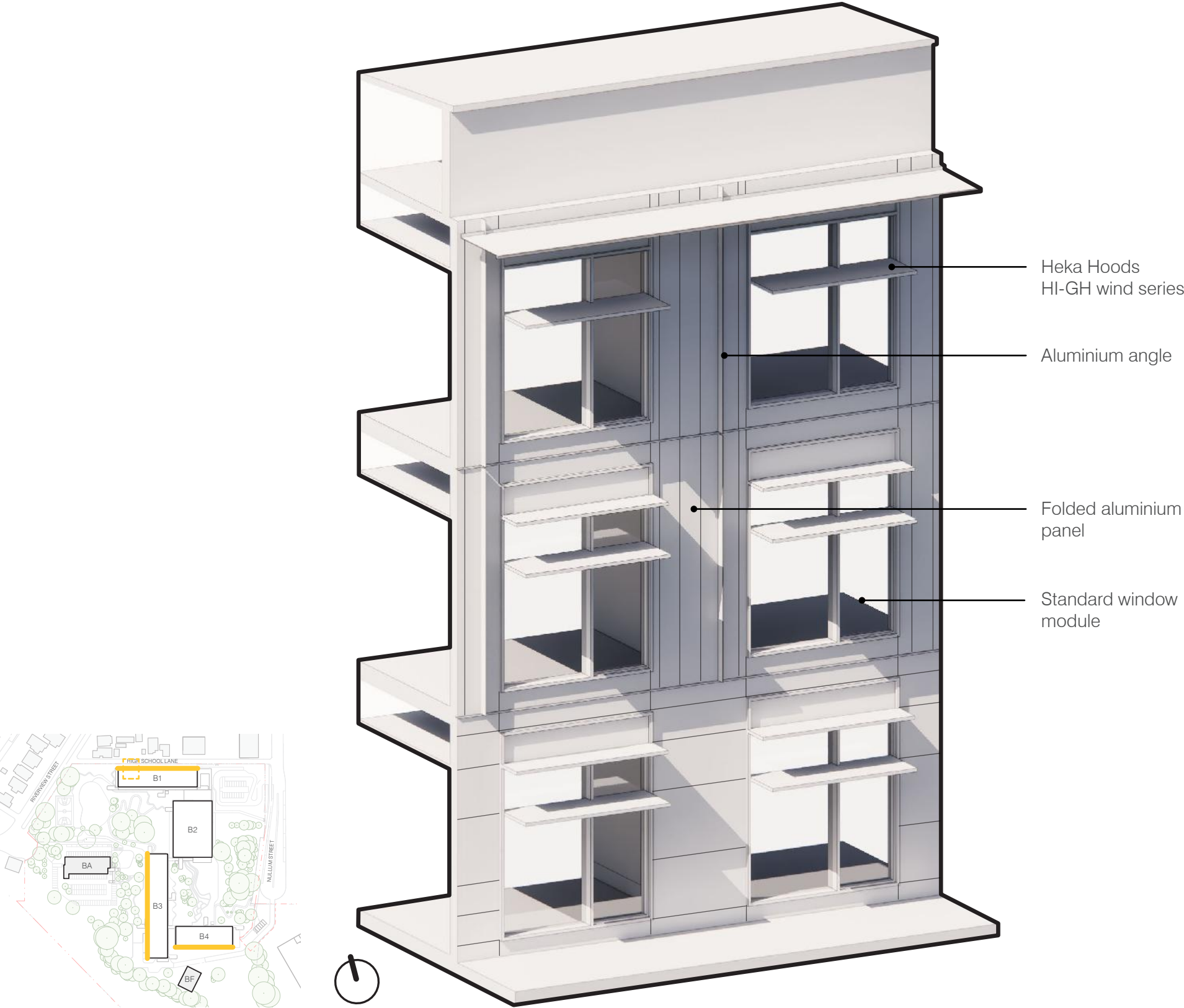
6.6 Outdoor Learning Commons



6.7 Typical Southern Facade



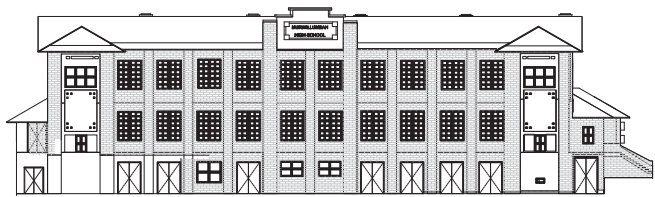
6.8 Typical Northern & Western Facade



6.9 Building 2

Latest GANSW feedback regarding Building 2.

13. Develop a unique design for the performance hall to ensure the intention for a “school Heart” is realized. Explore how the existing heritage building or a hybrid of the architectural languages of the primary and high school building might inform this response .



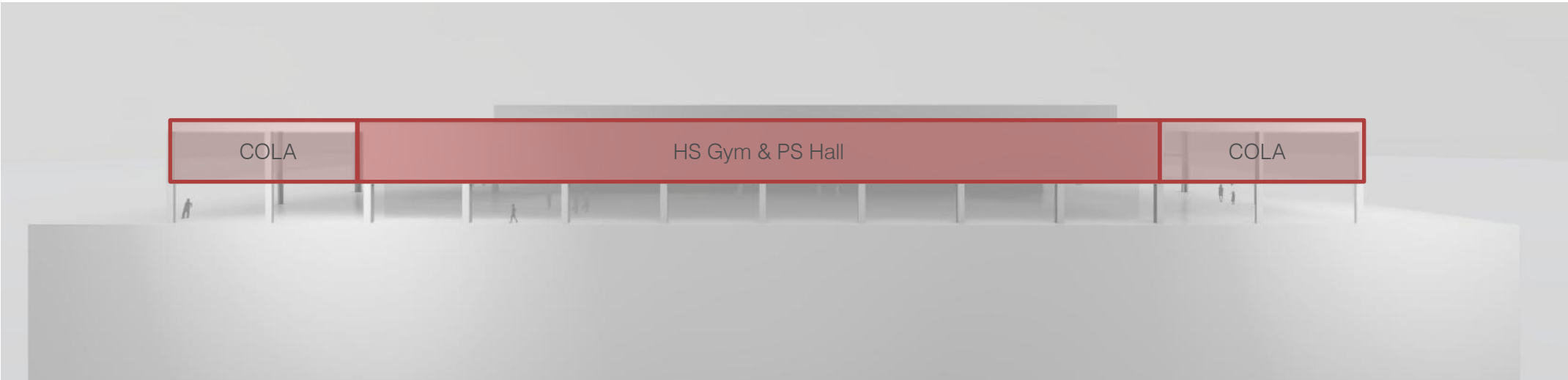
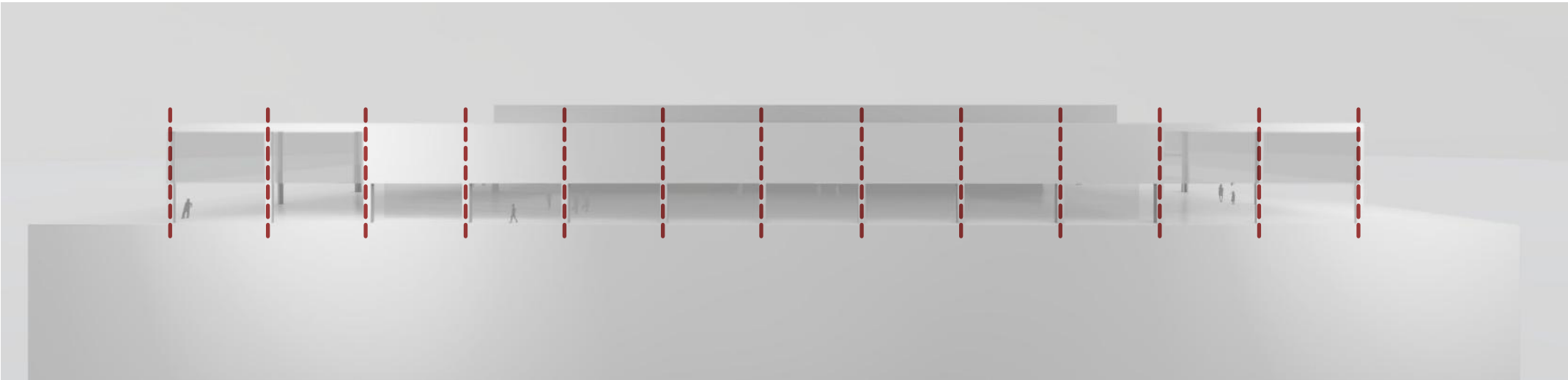
The access and vertical circulation is defined at the ends of the elevation responding to both sides east and west equally.

An expressed and continuous grid faces the main arrival and showcase the load-bearing structure and how it relates to the ground.

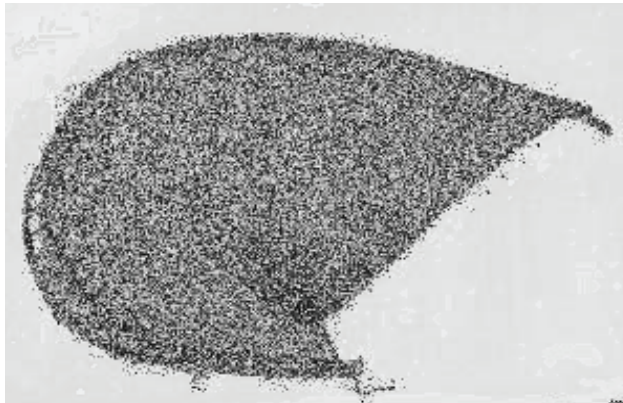
The new performance hall relates to these observations proposing a pimple built form that elevates from the ground, providing visual transparency and connecting the primary school with the high school through the contour lines of the Landscape.

Informed by the Architectural language of Building A, symmetry and repetition is achieved utilizing a 7.5 grid kit of parts along the east elevation. At the ends of the north and south side there are covered outdoor learning areas allocating the main entries. Therefore, consolidating a singular built form.

The materiality of the screen reflects a bright yellow colour emulating the cottonwood flower which was previously used to construct finishing nets by the traditional custodians.



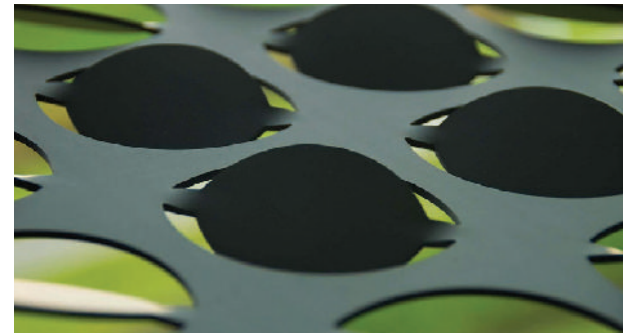
Facade and Materiality



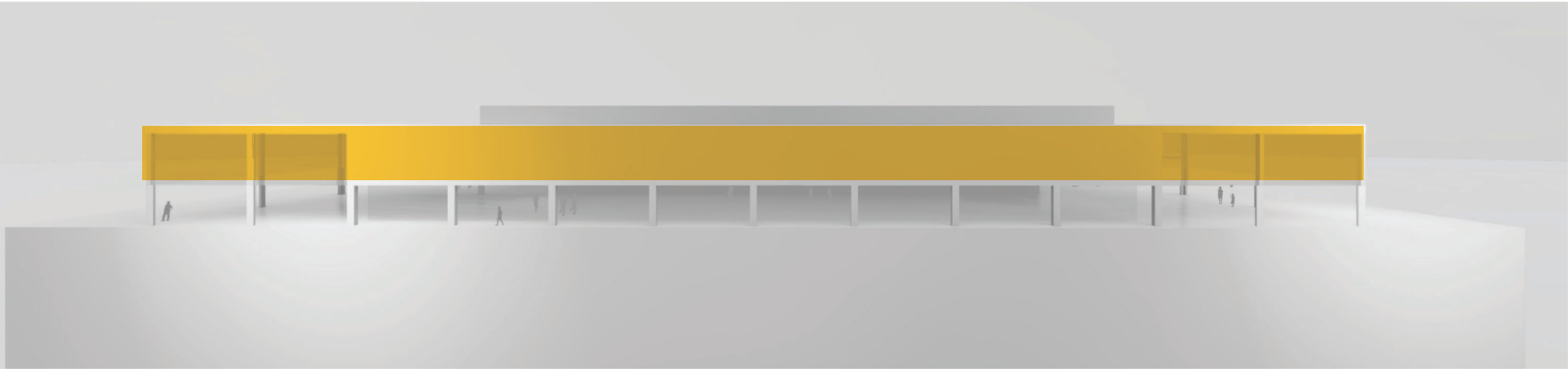
Fishing net made from fibre string fized between two pieces of vine, which opens out like a scoop. tully River



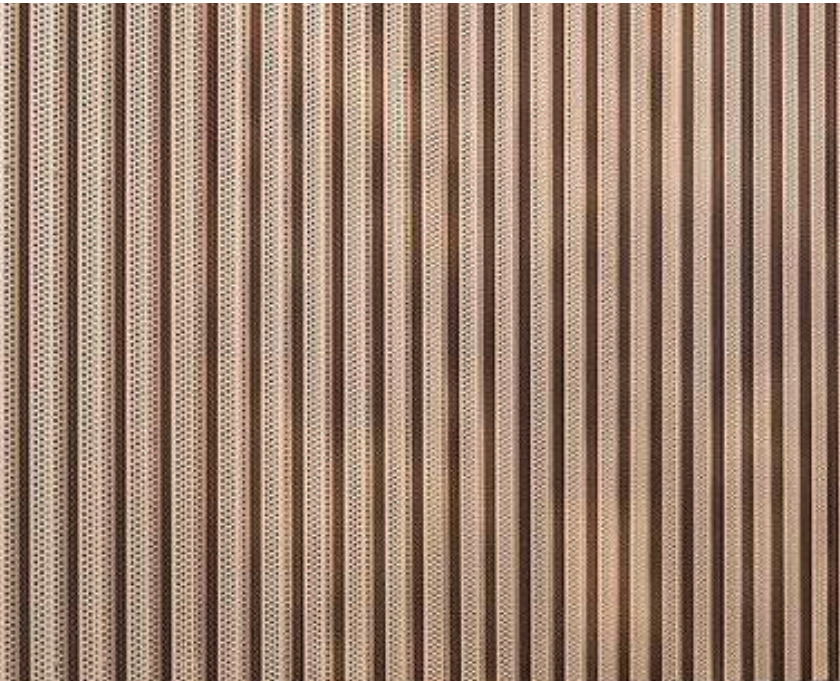
Billy Moore's Breatplate, S0776-98



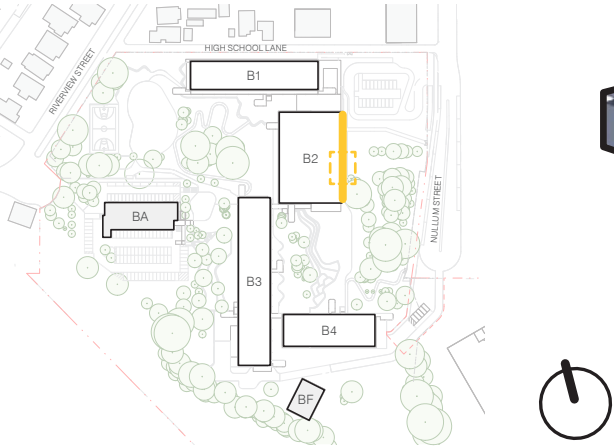
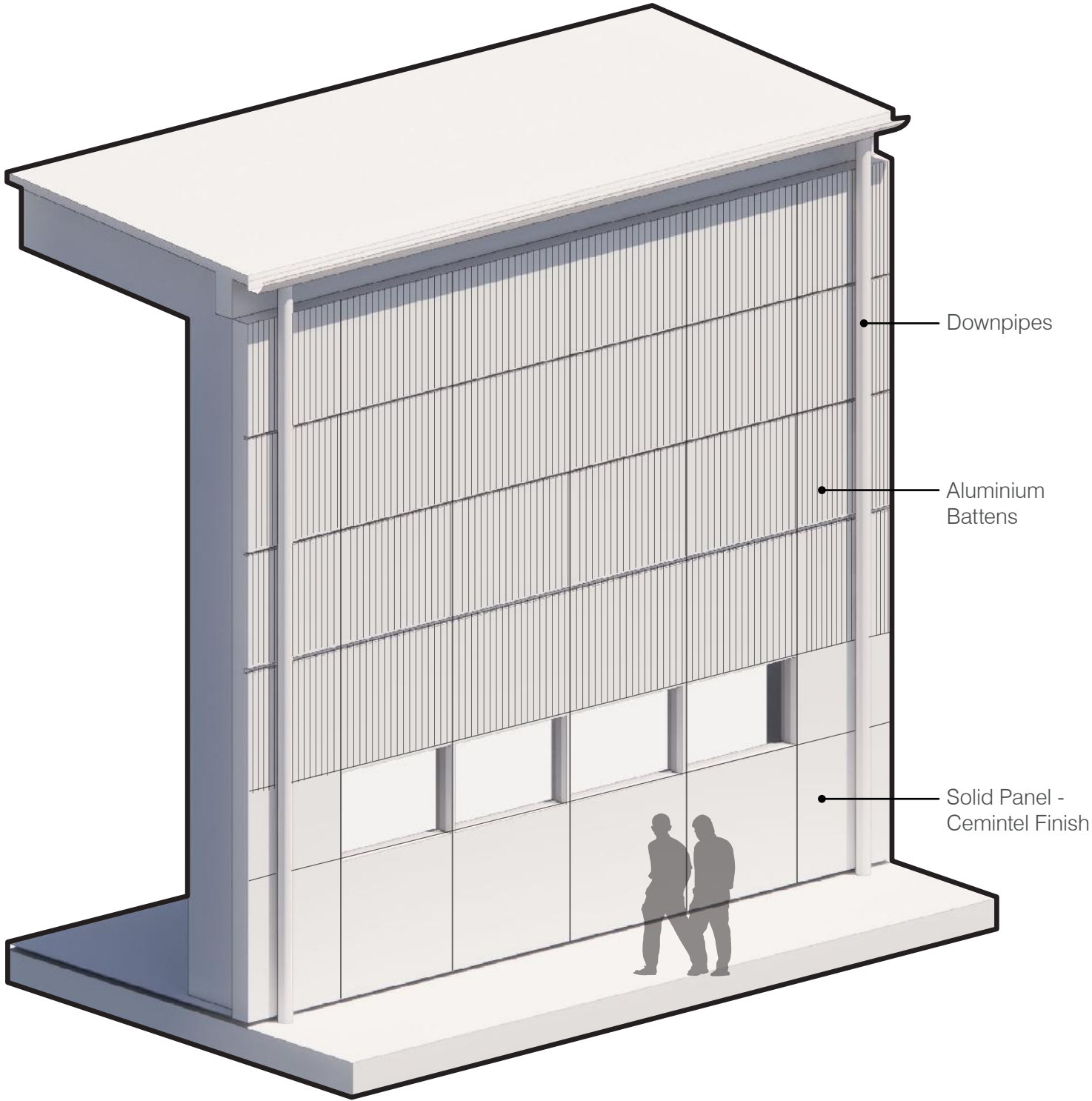
Perforated screen references



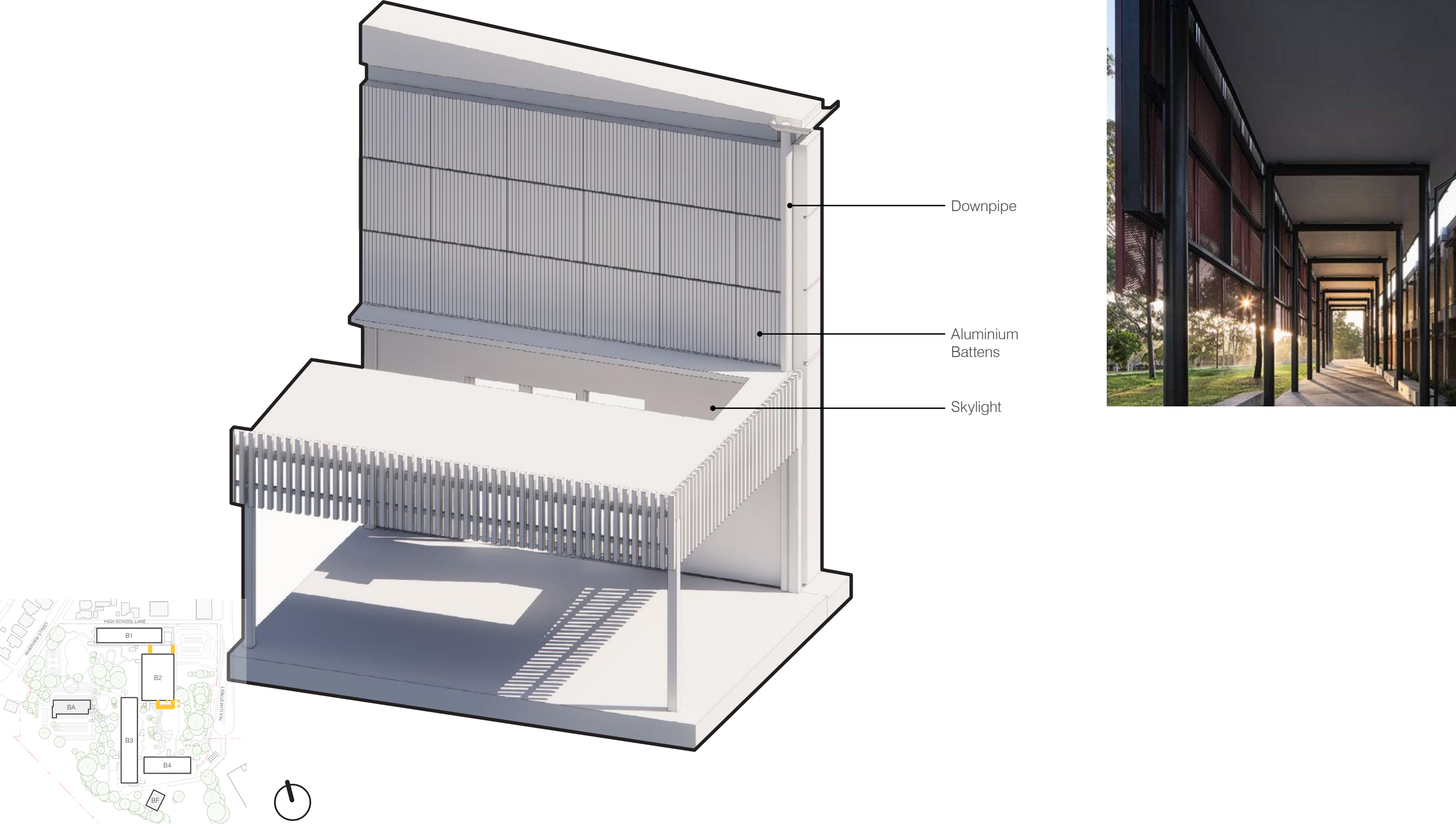
Building 2 - Singular Expression



6.10 Typical Gym & Hall Facade

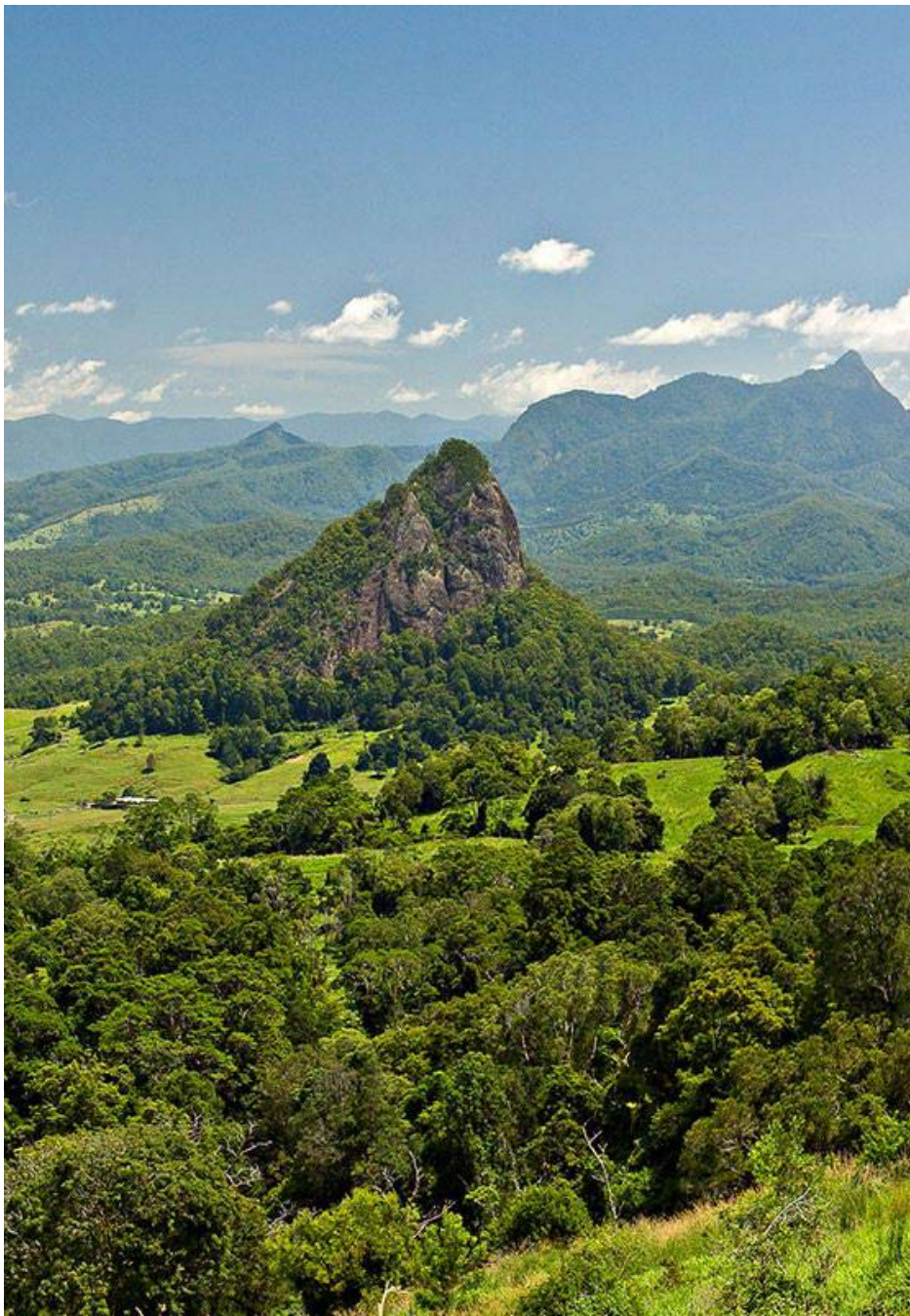


6.11 Typical COLA Facade



6.12 Lift and Stairs

The lifts and stairs are modelled to emulate the surrounding environment through the creation of vertical movement to create a destination, similar to that of the surrounding natural land forms that create views and vistas across the valley.



Facade and Materiality

The materiality branches from the surrounding mountains, escarpments, and cliffs and has a primarily vertical expression using rough, rock like, materials.

The expression of the lifts & stairs align with the wayfinding strategy.





7 Design Verification



7.1 Design Verification Statement

01 - Context, built form and

- 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 Murwillumbah Education Campus has been design as a direct response to it's context. Drawing on its surroundings, Wollumbin, the Tweed river and the town centre.
- The position of new buildings has been carefully considererd to reduce the impact on the existing heritage items, as well as working with the challenging topography by aligning to the existing contours and building pads.
- 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 future flexibly. The general learning spaces for both the public school and high school have been designed to the same planning grid enabling future reorganising of the site to occur as the site evolves.
- The proposed buildings will be constructed using modern methods of construction where joinery items, internal wall panels and even facade panels could be rearranged to suit the future planning of the site.

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 have engage the Murwillumbah community giving them the opportunity to utilise the site after hours. The school performance space and sports fields will be able to be opened to the community safely allowing the community to benefit and share the campus site.
- The site has been designed to provide an accessible and inclusive ground plane such that buildings are all served by ramps and/or lifts. 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 Nullum Street that is clearly identified.

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, prioritising the entry point away from the busier Riverview St and providing the front door for both the public school and high school from Nullum St.
- The community will also use the same entry points from Nullum St after hours to access the performance hall as well as the sports fields and playing courts.
- The site of the proposed campus is fortunate in its location and limited interface with the surrounding community. Building 1 has the closest relationship with the neighbouring properties on the Northern boundary and the facade has been designed to maximise the privacy and amenity of the exiting properties across High School Lane.
- 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.
- Visual privacy to the surrounding developments and proposed buildings is addressed through the placement of the large density buildings into the centre of the site. Louvres are also implemented into the facade design to increase privacy.
- There is a large amount of natural vegetation on the existing site and the proposal retains a large majority of the trees and landscape within it. The buildings and a strong visual connection to this nature to increase the visual amenity of the school for its occupants.
- The majority of the neighbouring residential developments are to the north of the site and are not subject to overshadowing as a result of this proposal.
- 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.
- The campus is not subject to external acoustic impact ie. street noise, sound from other developments, airports, or train stations. However, the campus is configured in a way to reduce the school's acoustic impact on the surrounding residential developments by placing the majority of the program away from the boundary.

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
- One of the benefits of the proposal is that through the master plan process we were able to test the retention of some of the existing buildings, after a rigorous test fits and cost analysis the proposal of providing brand new facilities for the school with the exemption of the Heritage building A and newest building F was preferred with the value of whole of life as one of the most important reason.
- Maintaining the aging process of the new building aligned is something the school and community will benefit over the coming years. The selection of materials and finishes has added another level of longevity to the new building by following an approach of prefinished and robust material like metal cladding and CFC. In regards of flexibility, the proposal had adopted the latest departmental design (DfMA) that is in line with the EFSG requirements and provide a standardization of spaces for PS and HS that can be interchangeable in the future, this provide to the school with a future focus learning spaces that can adapt to 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 subtropical weather, the specificity of the place where the school is located has nurtured the design response.
- In addition, the colour palette is in direct relationship with the indigenous stories heard during the consultation process respecting and creating linkages in between country and the project. In part.
- 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 wellbeing 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 tables provide feedback from the latest SDRP Panels.

August 2021

Item	SDRP Comment	Response
Connecting with Country		
1	Continue the commitment to engage with the local Bundjalung Community and respond to Country across the campus in the landscape and architectural design. Consider providing gathering spaces use by the Bundjalung Community	Consultation with the relevant and local Bundjalung community is ongoing – please refer to the ACHA report prepared by EMM during schematic design phase.
2	Develop a CwC strategy and embed what is learnt through consultation. This is to include how to manage knowledge that is shared, demonstrate a response to that knowledge through the project, and how to 'report back' to first nations advisors to foster a continuing relationship through the design process.	Feedback from the local community and during indigenous consultation together with Landscape will continue to inform the design strategies during the following phases of the project – please refer to the ACHA report prepared by EMM during schematic design phase.
Masterplan and Landscape		
3	Amplify the hydrology of the site to promote and express rainwater harvesting and water usage in an educational manner.	Rainwater system has been developed as part of the ideal of a school as a “third teacher”
4	Reduce the rectilinear rigidity of the proposed landscape design to a series of organic contour-reflecting places for all student age groups.	The landscape design proposes a series of semicircular and sandstone seating walls that follow the contours and deal with the change of level for both primary school and high school external areas.
5	Ember Built elements, such as walkways, within the landscape through the provision of additional tree canopy, shrubs, and glasses, consider different walkway conditions, such as width and stopping points, and locate path along the natural contours of the site.	The landscape proposal and architectural elements are connected through the existing contours additional connection are proposed in between levels to communicate buildings with outdoor learning areas, retention of existing trees and additional trees provide a continuous protection and comfort to the outdoor areas
6	Ensure the specification of local native species for landscaping and shading across the campus.	Native species are a key part of the proposal – refer to landscape report for further information.
7	Reduce the number of carparking spaces on site. Introduce a green buffer (or other appropriate curtilage) between the car spaces and the existing heritage building (block A). As a minimum, remove of all car spaces to the north of block A.	Direction from SINSW is to maintain the amount of car spaces, however, landscape buffers have been introduced to soften the relationship with the heritage building.

Item	SDRP Comment	Response
Architecture		
8	Explore the visual and Architectural relationships between the ends of the proposed buildings and consider how they connect and create interstitial spaces with each other	The end of the building have been developed as spaces of encounter of movements connected by vertical circulation (building 2 and 3) as well as becoming landscape spaces (building 3 and 4) that provide garden outlooks to arrivals, outdoor learning commons and circulation
9	Demonstrate how internal planning within the standardised building layouts can improve access to light vistas and ventilation, such as relocation common rooms or introducing voids.	The planning of the proposal is fixed by the Kit of Part system. However, provision of full heigh glass louvers 2700mm as well as windows provide light, vistas and natural ventilation to all internal spaces.
10	Continue to explore different architectural languages for the primary and high school buildings to ensure their unique identities	The architectural development in relation to the identities of the PS and HS is defines in the circulation elements, such as the walkways, stairs and lift, these elements combined with a distinct colour palette define the identities of each school but maintain the holistic approach as a Campus.
11	Refine the materiality and palette of the cladding to the upper levels of the primary and high school buildings. There are to be visually different to the expressions of the lower floors	The strategy developed is to use fibro cement (FC)materials to the base of the buildings in tones that relate to the sandstone of the landscape proposal, upper levels walkways will be FC and the facades are cladded in aluminium. Therefore, student will be able to only be in contact to FC and aluminium will wrap the other 3 sides of the building in the upper levels.
12	Delineate and experiment with the design of the external stairwells and exposed lift shafts. These should have a strong identity and read as place markers for wayfinding across the site and view beyond.	The architectural development in relation to the identities of the PS and HS is defines in the circulation elements, such as the walkways, stairs and lift, these elements combined with a distinct colour palette define the identities of each school but maintain the holistic approach as a Campus.

October 2021

Item	SDRP Comment	Response
Connecting with Country		
1	Continue consultation with the local Bundjalung Community to ensure the landscape design for the campus reflects the unique characteristics of the site and Country	Consultation with the relevant and local Bundjalung community is ongoing – please refer to the ACHA report prepared by EMM during schematic design phase
2	Extend the response from this consultation and the public announcement to further inform development of the external areas of the campus so that the site as a whole can become an educational hub for different aged student populations and the community.	Feedback from the local community and during indigenous consultation will continue to inform the design response during the following phases of the project – please refer to the ACHA report prepared by EMM during schematic design phase
Masterplan and Landscape		
3	Reconfigure the carpark surrounding Block A to increase the landscaped area to the north. Break down the expanse of bitumen and mitigate heat island effects by introducing landscape elements such as porous paving, garden beds and large trees for shade.	the design has accommodate additional landscape to the north of building A – please refer to Landscape site plan drawing
4	Develop the landscape design and use the natural topography to: a. Create different arrival sequences for the primary school and high school b. Scale the circulation routes to suit the different aged student cohorts c. Achieve secure lines and places of safety and refuge for different aged student cohorts.	The proposed movement or circulation in the landscape utilizes the existing contours to generate natural links between buildings and external learning areas. Please refer to the Landscape Report
5	Provide opportunitites for play and learning (formal and informal) within the landscape to reflect the needs of different aged student cohorts, such as messy play, line markings for courts, or creation of study nooks.	A multiplicity of external areas have been developed during schematic design maximising the opportunities of the site. Changes of level and existing vegetation is used as a support for different uses and experiences - please refer to the Landscape Report
6	Provide details of the canopy target and planting schedule across the campus.	Please refer to Landscape report
7	Explore systems for rainwater harvesting and overland flow collection to respond to the tropical climate of the region.	Rainwater system has been developed as part of the ideal of a school as a “third Teacher” Please refer to the Landscape report
8	Consider treatment of the south east portion of the wider site to reflect the proposal to the north.	Please refer to the Landscape report

Item	SDRP Comment	Response
Architecture		
9	Explore the expansion of the upper level circulation to enable outdoor play and learning areas.	The upper levels of building 1 ,3 and 4 contain outdoor learning spaces of approx. 135m² this comprises the primary school and high school
10	Finesse and provide details of the covered walkway designs across the campus.	Please refer to the façade and materiality section of this report to find details of the covered walkways
11	Consider relocation the shared hall further south to optimise the spatial qualitties of the COLA between buildings 1 and 2 and improve the connection between buildings 2 and 3	Further studies of spaces in between building can be found in the built form and urban response
12	Explore ways of increasing access to daylight in common learning areas to ensure good amenity.	Please refer to the façade and materiality section of this report to find details of the covered walkways
13	Consider adapting the EFSG model to provide general and common learning areas to suit the different aged student cohorts. Preference the location of kindergarten on the ground floor and provide details of any OOSHH facilities.	The project follows the latest departmental design from SINSW and EFSG and all adjacencies have been discussed and endorsed in consultation with the users
14	Continue to develop the horizontal language of the facade design of the shared hall beyond a direct reference to Block A.	Further refinement of the façade with the horizontal expression and materiality had been implemented – please refer to the Façade and materiality section
15	Contine to develop the facade and cladding treatments for the stairwells and lift shafts to ensure they read as place markers for wayfinding across the site and views beyond.	Stairs and lift treatment respond to the local context and are part of the wayfinding strategy, a unique treatment from the façade has been proposed to differentiate and showcase the vertical movement
16	Further connect the upper level walkways to the learning spaces and if feasible, neighbouring buildings.	The upper level walkways connect through the outdoor learning commons to the learning spaces. The upper levels of building 3 and 4 connect – please refer to the SSDA set for more information

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