# Meadowbank Education and Employment Precinct Schools Project
# Architectural Design Statement

**SSD 18_9343**
**Prepared by Woods Bagot**
**For School Infrastructure NSW**
**11 October 2019**

| Discipline | Consultant |
|---|---|
| Architecture | Woods Bagot |
| Education Planning | Woods Bagot |
| Project Management | BlueVisions |
| Acoustic and Vibration | Acoustic Logic |
| Arboricultural | Earthscape |
| Public Art | Urban Art Projects |
| Heritage | Urbis |
| BCA/PCA | McKenzie Group |
| Civil Engineering | Enstruct |
| Cost | RLB |
| DDA/Accessibility | Morris Goding |
| Electrical Engineering | WSP |
| Electromagnets | Webb |
| Crime Prevention (CPTED) | WSP |
| Contamination | Alliance |
| Environmentally Sustainable Design | Steensen Varming |
| Façade | Arup |
| Fire Engineering | GHD |
| Fire Services Engineering | Warren Smith & Partners |
| Geotechnical | Douglas Partners |
| Hydraulic Engineering | Warren Smith & Partners |
| Landscaping | Urbis |
| Mechanical Engineering | Enstruct |
| Planning | Urbis |
| Wayfinding | There |
| Structural Engineering | Enstruct |
| Transportation | GTA |
| Vertical Transportation | NDY |
| Wind Engineering | Windtech |
| Waste Management | Foresight |



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Date of first issue: June 2019

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# Contents

## Introduction

This Architectural Design Statement has been prepared by Woods Bagot on behalf of the NSW Department of Education (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 18_9343) for the Meadowbank Education and Employment Precinct Schools Project (hereafter referred to as MEEPSP) at 2 Rhodes Street, Meadowbank (the site).

MEEPSP will cater for 1,000 primary school students and 1,620 high school students. The proposal seeks consent for:

- A multi-level, multi-purpose, integrated school building with a primary school wing and high school wing. The school building is connected by a centralised library that is embedded into the landscape. The school building contains:
  - Collaborative general and specialist learning hubs, with a combination of enclosed and open spaces;
  - Adaptable classroom home bases;
  - Four level central library, with primary school library located on ground floor and high school library on levels 1 to 3.
  - Laboratories and workshops;
  - Staff workplaces;
  - Canteens;
  - Indoor gymnasium;
  - Multipurpose communal hall;
  - Outdoor learning, play and recreational areas (both covered and uncovered).
- Associated site landscaping and public domain improvements;
- An on-site car park for 60 parking spaces; and
- Construction of ancillary infrastructure and utilities as required.

## Purpose of the Report

The purpose of this report is to provide a detailed Architectural Design Statement to support the State Significant Development Application submission. It outlines in detail how this proposal has developed from initial site analysis/strategies, through concept, pedagogy, built form and materiality to propose a new school precinct that facilitates the learning and transitioning of students along their education pathway. This report should be read in conjunction with the supporting consultants reports and Environmental Impact Statement as prepared by Urbis. As such, this design report reflects the work undertaken with a multidisciplinary design team including the following disciplines;

- Architecture
- Education Specialists
- Structure
- Planning
- Building Services
- Façades
- Environmental
- EDS
- Fire Engineering
- Geotechnical
- Civil Engineering
- Traffic Engineering
- Heritage, Archaeology and Aboriginal heritage
- Landscape Design
- Geotechnical
- Wind
- Waste management

The proposed education model, brief, schematic layout plans, elevations, sections, and conceptual renderings have been developed in consultation with the relevant stakeholders. This included the Educational Facilities, Standards and Guidelines (EFSG), Technical Stakeholders Group (TSG), Project Reference Group (PRG and Ryde City Council.

The proposed development has been developed to align with the seven Education SEPP Design Quality Principles and presented to the Government Architects of New South Wales (GANSW) authority in the lead up to submission.

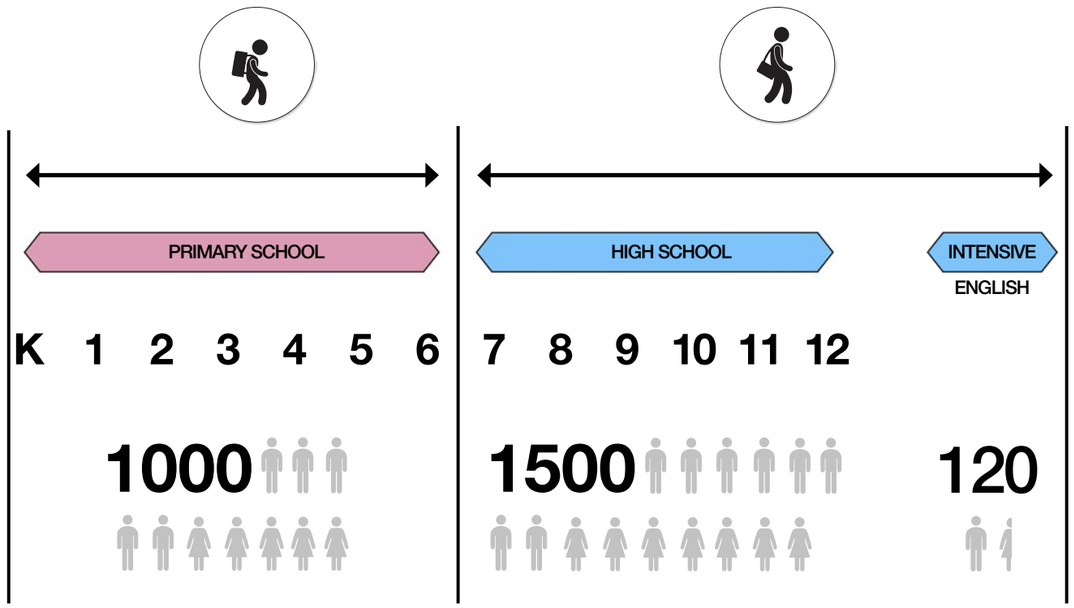
## Response to SEARS

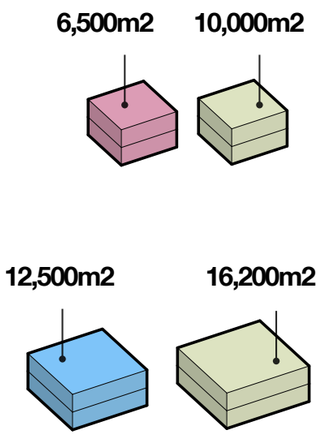
The Architectural Design Statement is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 18_9343. This table identifies the SEARs and relevant reference within this report;

| SEARS Requirements (Architectural Design Statement) | Response Location |
|---|---|
| **4. Build Form and Urban Design** | |
| • Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. | Section 3.0 Built Form |
| • Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, facade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles | Section 2.0 Site & Context Analysis<br>Section 3.0 Built Form<br>Section 4.0 Interaction with Landscape<br>Section 6.0 Materiality & Facade |
| • Demonstrate in consultation with and to satisfaction of the Government Architects NSW that design excellence will be achieved in accordance with Schedule 4 Schools - design quality principles of State Environmental Planning Policy (Education Establishment and Child Care Facilities) 2017. | Section 7.0 Design Response to GANSW |
| • Detail how services, including but not limited to waste management, loading zones and mechanical plant are integrated into the design of the development. | Section 4.0 Interaction with Landscape |
| • Provide detailed site and context analysis to justify the proposed site planning and design approach. | Section 2.0 Site & Context Analysis<br>Section 3.0 Built Form |
| • Detail any proposed use of the school grounds out of school hours (including weekends) and any resultant amenity impacts on the immediate locality and proposed mitigation measures. | Section 4.0 Landscape Strategy |
| **5. Environmental Amenity** | |
| • Assess amenity impacts on the surrounding locality, including solar access, visual privacy and over shadowing. | Section 2.0 Site & Context Analysis<br>Section 3.0 Bulk & Scale |
| • Undertake a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development). | Section 3.0 Bulk & Scale |
| • Provide a lighting strategy and detailed measures to reduce spill into the surrounding sensitive receivers. | Electrical Infrastructure Plan (WSP) |
| **The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents.** | |
| • Architectural drawings (dimensioned and including RLs) | Refer separate package: Architectural Drawings |
| • Site Analysis Plan | Section 3.0 Built Form, Refer Architectural Drawings package |
| • Solar Diagrams | Section 3.0 Built Form, Refer Architectural Drawings package |
| • View Analysis/ Photomontages, including from public vantage points | Section 3.0 Built Form |

# 01 Overview

# 01 Overview
## Brief




### Background

Meadowbank Education Precinct Schools is a once in a generation opportunity to create a learning environment for school students that is future focused, innovative and functional. A true Education Precinct accommodating up 2,620 students from two schools that is responsive to educational, economic and environmental conditions and requirements. A place that embodies the notion of life long learning, through local community outreach and considered engagement with neighbouring educational facilities, including TAFE NSW. This proposed development offers a learning environment that is future flexible and adaptable to empower the next generation of students to excel in their education.

This proposal has stemmed from demographic changes in the North Ryde precinct resulting in significant demand for public school places. Two existing schools – Meadowbank Public School and Marsden High School – are located in the Hornsby Principal Network where there is significant urban renewal and resulting higher density housing with more families. This has applied pressure to the existing two school sites which cannot expand on restricted and constrained campuses. As a result the Meadowbank site along Rhodes Street will be redeveloped to create a new education precinct to help meet these needs.

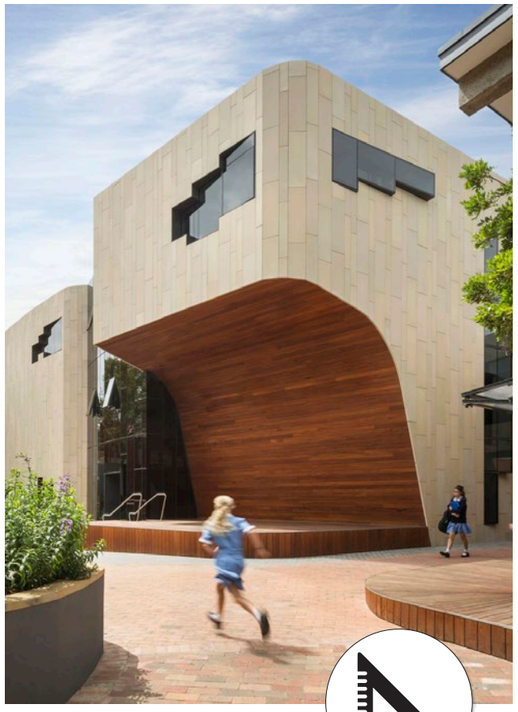
# 01 Overview
## Principles

### 01 | Play

A sense of playfulness within the school environment will help to create a fun and dynamic setting for students of all ages. The provision of a diversity of spaces is key in achieving this intent. A connection with indoor and outdoor learning space will amplify the playfulness. Play is a thread that can bind the indoor with outdoor, the formal with informal and repetition of space with identity and diversity of spaces that can compress and expand in scale and can change throughout the school environment through location, connectivity and materiality.

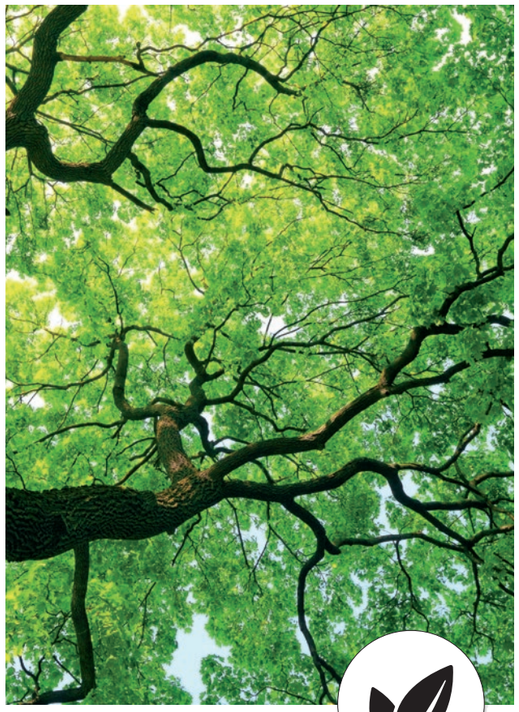
### 02 | Collaboration

As pedagogy shifts to Future Focused Learning, fostering collaboration between students is a key enabler of this shift. The ability to learn together and from one another collectively puts the student first. It also shifts the focus from linear teaching to agile learning in group and scenario based settings. Architecture, interiors and landscape also work together to deliver a well considered integrated building from the inside out and outside in.



### 03 | Scale

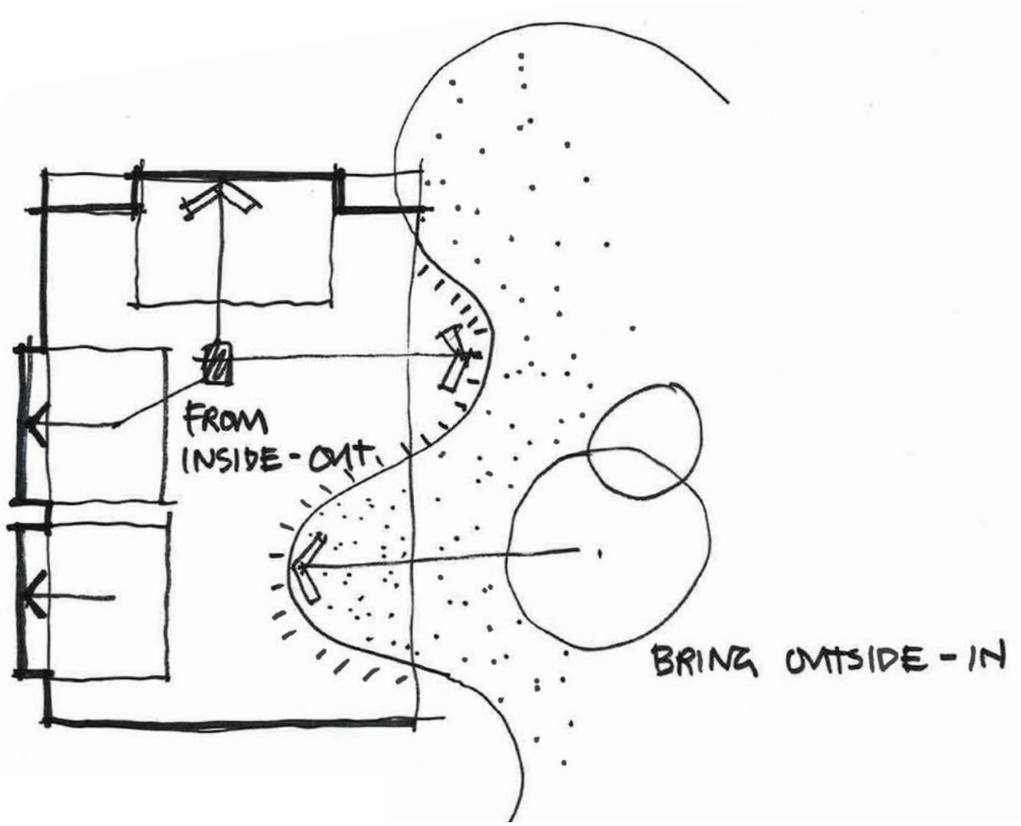
Scale is a key driver of the identification between Primary and High schools and can positively influence the student experience in each. The Primary school kids will enjoy a finer grain of space, through a kit of parts that can be easily used by kids of different ages as they grow and develop through the Primary School years. The scale shift to High School will support the transition in the learning journey and prepare students for their next step in their education.



### 04 | Nature

The site, building setting and immediate context are all very unique for this school location. It is this mature landscape on the site that allows us to engage with nature and use nature as a mediator and influencer for the student experience.

# 01 Overview
## Concept




### Learning In Nature

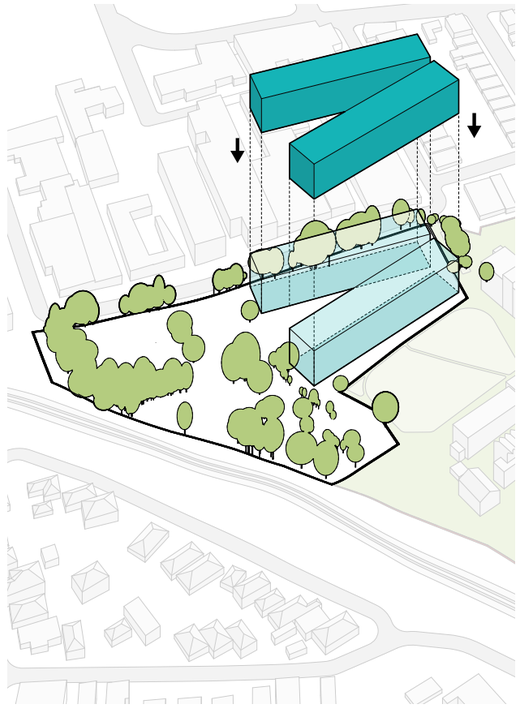
The specific site context and analysis developed an instinctual connection with the mature landscape and tree canopies that occupy large portions of the proposed site. This has resulted in proposing a building that enhance connections with nature and maximise outdoor learning and play opportunities, on ground levels and also versatile green terraces stepped vertically. The design philosophy is centred on the idea of designing from the inside out by bringing the outside in.

> “Designing from the inside out by bringing the outside in....”

# 01 Overview
## Mass

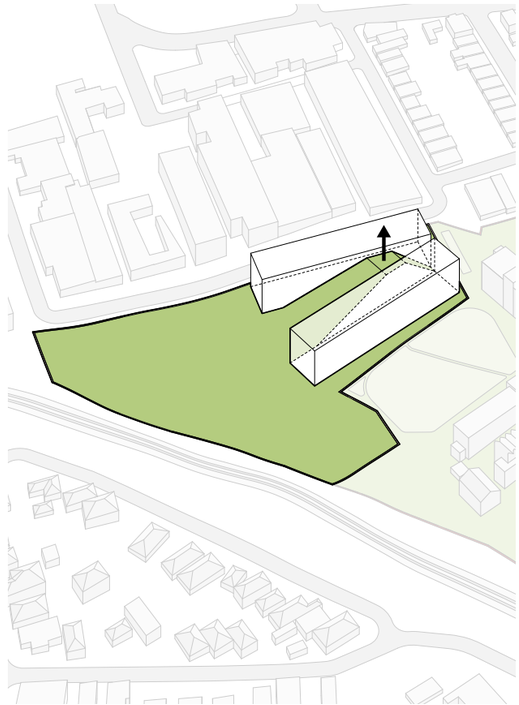
### The Green Site

The site contains approximately two-hundred and seventy-five trees. The arborist report has also revealed many of these trees on the site have significant importance in terms of their environmental, heritage and amenity values and have therefore been classified as class 1.



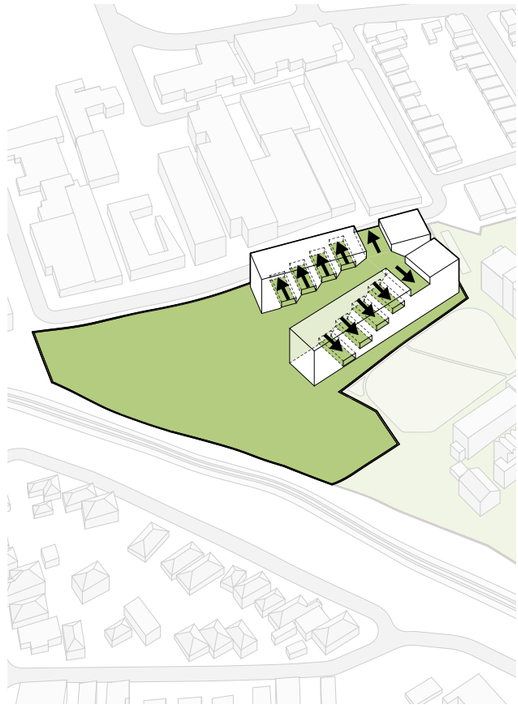
### Nestled Within the Trees

Therefore, the proposed building mass sits nestled within these well-established trees taking much of the same footprint as the existing buildings. The mass has been pushed away from Rhodes street to allow adequate space for the tree protection zone for the highly important trees.



### Pulling the Landscape Vertically

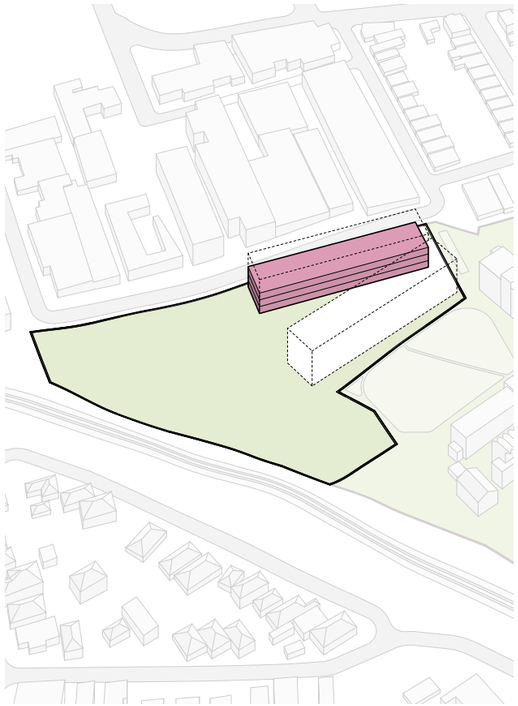
The design approach has been to explore and discover different ways of connecting between the indoor and outdoor space, between the built form and the natural site environment, with a playful intention to engage with the existing trees and landscape. As a result the landscape is not only seen as something that surrounds and borders the building but as an element that cascades up the central axis and becomes one with the architecture.



### Bringing the Landscape Inside

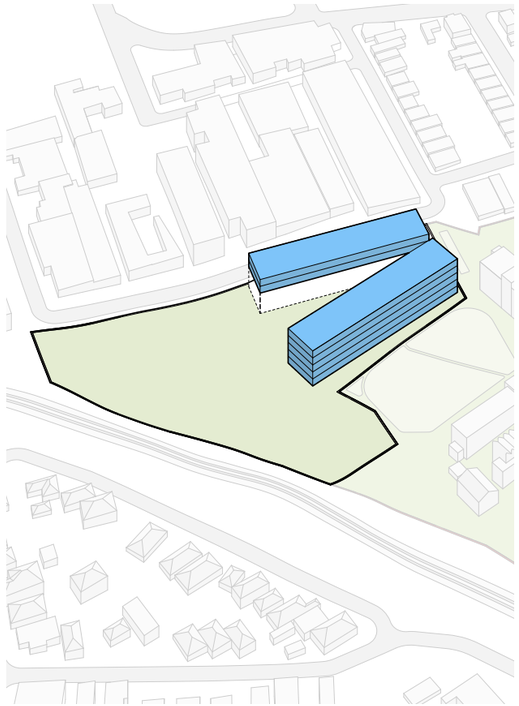
Not only does the landscape cascade vertically but is pulled into the building creating covered outdoor play areas on every level.

# 01 Overview
## Block & Stack



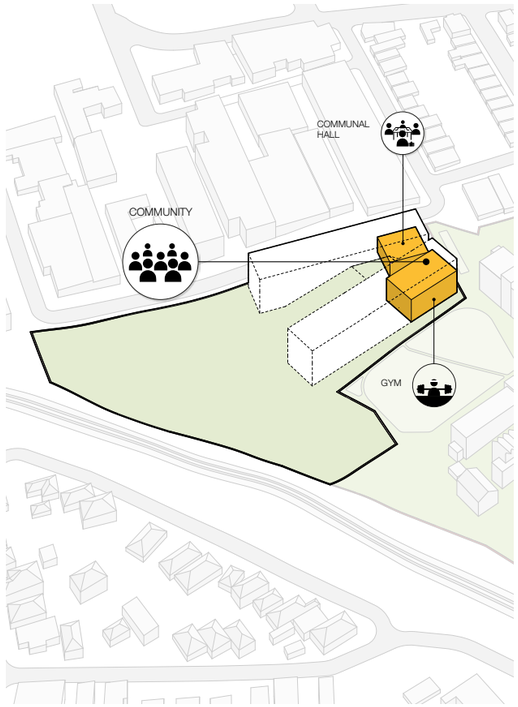
### Primary School

The Primary School has three stacked learning communities facing Rhodes Street. This configuration allows for direct drop off outside the school and allows for minimal vertical travel distance between outdoor play areas and indoor learning areas.



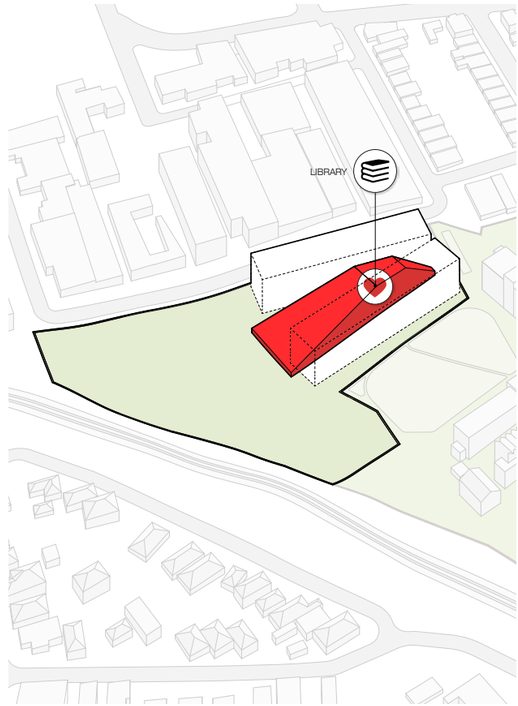
### High School

The High School form is comprised of 5 levels within the southern building and 2 levels of the northern building above the primary school. Entrance for the High School comes from the west at the pinch point between the two wings.




### Community Engagement

Schools play an important role in the local social infrastructure and it is vital that there should be an inclusive and clear approach to access and engage with the community which is interwoven with the proposal. It is therefore envisaged that the community access will occur mainly on the Ground and Lower Ground with potential access to the Communal Hall, Gymnasium and outdoor play areas. These areas have been placed at the forefront of the building gesturing towards the wider community.




### Central Library

Joining the two schools is the central library space. Within this 4-level volume are both the Primary School Library and High School Library. Consisting of mezzanine levels, voids and direct access to the central landscape this space forms the heart of the building, the educational glue where students from various years come together interact and collaborate.

“

breaking down the traditional notions of how to deliver education by blurring the boundaries between learner and teacher, between subjects and between indoor and outdoor learning.

”

View 01 - Central landscaped play area

View 02 - High school Entrance

View 03 - South-East corner approach from TAFE NSW


4
3
2


SCHOOL

# 02 Site Context & Analysis

MARSDEN
HIGH SCHOOL

ERMINGTON
PUBLIC SCHOOL

VICTORIA RD.

WEST RYDE
PUBLIC SCHOOL

WEST RYDE

TAFE NSW RYDE

WEST RYDE
LONG DAYCARE

RYDE LIBRARY

ST. MICHAEL'S CATHOLIC
PRIMARY SCHOOL

RYDE PUBLIC
SCHOOL

SITE

MELROSE PARK
PUBLIC SCHOOL

VICTORIA RD.

MEADOWBANK

LITTLE STARS
KINDERGARDEN

MEADOWBANK
PUBLIC SCHOOL

PUTNEY
PUBLIC SCHOOL

RHODES

SEDA COLLEGE -
OLYMPIC PARK CAMPUS

# 02 Site Context & Analysis
## Local Context

### Site

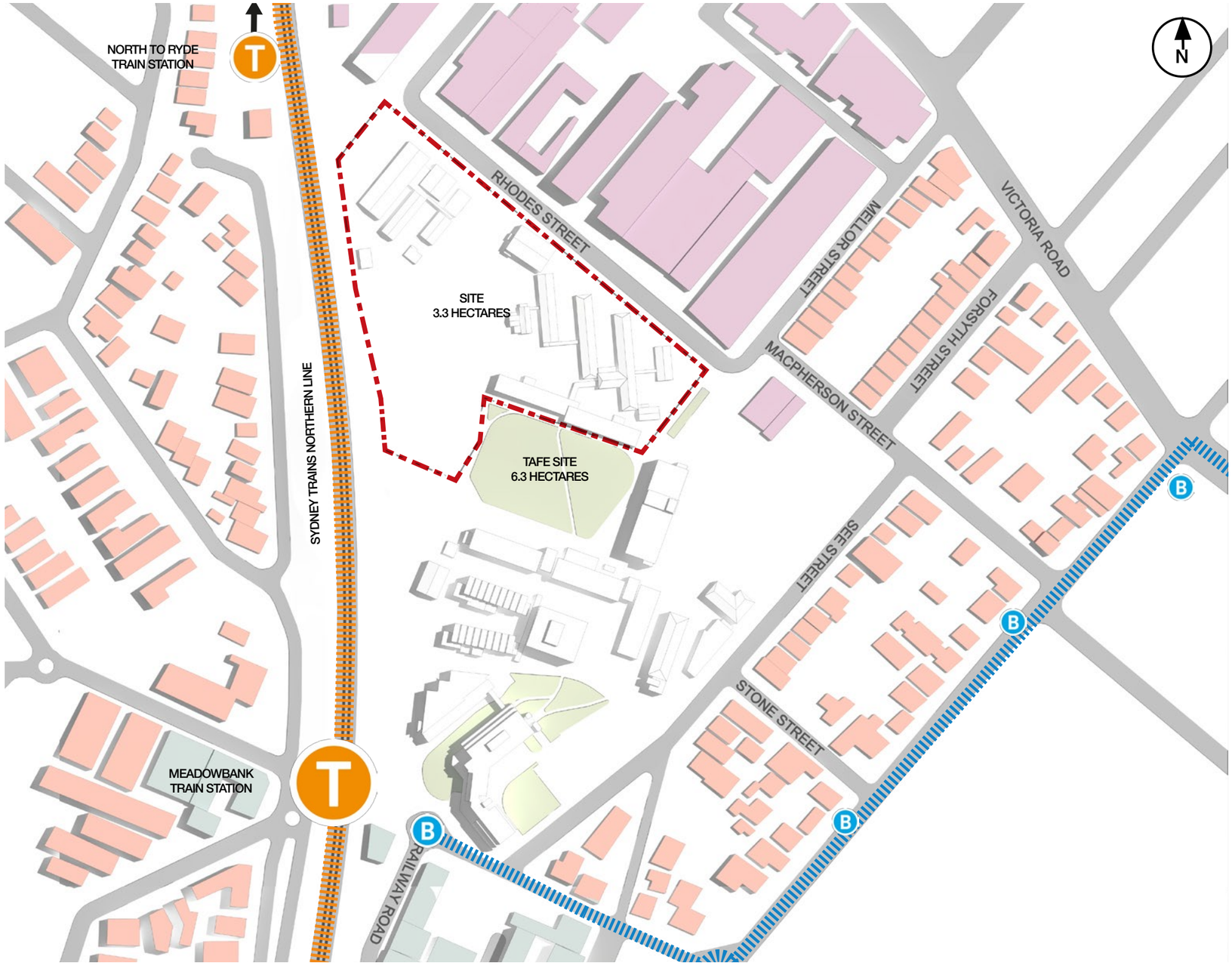
The NSW Department of Education has identified lot 10 in DP 1232584 north of TAFE NSW Northern Sydney Institute Meadowbank Campus as the proposed site for this project where the two schools will relocate. This site, owned by NSW Department of Education, has an approximate area of 3.34 hectares located approximately 12 km Northwest of Sydney's CBD. The site is described as 2 Rhodes Street, Meadowbank NSW 2114

### Public Transport

The site has excellent access to train, bus and ferry public transport networks, with Meadowbank Train Station to the south and West Ryde Station to the north. Meadowbank station is on the North Shore, Northern & Western Line. Many buses service the local area from all directions, such as the 507 and regular routes operating along Victoria Road, a major traffic channel to the north east of the site. Meadowbank Ferry Wharf is south of the site, and is part of the Sydney Ferries network.

### Urban Context

The site is surrounded by buildings of diverse land-use. Much of the surrounding area however, is low rise residential. Directly to the north of the site is an active light industrial zone with the civic centre located to the south of the site.




SITE
BUS ROUTE 507
TRAIN STATION
LIGHT INDUSTRIAL
RESIDENTIAL
MIX USE

# 02 Site Context & Analysis
## Site Constraints


### 01 | 1 in 100 Year Flood

The flood model results for the 100 year flood event show a constant peak water level at the site of 8.15 mAHD. This indicates that the capacity of the culvert beneath the railway embankment is exceeded at this event resulting in flood waters building up behind the railway embankment.


### 02 | Possible Maximum Flood Level

The flood model results for the PMF event showing peak flood depths and levels at the site for the existing case show that the majority of the site is affected by flooding in the PMF event. Similar to the flood behaviour in the 100 year ARI event, the capacity of the culvert under the railway line is exceeded resulting in floodwaters accumulating behind the railway embankment with a peak flood level of 16.24 mAHD.


### 03 | Significant Trees

The site contained approximately two-hundred and seventy-five (275) trees. The significance of each tree has been evaluated combining its environmental, heritage and amenity values. The arborist report has identified a number of significant trees on the site.


### 04 | Easements & Vibration Clearance

Major easements accessed by Sydney Water and Sydney Trains run through areas of the site. Access to these easements must be maintained.

There is a 60 meter train vibration clearance on the west of the site. No built form can encroach on this area. It is also important for safety to keep students away from the train tracks.

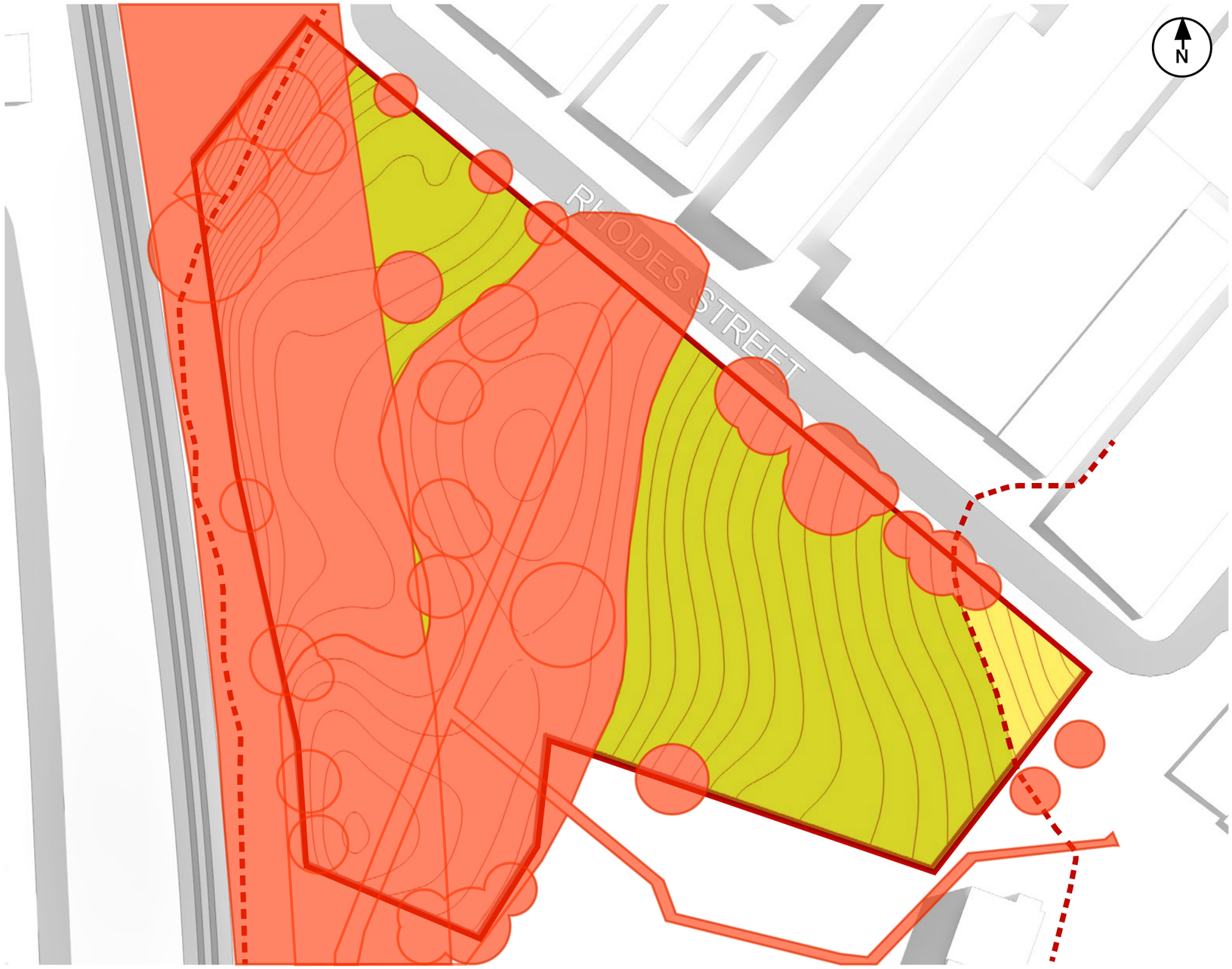
# 02 Site Context & Analysis
## Site Constraints

### Site Understanding

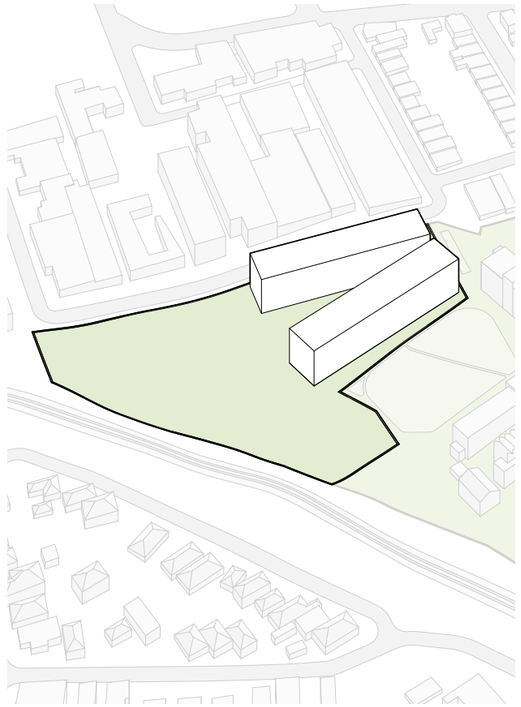
For this particular proposal it is crucial to understand the site and it's restrictions. This has included looking at the sites topography, flooding conditions, vibration zones and easements that restrict particular areas of the site. The arborist report has also revealed many significant trees on the site that have been classified as class 1 in relation to their overall significance to the site and area. This analysis has revealed that the north-eastern corner of the site is the only major developable zone on the site for the new MEEPSP project.

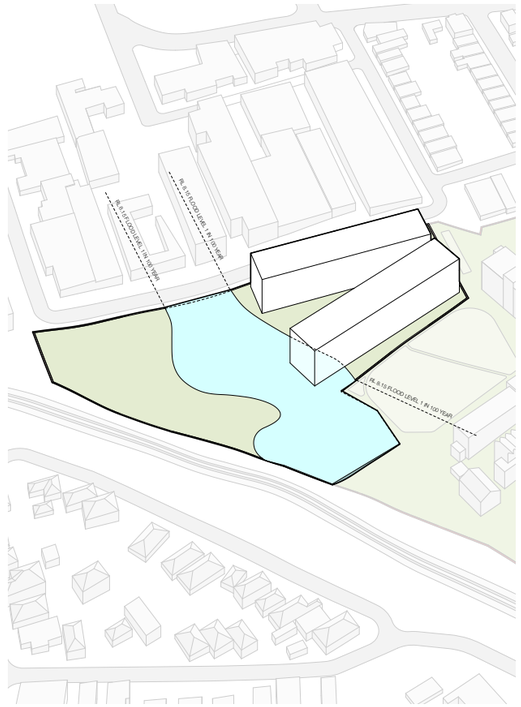
### Topography

The existing topography of the site grades naturally to the south-west. A wide depressed channel runs through the site from the north-east to south-west. Two depressions exist across the existing car parks, which fall towards the ultimate low point in the south-west corner of the site. The high points of the site are the south-eastern and north-western corners along Rhodes Street. At the western site boundary the raised railway embankment forms a physical bund. Levels at the site range from 6 mAHD at the south-western site extent to 17 mAHD at the south-eastern site extent.



# 02 Site Context & Analysis
## Site Constraints



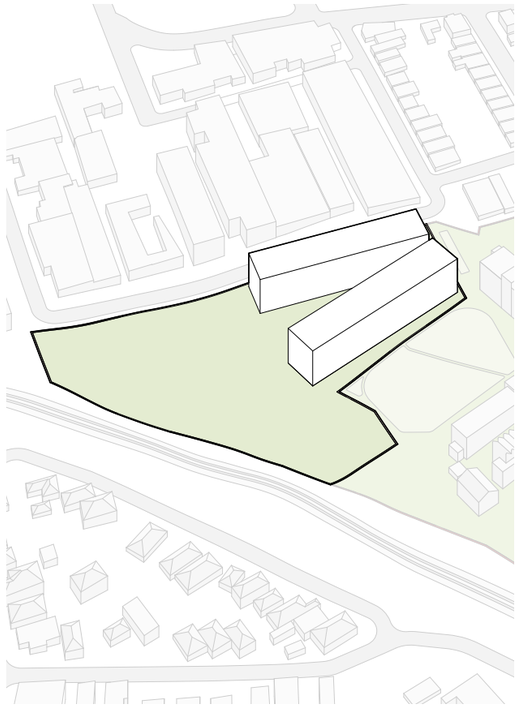
### 01 | 1 in 100 Year Flood

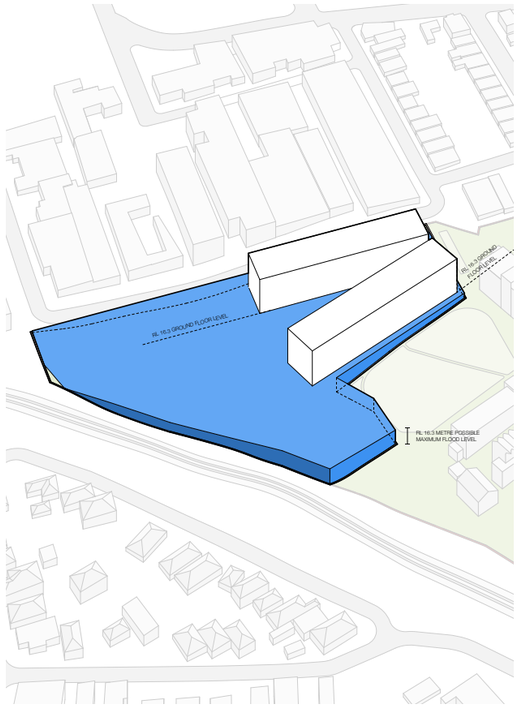
All learning areas as well as carpark, loading, school canteens, bike parking and lift access points are all above the 1 in 100 year flood level.

1 IN 100 YEAR FLOOD

MASS ENVELOPE

# 02 Site Context & Analysis
## Site Constraints



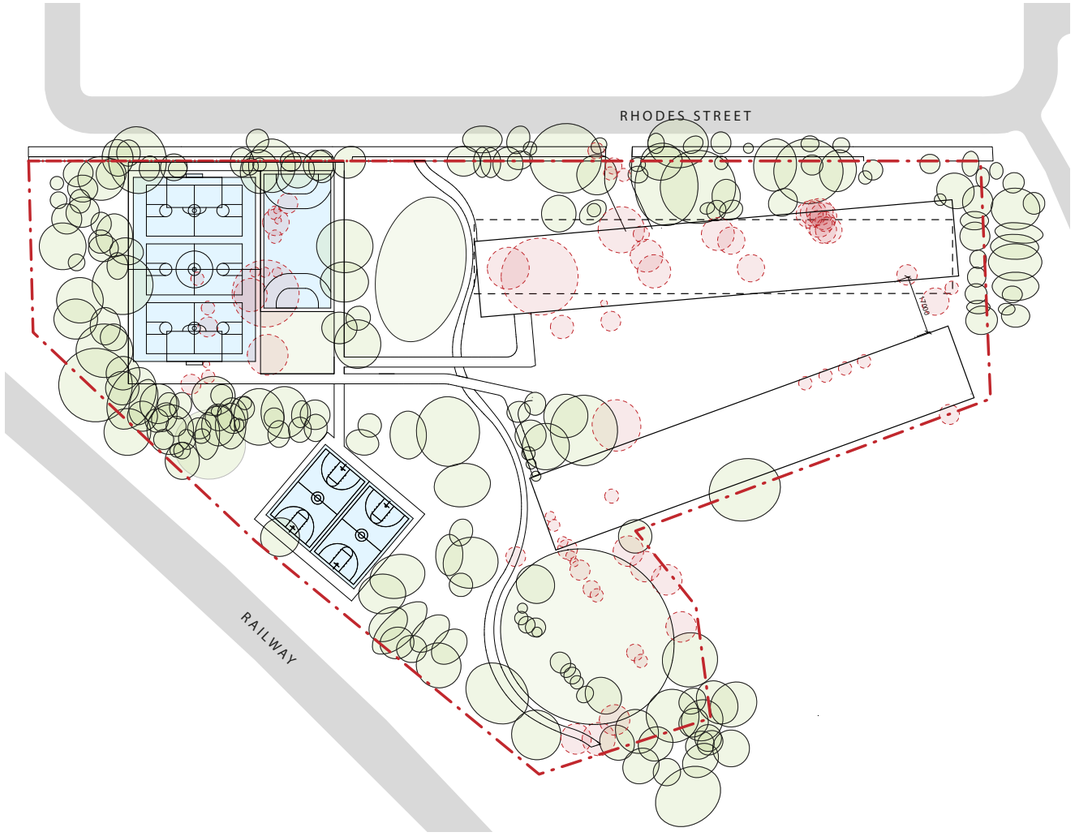

### 02 | Possible Maximum Flood Level

Ground level of the proposal has been set at RL 16.3 This level is used and the primary entrance for both High School and Primary School. All teaching classrooms and spaces are situated on ground or above. The carpark, loading zone, canteens and high school gymnasium sit below this level.

POSSIBLE MAXIMUM FLOOD (PMF) LEVEL

MASS ENVELOPE

# 02 Site Context & Analysis
## Site Constraints


### 03 | Significant Trees

The most significant trees on the site are clustered along Rhodes Street. Therefore the building mass has been pulled away from the site boundary so that the building does not encroach on the tree protection zone for these trees.

The northern wing has also been rotated for this reason which in turn gives space back to the community in front of the Primary School mass.

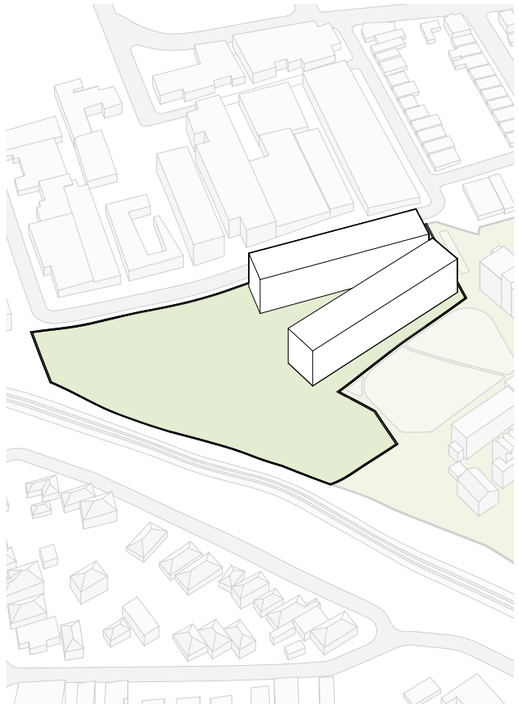
The building footprint sits on what is already primary asphalt. As a result minimal trees need to be removed in order the build MEEPSP. The same strategy is used for the layout of the outdoor play spaces where already cleared zones are used for ovals and courts leaving most of the trees untouched.

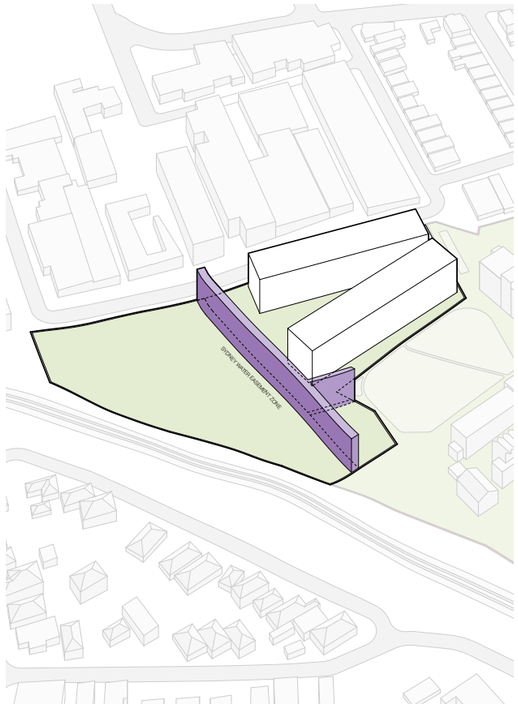
TREES RETAINED

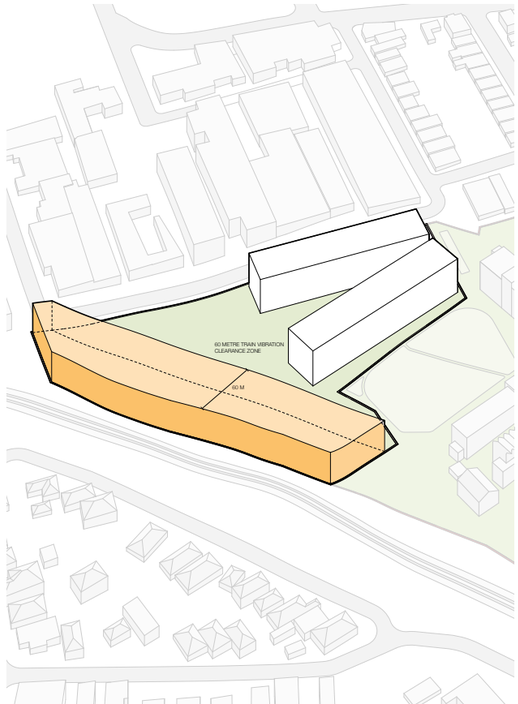
TREES REMOVED

BUILDING OUTLINE

# 02 Site Context & Analysis
## Site Constraints




### 04 | Easements & Vibration Clearance

As the best developable area on the site is towards the north east the building remains clear of both the easement running through the centre of the site and the train vibration clearance zone.

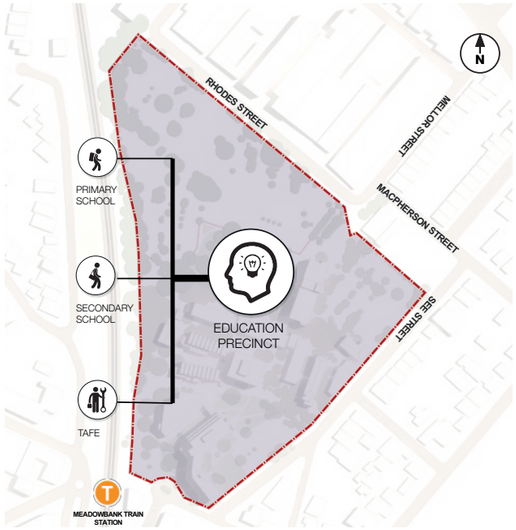
The building mass, facade or structure are kept to the east of the easement line.

EASEMENT

VIBRATION ZONE

MASS ENVELOPE

# 02 Site Context & Analysis
## Masterplan






### Education Precinct

Combined with TAFE, the proposed school creates an opportunity for an education precinct serving ages from Kindergarten to adult learning. Along with this is the controlled sharing of outdoor and indoor learning facilities. The masterplan addresses the site as an education campus while providing proper security measures for the schools.

### Site Link

An existing pedestrian link connects Meadowbank train station with Rhodes Street. Enhancements to the connection can potentially be made by TAFE (as part of a separate approvals process).

### Green Heart

Bringing together both the TAFE NSW site and MEEPSP site is the TAFE green. This area commonly used by students forms the heart of the overall precinct. This proposal seeks to not only maintain amenity to this area but add to the overall use and importance of this space.

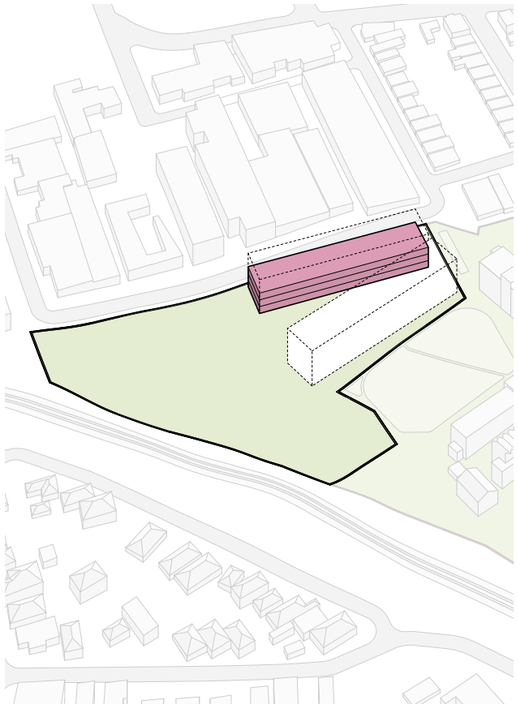
# 02 Site Context & Analysis
## Zoning

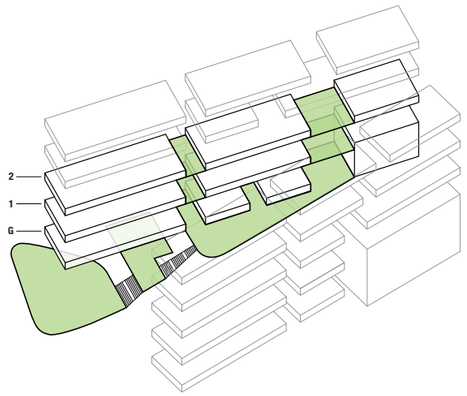

### Zoning

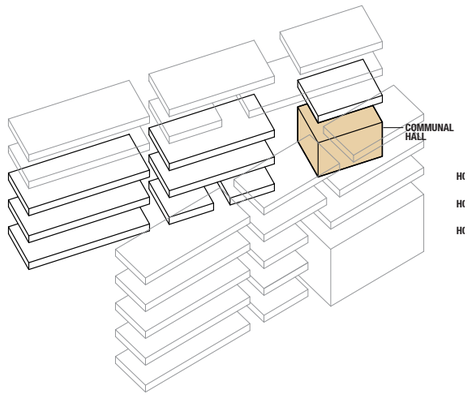
The zoning strategy of the site allows for age related adjacencies between the schools and TAFE. It promotes the continuation of learning as students transition between the schools. Primary school is placed along Rhodes street allowing for easy access and drop off. The zoning is arranged with the High School adjacent to TAFE with access from Rhodes street within the school boundary.

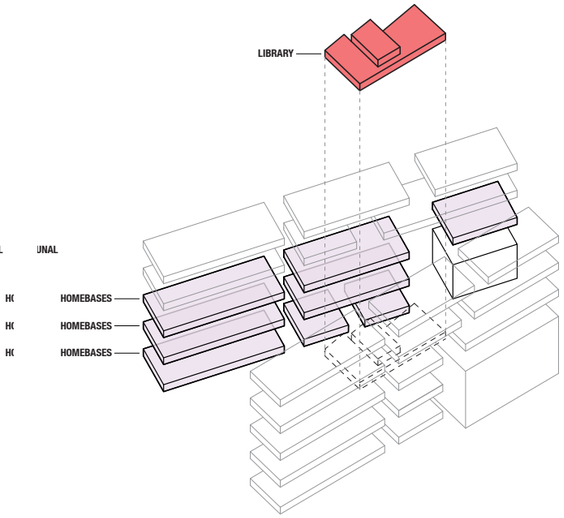
# 03 Built Form

# 03 Built Form
## Primary School






### Primary School

The Public School has three stacked learning communities facing Rhodes Street. This configuration allows for direct drop off outside the school and allows for minimal vertical travel distance between outdoor play areas and indoor learning areas.

### Covered Learning Space

There is access to covered outdoor learning areas (COLA) on each level. Upon entering the school Primary students have access to continual outdoor play space from entering the gate and continuing down to the oval and sports courts.

### Communal Hall

The communal hall is the cornerstone of the proposal and marks the entrance to each of the schools. The communal hall is placed in this location to allow for possible community access before and after school and on weekends.

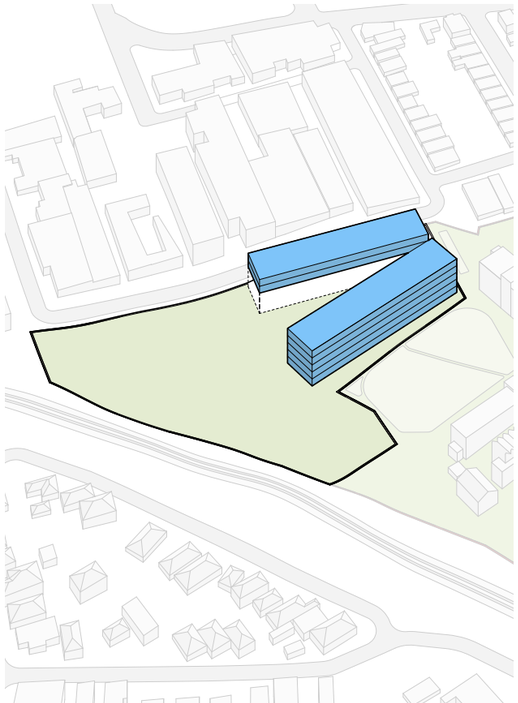
### Teaching Spaces

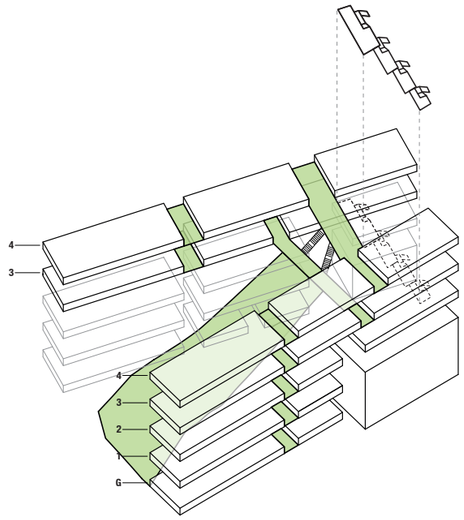
Homebase cluster teaching spaces are stacked from ground to level 2. These have been designed so that students move vertically as they progress and transition through their primary school years.

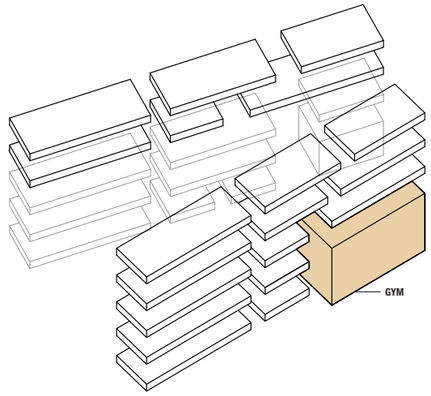


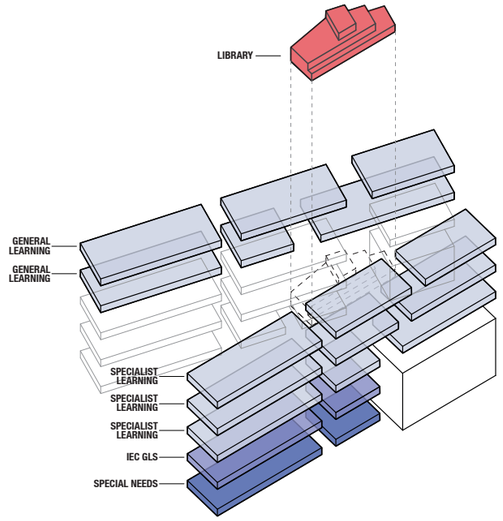

the proposed development proposes construction of two new five storey integrated multi-purpose school buildings, connected by a central library.

# 03 Built Form
## High School






### High School

The High School form is comprised of 5 storeys within the southern wing and 2 storeys of the northern wing above the primary school.

### Covered Learning Space

Outdoor terrace space is provided on each level of the high school. On the upper levels 3 and 4, the terraces join the two wings together. Workshops and other areas requiring covered outdoor space such as the kitchen bistro are placed adjacent to these areas.

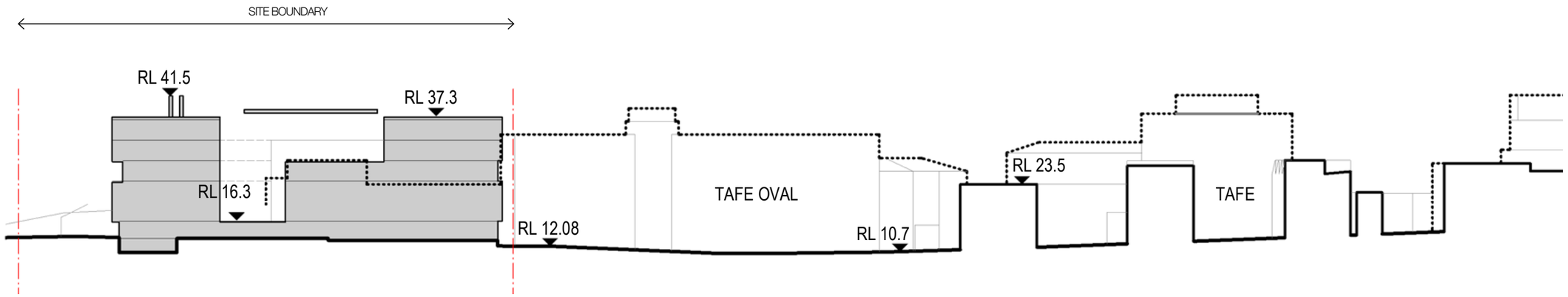
### Gymnasium

The High School gymnasium is located at the entrance of the southern wing. This corner marks the southern corner of the building and allows for possible community access before and after school and on weekends. The gym opens up and gestures towards the adjacent TAFE green.

### Teaching Spaces

General learning spaces, workshops and staff make up the high school block and stack. All workshop spaces are within the southern wing with most of the general learning spaces to the north.

# 03 Built Form
## Heights & Setbacks




EAST-WEST SITE SECTION AA

### Bulk and Scale

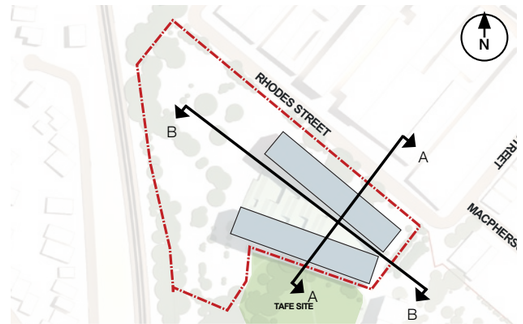
The proposed development proposes construction of a multi-level, multi-purpose, integrated school building with a primary school wing and high school wing. The school building is connected by a centralised library that is embedded into the landscape. As set by the PMF analysis, ground level for the building will be set at RL +16.3. The carpark, loading zone, canteens and high school gymnasium sit below this level. The mass has been broken down vertically to two two-storey volumes separated by a recessed level.

The following sections show the proposed building mass in the context of the topography, neighbouring buildings, existing buildings on the site and streetscape.

PROPOSED MASS

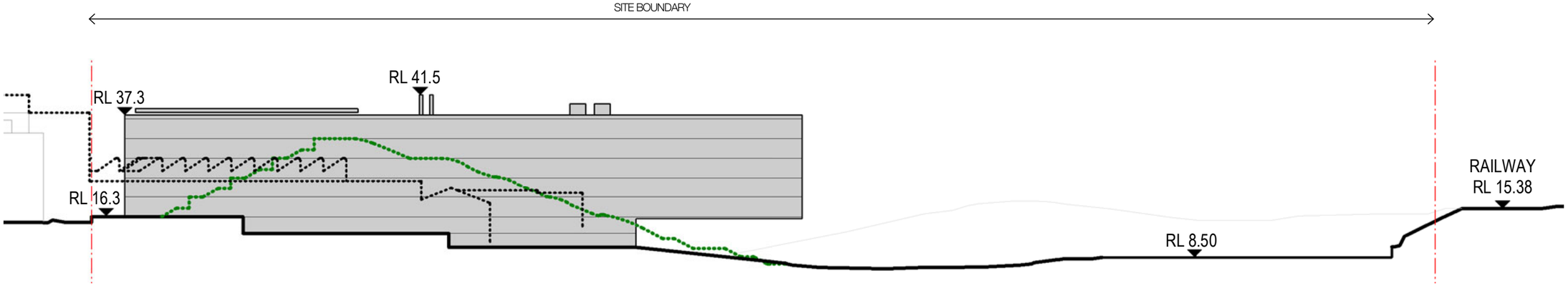
LANDSCAPE

TAFE BUILDINGS BEHIND




KEY PLAN

# 03 Built Form
## Heights & Setbacks

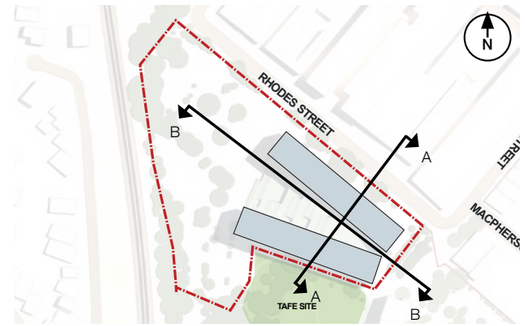



NORTH-SOUTH SITE SECTION BB

PROPOSED MASS

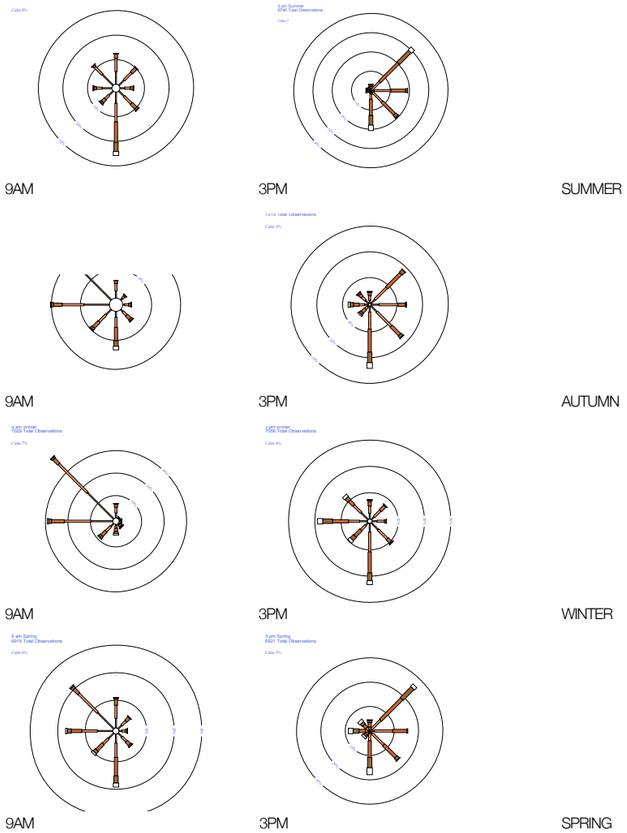
LANDSCAPE

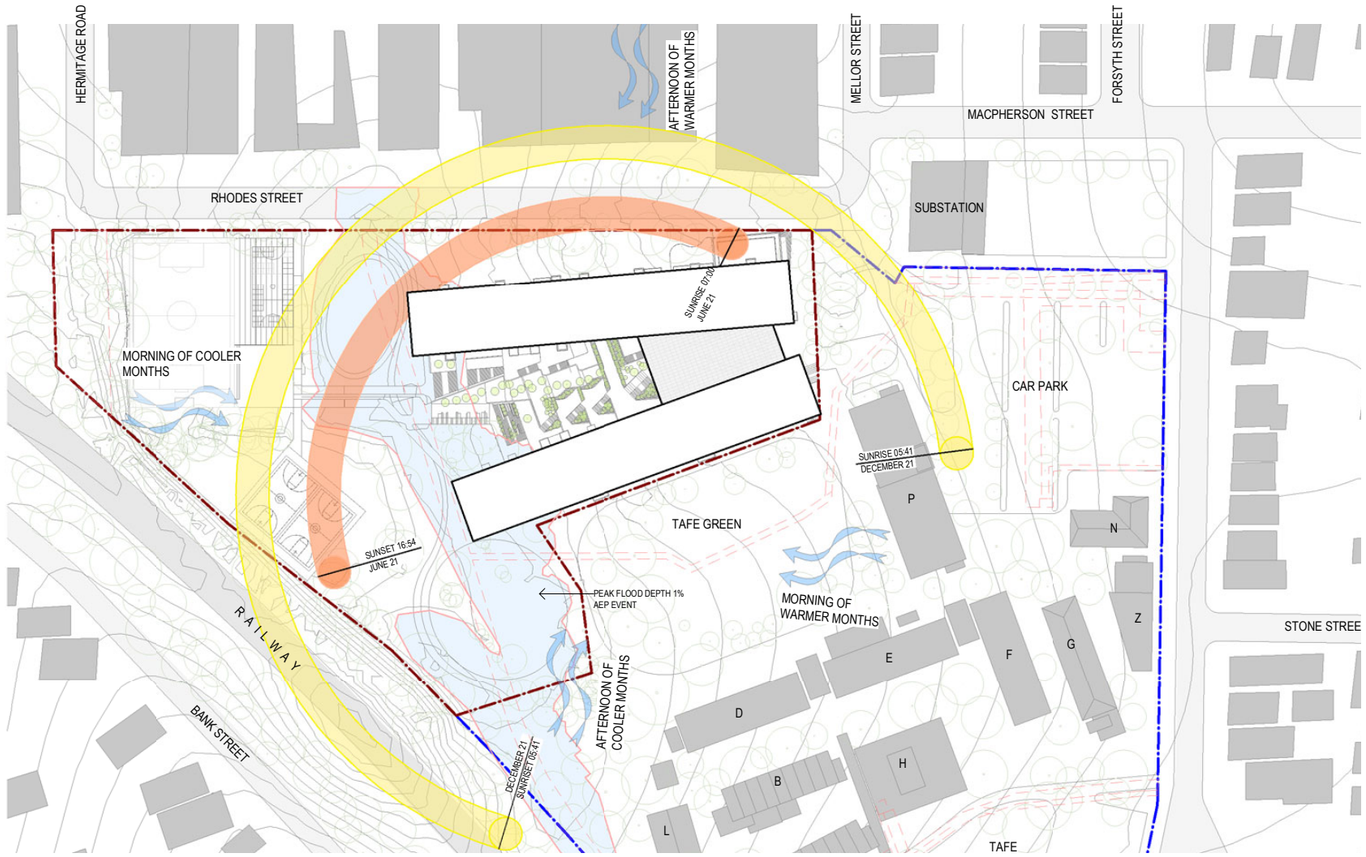
TAFE BUILDINGS BEHIND




KEY PLAN

# 03 Built Form
## Environmental Impacts



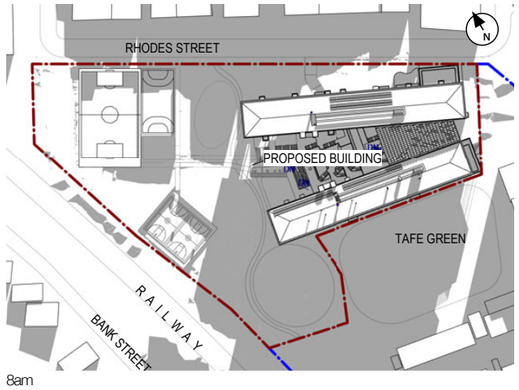




## Building Orientation

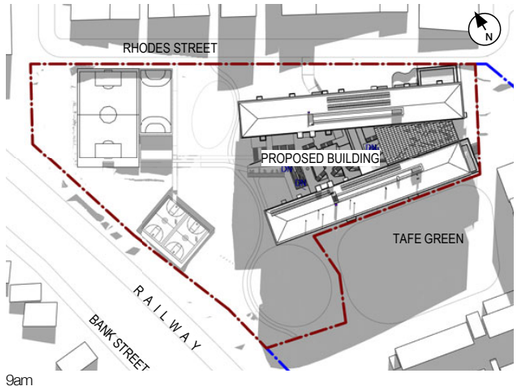
The building is designed so that its main aspects are predominantly north and south facing. The shorter edges of both wings face predominantly east and west.

The building orientation also seek to use the buildings mass to protect the central from the warm north easterly winds and the cold southerly winds in winter.

# 03 Built Form
## Shadow Diagrams



8am



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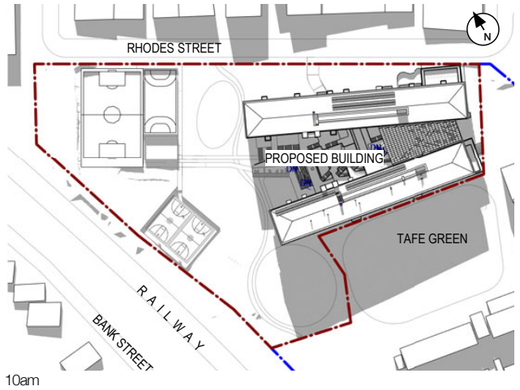

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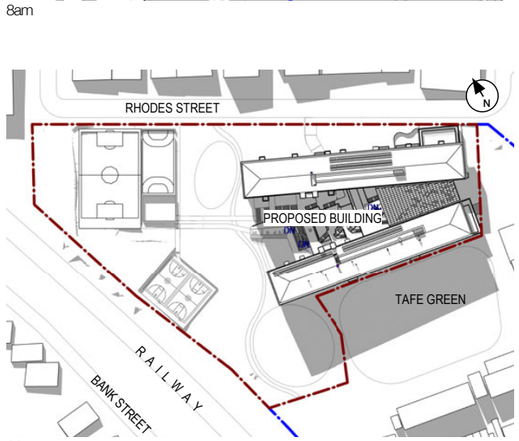
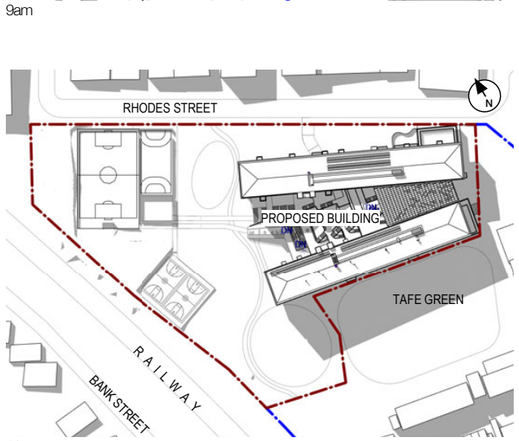
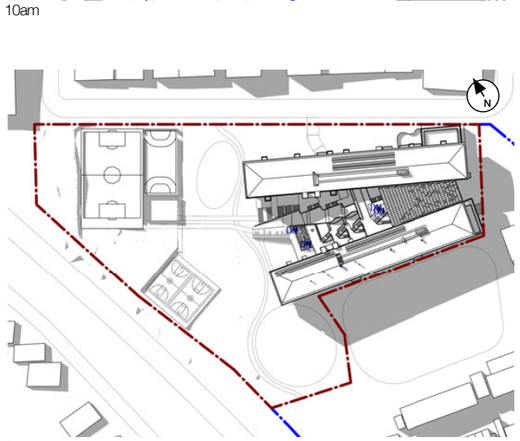


11am



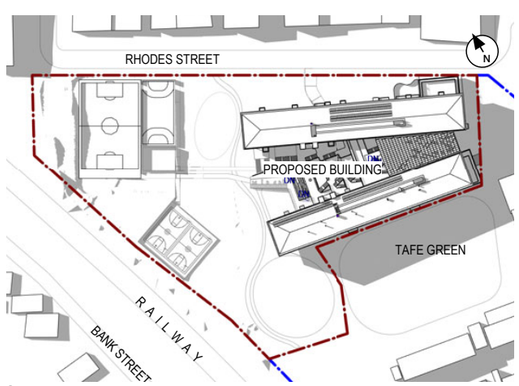
12pm



1pm

### Winter Solstice - 21 June

Consisting of 5 storeys the proposal's height comparable to the adjacent TAFE building to the south-east. Longer larger floor-plates have meant that the building height has been kept down. This allows the building to sit within the tree canopy that surrounds it and minimise over shadowing to the adjacent TAFE green to the south.



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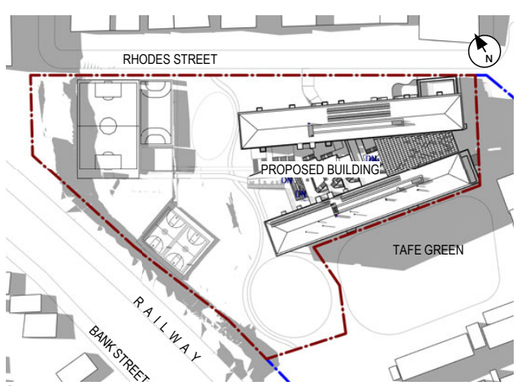

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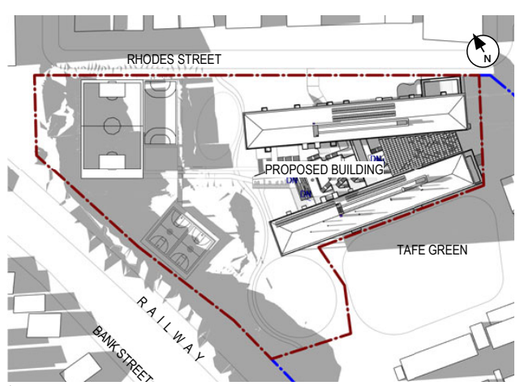
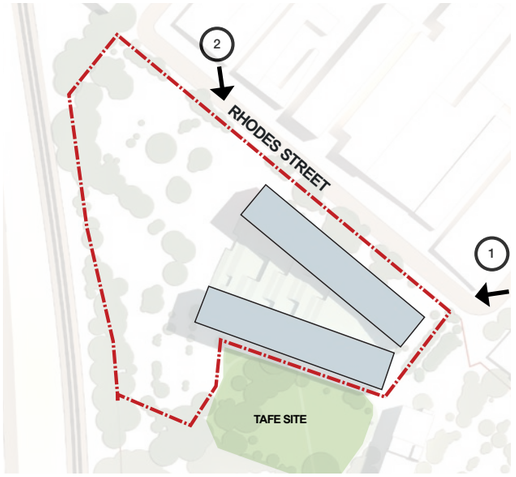


4pm

# 03 Built Form
## Visual Analysis - Key View Points




EXISTING

EXISTING

PROPOSED

PROPOSED

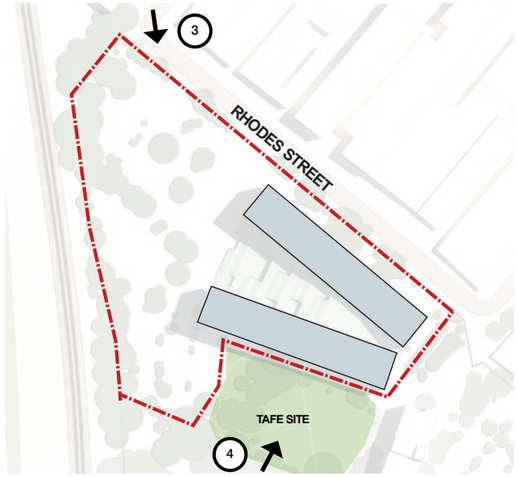
### 01 | Corner of Rhodes and Macpherson Street

The main entrance to both primary school and high school are on the corner of Rhodes Street. The mass is set back from Rhodes Street allowing the tree protection zone to be maintained. These trees form a buffer between the building and the street.

### 02 | Rhodes Street Looking East

The mass protrudes from behind the trees hovering above the outdoor play areas for primary school. The end walls used as part of the public art strategy face the street.

# 03 Built Form
## Visual Analysis - Key View Points




EXISTING

PROPOSED

### 03 | Corner of Rhodes Street and Hermitage Road

Moving west along Rhodes street the building begins to disappear behind the trees along the street.

EXISTING

PROPOSED

### 04 | TAFE Green Looking North

Keeping the building long means that the proposed school is only five levels. The height relates and is very similar to the closest TAFE building to the east.

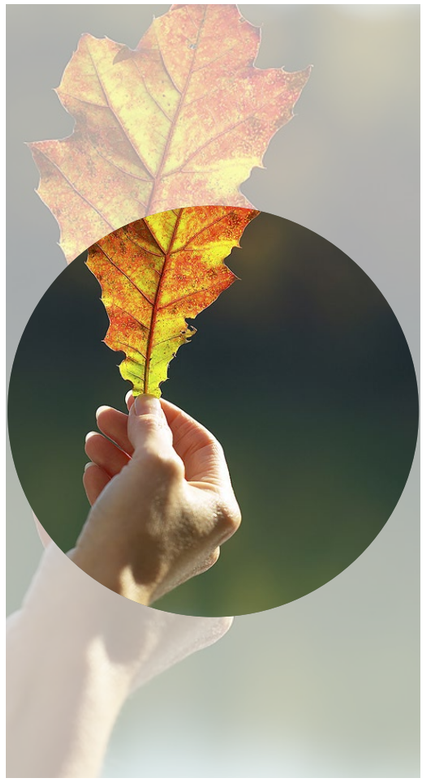
# 04 Interaction with Landscape

The landscape extends upwards reaching every level, so as where possible every available surface can be used as space for learning and play.

# 04 Interaction with Landscape
## Learning in Nature

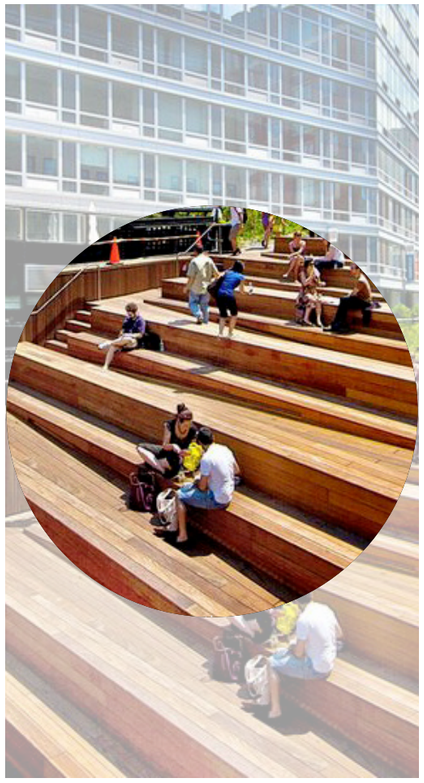
Visual Connections

Physical Connections



Engagement Of Senses

Activity/Stairs/Community



Usable Spaces

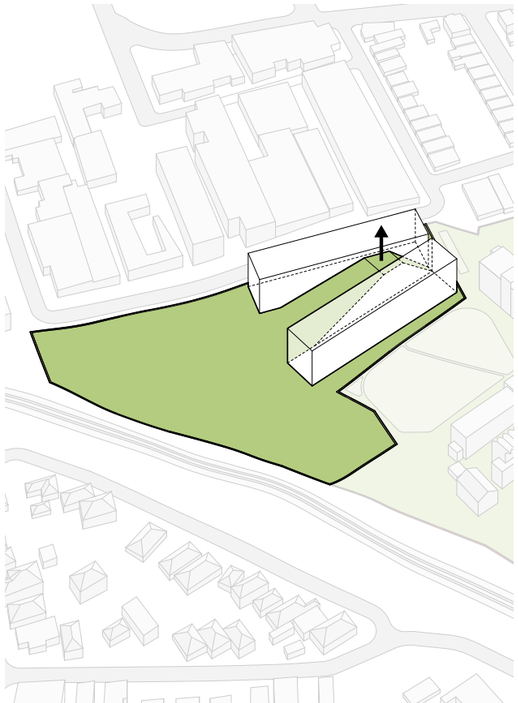
### Landscape

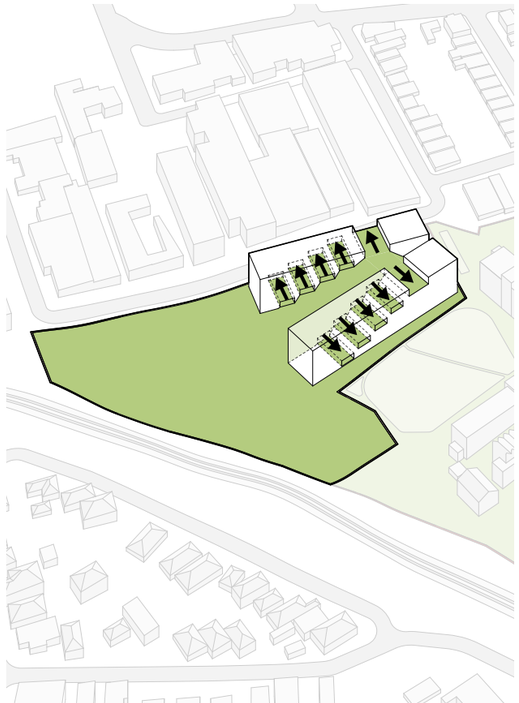
The proposed scheme provides a modern pedagogy breaking down the traditional notions of how to deliver education by blurring the boundaries between learner and teacher, between subjects and between indoor and outdoor learning.

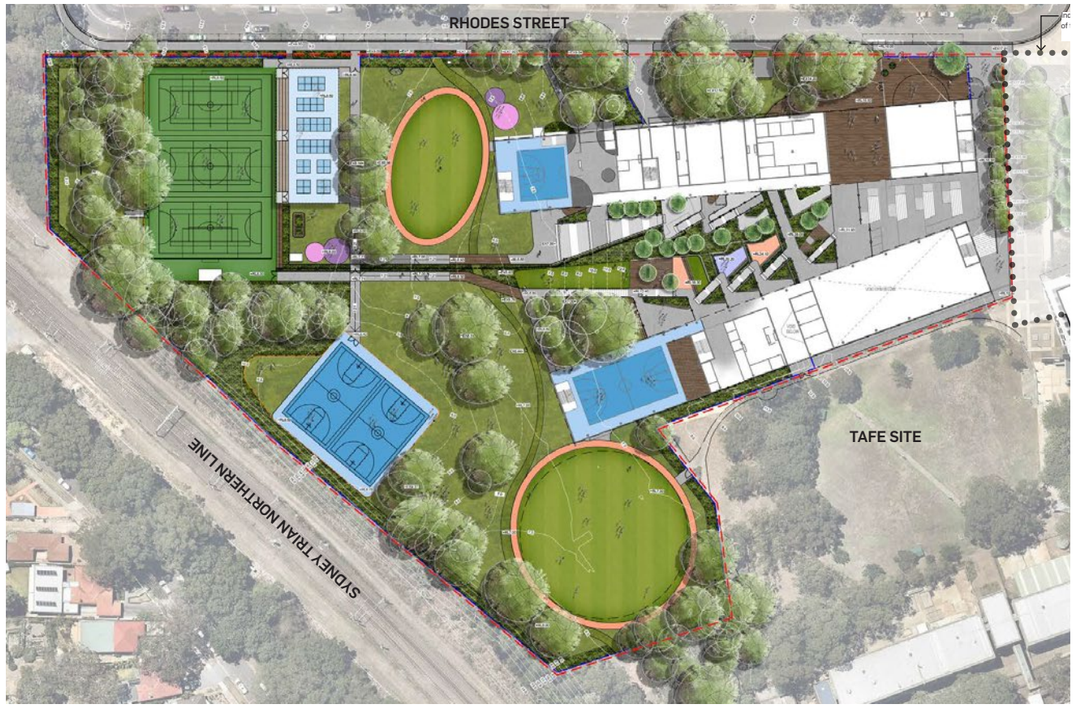
Inspired by the lush and well established natural landscape within the site the design philosophy of ‘designing from the inside out by bringing the outside in’ emerged. This has resulted in a series of buildings that enhance connections with nature and maximise outdoor learning and play opportunities, on ground levels and also versatile green terraces stepped vertically and following the ascension of the school skyward.

A vast and well-established tree network typifies the area, it’s this character that the architecture looks to compliment with its structural elements and positioning nestled within. The architectural language is refined and unobtrusive, comprised of clean intelligent lines that allow the surrounding natural environment to sing. The landscape extends upwards reaching every level, so as where possible every available surface can be used as space for learning and play.

# 04 Interaction with Landscape
## Outdoor Play








Source: Urbis

### Primary School Landscape

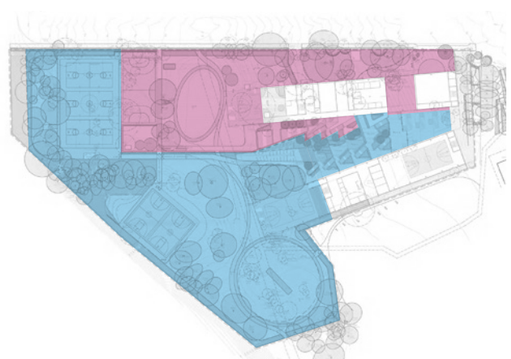
The play area is the main connector for students, it will incorporate a variety of seating, planting and vertical greenery that brings the outside landscape into the school heart. A series of seats and platforms ensures the maximum flexibility within the space. Steps, amphitheatre seating and a softfall play area lead the children down to two multi-purpose undercover play areas which overlook the external grassed play areas. All areas of the site have been developed to ensure flexible learning spaces.

### High School Landscape

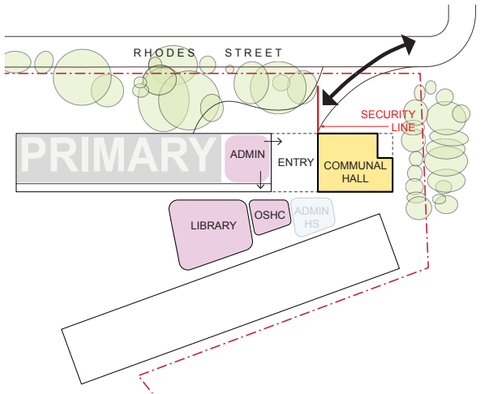
The high school primary outdoor play and learning space is to the west of the site, incorporating free play and structured (hard courts) spaces, informal and covered outdoor learning spaces, discovery gardens and opportunities for ecological restoration and agriculture and permaculture.

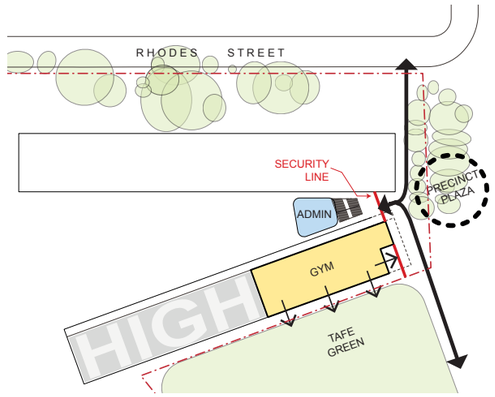
PRIMARY SCHOOL

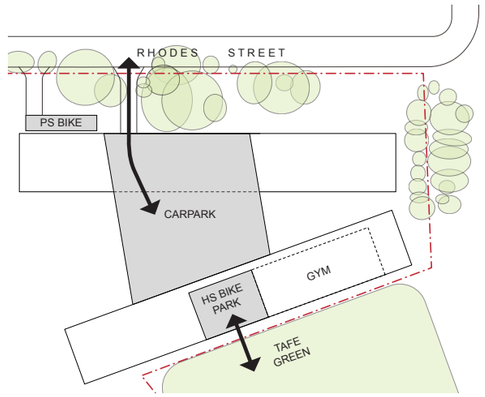
HIGH SCHOOL



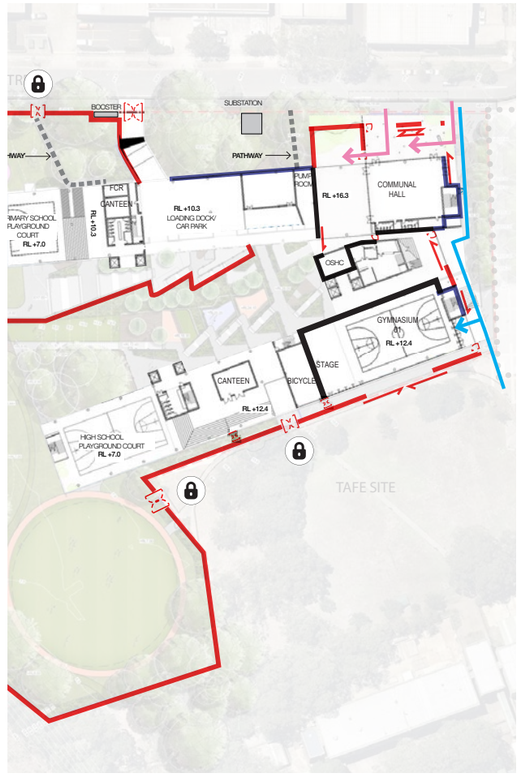
# 04 Interaction with Landscape
## Entrances




### Before and After School Hours




### Primary School

The main access point for the Primary School is from Rhodes Street to the North-West of the site. Sliding gates at this entrance point will be open to allow students and teachers to enter and leave the school and closed during school hours.

### High School

The main access point for the High School is from the precinct plaza to the West of the site. Again a sliding gate will be open before and after school and then closed during school hours.

### Vehicle/Bicycle & Loading

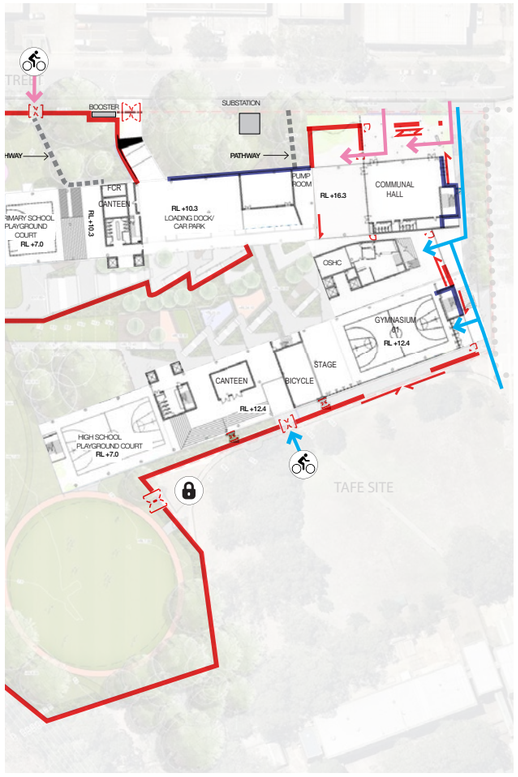
Vehicle access to the car park and loading bay are from Rhodes Street. A southern access point allows high school bicycles into the secure bicycle parking area at the Lower Ground level.

### Perimeter Security

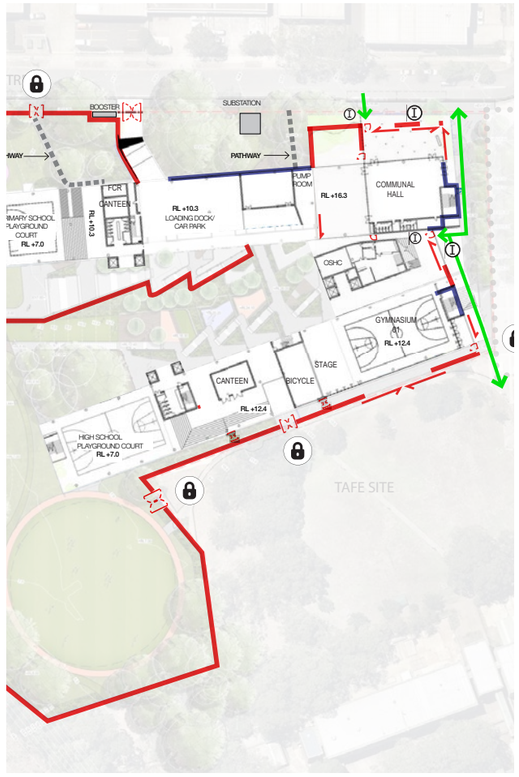
While fencing is necessary to the educational precinct, a strong emphasis is placed on permeability of the physical environment to encourage transition, transparency and minimise the visual impact of barriers from the street. This will be achieved through varying security measures and physical boundaries most often populated plentifully with vegetation, welcoming not only students but the greater community within which the proposal sits.

# 04 Interaction with Landscape
## Security

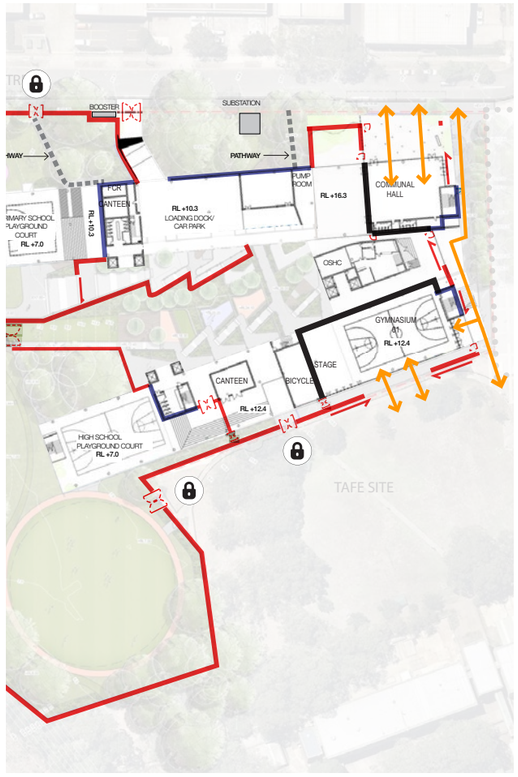
### Student Arrival and Departure



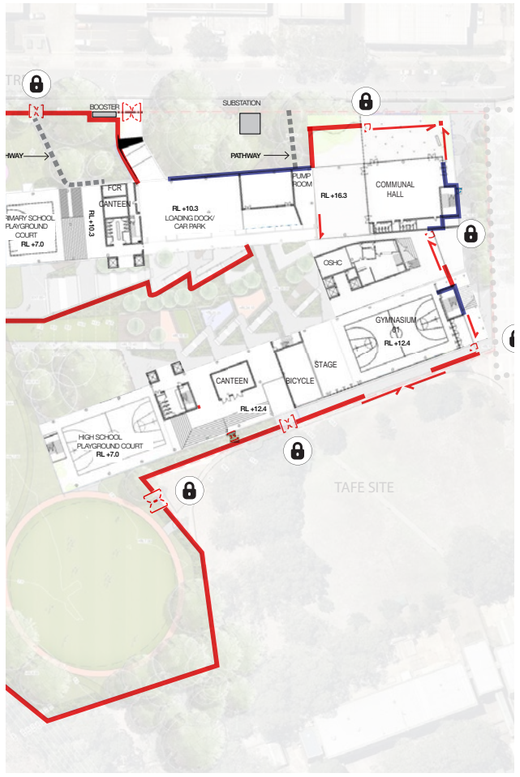

### During School Hours




### Weekend




### 3am



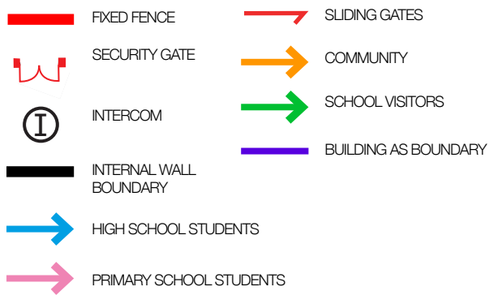

### Boundaries

Northern boundary: Palisade security fence with gates allowing students to enter before and after school and for sporting facilities to be used outside school hours. A portion down the slope from the Primary School entrance is a fenceless area that allows the community to blend into the school. This area is lower than the Primary School entry terrace for security. On the north east corner there are sliding gates that stay open during weekend/community events and closed at late night for asset protection.

West/South-West boundary: Palisade security fence will run along this entire boundary line separating the site from the rail corridor.

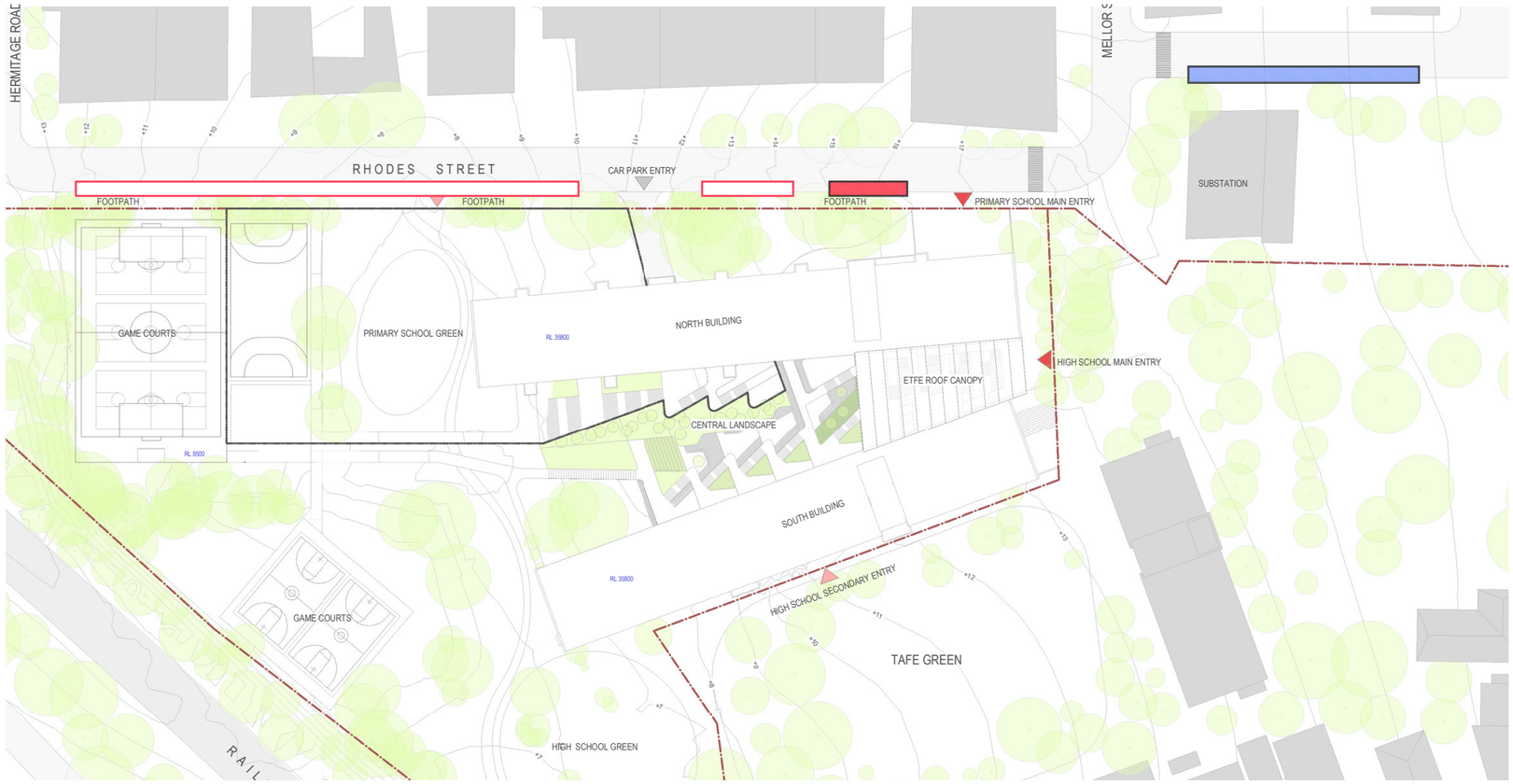
Southern boundary: A 2.1m palisade fence makes up most of the southern boundary. At the south-east corner large sliding gates are used to open up the gym to the neighbouring TAFE green. This is especially important where a high level of engagement between the two institutions is wanted.

Eastern boundary: The building provides security to most of the eastern edge. This is to give space back to the entrance of the precinct and allow for greater circulation space for both students and community members into the wider precinct. Sliding gates will allow students to enter and leave before and after school and will be closed during school hours. A swing gate will allow school visitors to enter the school after being granted access.




SCHOOL

# 04 Interaction with Landscape
## Drop off Strategy



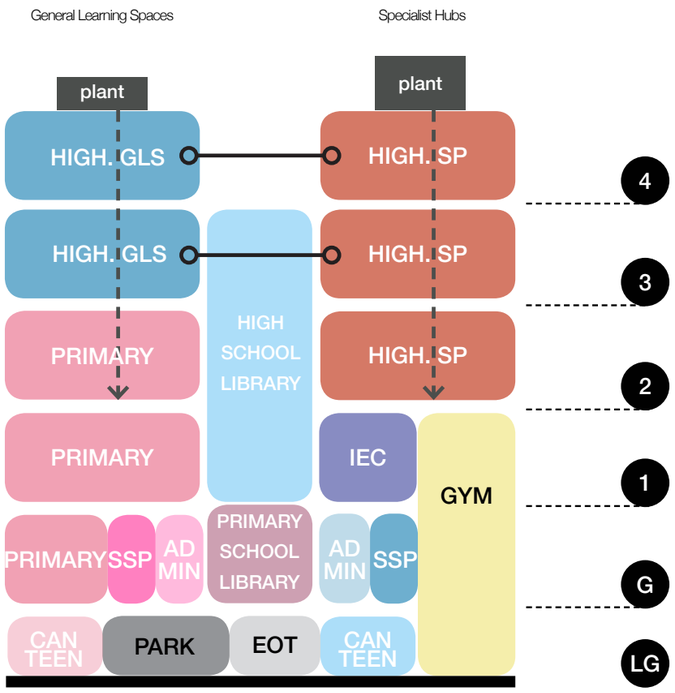

HIGH SCHOOL BUS DROP OFF

PRIMARY SCHOOL BUS DROP OFF

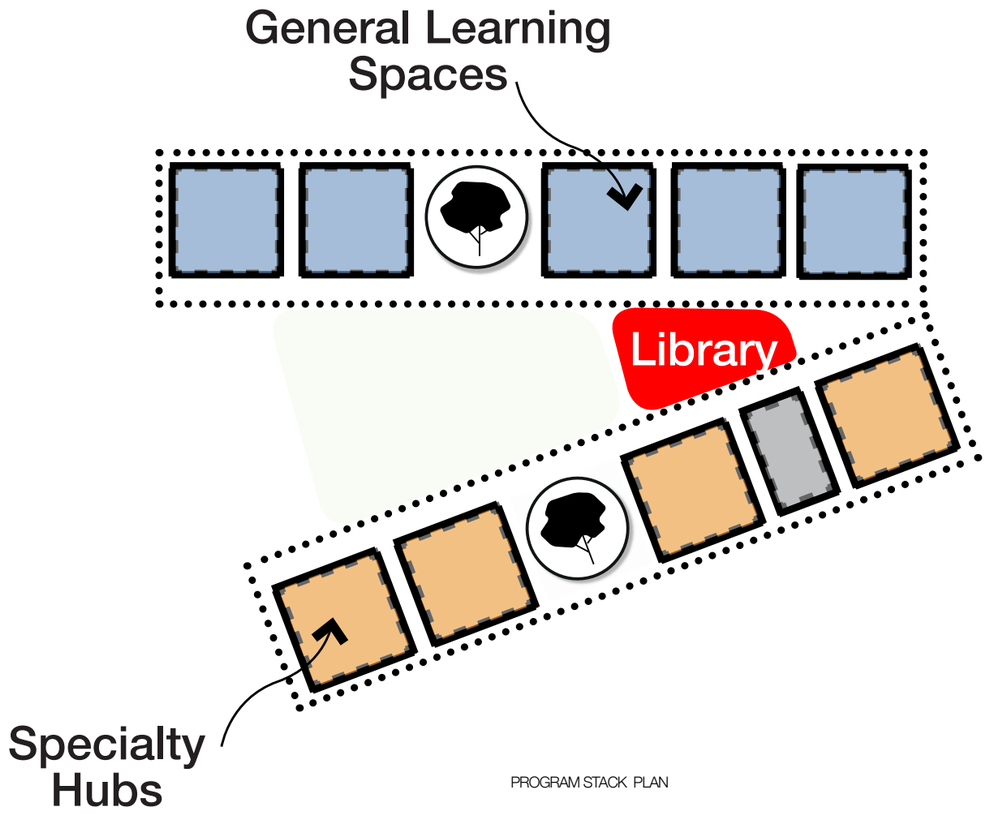
CAR DROP OFF

# 05 Internal Layout

# 05 Internal Layout
## Block and Stack



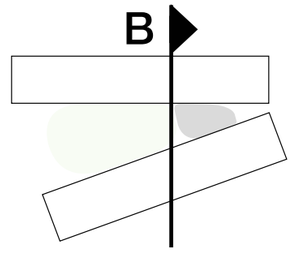

PROGRAM STACK SECTION B




PROGRAM STACK PLAN

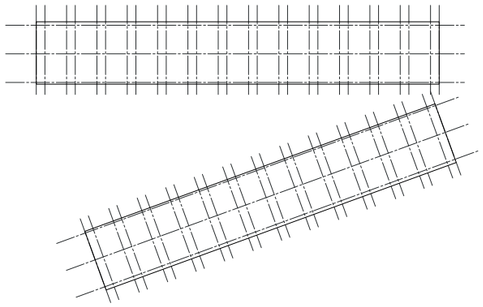
### Building Stack

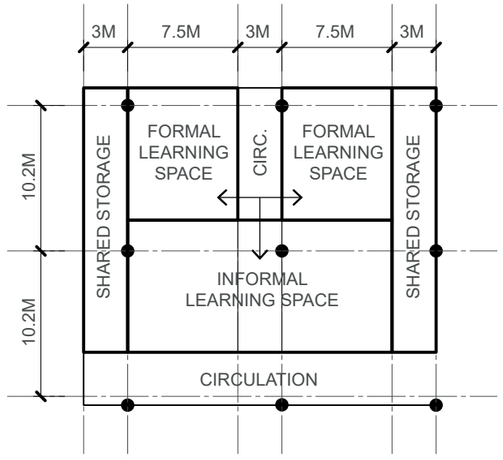
The program stack for Meadowbank has been divided between the two wings; General Learning Spaces in the north building and specialist hubs in the south building. Lower ground connects directly to play and has both high school and primary canteens. Ground, first and second floors have primary school homebase clusters, library, administration offices, and specialist learning units. Connecting both wings the library is at the heart of the school.

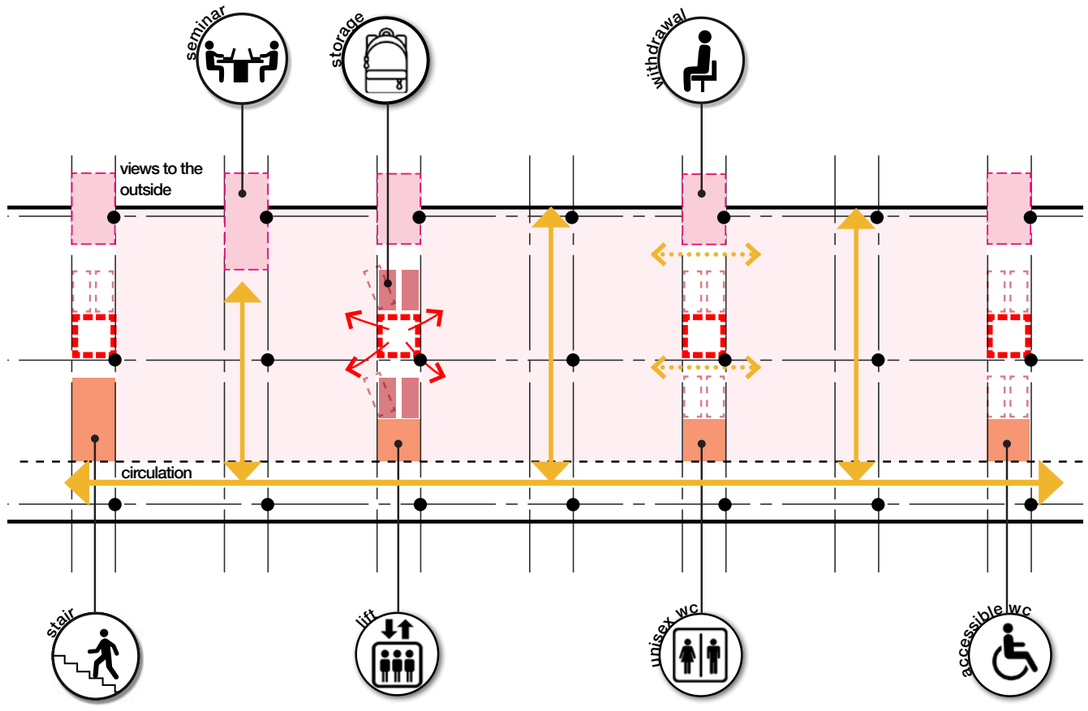



KEY PLAN

# 05 Internal Layout
## Pedagogy






## The Framework

A “tartan” grid structure allows for adaptable and flexible interior spaces. Within the grid are support zones that house services risers, storage, wet and dry cabinetry, amenities and vertical circulation. The support zones serve the adjacent learning spaces which work as a cluster model of 4 classrooms. The grid expands and contracts as the program changes throughout the building. For primary school the cluster of 4 homebase’s work as a shared space with moveable furniture to allow for separation when required. For the high school the cluster consists of 1 full enclosed room, and open learning spaces that can be separated by moveable joinery screens.

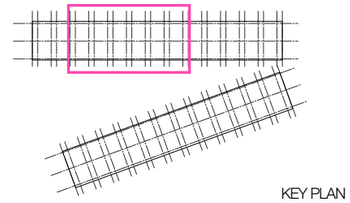
SERVICES RISER

STORAGE

LEARNING ZONE

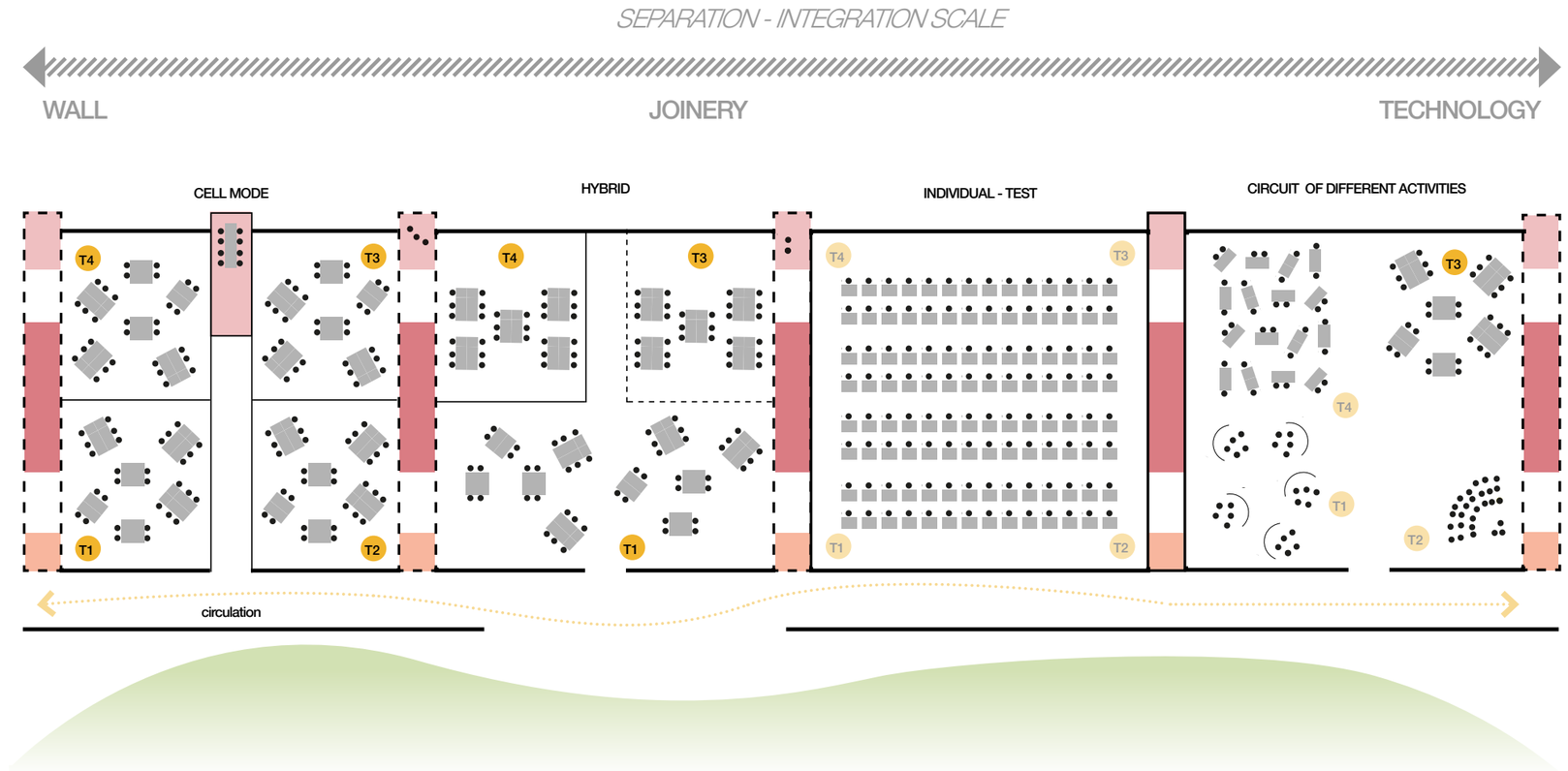
CORE ELEMENTS - WC / LIFTS / STAIRS

CIRCULATION



KEY PLAN

# 05 Internal Layout
## Possible Learning Modes


### Learning Modes

The flexible grid allows for various methods of learning. From cell mode, where the pedagogy is didactic through to open and collaborative learning where the space is divided for activity-based learning.

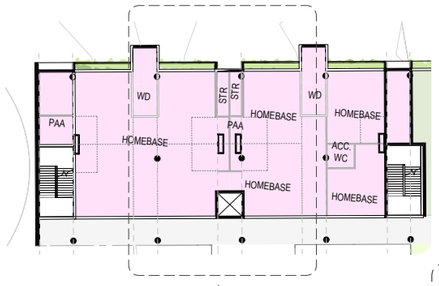
STORAGE

SUPPORT LEARNING - WITHDRAWAL / SEMINAR ROOMS

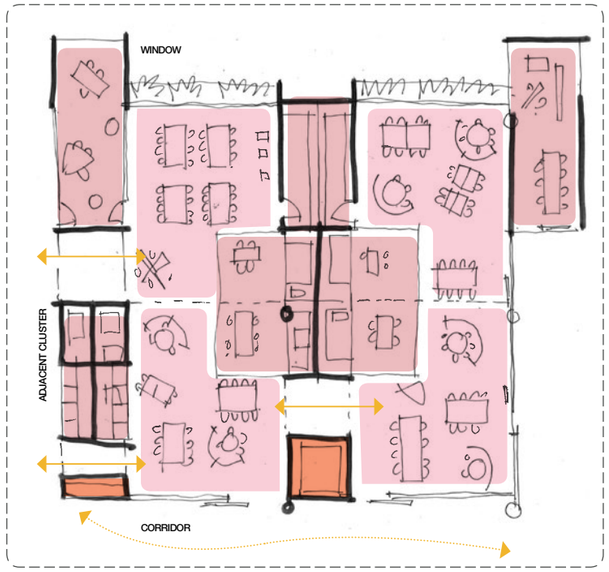
CORE ELEMENTS - WC / LIFTS / STAIRS

CIRCULATION

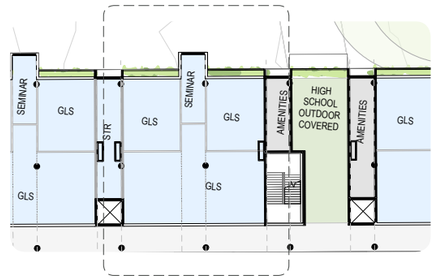
# 05 Internal Layout
## Typical Cluster Typologies

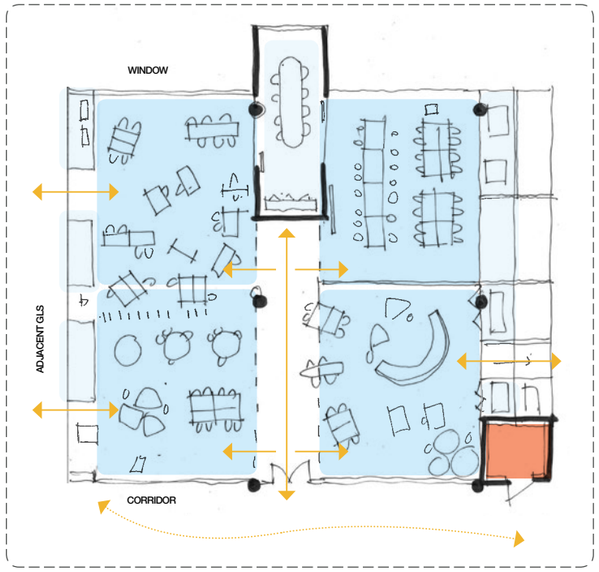



### Typical Primary School Cluster




### Typical High School Cluster




## Cluster Typologies

The 9m/3m “tartan” grid provides flexibility and is sized to suit both Primary and High School activities.

In the Primary School, learning is activity-based in a largely open plan cluster of 4 Homebases and includes; a Practical Activities Area (PAA), a Withdrawal room (WD) and storage within the cluster. Partitioning can occur with moveable furniture to screen off areas within the cluster.

To enable more activity-based learning in the High School also, the cluster of 4 General Learning Spaces (GLS) includes a seminar room and is a highly flexible space that can adapt to a variety of learning modes including fully open plan and fully cellular. This is achieved through operable walls and moveable joinery screens.

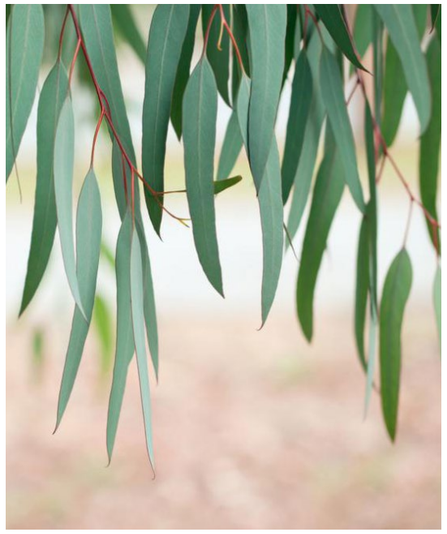
The specialist spaces such as science labs and workshops also fit within the regular grid and are found in the southern wing.

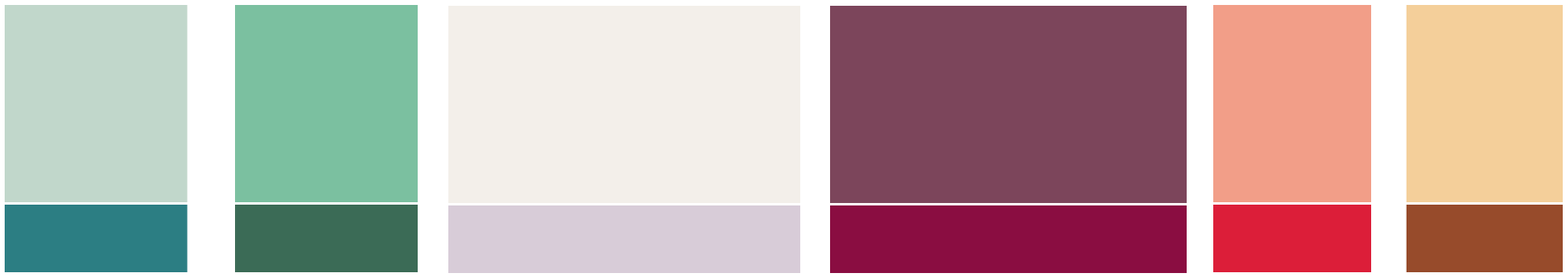
The northern wing contains the majority of the GLS and Homebase clusters and allows for future expansion and contraction of either school.

SERVICES RISER
PRIMARY SCHOOL SUPPORT SPACE
PRIMARY SCHOOL LEARNING ZONE
HIGH SCHOOL SUPPORT SPACE
HIGH SCHOOL LEARNING ZONE
CORE ELEMENTS - WC / LIFTS / STAIRS
CIRCULATION

# 06 Materiality & Facade

# 06 Materiality & Facade
## Colour Palette





Daniel Walbidi - Kirriwirri, 2013

Reko Rennie - Always was, Always Will Be, 2012

Emily Kam Kngwarray - Big Yam, 1996

### Natural Hues

The colour palette of the proposal is very much derived from the surrounding context. Inspired by the natural hues of the local flora the project further seeks to blend in with its surrounds. Such colours include the greens of the eucalyptus leaves, the white/grey of the bark, the warm yellow of the wattle tree, the deep blues of the jacaranda and the rich reds of the flourishing gum nuts. The colours of the schools are also incorporated into the design giving each school a sense of personal identity and pride.

# 06 Materiality & Facade
## Colour Palette

Eucalyptus Leaf

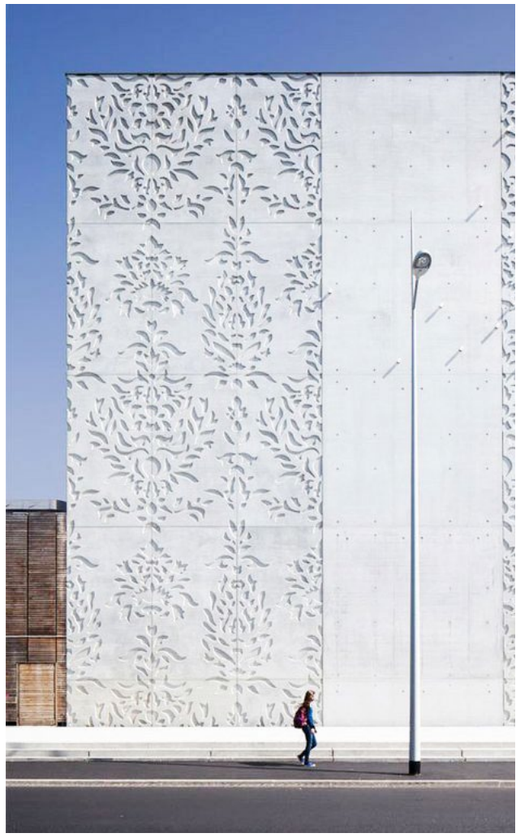
Golden Wattle

Jacaranda

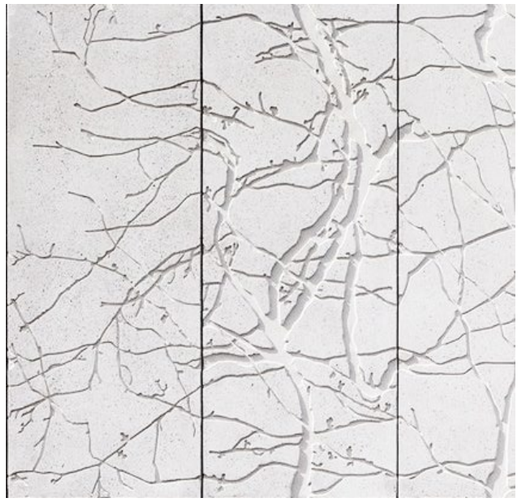
Gum Nut

# 06 Materiality & Facade
## Material Palette

### Concrete



Saint-Nazaire Theatre, K-architectures, France, 2012.



Laposa Winery, Atelier Peter Kis, Hungary, 2010.

Co-Working Space, MAT Office, China, 2015.

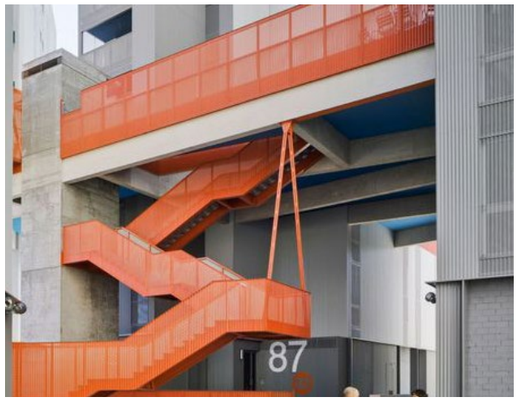
### Planting

The Ivy, Woods Bagot, Sydney, Australia, 2008.

Tower 25 - White Walls, Jean Nouvel, Nicosia, Cyprus, 2015.

### Metal

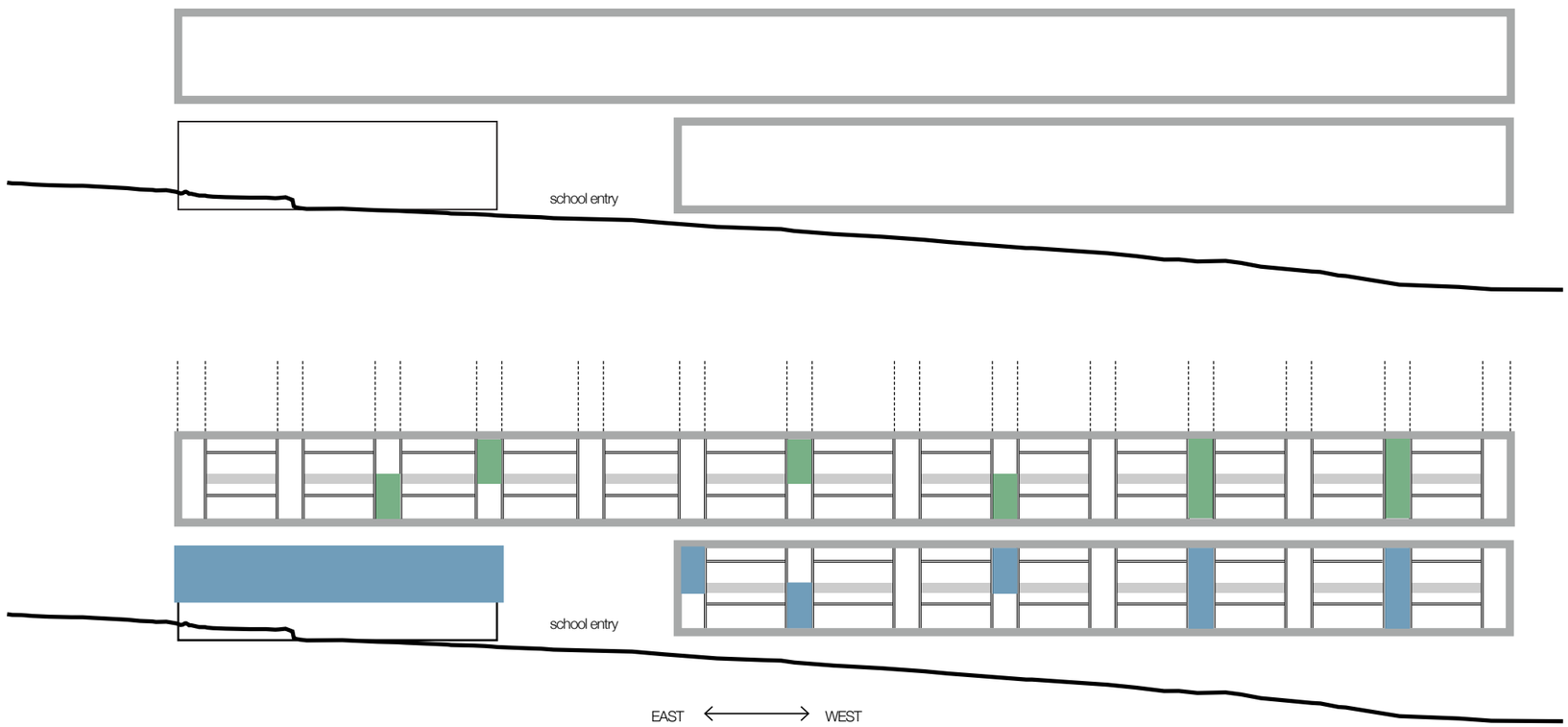
Chaparral Rural School, Plan:b arquitectos, Colombia



118 Subsidezed Dwellings, Amann Canovas Spain

The proposal embodies materials that are robust, hardy, tactile and playful. Materials are celebrated in their natural state adding colour, vibrancy and overall playfulness to the project. The education of craftsmanship and how things are made/assembled is something that the project seeks to express in its use and placement of such materials both natural and man made. Such materials include the use of timber, masonry, concrete and steel.

# 06 Materiality & Facade
## Facade Concept




### The Frame

The proposed mass consists of 5 storeys. The mass has been broken down horizontally by offsetting the 3rd storey inwards. This leaves 2, 2 storey bars stacked on top of one another. These two horizontal bars are emphasised by a thick frame that boarders these large elements.

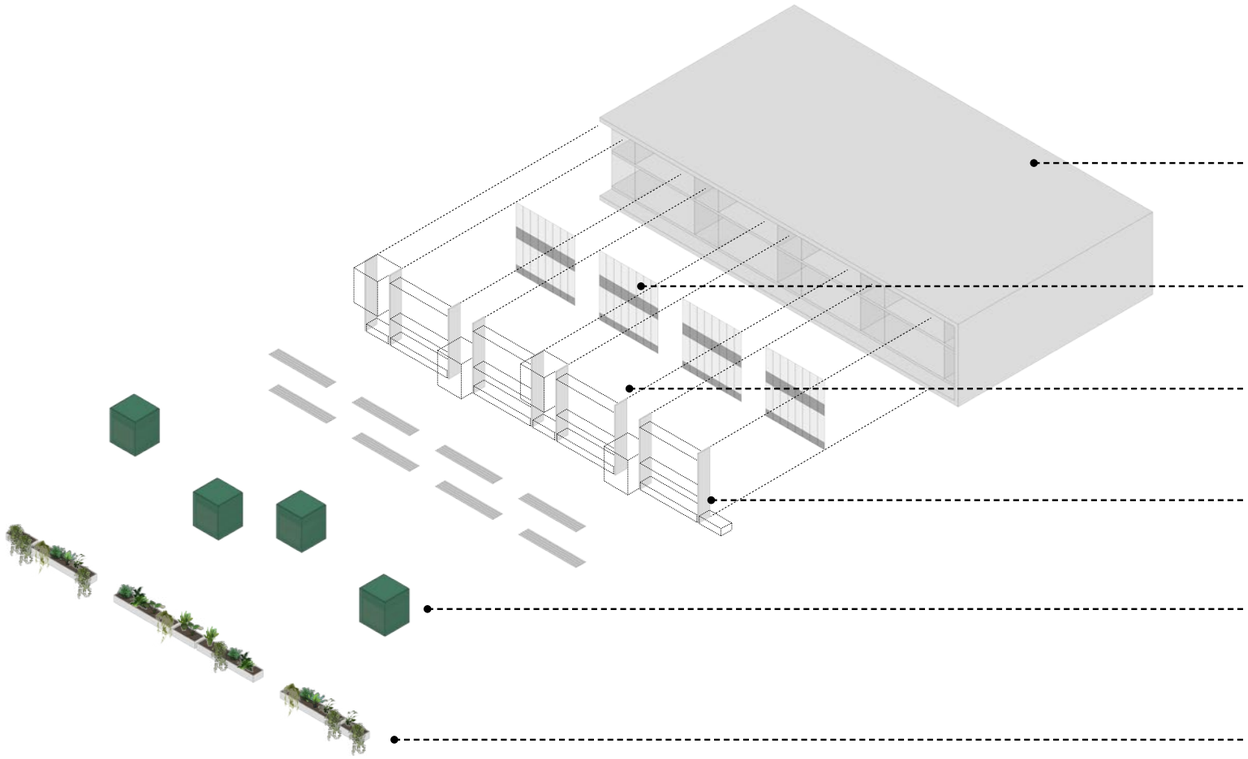
### Articulation and the Tartan Grid

Breaking down the scale further the tartan grid that sets out the internal layout is also expressed on the facade. The treehouse boxes that protrude out are always placed within the tartan grid. It is these threehouse elements and communal hall/gymnasium that are clad in coloured perforated metal adding brightness and playfulness to the facade.

### Landscape Planters

Like the inner façades that face the central landscape it is important that the outer façades also capture and contain greenery. On the 1st and 4th storey planter boxes are placed allowing direct connection to the learning spaces behind. Green climbers are placed within every second tartan grid.

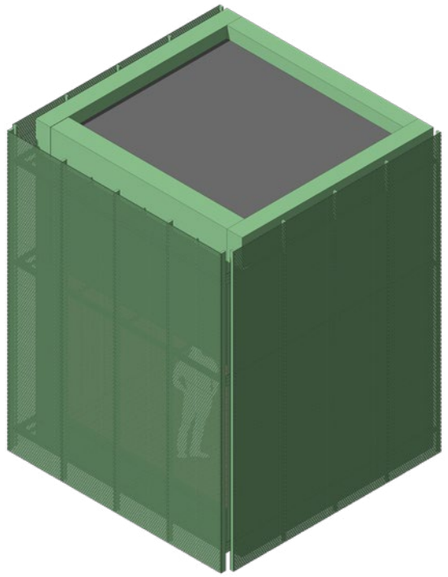
# 06 Materiality & Facade
## Facade Breakdown

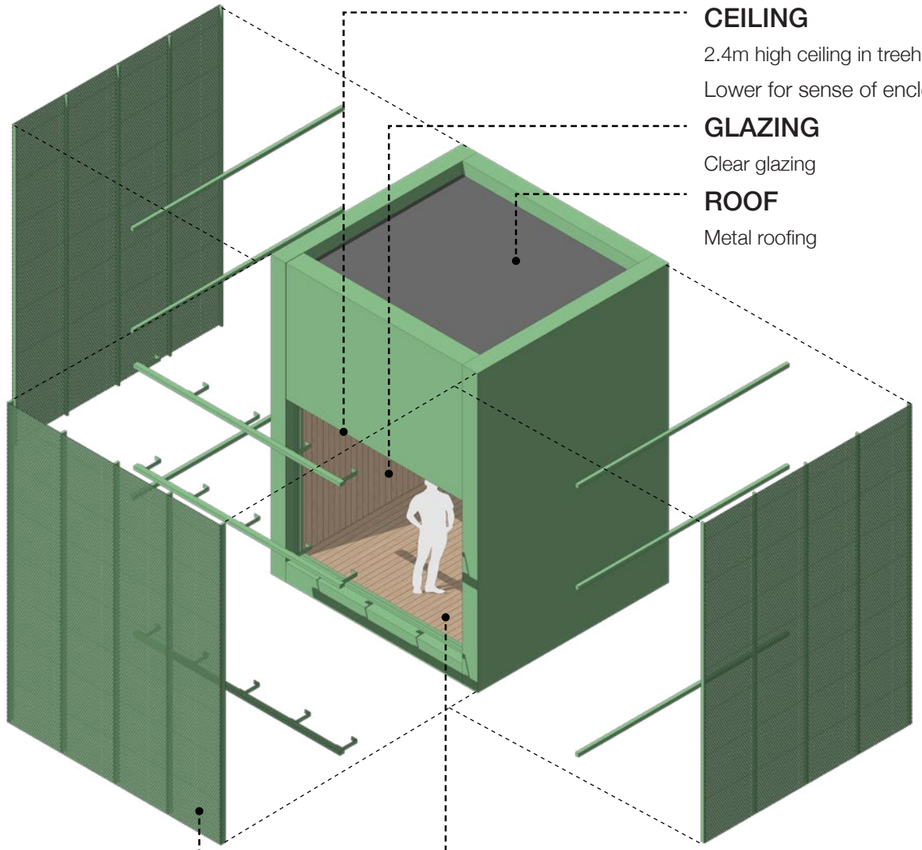


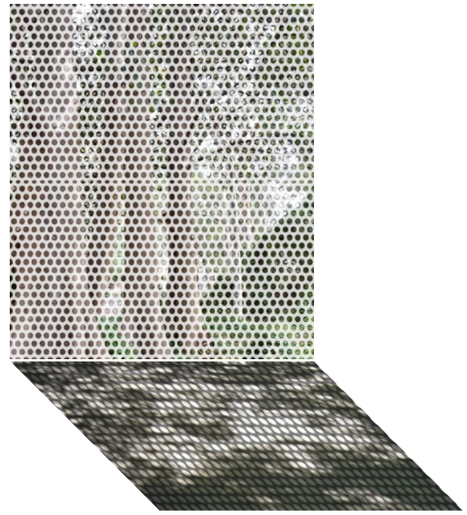

### Kit of Parts

The frame is the primary facade element. Within the frame site all of the secondary elements including glazing, vertical metal sun shades, horizontal metal sun shades and the planter boxes. The treehouses sit within the vertical metal sun shades and protrude outwards beyond the primary frame.

# 06 Materiality & Facade
## Treehouses



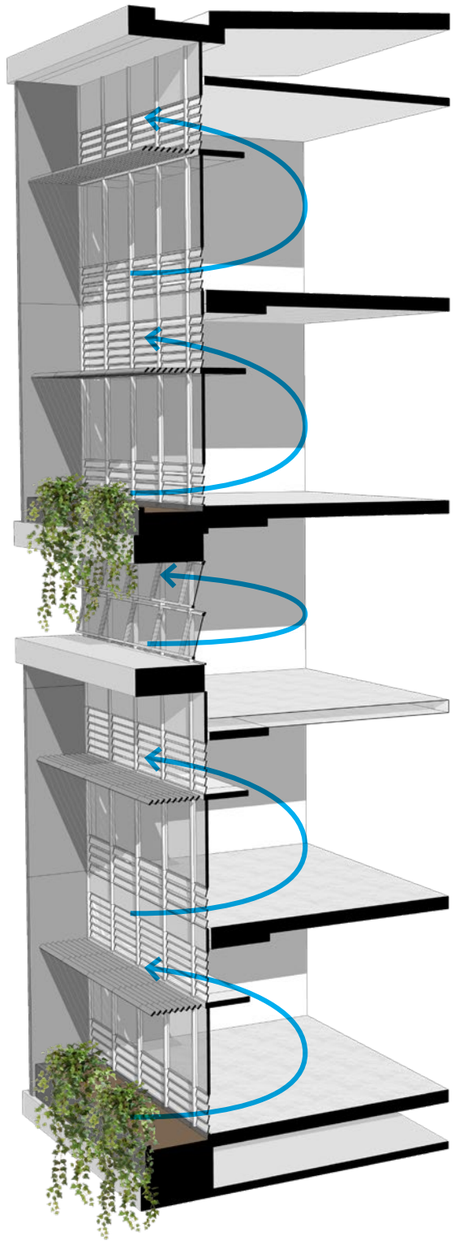


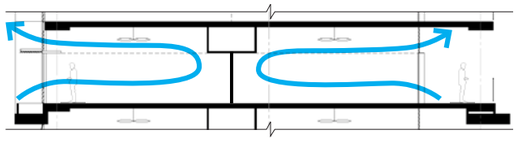



### Treehouses

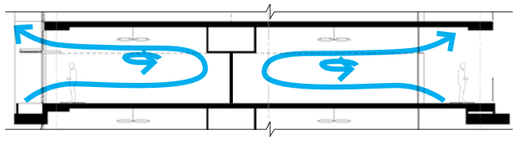
Idea of “stepping out” into nature
Provides a sense of privacy and enclosure
Provides screening from the sun
Creates dappled light effect, referencing tree canopy
Lantern effect at night

# 06 Materiality & Facade
## ESD Principles





CELL MODE



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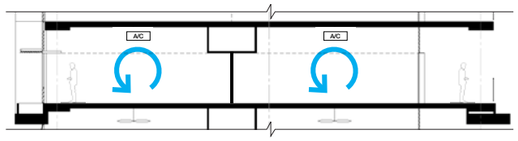


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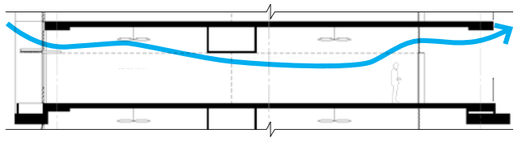
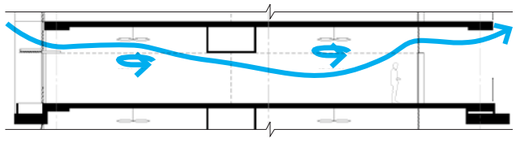


OPEN MODE



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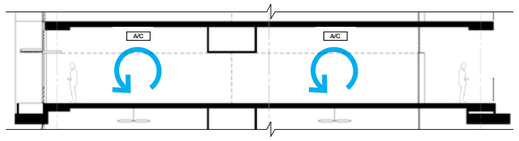



OPEN MODE

VENTILATION PATH

VENTILATION PATH

VENTILATION PATH

### Natural Ventilation Mode

Low and high level automated louvres are provided to each classroom face for natural ventilation purposes. Wind driven, hot air escapes through high level openings and cool air is drawn in from lower openings.

The open-able area has been calculated to ensure effective ventilation when clusters are in both cell and open mode. The natural ventilation is able to operate as either single sided ventilation or cross ventilation, and the internal light shelf assists in guiding air movement.

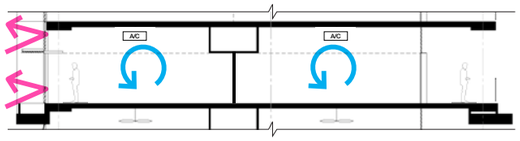
### Fan Boosted Natural Ventilation Mode

On still days, fans will assist with natural ventilation by stirring air movement in the same way wind drives air through low and high level openings. Fans will assist with both single-sided and cross ventilation.

### Mechanical Ventilation Mode

There are times where natural ventilation will not be effective, such as on hot and still days. On these days, the exterior facade will automatically close and mechanical ventilation will be used.

# 06 Materiality & Facade
## ESD Principles

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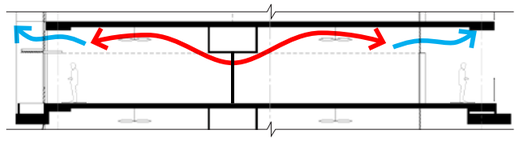

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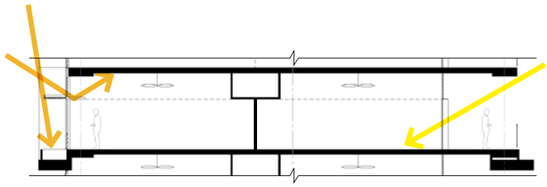
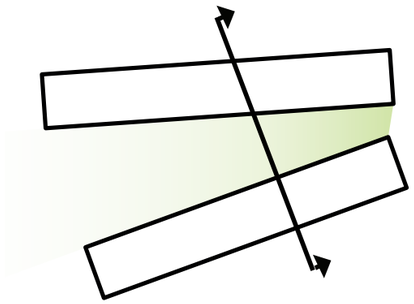
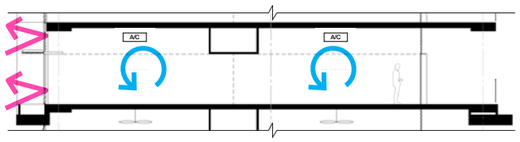


NORTH BUILDING



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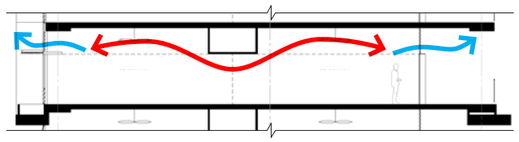

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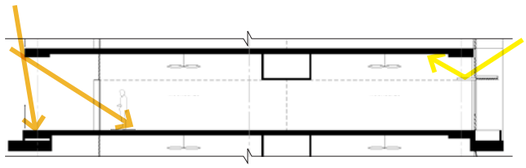


SOUTH BUILDING

NOISE
A/C AIR

COOL AIR
HOT AIR

DIRECT SUN
DAYLIGHT

### Acoustic Shut Down Mode

As the school is close to a freight train line, there are short periods of time where exterior noise makes natural ventilation undesirable.

It is proposed that there will be individual controls inside classrooms so teachers are able to shut down facade openings temporarily and allow the noise to pass, during which mechanical ventilation will be used.

### Night Time Purge Mode

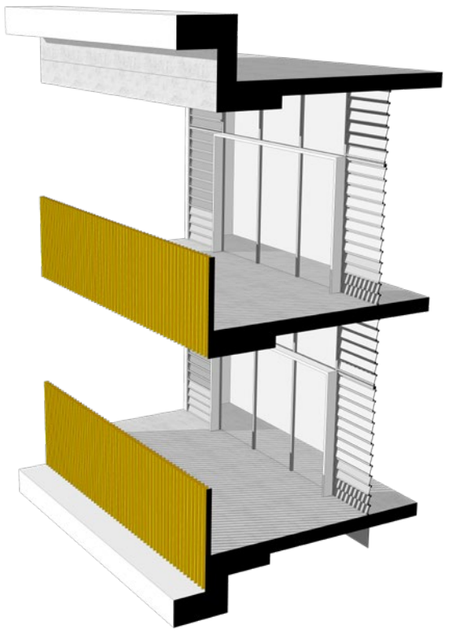
Exposed concrete slabs in lieu of ceilings are proposed in the classrooms. At night, high level louvres will open and allow hot air to be drawn out of the classrooms.

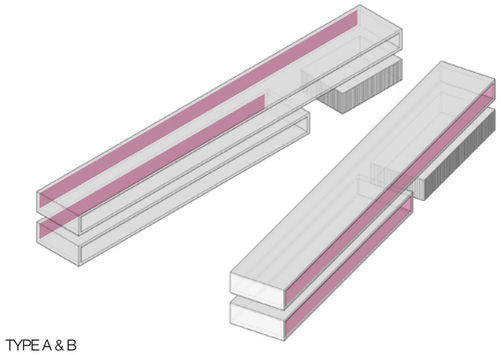
The effect of air being pulled across the underside of the slab will draw heat out of the thermal mass, cooling the classrooms in preparation for the next day.

### Solar Control

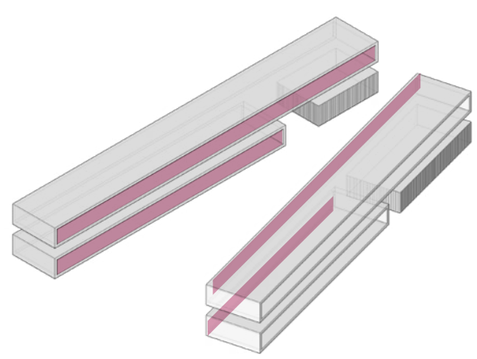
Façades have been designed to carefully control glare and minimise heat loading on the interior spaces, whilst maintaining a bright interior. On the northern block, vertical and horizontal shading devices project from the facade and prevent direct sunlight entering classrooms. Interior light shelves project light deep into the space. The southern block controls direct light using deep balconies, and bounces southern light into the classrooms with the light shelf.

# 06 Materiality & Facade
## Facade Types





TYPE A & B



TYPE C

### Type A | Typical Classroom

Designed with the classroom users' needs in mind, the facade works throughout the year to control glare, shade direct sun and cool interior spaces.

This facade appears to the northern and southern façades, with horizontal and vertical elements controlling sunlight for each orientation.

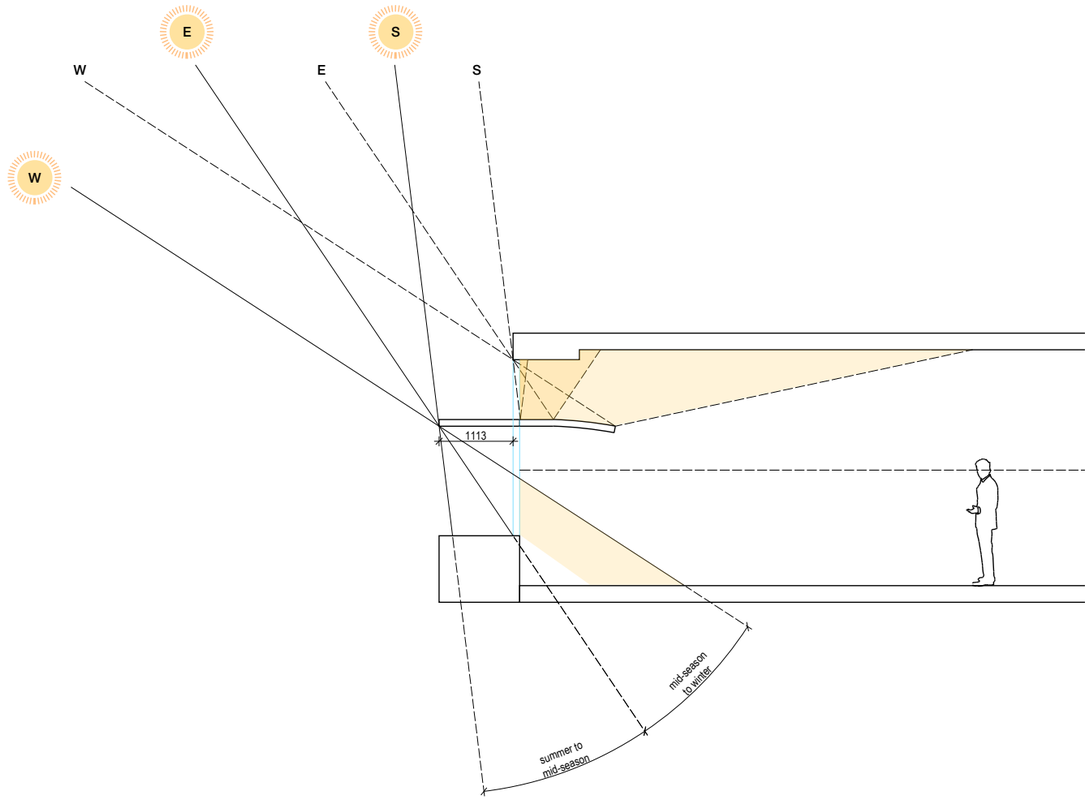
### Type B | Typical Corridor

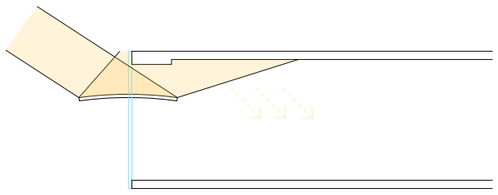
To the end of each corridor, a solid wall with a screen over is proposed. The lowered ceiling space allows mechanical services to run within the tartan grid, venting to the exterior and being shielded from view by the screen. The screen also hides downpipes and provides a consistent approach for controlling services.

### Type C | Corridor

The classroom façades facing the internal landscaping maximise lighting through fixed glazing, and louvre banks to each side allow for good natural ventilation. The corridor balconies provide shading for summer sun on the south building, and the light coloured concrete bounces light into the classrooms on the northern building.

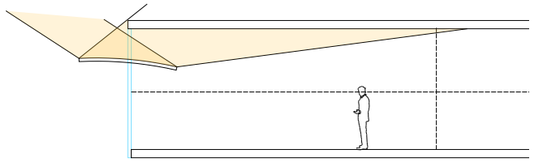
# 06 Materiality & Facade
## Light Shelf



### 03 CONVEX LIGHT SHELF

Reflects light at wider angle to incoming light
Hits ceiling over a broader area
Loss of some light externally



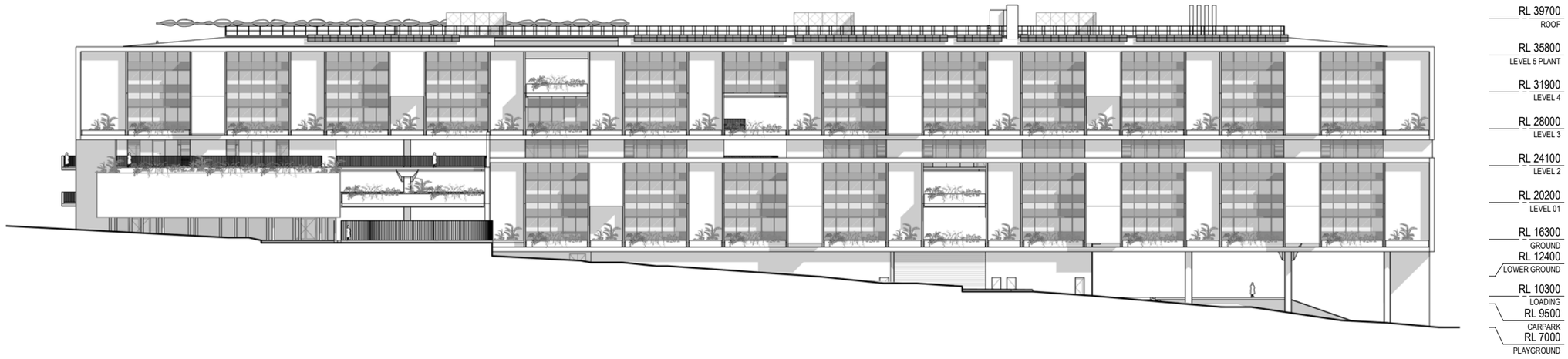
### 03 CONVEX LIGHT SHELF
### *5 DEGREE ANGLE*

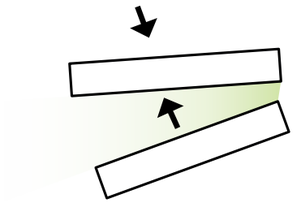
Reflects light at wider angle to incoming light
Hits ceiling over a broader area
Loss of some light externally
Potential to see overside of shelf & create unwanted glare

STRAIGHT
Minimise light loss (convex)
Minimise light narrowing (concave)
Shade glazing below from heat gain (from summer to mid-season)

CONVEX
Reflects light at wider angle to incoming light
Bring light deeper into the room
*Ensure top surface of reflector is not visible to avoid glare

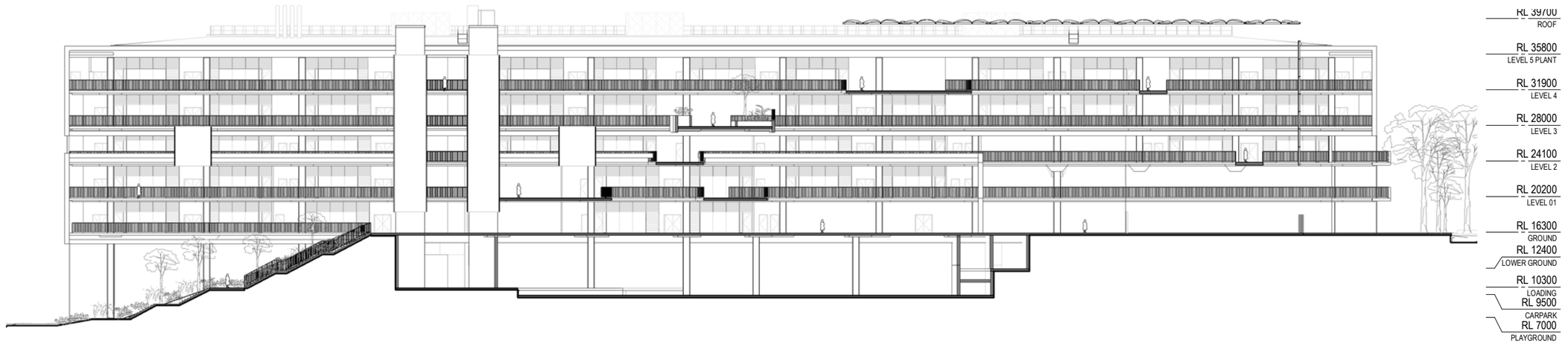
# 06 Materiality & Facade
## Elevations



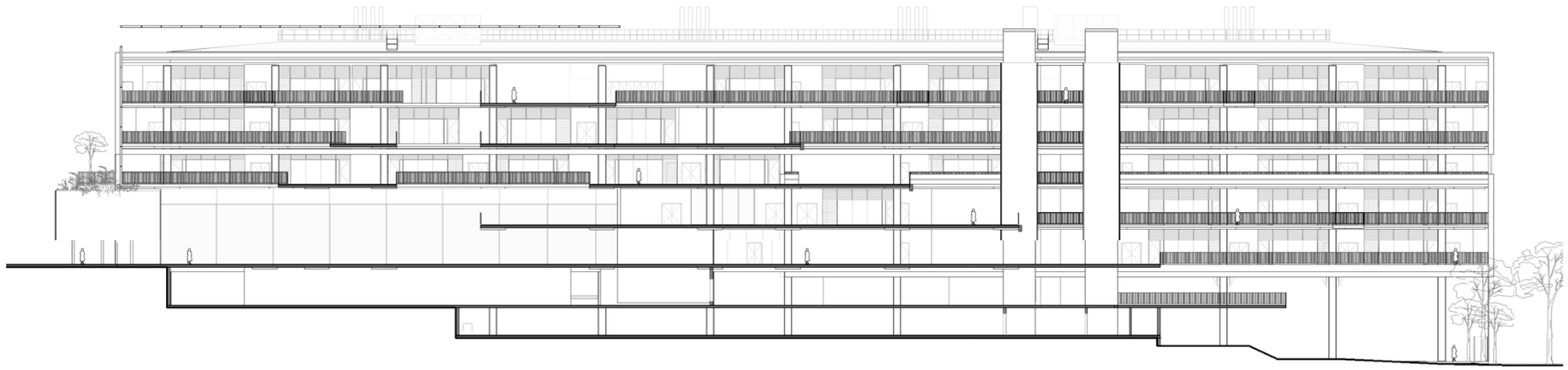
NORTH WING NORTHERN ELEVATION

NORTH WING SOUTHERN ELEVATION

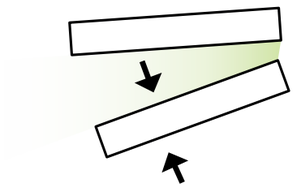



SCHOOL

# 06 Materiality & Facade
## Elevations

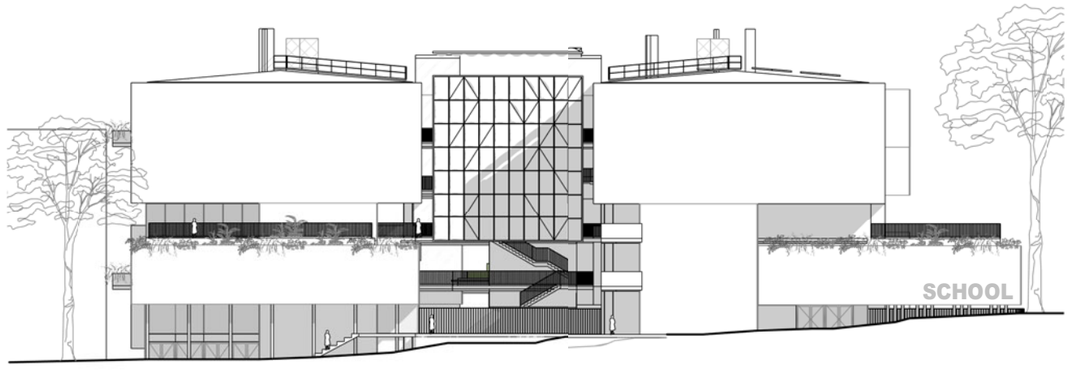



SOUTH WING NORTHERN ELEVATION

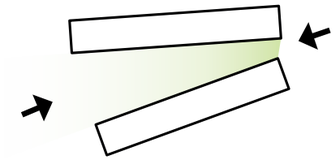


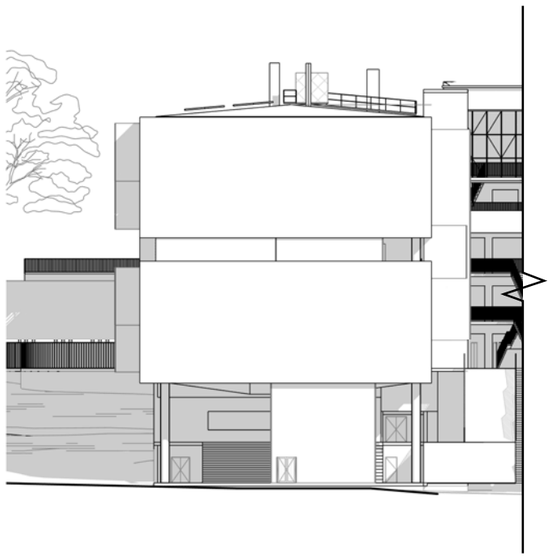
SOUTH WING SOUTHERN ELEVATION

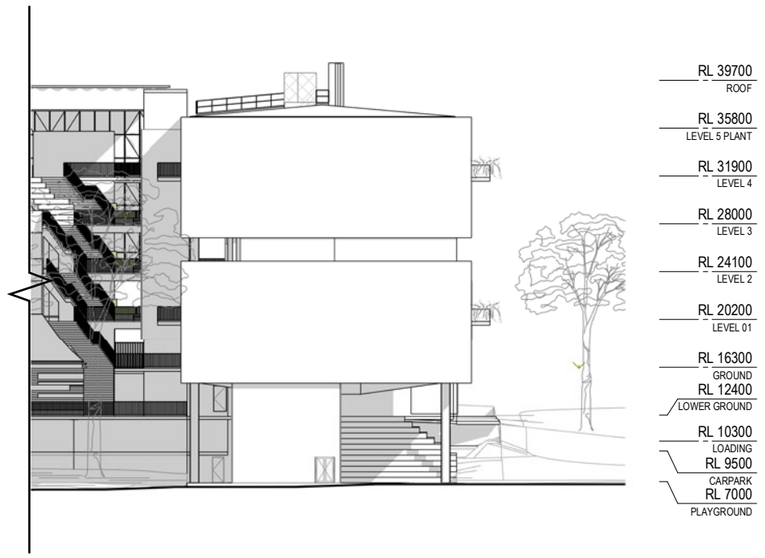

4
3
2




EAST ELEVATION








WEST ELEVATION

# 07 Design Response to GANSW

# 07 Design Response to GANSW
## Better Schools Verification Statement

### Better Schools Design Verification Statement

**Project name: Meadowbank Education and Employment Precinct Schools Project**

**Project Overview**

**Project Name:** Meadowbank Education and Employment Precinct Schools Project

**Project Address:** 2 Rhodes Street, Meadowbank

**Architect's Name:** Georgia Singleton

**Registration No.: 7968**

I confirm responsibility for designing the proposed development and have applied the Education SEPP Design Quality Principles. (Please Note this document may be used by schools, communities, councils and certifiers to verify this).

Signature of Architect: 

Architect's Name: Georgia Singleton

### 01 | Context, built form and Landscape

The proposed development proposes construction of a multi-level, multi-purpose, integrated school building with a primary school wing and high school wing. The school building is connected by a centralised library that is embedded into the landscape.

The proposed scheme provides a modern pedagogy breaking down the traditional notions of how to deliver education by blurring the boundaries between learner and teacher, between subjects and between indoor and outdoor learning.

Inspired by the lush and well established natural landscape within the site the design philosophy of 'designing from the inside out by bringing the outside in' emerged. This has resulted in a series of buildings that enhance connections with nature and maximise outdoor learning and play opportunities, on ground levels and also versatile green terraces stepped vertically and following the ascension of the school skyward.

A vast and well-established tree network typifies the area, it's this character that the architecture looks to compliment with its structural elements and positioning nestled within. The architectural language is refined and unobtrusive, comprised of clean intelligent lines that allow the surrounding natural environment to sing. The landscape extends upwards reaching every level, so as where possible every available surface can be used as space for learning and play.

### 02 | Sustainable, Efficient and Durable

There is growing appreciation of the significant role that good design can play in education, with increasing evidence that student learning outcomes are closely related to the quality of the environment in which they learn. Factors such as air quality, ventilation, natural lighting, thermal comfort and acoustic performance have been shown to have a profound impact on teacher well-being and student attentiveness, attendance and overall performance.

MEEPSP addresses the key concepts in achieving indoor environmental quality. This includes the promotion of natural daylight into all learning spaces, excellent indoor air quality through a mixed mode system allowing increased outdoor air inside classrooms, low pollutant emitting materials, excellent thermal, visual and acoustic comfort from the nearby train line.

The proposal embodies materials that are robust, hardy, tactile and playful. Materials are celebrated in their natural state adding colour, vibrancy and overall playfulness to the project. The education of craftsmanship and how things are made/assembled is something that the project seeks to express in its use and placement of such materials both natural and man-made. Such materials include the use of timber, masonry, ceramic, concrete and steel.

### 03 | Accessible and Inclusive

Schools play an important role in the local social infrastructure and it is vital that there should be an inclusive and clear approach to access and engage with the community which is interwoven with the proposal. It is therefore envisaged that the community access will occur mainly on the Ground and Lower Ground with potential access to the Communal Hall, Gymnasium and outdoor play areas. These areas have been placed at the forefront of the building gesturing towards the wider community.

The proposal is foremost designed to be accessible and inclusive to all students. Accessible routes are proposed to all learning spaces within the building as well as all outdoor play areas. On grade entry points off Rhodes Street provide the main entrances to both schools. Lift access reaches all five levels in each wing as well as the gymnasium, canteens and outdoor play space.

# 07 Design Response to GANSW
# Better Schools Design Verification Statement

## 04 | Health and Safety

This proposal seeks to provide a healthy and safe learning environment for all students, promoting physical activity and walkable environments, social cohesion and student safety and security at all times of the day.

While fencing is necessary to the educational precinct, a strong emphasis is placed on permeability of the physical environment to encourage transition, transparency and minimise the visual impact of barriers from the street. This will be achieved through varying security measures and physical boundaries most often populated plentifully with vegetation, welcoming not only students but the greater community within which the proposal sits.

Large under croft spaces and outdoor learning areas throughout the building allow for shaded areas for students to plays and congregate whilst protected from the sun. Maintaining many of the trees on the site as well as introducing new vegetating in the centralised landscape provides further shading for students.

The project supports safe walking, cycling and the use of public transport through connections from Meadowbank train station, provisions of bike parking and end of trip facilities.

Through centralised and open circulation paths the proposal supports passive surveillance and anti bulling measures.

## 05 | Amenity

The design approach has been to explore and discover different ways of connecting between the indoor and outdoor space, between the built form and the natural site environment, with a playful intention to engage with the existing trees and landscape. As a result the landscape is not only seen as something that surrounds and borders the building but as an element that cascades up the central axis and becomes one with the architecture.

Consideration has been given to not only the amenity of the school site but its neighbouring occupants in particular TAFE NSW. The building profile is long and low reducing over shadowing to the TAFE green to the south. To the north the building is used as the boundary giving back civic space to the local community. The building footprint is nestled within existing mature trees which minimises it impact from Rhodes Street and TAFE.

Noise mitigation measures have been proposed due to the schools close proximity to the train line.

## 06 | Whole of Life, Flexible and Adaptive

It is essential for school facilities to enable learning and teaching outcomes required of a modern world and the world of the future. It is vital that they are designed and constructed to reflect the pedagogy of today but able to adapt to the way we learn and teach in future.

This proposal acknowledges that overtime student numbers will shifts, the way we teach will shift and that even the schools that occupy the site may merge or change. A “tartan” grid structure allows for adaptable and flexible interior spaces. Within the grid are support zones that house services risers, storage, wet and dry cabinetry, amenities and vertical circulation. The support zones serve the adjacent learning spaces which work as a cluster model of 4 classrooms. The grid expands and contracts as the program changes throughout the building.

For primary school the cluster of 4 home-base’s work as a shared space with moveable furniture to allow for separation when required. For the high school the cluster consists of 1 full enclosed room, and open learning spaces that can be separated by moveable joinery screens. The same grid system is carried out throughout the building allowing for either primary school or high school to expand or contract.

## 07 | Aesthetics

The colour palette of the proposal is very much derived from the surrounding context. Inspired by the natural hues of the eucalyptus the project further seeks to blend in with its surrounds. Such colours include the white/grey of the bark and the rich reds of the flourishing gum nuts and yellows of the neighbouring wattle trees. The colours of the schools are also incorporated into the design giving each school a sense of personal identity and pride.

The proposal also identifies a number of key areas to be used as part of the public art strategy. Destination artworks create a sense of ownership of space for students and staff alike as they reflect the culture of the school and the local community. Identified locations include the undercroft soffits as well as the end walls facing east and west.

# 07 Design Response to GANSW State Design Review Panel

The proposed development has been developed to align with the seven Education SEPP Design Quality Principles and presented to the Government Architects of New South Wales (GANSW) authority in the lead up to submission. There have been six consultations with the State Design Review Panel (SDRP) that provided feedback on the design as well as suggestions for improving the design for students, teachers and the wider community.

The key themes of these consultations and areas that the SDRP support and consistently asked to see further development throughout the submission process are;

Precinct

Considering the site along with TAFE as an opportunity for an education precinct serving ages from Kindergarten to adult learning.

Community Access

Considering controlled sharing of outdoor and indoor learning facilities between MEEPSP, TAFE NSW and the community.

Equity and Access

Providing equitable access to all areas of the building and outdoor play areas for all students and teachers.

Landscaping

Ensuring consideration is given to the maintenance, gradients, accessibility, build-ability and zoning of landscaped areas for students of different ages.

Fencing

Striving to minimise and seek to eliminate perimeter fencing where possible. Investigating options for utilising the building as the secure line and options for camouflaging fences with landscape where they cannot be removed.

Circulation

Clarifying and illustrating the circulation strategy of students distributed across the site.

Such themes have been worked through by the design team and consultants. This process has promoted and championed better design processes and outcomes. As a result MEEPSP is at the forefront of education pedagogy of today and readily adaptable for the education pedagogy of tomorrow, it is better placed within it's physical, social and environmental context, a place where students teachers feel safe and secure together with a strong sense of school pride.

MEEPSP provides an educational facility fostering creativity, collaboration, learning and teaching for both students and the wider community.

WOODS

BAGOT™