

GHPs

**NEW PRIMARY SCHOOL AT
GREGORY HILLS
SSDA REPORT
5/10/2022
BENNETT AND TRIMBLE**

SSDA REPORT

CONTENTS

INTRODUCTION	
EXECUTIVE SUMMARY	3
GREATER SITE CONTEXT	4
LOCAL CONTEXT	5
CONNECTING WITH COUNTRY	6
SITE HERITAGE INVESTIGATIONS	7
WORKS VIA ALTERNATIVE PLANNING PATHWAYS	8
SITE ANALYSIS	
SITE ANALYSIS	10
EXISTING SITE PHOTOS	11
EXISTING SITE INFRASTRUCTURE	12
CONCEPT DESIGN	
KEY PRINCIPLES	14
DESIGNING WITH COUNTRY	15
ARCHITECTURAL CONCEPT	16
BLOCK AND STACK	17
MODERN METHODS OF CONSTRUCTION	18
PLAN - GROUND FLOOR	19
PLAN - FIRST FLOOR	20
PLAN - SECOND FLOOR	21
PLAN - ROOF	22
VIEWS - MAIN ENTRY	23
VIEWS - EAST FACADE	24
VIEWS - STREET	25
VIEWS - OPEN SPACE	26
VIEWS - HALL	27
VIEWS - AERIAL	28
TECHNICAL OVERLAY	
FUNCTIONAL RELATIONSHIPS	30
SETBACKS	31
BUSHFIRE - APZ	32
FLOODING	33
TRANSPORT AND CONNECTIVITY	34
PUBLIC DOMAIN	35
FENCING	36
SHARED USE OPPORTUNITIES	37
ACCESSIBILITY	38
ACCESS, SECURITY AND CIRCULATION	39
WAYFINDING AND SIGNAGE	40
WAYFINDING AND SIGNAGE	41
TECHNICAL STAKEHOLDERS AND SERVICES OVERLAY	42
ENVIRONMENTAL SUSTAINABILITY DESIGN (ESD)	43
EGRESS PATHS	44
DAYLIGHT AND AMENITY	45
OUTDOOR PLAY AREA	46
TYPICAL CLASSROOM CONFIGURATION	47

ENVELOPE	
ELEVATIONS	49
SITE SECTIONS	50
EASTERN FACADE	51
WESTERN FACADE	52
MATERIALS	53
DESIGN VERIFICATION STATEMENT	
SEARS REQUIREMENTS	55
TRANSPORT AND INFRASTRUCTURE SEPP	56
DESIGN GUIDE FOR SCHOOLS	58
BETTER PLACED	60
SDRP	62
HEIGHT PLANE	63
VIEW ANALYSIS	64
VIEW ANALYSIS	65
SHADOW STUDIES	68
CONNECTING WITH COUNTRY - STATEMENT OF COMMITMENT	69

DOCUMENT STATUS		
ISSUE	DATE	PURPOSE
01	12/9/22	DRAFT FOR REVIEW
02	19/9/22	DRAFT
03	23/9/22	FINAL DESIGN REPORT REVIEW
04	5/10/22	FINAL DESIGN REPORT

INTRODUCTION

EXECUTIVE SUMMARY

PROJECT OVERVIEW

This Architectural Design Report has been prepared for School Infrastructure NSW, Department of Education in support of a State Significant Development Application for a new primary school at Gregory Hills (hereafter referred to as GHPS).

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

The proposed development has been developed to align with the seven Education SEPP Design Quality Principles and presented to the State Design Review Panel (SDRP) in the lead up to submission.

RATIONALE FOR THE PROJECT

Strong population growth in the Oran Park School Community Group area driven by greenfield development sites, land releases, and higher than anticipated residential densities, has seen the need for additional primary schools to be delivered in the area.

The site for the new primary school at Gregory Hills is near the Gregory Hills Town Centre shopping centre, Howard Park and green corridor connectors. It is well located to service the local population and will assist in easing the pressures on other public schools in the region.

PROJECT SCOPE

The proposal is for a new primary school at Gregory Hills that generally comprises the following:

- 44 General Learning Spaces.
- 4 Support Learning Spaces.
- Administration, staff hub, amenity and building service areas.
- Library, communal hall and canteen.
- Outside School Hours Care (OSHC) services.
- Sport courts, outdoor play space, a Covered Outdoor Learning Area (COLA) and site landscaping.
- Dedicated bicycle and scooter parking.
- Three (3) kiss and drop spaces for Supported Learning Students (SLS) located on Wallarah Circuit.
- On-site car parking.
- Signage.
- Footpath widening on Wallarah Circuit.

CONSULTATION

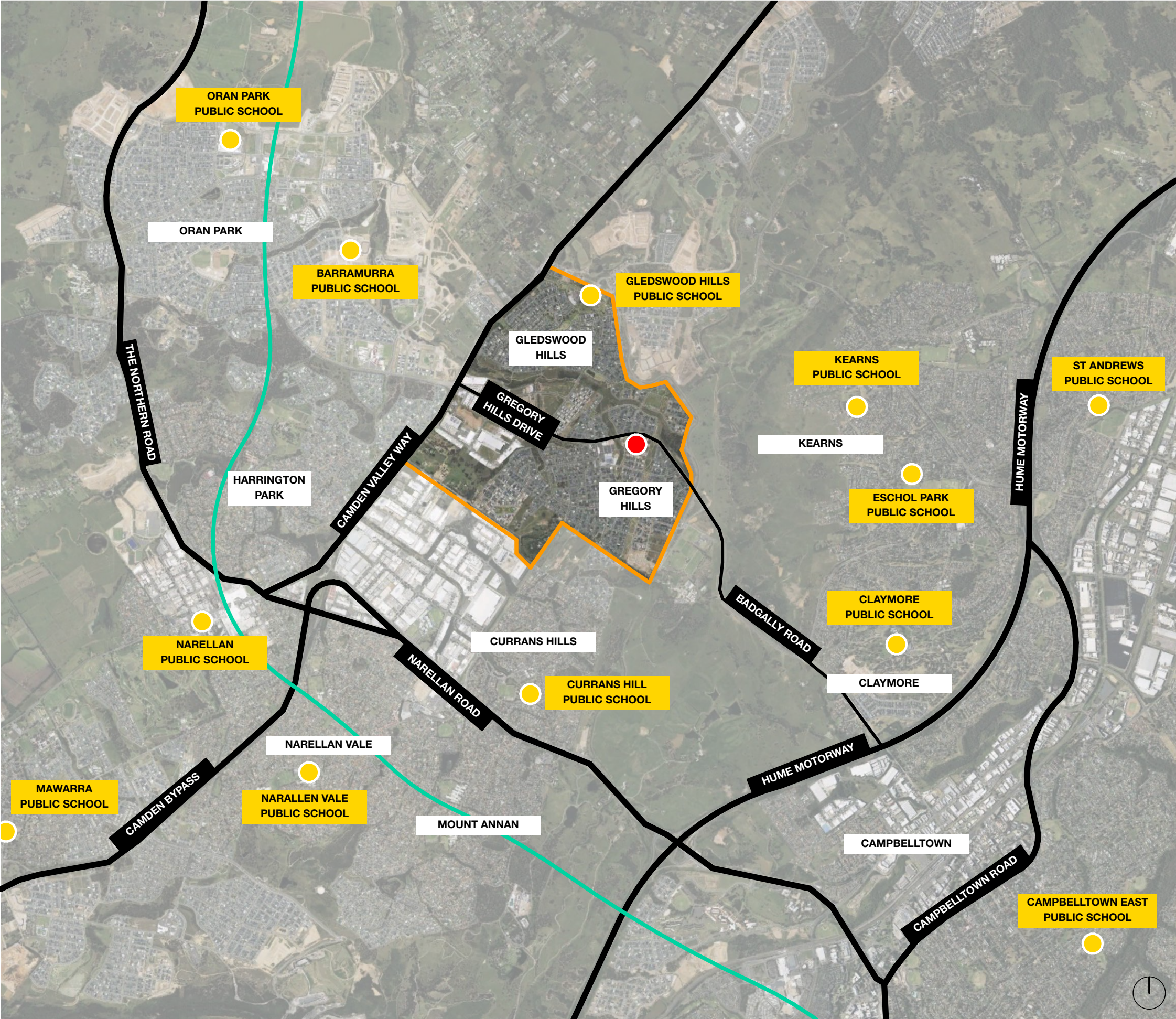
The following meetings with and presentations to stakeholders have been made in preparing this Concept Design Report.

- 2/2/22	Site visit
- 22/2/22	Expert Review Group (ERG)
- 28/2/22	Project Reference Group (PRG)
- 11/3/22	Risk Management Workshop
- 21/3/22	Connecting with Country, initial walk on site
- 23/3/22	State Design Review Panel (SDRP)
- 24/3/22	Greenstar Workshop
- 28/3/22	Gas corridor agency discussion
- 31/3/22	Technical Stakeholder Group (TSG)
- 6/4/22	Project Reference Group (PRG)
- 28/4/22	Safety in Design Workshop
- 29/4/22	Camden Council introductory meeting
- 2/5/22	Technical Stakeholder Group (TSG)
- 3/5/22	Expert Review Group (ERG)
- 4/5/22	Connecting with Country site meeting
- 23/5/22	Cultural cleansing ceremony
- 31/5/22	Cultural cleansing ceremony
- 9/6/22	PRG
- 4/7/22	Transport Working Group
- 6/7/22	Western Sydney Parklands Authority
- 18/7/22	Transport Working Group
- 21/7/22	SDRP 2
- 10/7/22	Asset activation review
- 18/7/22	PRG
- 15/9/22	Safety in Design Workshop
- 15/9/22	PCG
- 27/9/22	Expert Review Group (ERG)



INTRODUCTION

GREATER SITE CONTEXT



SITE DESCRIPTION

The site is located in Gregory Hills, southwest Sydney, to the northwest of Campbelltown. The site is within the Turner Road Precinct as outlined in the State Environmental Planning Policy (Precincts - Western Parkland City) 2021.

The region around Gregory Hills has seen massive change in recent years with rural and industrial land uses being replaced by low density residential housing.

The site for the proposed school is identified in the Turner Road Precinct DCP, and the location of nearby public schools in a ring around Gregory Hills highlights the need for a school in this location.

KEY PLANNING CONTROLS

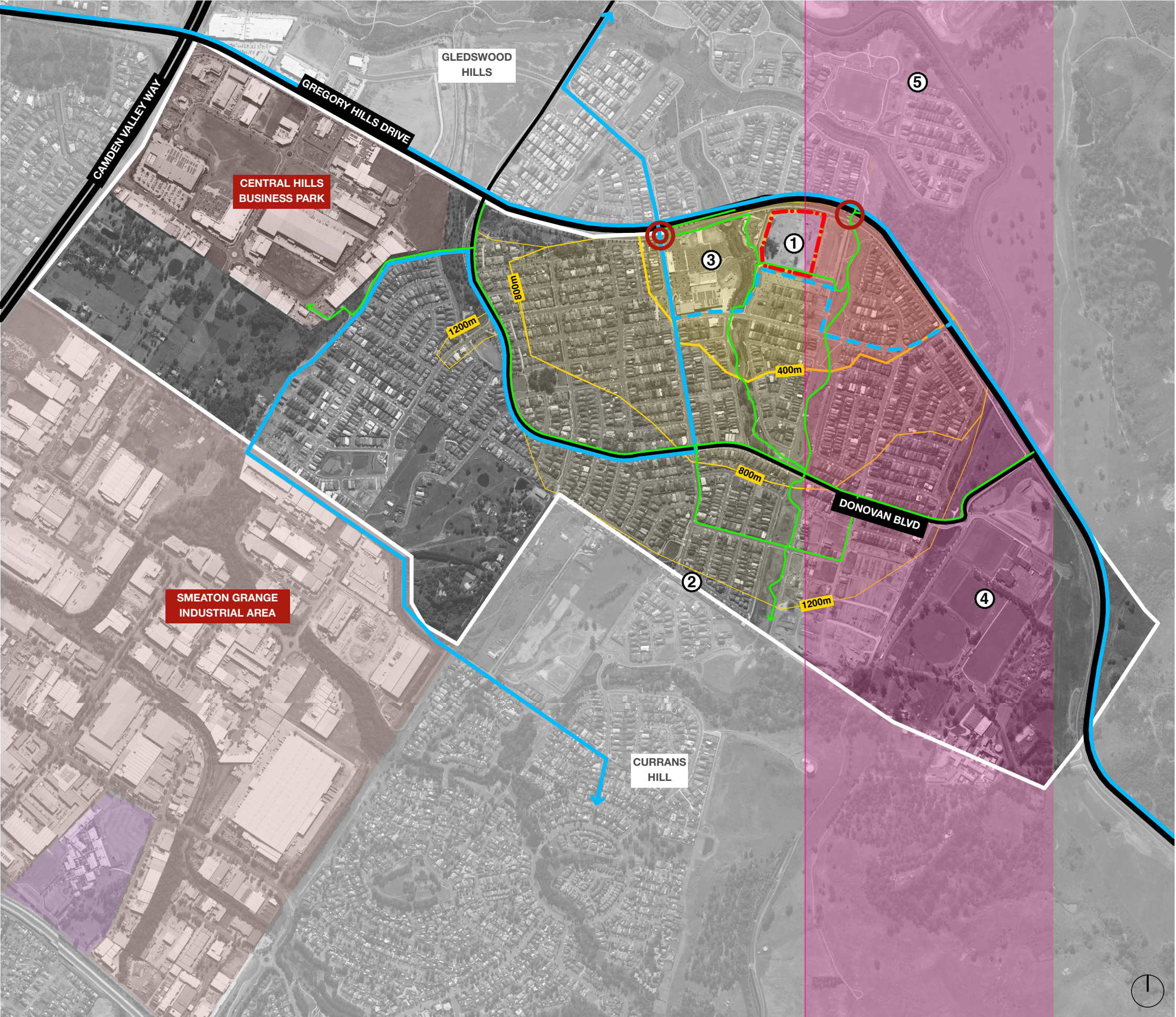
Zoning:	R1 General Residential
Height of Buildings:	16m Residential apartment buildings 9.5m all other developments

LEGEND

- Site location
- Nearby public schools
- Main roads
- North south rail line corridor
- Turner road precinct boundary

INTRODUCTION

LOCAL CONTEXT



SITE DESCRIPTION

The site is located in Dharawal Country.

The site is located at 28 Wallarah Circuit, Gregory Hills NSW 2557. The legal description of the site is Lot 3257 DP 1243285. The site is located within the Camden Local Government Area and is within the Turner Road Precinct of the South-West Growth Centre. The site has an area of approximately 2.9ha and falls from the south-east corner (RL116.5) to the north-west corner (RL113).

The site has three (3) street frontages:

- Wallarah Circuit (southern boundary);
- Gregory Hills Drive (northern boundary);
- Long Reef Circuit (eastern boundary)

Howard Park and the riparian corridor along Sykes Creek are to the west of the site.

To the north, east and south of the site is emerging and recently completed residential development. To the west of the site, beyond Sykes Creek and Howard Park, is the Gregory Hills town centre. A pedestrian bridge links Wallarah Circuit with the town centre across Sykes Creek.

To the east of the residential area fronting Long Reef Circuit are high voltage power lines within an easement which includes pedestrian paths and cycleways. Further east is an easement for high pressure gas infrastructure.

KEY ELEMENTS

1. The school site is a greenfield site in close proximity to the Gregory Hills Town Centre and Gregory Hills Drive
2. The school catchment is to the south of Gregory Hills drive with the site located to the northern border of the catchment boundary. The catchment generally comprises detached, low density housing. Several areas remain undeveloped in the western half of the catchment
3. Sykes Creek is located immediately to the West of the site with Gregory Hills Town Centre located on the west of the creek. The town centre includes shops, foodcourts and a carpark.
4. An established Catholic School is located within the catchment to the south east
5. The school site overlaps the zone of influence from a high pressure gas pipeline located approximately 700m to the east of the site

LEGEND

- - - Site boundary
- Gas pipeline approximate zone of influence
- Walking and cycling catchment 400m, 800m, 1,200m
- Shared cycling paths
- Bus
- Main roads

INTRODUCTION

CONNECTING WITH COUNTRY



CONNECTING WITH COUNTRY

The site for the new school is located on Dharawal country.

The Connecting with Country process to date has included:

- Initial meeting on site with Burruga, local indigenous landowners, Jacobs, Bennett and Trimble, McIntosh & Phelps 21/3/22
- Meeting of the working group on site with local indigenous landowners, members of the AECG, Burruga, Jacobs, Bennett and Trimble, 4/5/22
- A cleansing ceremony on site conducted by local indigenous landowners, in the presence of Peter Sidgreaves (Camden MP), SINSW, Jacobs, Bennett and Trimble, McIntosh Phelps 23/5/22. The ceremony was cut short due to heavy rain and postponed to 31/5/22.
- The cleansing ceremony was completed by local indigenous landowners in the presence of SINSW, Jacobs and Bennett and Trimble on the 31/5/22.

KEY THEMES RAISED (INITIAL ENGAGEMENT)

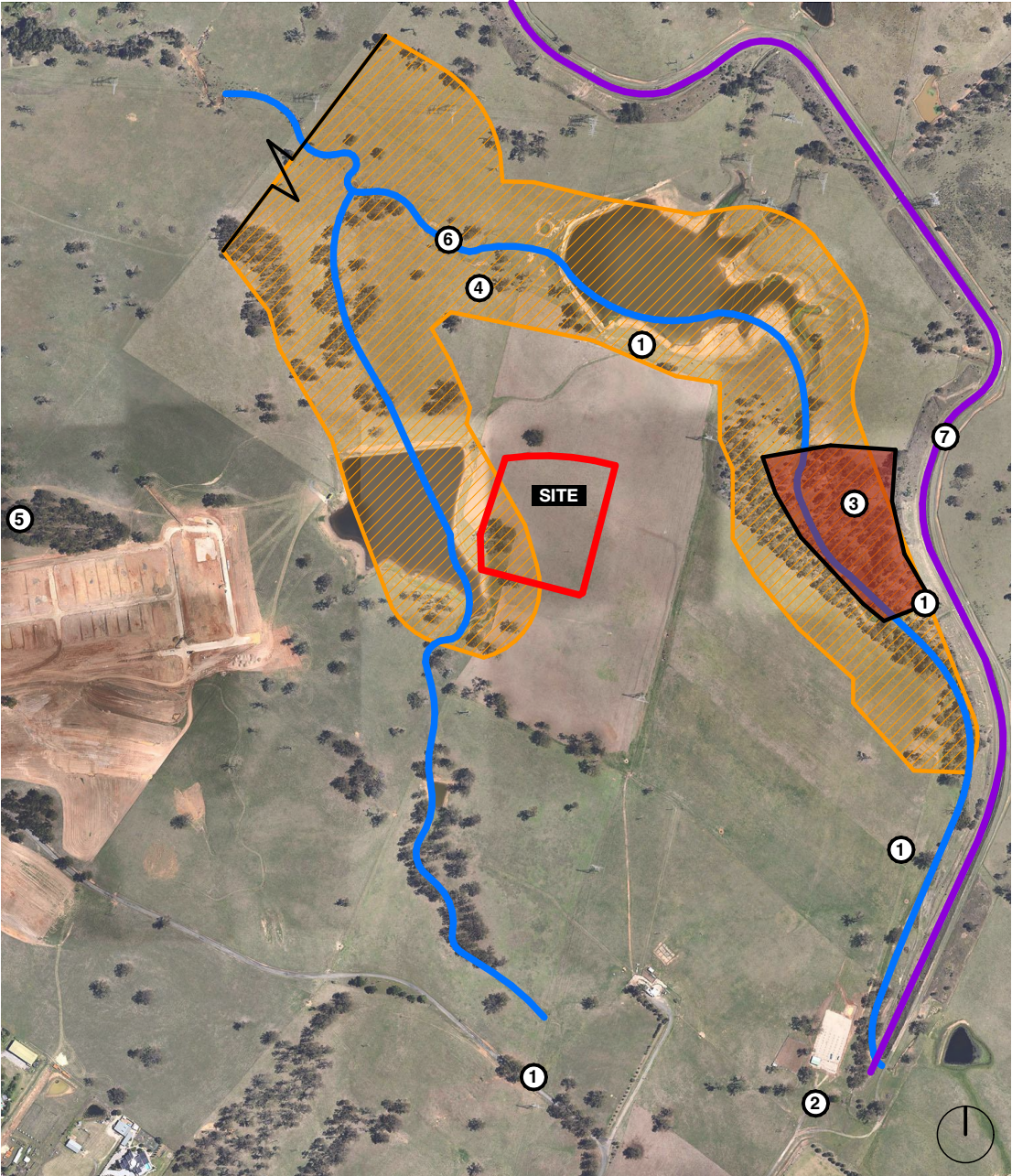
- Meaningful representation of indigenous culture should be embodied within all elements of the school. This could extend in the naming of the school and learning spaces.
- It is important to recognise the significance of the culture and heritage of First Nations people and the Traditional Owners of Dharawal Country.
- The Dharawal totem is the lyre bird.
- The circle as a symbol is meaningful symbol for sharing stories and connecting with each other.
- Recognition that the First Nations children are the elders of the future and important to embrace this.
- The significance of retaining the existing Cumberland trees on the site, and the preferred use of these trees as a setting for a yarning circle. Note: Existing trees to be retained where possible subject to advice from arborist advice.
- Any signage and artwork incorporated into the school design to be designed by a local indigenous artist

Connecting with Country is an ongoing part of the project. The school will be developed incorporating the stories that are told and the insights gained as this process continues.

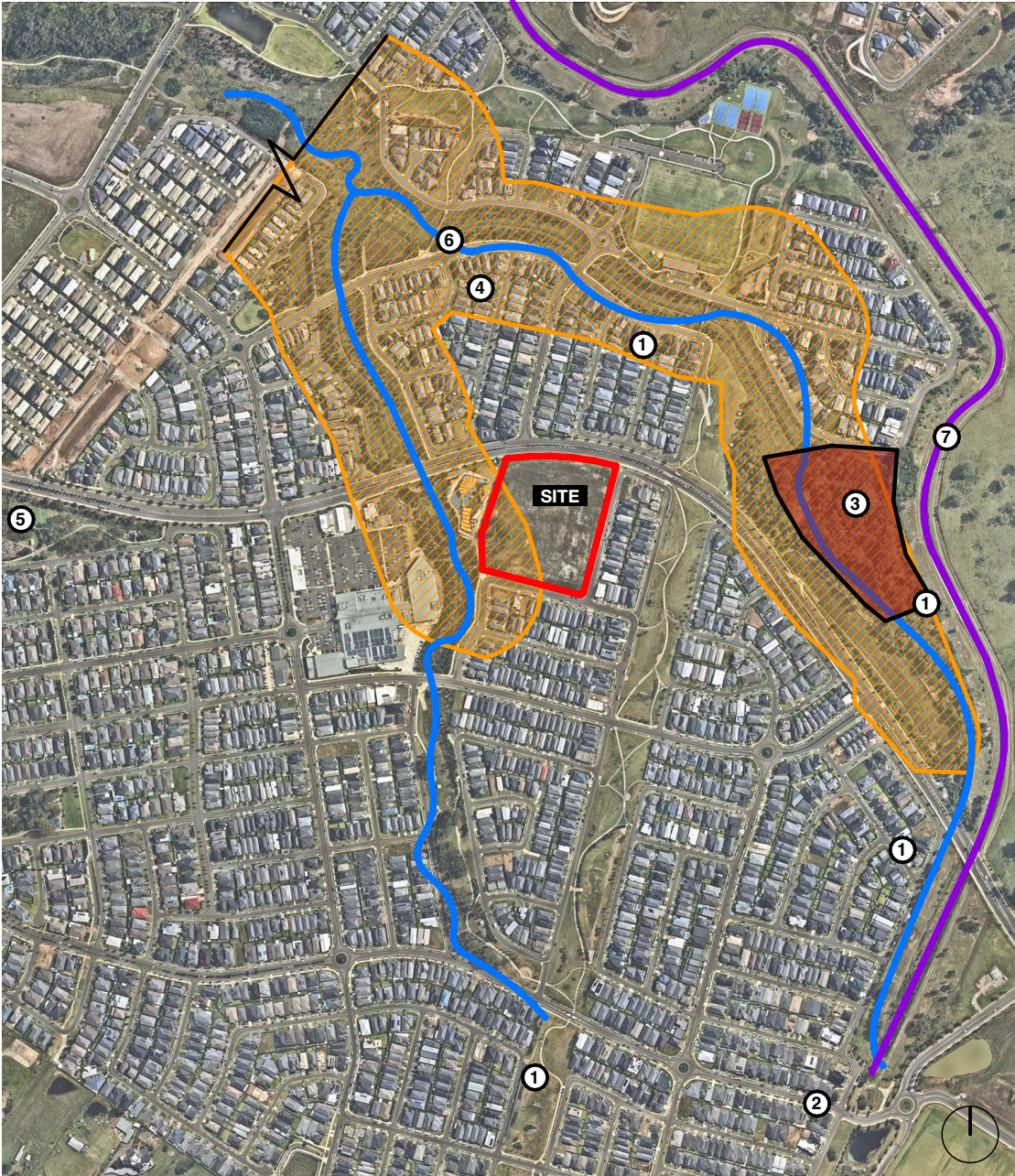


INTRODUCTION

SITE HERITAGE INVESTIGATIONS



DECEMBER 2009
Earliest available aerial photograph available to the design team
Source: Nearmap



FEBRUARY 2022
Source: Nearmap

AHIP
An Aboriginal Heritage Impact Permit (AHIP #1101800) obtained by the developer of the Turner Road South area including Gregory Hills identified a number of artefacts, a conservation area, and a scarred tree in the wider precinct area.

The scarred tree and the artefacts were all located outside of the proposed school site.

NSW STATE HERITAGE REGISTER
There are no heritage listed items on the site, or within the immediate vicinity of the site.

The State Heritage listed Upper Canal runs to the east of the site. Constructed in 1888 it runs between Prospect Reservoir and Pheasants Nest and provides Sydney with drinking water.

C21 HISTORY
Prior to the current subdivision, Gregory Hills was primarily used for agricultural farming. Tree cover was sparse and local creeks provided sources for farm dams.

KEY ELEMENTS

- 1. Open Lithic Scatter*
 - 2. Isolated Find*
 - 3. Aboriginal Heritage Conservation Area*
 - 4. Model of Archeological Deposit*
 - 5. Scarred Tree*
- *Source: AHIP (for Dart West Development 8/7/2009)
- 6. Former Creek Lines
 - 7. Upper Canal System

LEGEND

- Aboriginal Heritage Conservation Area*
- Model of Archeological Deposit*
- Former Creek Lines
- Upper Canal System

*Source: AHIP (for Dart West Development 8/7/2009)

WORKS VIA ALTERNATIVE PLANNING PATHWAYS



A temporary school is proposed on the site to meet strong demand for learning spaces on Day 1, Term 1 2023 with the DA approved by Camden Council. The temporary school has been planned with consideration to the construction works required for the permanent school.

- The temporary school has dedicated entries located away from the construction site entries
- It has been located in the northwest of the site in the area of the future playing field so that the permanent school buildings and the majority of the landscaping may be completed prior to the removal of the temporary school.
 - The short stay parking will be constructed as part of the permanent school to enable a dedicated pickup and drop-off area for the temporary school
 - The OSD and bio retention basins will be built with the temporary school so that they are operational once the permanent school is completed
 - Following the removal of the temporary school, the playing field and landscaped areas around will be completed.

DEVELOPMENT APPLICATION TEMPORARY SCHOOL AT GREGORY HILLS APPROVED UNDER DA/2022/742/1

- KEY ELEMENTS**
- 12 x General Learning Spaces
 - Core facilities
 - School based on standard modular building units.
 - Minimum 3,000m² open play space provided (10m²/per student)
 - Staff parking in north-east corner of site.
 - Permanent school waste pad constructed as part of temporary school works. Access to staff parking via waste pad.
 - Short stay parking and new shared path on Long Reef Circuit.
 - Secondary entry and shared path connection to Howard Park
 - 20 x Bicycle parking spaces
 - Temporary generator

REF TEMPORARY SCHOOL AT GREGORY HILLS

- A separate REF application has been made for services connections for the Temporary School including:
- Power connection
 - Water connection
 - Sewer connection
 - Communications connection

- LEGEND**
- - - Site boundary
 - Administration
 - Staff
 - Library
 - Communal Hall
Canteen
OSHC
 - General Learning Spaces
 - Student Amenities
 - 1200mm high temporary school fencing
 - 2150mm high temporary school fencing
 - 1200mm high permanent school fencing
 - 2150mm high permanent school palisade fencing
 - Secure Entry Point
 - Temporary School Signage
 - OSD
 - Temporary generator

SITE ANALYSIS



SITE ANALYSIS

SITE ANALYSIS



SITE DESCRIPTION

The site is a gently sloping vacant lot. It is bounded to the north by Gregory Hills Drive, the east by Long Reef Circuit, to the south by Wallarah Circuit, and to the west by the Howard Park, the riparian corridor and beyond to the Gregory Hills Town Centre.

An existing group of trees has been retained in the south west corner of the site that pre-dates the sub-division and development of the precinct.

The southwest corner of the site is subject to potential bushfire risk due to its proximity to the heavily vegetated riparian corridor.

The site is within the edge of the zone of influence of a nearby high pressure gas pipeline. The associated risk and impact on the site planning is being investigated and is in progress.

KEY ELEMENTS

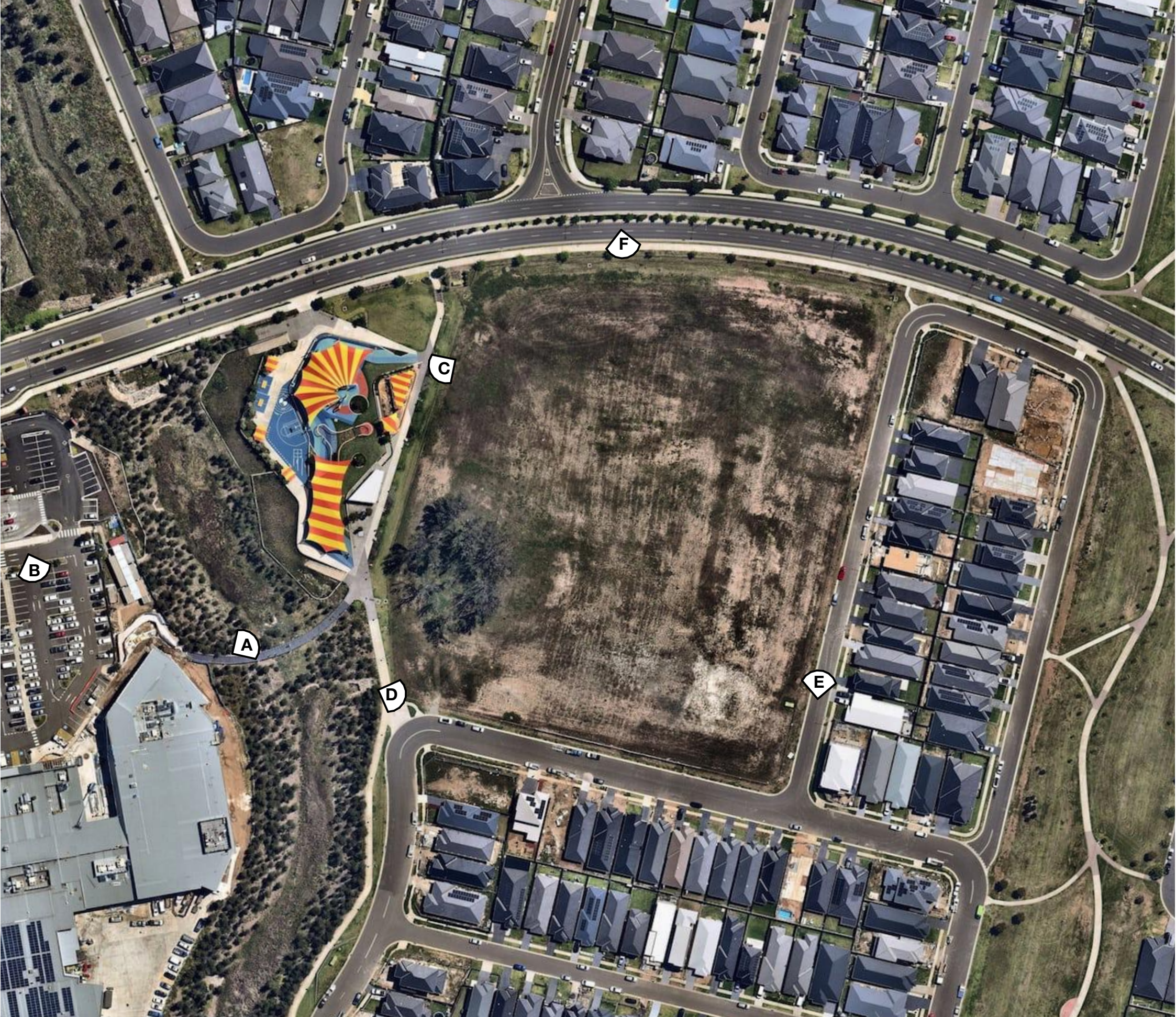
- Existing trees (Cumberland plain woodland)
- Howard Park playground
- Pedestrian bridge across riparian corridor
- Pedestrian and cycling connections
- Low density detached housing
- Gregory Hills Town Centre
- Drainage easement
- Sub-station
- High voltage overhead cables
- Approximate edge of zone of influence of high pressure gas pipeline located around 700m to the east of the site. Exact dimensions to be confirmed.
- 40m distance from top of creek embankment
- Asset protection zone
- 1% AEP 30min duration flood extent (predevelopment)
- PMF 60min duration flood extent (predevelopment)

LEGEND

- Site boundary
- Easement
- Existing pedestrian and bike paths
- Overhead high voltage wires
- 1% AEP 30min duration flood extent (predevelopment)
- PMF 60min duration flood extent (predevelopment)

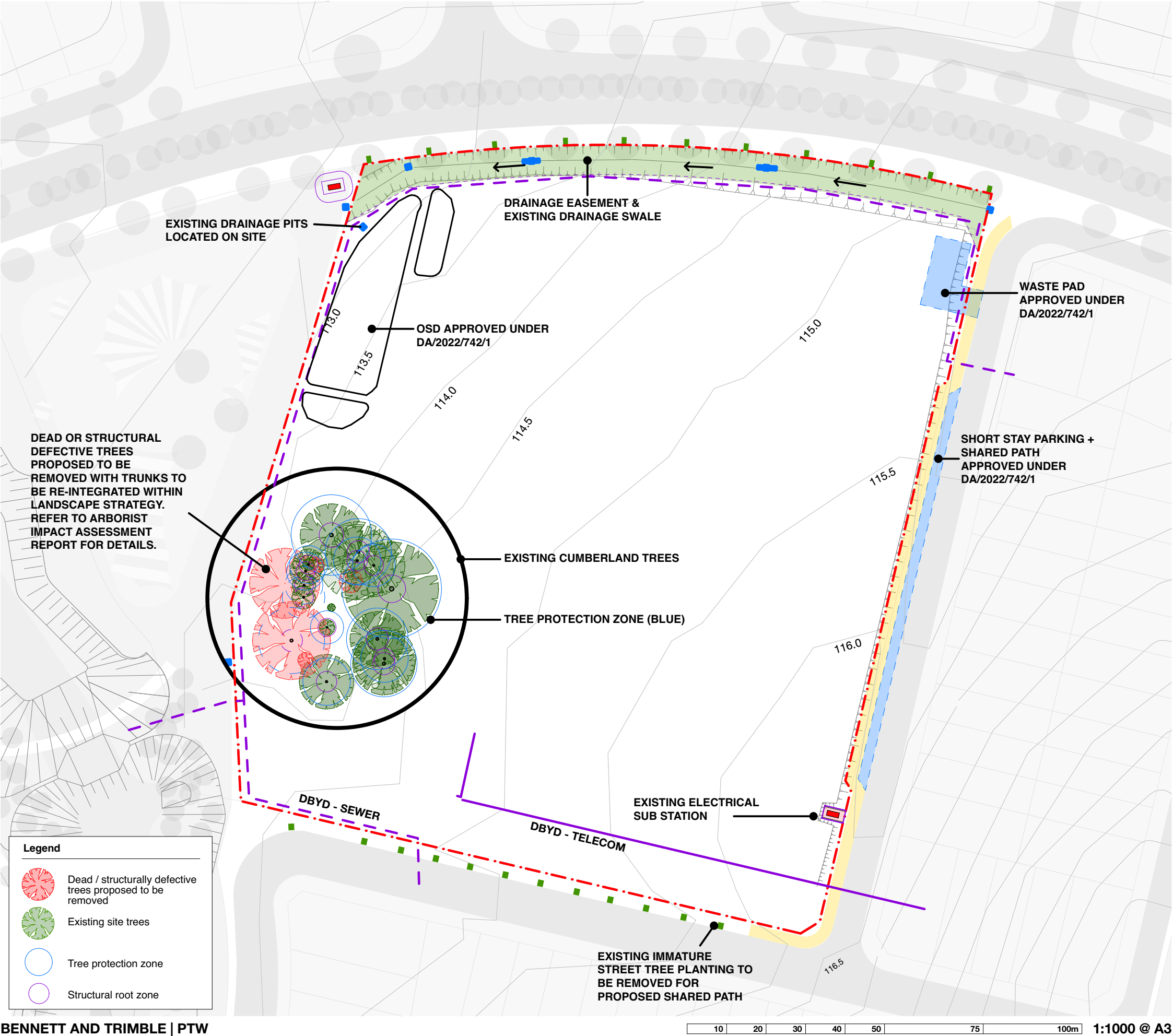
SITE ANALYSIS

EXISTING SITE PHOTOS



SITE ANALYSIS

EXISTING SITE INFRASTRUCTURE



The existing site is undeveloped with no existing building assets on-site. Existing natural and infrastructure assets have been identified within the site and surrounds to maximise their utilisation.



Existing significant trees
Existing remanent Cumberland plain trees have been retained and protected where possible. Trees that the arborist identified as unable to be retained are to be incorporated into the landscape design as seating and play structures.



Existing electrical sub station (South east of site)
Existing electrical sub station located within the site boundary to be retained and protected in accordance with electrical engineering advice.



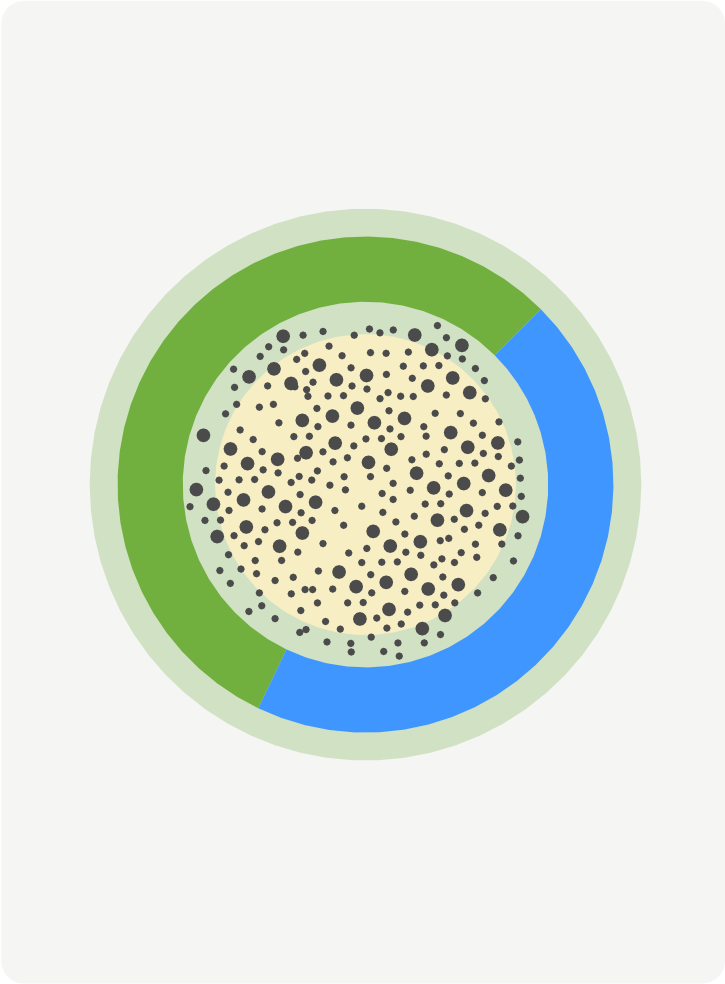
Easement for drainage
Easement of varying width located to northern boundary identified for drainage. Asset to be protected to maintain its function.

CONCEPT DESIGN



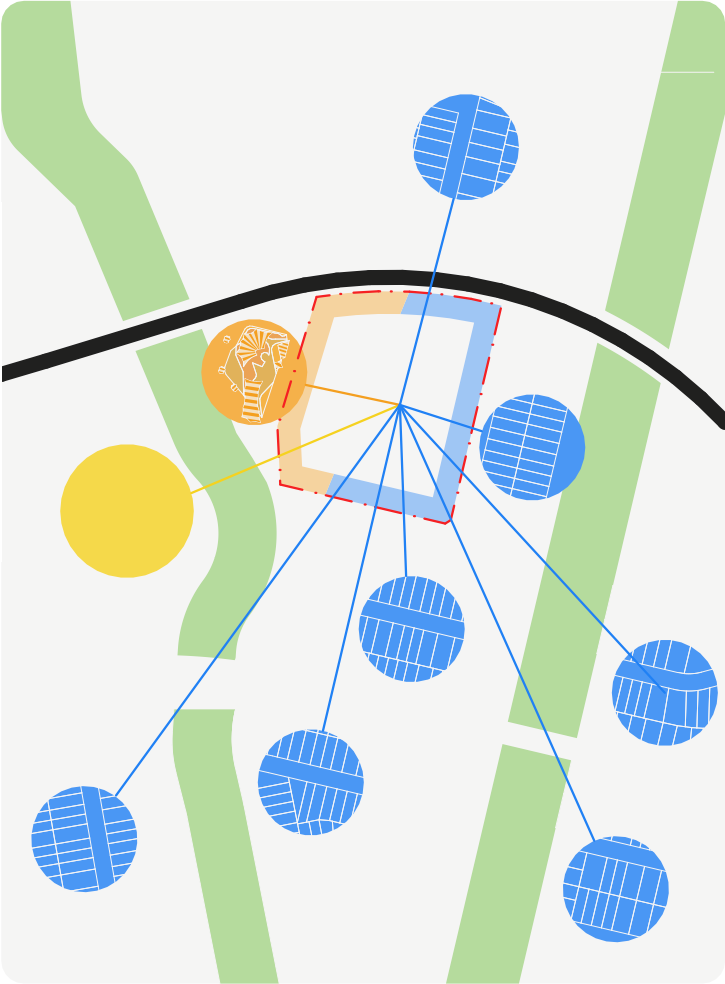
CONCEPT DESIGN

KEY PRINCIPLES



AN ENVIRONMENT FOR LEARNING, DISCOVERY, AND PLAY

- The new primary school at Gregory Hills will first and foremost be a place for the education and social growth of its students.
- The students at the school will range from Kindergarten to year 6, represent many diverse backgrounds and cultures, and have a range of interests and abilities. The school must accommodate this diverse cohort with spaces and programs that enable them to have a rich and productive introduction to their schooling.
- The whole school site is an educational environment including the classrooms, library, hall, outdoor learning areas, and play spaces.
- The organisation of the site and the design of the building and landscape will support this through structured and open ended learning environments.



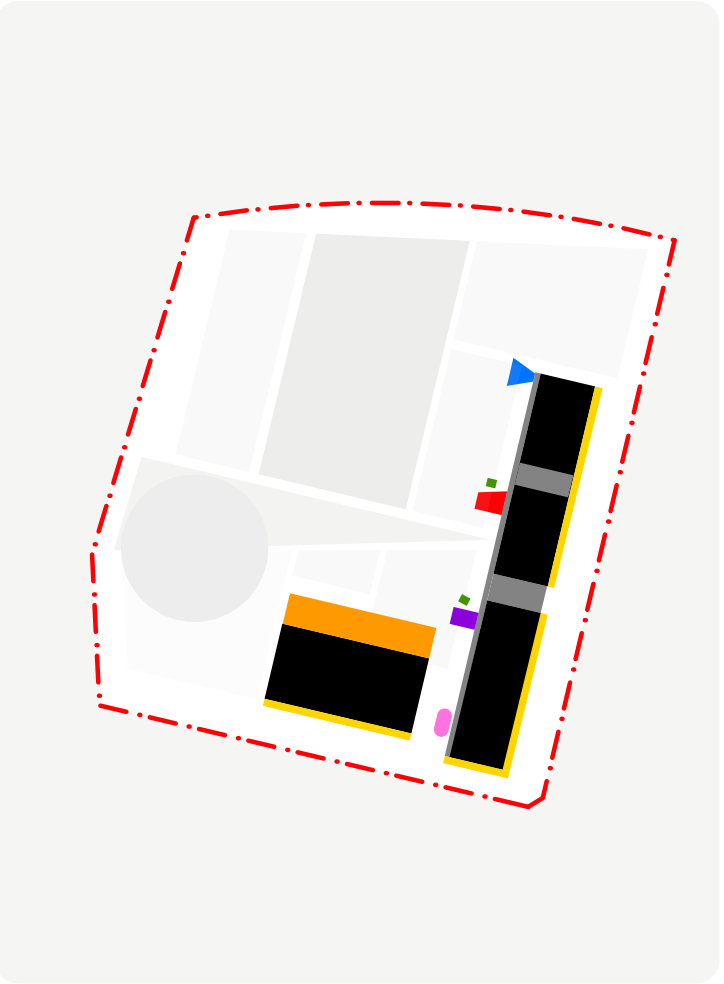
A PUBLIC INSTITUTION FOR THE LOCAL COMMUNITY

- Public schools are important civic institutions in local communities that represent our society's commitment to providing education for all children.
- The school is located adjacent to a public playground, a landscaped green corridor, with well connected bike and walking paths, and is in close proximity to the Gregory Hills Town Centre. Combined with the school, these three places will create a cohesive, connected local centre for the community.
- The school will have a public presence that is open and welcoming to students, staff, parents and caregivers, visitors, and residents.
- The school grounds and facilities, where possible and appropriate will be made available for use by local residents and local community groups to extend the usage of the school to wider groups, and also importantly to engender a sense of ownership and pride in the school within local community.



COUNTRY, ECOLOGY, AND LANDSCAPE ARE EMBEDDED IN THE SCHOOL

- The school is located on Dharawal Country, and the stories and histories of the traditional landowners will be integrated into the life of the school, through the site planning, landscape, school practices, and educational program.
- The site adjoins a riparian corridor that reinstates the creek along the western boundary of the site. Water and its importance to the ecology and history of the site will be embedded in the design and programming of the school's open space.
- An existing stand of trees remains on the site as a remnant of the woodland areas from before the area's subdivision and from before the site was cleared for farming. These trees are ecologically important, are a link to the sites history, and are an opportunity for learning and discovery for the children at the school.

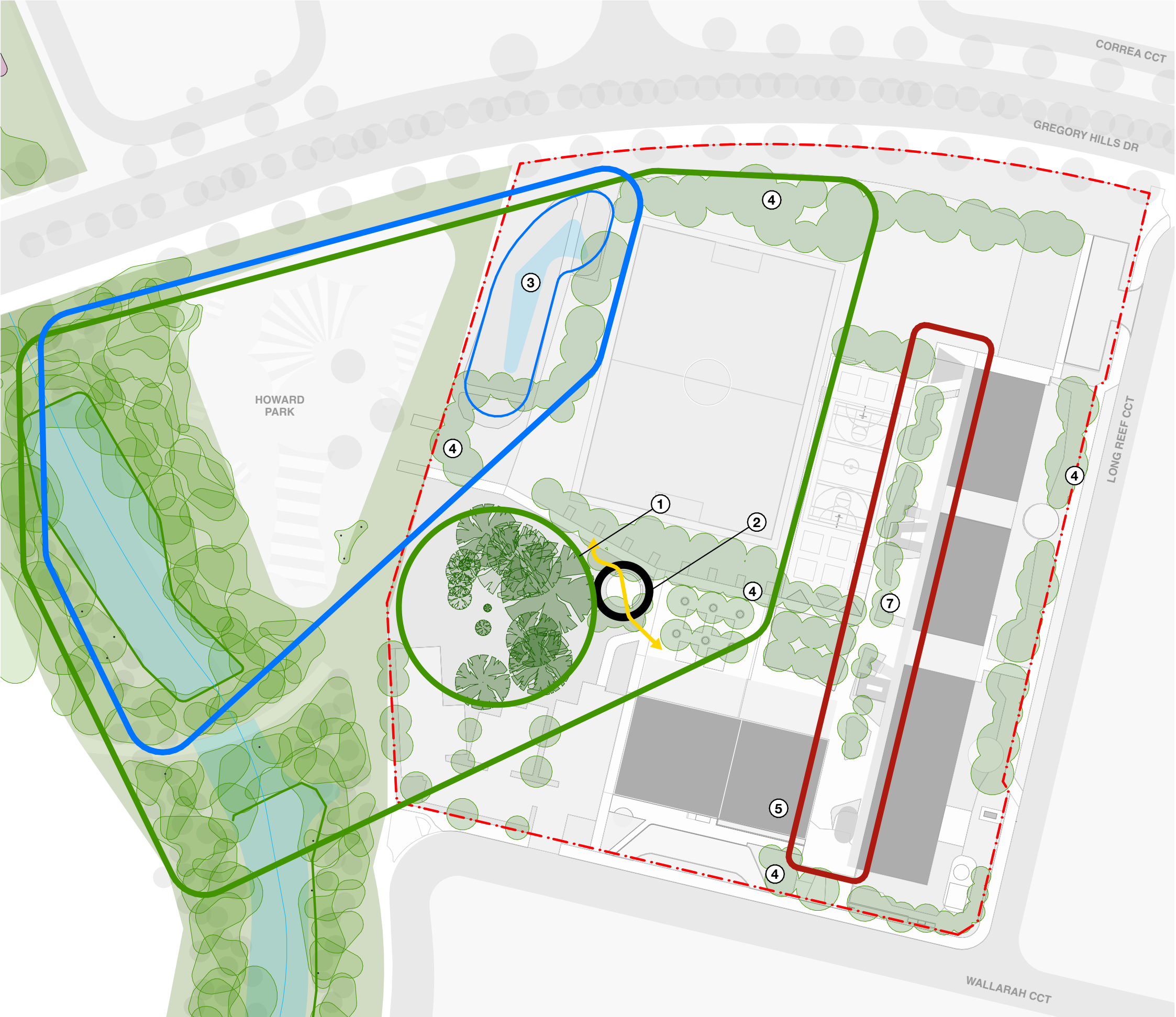


ESTABLISHING CHARACTER AND IDENTITY WITHIN A STANDARDISED DESIGN

- The new primary school at Gregory Hills will be one of the first to be delivered using SINSW's new standardised layouts for learning spaces and school core facilities.
- This standardised approach brings design efficiency and consistency as well as possible time and cost savings during construction.
- Within this standardised approach, it is important to identify areas where the school may develop its own specific character and presence within its community.
- The school character and identity may be expressed through the design of select elements including facades design, material selections and colour, external stairs, and landscaping.

CONCEPT DESIGN

DESIGNING WITH COUNTRY



CONNECTING WITH COUNTRY

Connecting with Country and Designing with Country are ongoing as the project progresses. Connecting with Country design elements include:

1. Retention of existing Cumberland Plain trees on site where possible. Where trees are nominated to be removed by the arborist, they will be kept on site and used in the landscape and play areas of the school.
2. The indigenous elders identified the existing trees as a preferred location for a yarning circle. Following the arborist advice where it was identified that this may be a dangerous location due to limb dropping, a location adjacent the trees has been selected.
3. Water based learning and discovery areas are located in close proximity to the riparian corridor that follows an old creek line. These areas provide opportunities for stories about water to be told within the school with a meaningful connection to the existing surrounding landscape.
4. New planting to incorporate species to be native to the area. i.e. Cumberland Plain species.
5. Way-finding graphics and artworks that may be included in the school to be by local indigenous artists and designers.
6. Enquiries are being made regarding the exhibition of artefacts from archeological studies (from larger Gregory Hills precinct development) in the school library or reception.
7. Opportunities to incorporate elements from ongoing engagement with the local indigenous elders within the stairs, walkways, and facades of the school buildings. Including;
 - use of the timber from the felled existing trees in seating, furniture
 - use of site clays, soils, rubble within masonry elements in the school building

CONCEPT DESIGN

ARCHITECTURAL CONCEPT



Learning Spaces & Core Facilities

The built form is arranged in two wings addressing the primary street frontage along Wallarah Circuit and the secondary frontage on Long Reef Circuit. The two wings enclose a large open space to the north west for outdoor recreation, learning, and discovery.

Setbacks to residential areas provide a landscape buffer and minimise overshadowing. The Hall and Library are co-located and positioned to enable community uses if required.

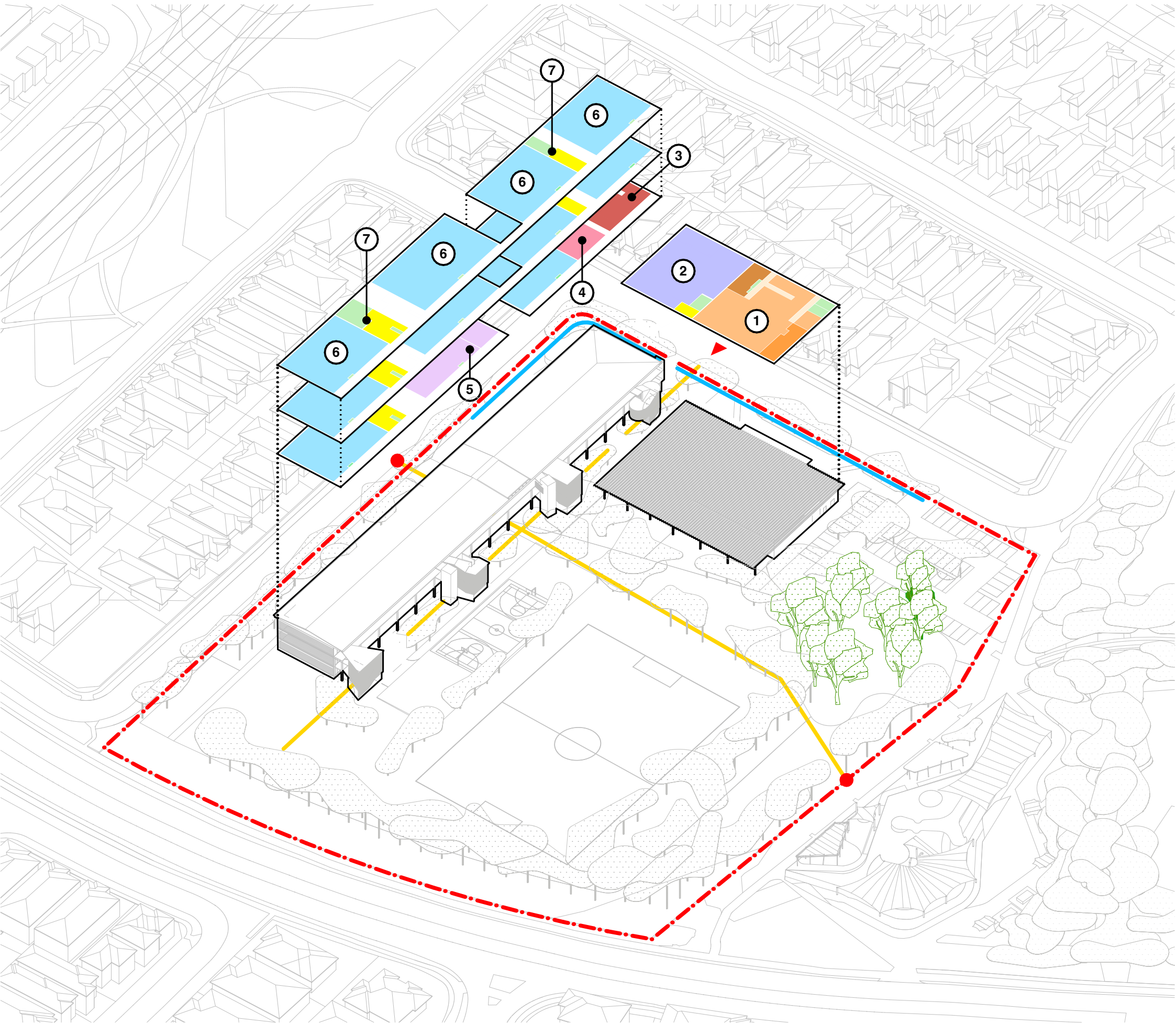
1. Administration and staff hub located at Main Entry on Wallarah Circuit
2. Library located to open out onto school centre, while also providing access to the wider community off Wallarah Circuit if required.
3. Communal Hall (with OSCH and Canteen) located to open out onto school centre, while also providing access to the wider community off Wallarah Circuit and staff carpark if required.
4. 44 General learning spaces arranged in hubs of four arranged along both wings of the new school
5. 4 Support learning spaces located at ground level, adjacent the staff and admin hubs, and with direct access to a dedicated drop off area.
6. Amenities and building services cores are located on each level of the school and in regular, evenly spaced locations.
7. Circulation corridors and stairs are articulated as a series of playful, sculptural elements that enliven the school and provide a unique character within the standard grid, hubs, and modules
8. North facing COLA located off Communal Hall and Library, providing a shaded covered area for play, outdoor classes, and spill out area
9. Open play space as a series of varied outdoor learning and recreation areas of varying characters, utility and program
10. Yarning circle adjacent Cumberland Plain trees
11. Shared use opportunities are located to provide access to and interaction with Howard Park and the Gregory Hills Town Centre Large sliding gates to provide managed access at appropriate times
12. Secure bicycle and scooter parking area at main entry
13. Off street, accessible Support Learning drop-off area
14. Staff car parking, with shade trees located for access to joint use facilities if required
15. OSD basin located to the lower portion of the site to remain unchanged under approved DA2022/724/1
16. Waste storage and collection area located off Long Reef Circuit approved under DA2022/742/1

LEGEND

	Site boundary		Administration and Staff
	Main school entry		Library
	Secondary school entry		Communal Hall
	Street frontage		General Learning Spaces
	Primary circulation		Support Learning Spaces
	Shared use opportunities		Student Amenities
			Movement corridors
			Vertical circulation

CONCEPT DESIGN

BLOCK AND STACK



KEY ELEMENTS

- 1. Communal Hall (with OSHC and Canteen)
- 2. Library
- 3. Administration hub
- 4. Staff hub
- 5. 4 Support learning spaces.
- 6. 44 General learning spaces
- 7. Amenities and building services cores

GROUND LEVEL

- 8 x General learning spaces
- 4 x Support learning spaces
- 1 x Hall, Canteen, OSHC
- 1 x Library
- 1 x Admin, Staff
- 2 x Amenity cores
- 1 x End of trip facility

FIRST FLOOR

- 20 x General learning spaces
- 2 x Amenity blocks

SECOND FLOOR

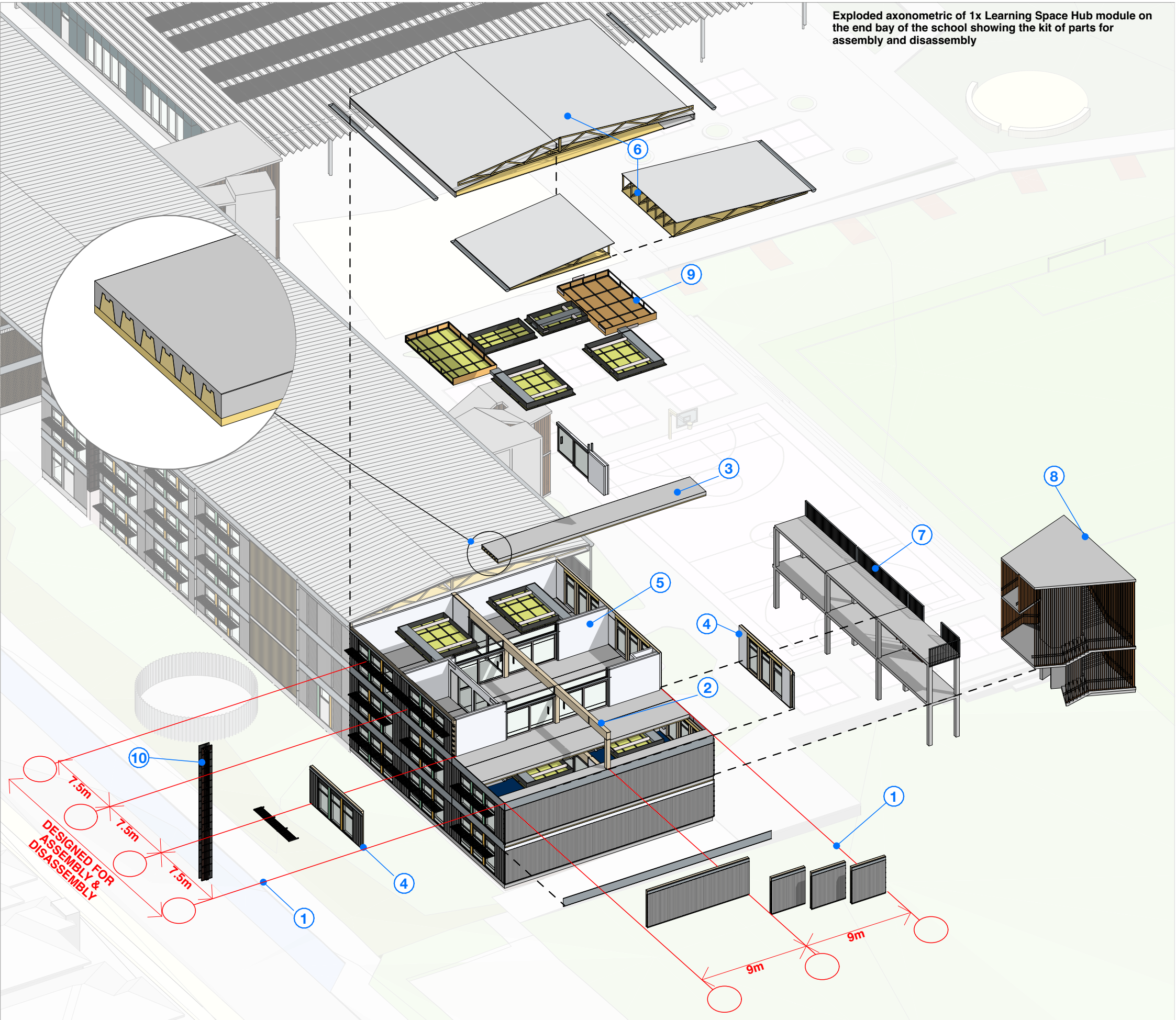
- 16 x General learning spaces
- 2 x Amenity blocks

LEGEND

- | | |
|--------------------------|-------------------------|
| --- Site boundary | Communal Hall |
| ▲ Main school entry | Canteen |
| ● Secondary school entry | OSHC |
| — Street frontage | General Learning Spaces |
| — Primary circulation | Support Learning Spaces |
| Administration | Student Amenities/Core |
| Staff | Services Unit |
| Library | Storage Unit |

CONCEPT DESIGN

MODERN METHODS OF CONSTRUCTION



Kit of Parts Assembly

The project has been developed using Modern Methods of Construction (MMoC) kit of parts assembly principles.

1. All elements based on the standard 9 x 7.5m grid
2. MASSLAM Vic Ash GLT timber beams span the 7.5m grid.
3. 'Strongfloor' composite timber and concrete flooring system. For the end three bays, the 'Strongfloor' system is delivered as a series of pre-cast concrete modules that are dropped in on-site .
4. Structural CLT and MASSLAM GLT wall panels integrate framing, linings, insulation, windows, louvres and fixings for awning fixtures are delivered in 7.5m wide panels.
5. Internal wall systems integrating framing, doors, linings.
6. Integrated roofing modules incorporating trusses, insulation and roofing dropped into a structural frame in a series of complete modules.
7. Precast concrete circulation corridor. Designed as an independent structural system from the main building aiding future flexibility in assembly and disassembly.
8. External stairs incorporate standardised riser elements dropped into custom frames for individual stairs.
9. Lined service pods housing mechanical and electrical services are dropped in to each space and integrate acoustic ceiling treatment and linings.
10. Service risers located and expressed externally along eastern elevation

Standardised Hubs Layouts

The project has been developed using the SINSW standard hub layouts. Each hub is based on a 9x7.5m structural and planning grid that has been developed by SINSW to enable future flexibility across all primary schools and high schools.

This methodology influences site planning, the ability to use spaces flexibly for the purposes of delivering education, and allows for schools to be delivered with reduced construction impacts.

The standard hubs have been adjusted where required due to site conditions, functional relationships, and services requirements.

Disassembly

The ultimate aim for the Modern Methods of Construction methodology is for an "Assembly/Disassembly" strategy to be incorporated. Gregory Hills is a pilot project for this approach with the northernmost Learning Hubs being designed for future disassembly. This involves the use of precast concrete flooring, 'plug and play' services, kit of parts load-bearing walls, and the careful design of connection details throughout.

CONCEPT DESIGN

PLAN - GROUND FLOOR



KEY ELEMENTS

1.

Administration
2.

Staff Unit
3.

Library Unit
4.

OSCH, Hall & Canteen hub
5.

General learning space (total provision of 44)
6.

Support learning space (total provision of 4)
7.

Amenities and building services
8.

Open play space
9.

Support learning drop-off (3 spaces)
10.

Short stay parking approved under DA2022/742/1
11.

Staff car parking (60 spaces - inclusive of 1 accessible space)
12.

Waste storage and collection area approved under DA2022/742/1
13.

Undercover student bike parking (60 spaces)
14.

End of trip facilities
15.

New sliding gate. New pathway connection to Howard park on council land
16.

Location of school signage

LEGEND

- Site boundary
- Administration
- Staff
- Library
- Communal Hall
- Canteen
- OSHC
- Asset Protection Zone
- General Learning Spaces
- Support Learning Spaces
- Student Amenities/Core
- Services & Storage Unit

CONCEPT DESIGN

PLAN - FIRST FLOOR



KEY ELEMENTS

1. General learning hub
2. Covered outdoor learning area
3. Amenities and building services
4. Void
5. Solar panels on roof to Hall and Library

LEGEND

- | | |
|-------------------|---------------------------|
| --- Site boundary | --- Asset Protection Zone |
| Administration | General Learning Spaces |
| Staff | Support Learning Spaces |
| Library | Student Amenities/Core |
| Communal Hall | Services & Storage Unit |
| Canteen | |
| OSHC | |

CONCEPT DESIGN

PLAN - SECOND FLOOR



KEY ELEMENTS

- 1. General learning hub
- 2. Covered outdoor learning area
- 3. Amenities and building services
- 4. Void
- 5. Solar panels on roof to Hall and Library

LEGEND

- | | |
|----------------|-------------------------|
| Site boundary | Asset Protection Zone |
| Administration | General Learning Spaces |
| Staff | Support Learning Spaces |
| Library | Student Amenities/Core |
| Communal Hall | Services & Storage Unit |
| Canteen | |
| OSHC | |

CONCEPT DESIGN

PLAN - ROOF



LEGEND			
- . -	Site boundary	- - -	Asset Protection Zone
■	Administration	■	General Learning Spaces
■	Staff	■	Support Learning Spaces
■	Library	■	Student Amenities/Core
■	Communal Hall	■	Services & Storage Unit
■	Canteen		
■	OSHC		

CONCEPT DESIGN

VIEWS - MAIN ENTRY



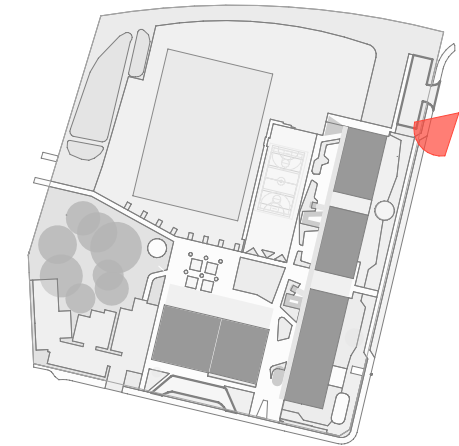
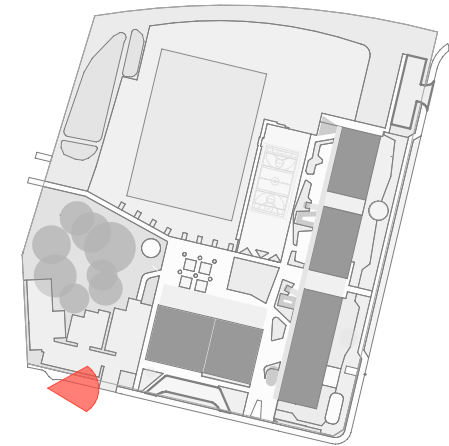
CONCEPT DESIGN

VIEWS - EAST FACADE



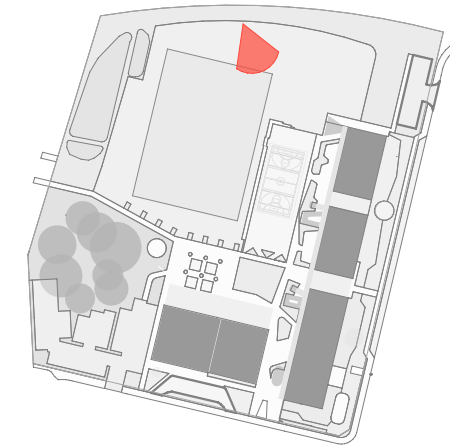
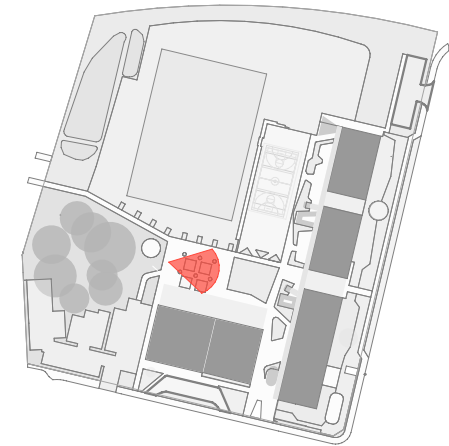
CONCEPT DESIGN

VIEWS - STREET



CONCEPT DESIGN

VIEWS - OPEN SPACE

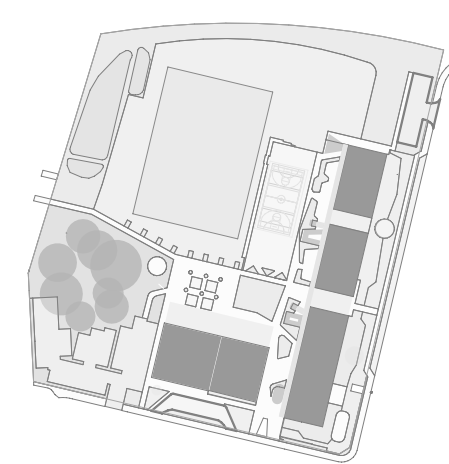
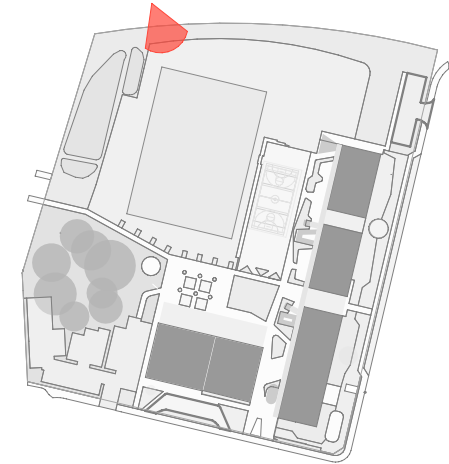


CONCEPT DESIGN

VIEWS - HALL



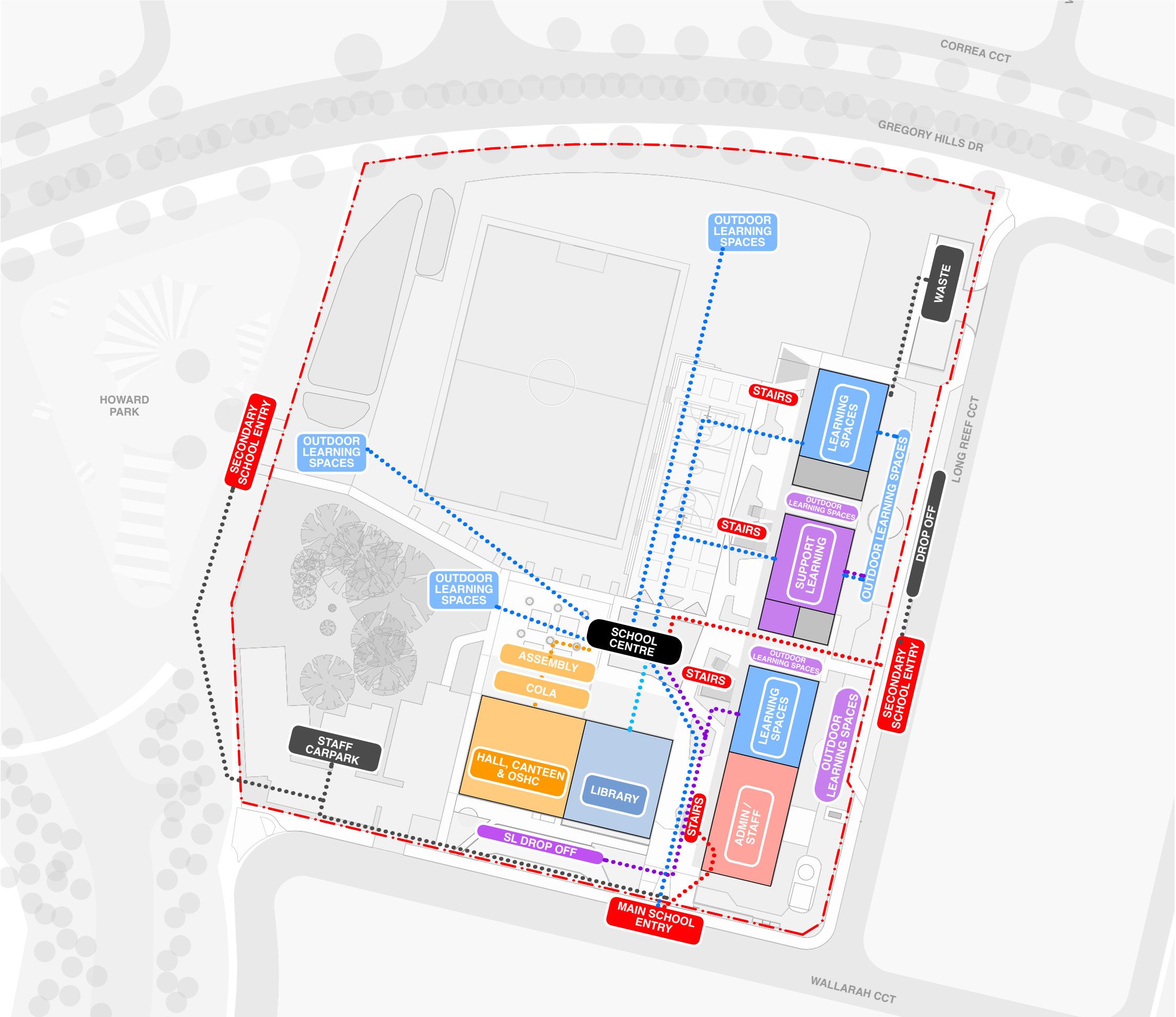
CONCEPT DESIGN
VIEWS - AERIAL



TECHNICAL OVERLAY



FUNCTIONAL RELATIONSHIPS



SITE RELATIONSHIPS

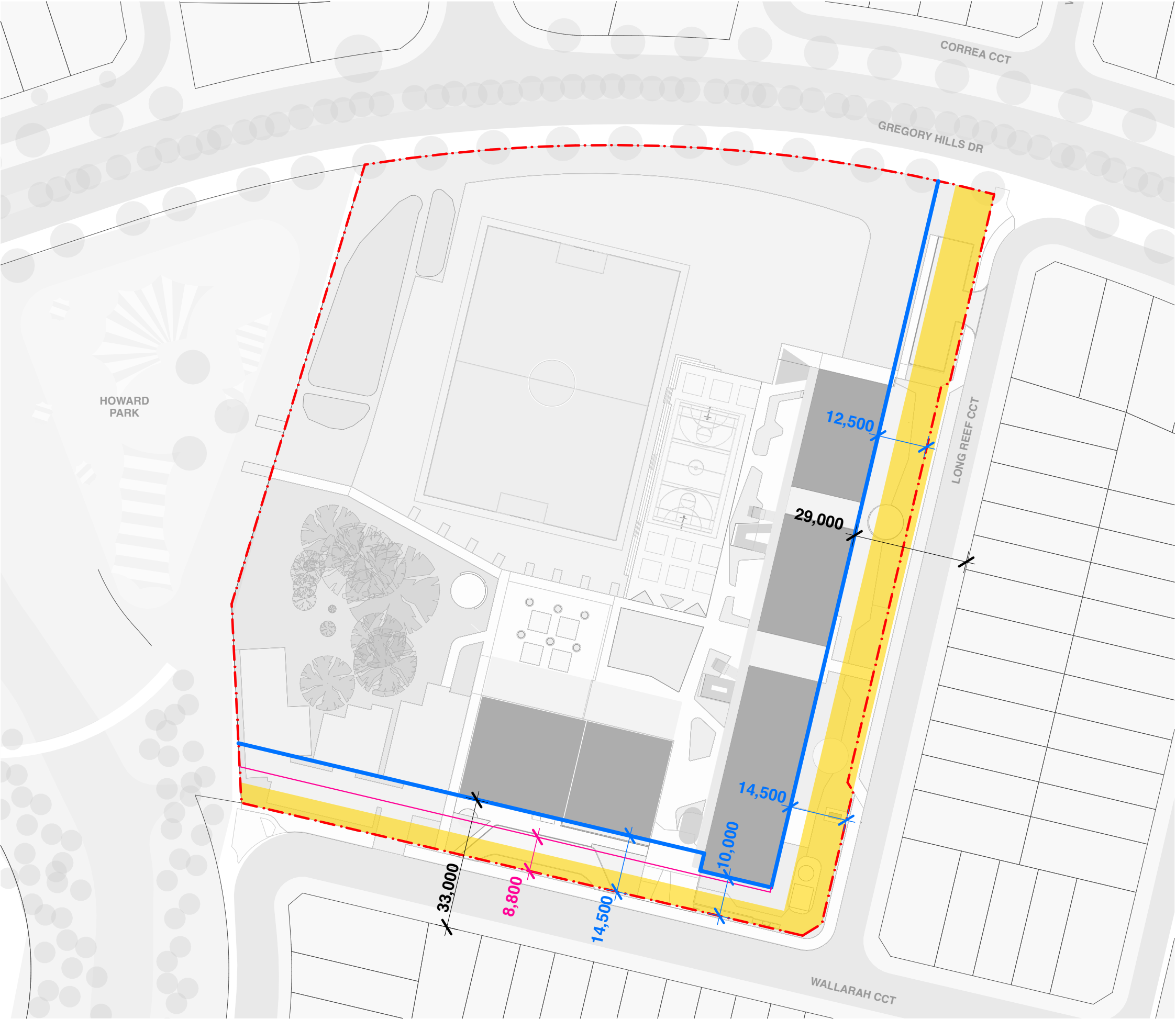
The EFSG sets out the desirable relationships between the access/egress to a school site and the main operational units and areas that form the central functions of a school.

FUNCTIONAL RELATIONSHIPS

- The library, Hall and Admin have direct connection to the school main entry and Wallarah Circuit with the admin / staff hub located directly off the main school entry.
- The support learning is located with direct access the from the support learning drop-off and in connection to the primary and secondary entrance.
- The staff carpark has a direct connection to the Hall and is in close proximity to the main school entry and playing fields.

TECHNICAL OVERLAY

SETBACKS



BUILDING SETBACKS

a. Long Reef Circuit setback

A 14.5m setback to the original boundary to Long Reef Circuit has been retained to the for the following reasons:

- The setback prevents overshadowing to the residential properties along Long Reef Circuit
- The fencing and landscape strategy provides a high amenity to the public domain along Long Reef Circuit

A 12.5m setback is provided to the portion of building adjacent the realigned boundary to the short stay parking

A 29m setback is provided to the Long Reef Circuit residential property boundary

b. Wallarah Circuit

- The setback to Wallarah Circuit has been increased to 14.5m at the hall and library, and to 10m for the Admin for the following reasons:
- It allows for a more generous forecourt to the school
- It allows for an accessible drop off area at the school entry
- The slightly smaller setback for the admin area provides a visual break between the two buildings and allows for visibility of the school entrance from the approach
- The setback prevents overshadowing to the residential properties along Long Reef Circuit

A 33m setback is provided to the Wallarah Circuit residential property boundary

LEGEND

- - - Site boundary
- Setbacks
- Setbacks at SDRP 1
- Minimum setbacks for Complying Development under Transport and Infrastructure SEPP 2021 (Note - not applicable with this planning pathway, but presented for comparative purposes)

TECHNICAL OVERLAY

BUSHFIRE - APZ



ASSET PROTECTION ZONES

A preliminary bushfire hazard assessment report has been prepared by Black Ash.



Asset Protection Zone

This analysis identifies a range of possible Asset Protection Zones (APZs) that relate to different vegetation categories that may be in the riparian corridor.

The exact vegetation and APZ is yet to be determined and may affect the concept design through:

- restrictions of where buildings may be located
- structural systems and building design
- landscaping, planting selections and density, and canopy cover



Forested Wetlands Inner Asset Protection Zone

Key requirements from BlackAsh report (not limited to):

- max 15% tree canopy cover at maturity
- tree canopies separated by 2-5m
- lower limbs should be removed up to 2m
- 100mm max grass height
- additional requirements for species, shrub and management. Refer to BlackAsh report for details.



Forested Wetlands Outer Asset Protection Zone

Key requirements from BlackAsh report (not limited to):

- max 30% tree canopy cover at maturity
- tree canopies separated by 2-5m
- shrubs should not form a continuous canopy or more than 20% ground cover
- 100mm max grass height additional requirements for species, shrub and management. Refer to Bushfire Hazard Assessment Report by BlackAsh report for details.

BAL 12.5

- The library and hall building boundary is to comply with BAL 12.5
- To be built in accordance with Section 5 (BAL 12.5) of AS 3959
- To comply with Section 7.5 & 7.6 of *Planning for Bush Fire Protection 2019*

Key requirements from AS3959 BAL 12.5 (not limited to):

- External walls: non-combustible or complying timber species for portion within 400m of surface level.
- Operable Windows: aluminium, steel or bronze fly screen
- All Glazing: greater than 400mm off ground to be annealed within metal frames or complying timber. Less than 400mm Grade A safety glass.
- Doors: Either screened or non-combustible material framing or metal or bushfire resistant timber framing up to 400mm above ground.
- Roofing: non combustible, fully sarked.

TECHNICAL OVERLAY

FLOODING



RIPARIAN FLOOD EXTENT

Flood modelling by Robert Bird Group. Refer to Flood Study Report for details.

The analysis identifies the 1% AEP and PMF flood extent post development of Gregory Hills and can be seen on the diagram to the west of the site along the riparian corridor.

Flood Planning Level

According to Camden Council's Flood Risk Management Policy, the Flood Planning Level (FPL) used for general planning control purposes is derived from a combination of the 1% Annual Exceedance Probability (AEP) flood event plus a freeboard of 600mm.

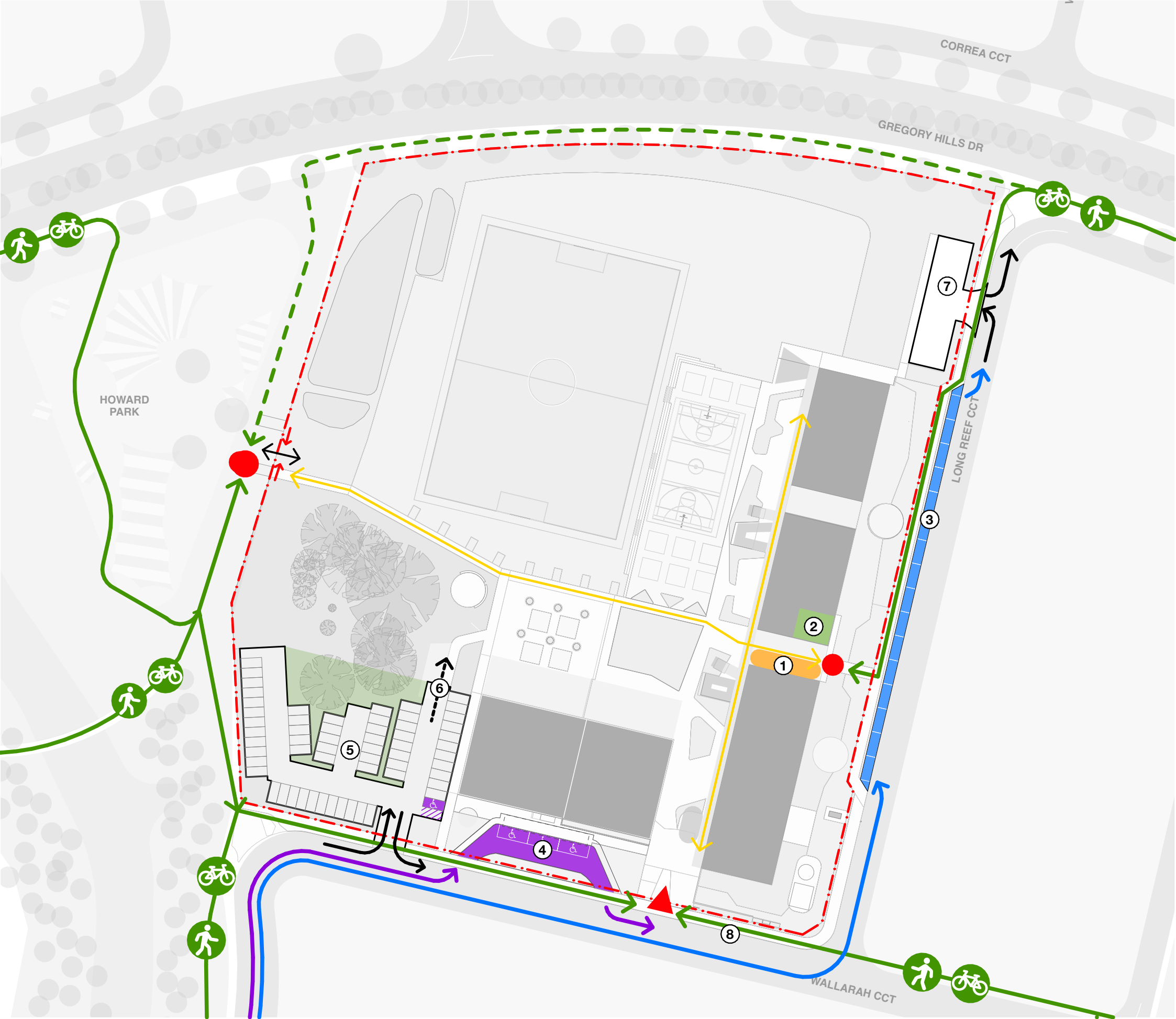
Flood Planning Level = RL 115.1 (1% AEP 30min duration highest RL) + 600mm
= 115.7 RL

Proposed Main Building and Library GF FFL: 116.1 RL
Proposed Hall GF FFL: 115.7 RL

LEGEND

- Site boundary
- 1% AEP 30min duration flood extent
- PMF 60min duration flood extent

TRANSPORT AND CONNECTIVITY



TRANSPORT FACILITIES

Pedestrian and Bike Paths

- 3m wide paths are provided along Wallarah Circuit and Long Reef Circuit* for pedestrian, bikes, and scooters.
* 2.5m wide path on Long Reef Circuit adjacent short stay parking area approved under DA2022/742/1
- These paths connect to an established network of pedestrian and bike paths running through to the riparian corridors and open space networks.

Bicycles and Scooters

- Undercover bicycle parking is provided within the school grounds at the main entry.
- 60 spaces for bike and scooter parking have been allowed for.

Support Learning

- 3 accessible drop off spaces are provided on Wallarah Circuit to AS2890.6
- The Support Learning drop off is located at the main school entry providing an equitable access to the school for all students.

Short Stay Parking

- Short stay parking is located along Long Reef Circuit approved under DA2022/742/1

On site Parking

- Staff parking has been provided at a rate of 1 space per FTE staff member.
- This equates to 60 spaces inclusive of 1 accessible space
- Refer to the Transport and Accessibility Impact Assessment report for details.

Crossings and 40km/hr School Zones

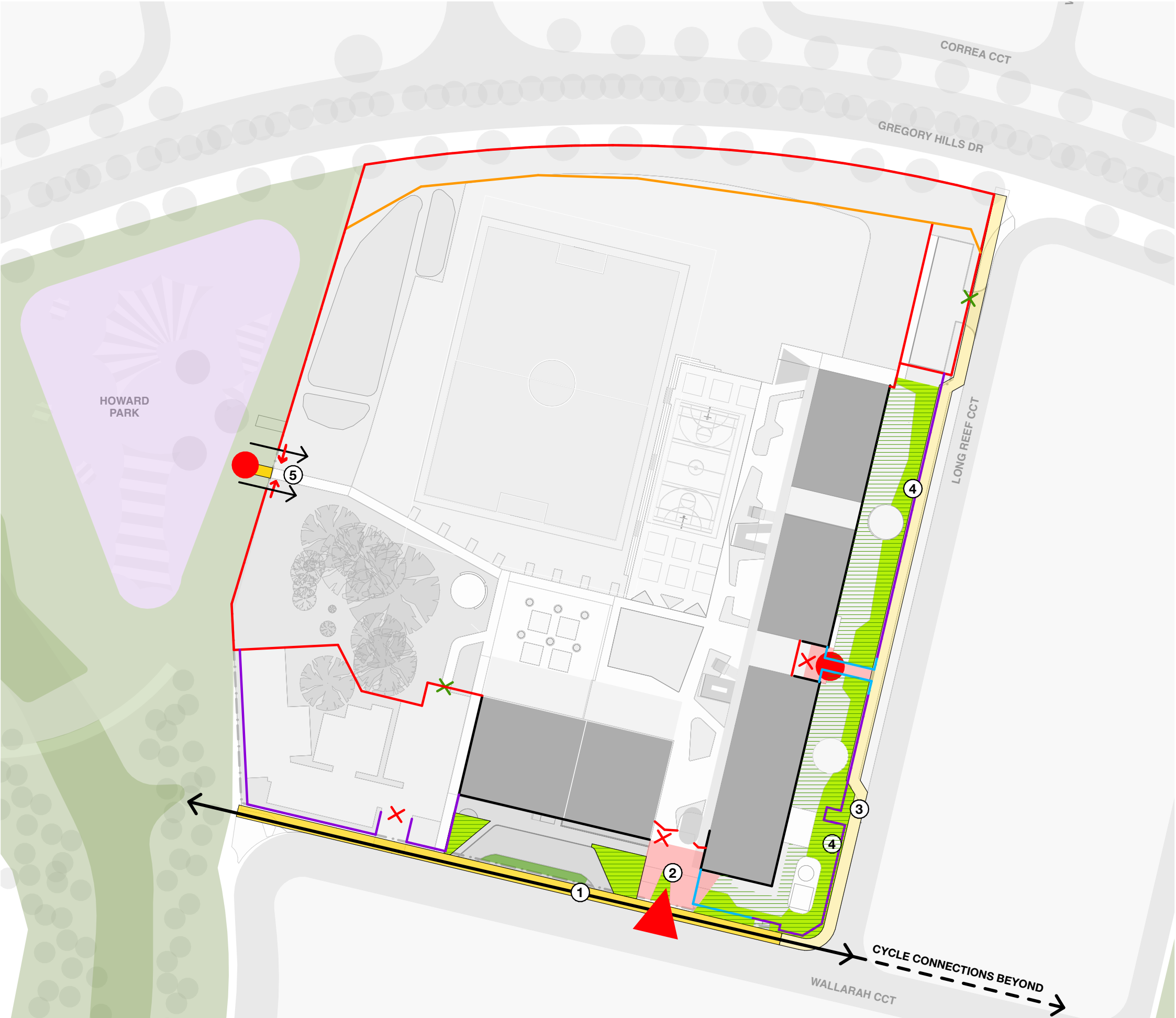
- Pedestrian crossings and school zones are anticipated but not shown at this stage pending input from the Transport consultant.

KEY ELEMENTS

1. Student bike parking
2. Staff end of trip facilities
3. Short stay parking
4. Support learning drop off
5. Staff parking (60x - inclusive of 1x accessible space)
6. Emergency vehicle access to school grounds
7. Waste pad
8. Proposed school bus stop (in lane)

LEGEND

- - - Site boundary
- ▲ Main school entry
- Secondary entries
- ↔ Active transport links
- Short stay parking
- Short stay parking vehicle movement
- Support learning drop off
- Support learning vehicle movement
- Staff parking vehicle movement

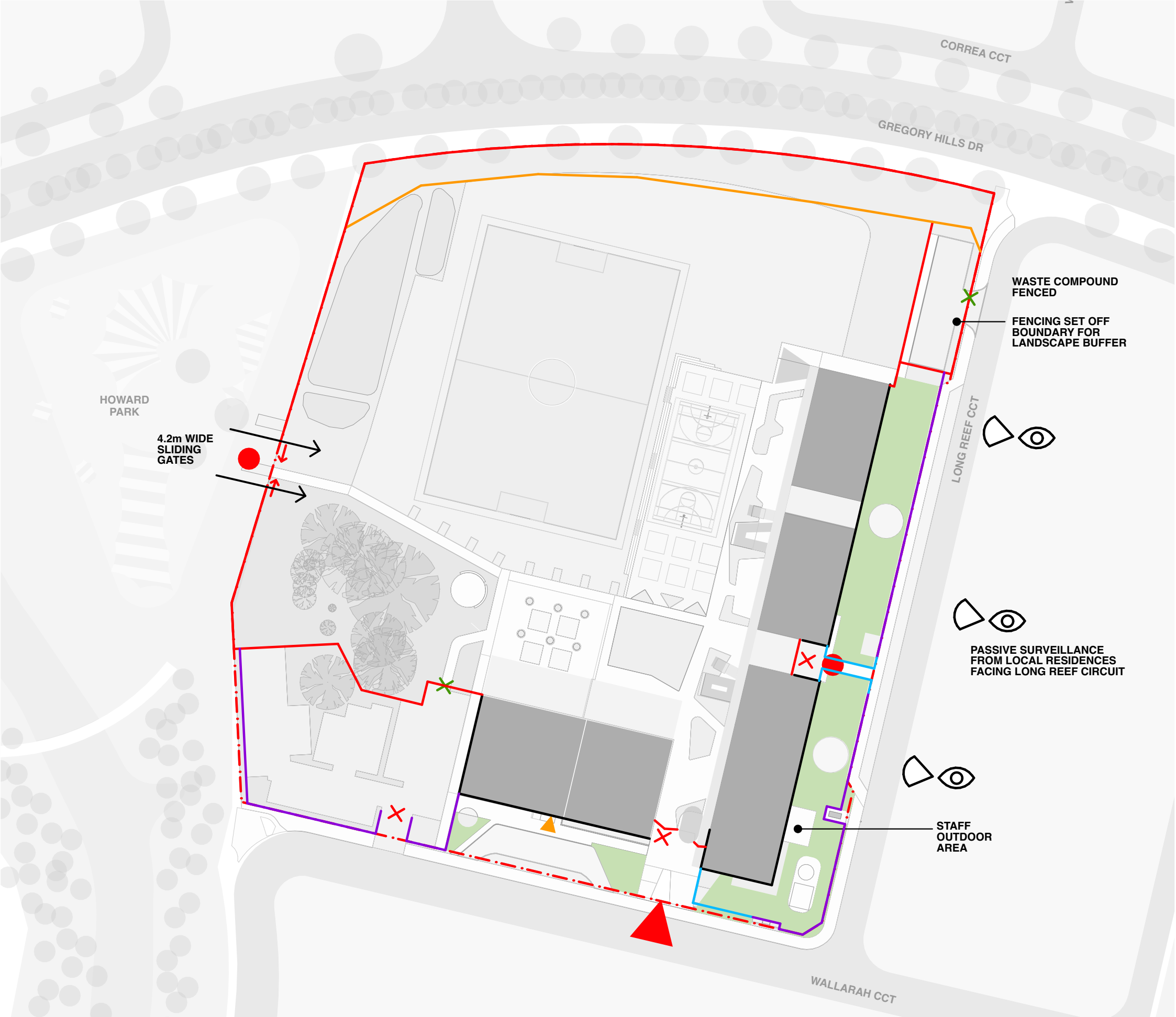


PUBLIC DOMAIN ELEMENTS

- 1. New 3m wide footpath to northern side of Wallarah Circuit to connect existing cycle routes to the west and east of the site
- 2. Primary school entry and forecourt to Wallarah Circuit
- 3. New 3m wide footpath (2.5m adjacent short stay parking) to the western side of Long Reef Circuit delivered as part of temporary school works currently under consideration by Camden Council
- 4. New tree planting to the site perimeter to enhance the public domain outside school secure line (high level fencing).
- 5. New sliding gate. New pathway connection from site boundary to existing Howard Park pathways

LEGEND

- Site boundary
 - Main school entry
 - Secondary entries
 - Entry forecourt
 - Support learning drop off
 - Perimeter tree planting
 - Landscaped perimeter between school buildings and boundary fence
 - New shared path
 - Shared path delivered under temporary school DA
- UNDER TEMPORARY SCHOOL DA APPLICATION



FENCING STRATEGY

A fencing strategy has been prepared that proposes an alternative to the standard palisade fencing to the full school perimeter.

The aim of this approach is to provide a safe environment for the school children while positioning the school as an open and inclusive public building in the local community.

The school fence line is its primary interface with the community and sets the expectations of the social contract with regards to safety, trust, and respect.

The fencing in this option has been developed to keep students safe while they are at school through a range of fencing types, while maintaining a civic street presence for the school.

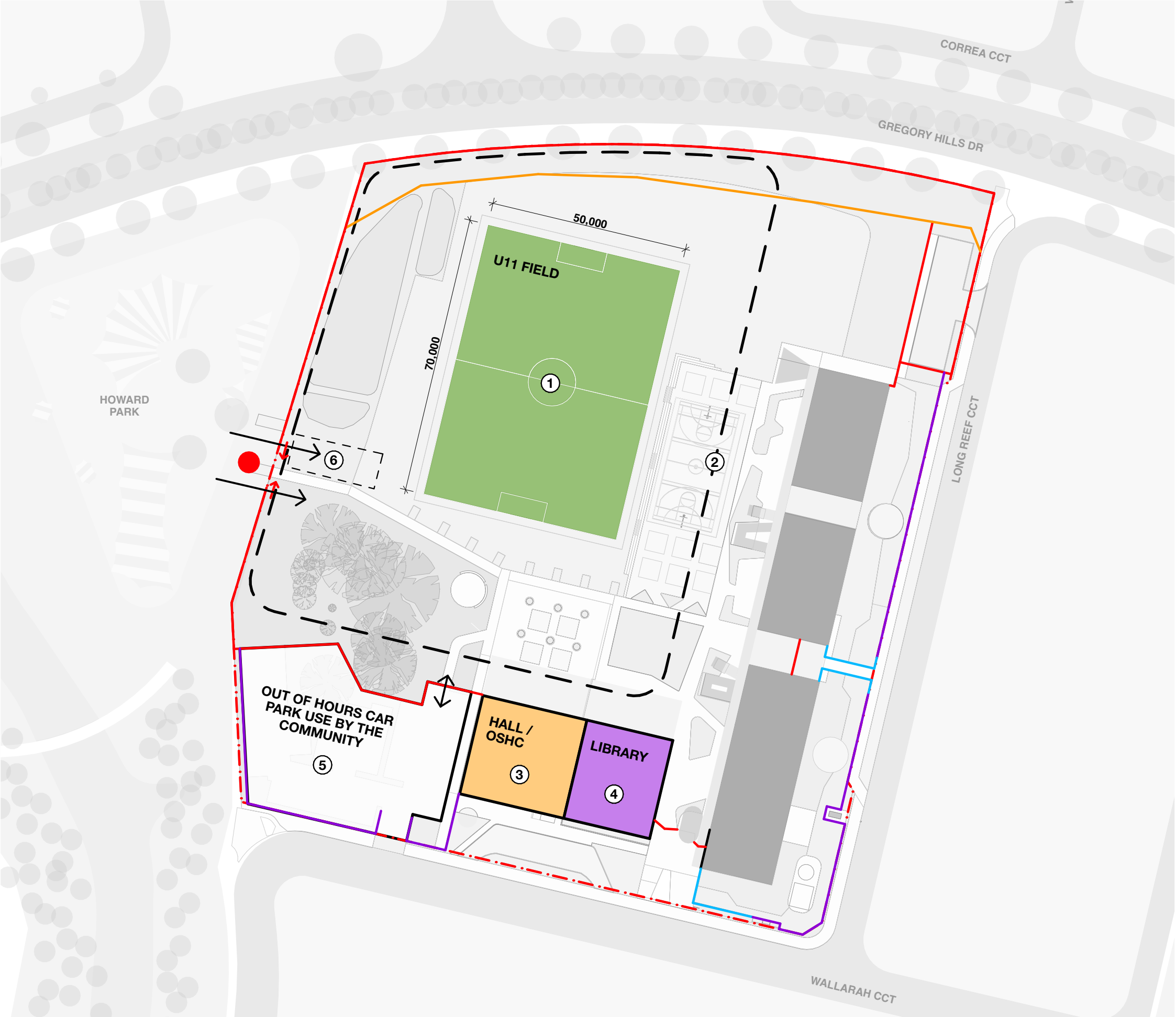
KEY ELEMENTS

- 2150mm high palisade fencing to perimeter of student accessible open play areas.
- 900mm high masonry fencing with landscaping behind at school entries. To provide an open, inclusive, and inviting frontage to the street.
- 900mm high galvanised welded mesh fencing with landscaping behind to street frontages. To provide an open, inclusive, and inviting frontage to the street.
- 1200mm high non-climbable fencing to stormwater easement along north boundary. Stormwater swale in this location may fill to 500mm depth. (Assumed pool code applies)
- Building as perimeter at school entry for Hall and Library.
- Gates operated by electronic card readers and video intercom
- Gates manually unlocked
- Large sliding gates to boundary with Howard Park, allowing for school grounds to be accessible to the community at managed times. Manually unlocked

LEGEND

- Site boundary
- Main school entry
- Secondary entries
- Secure gates
- Sliding Gate to boundary with Howard Park
- After hours entries to Hall

SHARED USE OPPORTUNITIES



SHARED COMMUNITY USES

Shared use arrangements are currently in consideration and consultation with SINSW and Camden Council.

The proximity of the new school to Howard Park and the Gregory Hills Town Centre provides opportunities for use of the school facilities and grounds for outside of school activities for sporting and community groups.

Shared use agreements for the school reinforce the importance of the school as a public institution, provide tangible benefits to the local community, and engender a community ownership and pride in the school.

This may include:

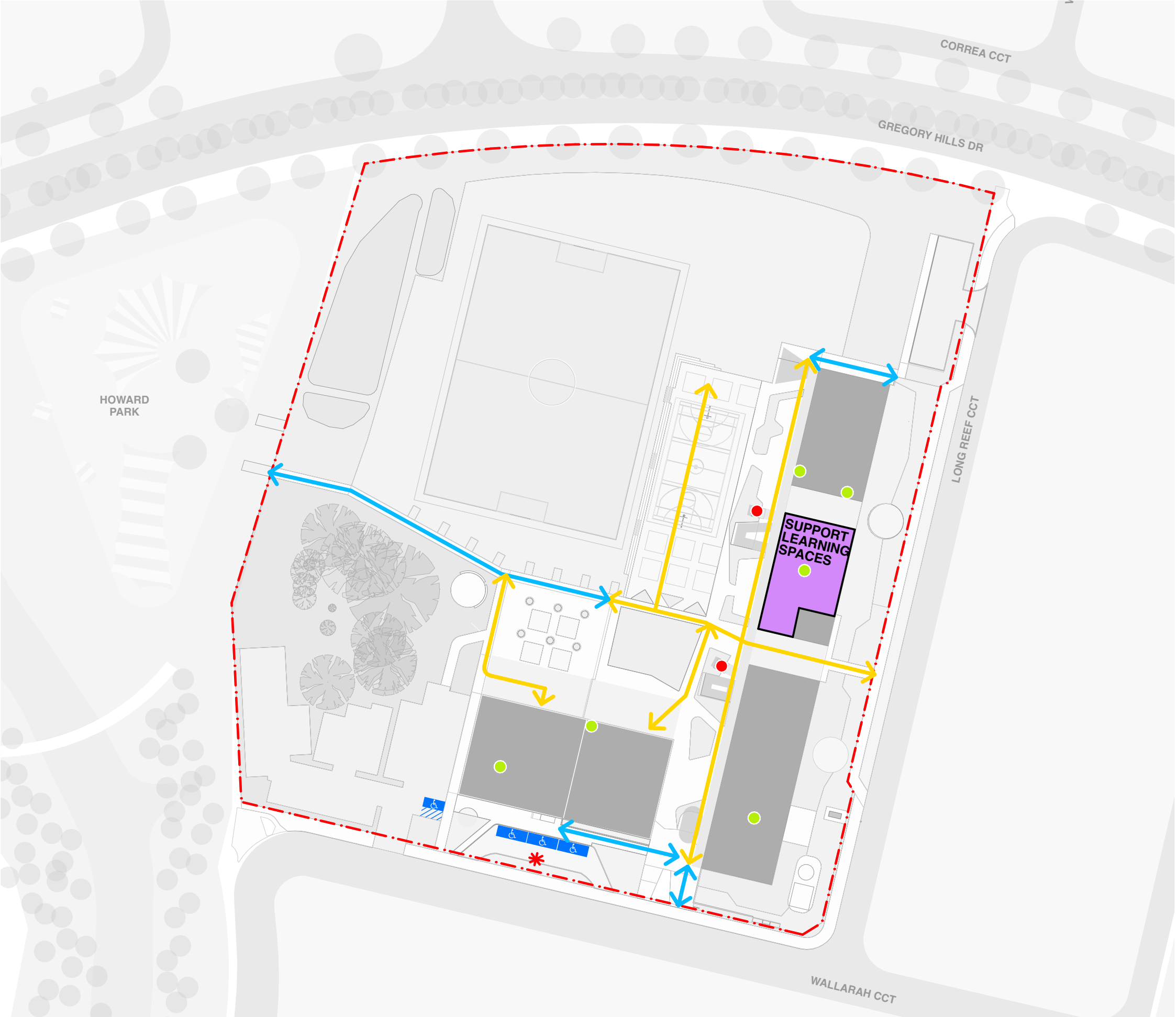
1. Sporting field
2. School landscape & play space
3. Community Hall
4. Library
5. Possibility of staff car park use by the community/groups using the hall or sporting fields
6. Location of active play area with possible community use.

LEGEND

- Site boundary
- ← Sliding Gate to boundary with Howard Park
- ▲ After hours entries to Hall

TECHNICAL OVERLAY

ACCESSIBILITY



ACCESS PRINCIPLES

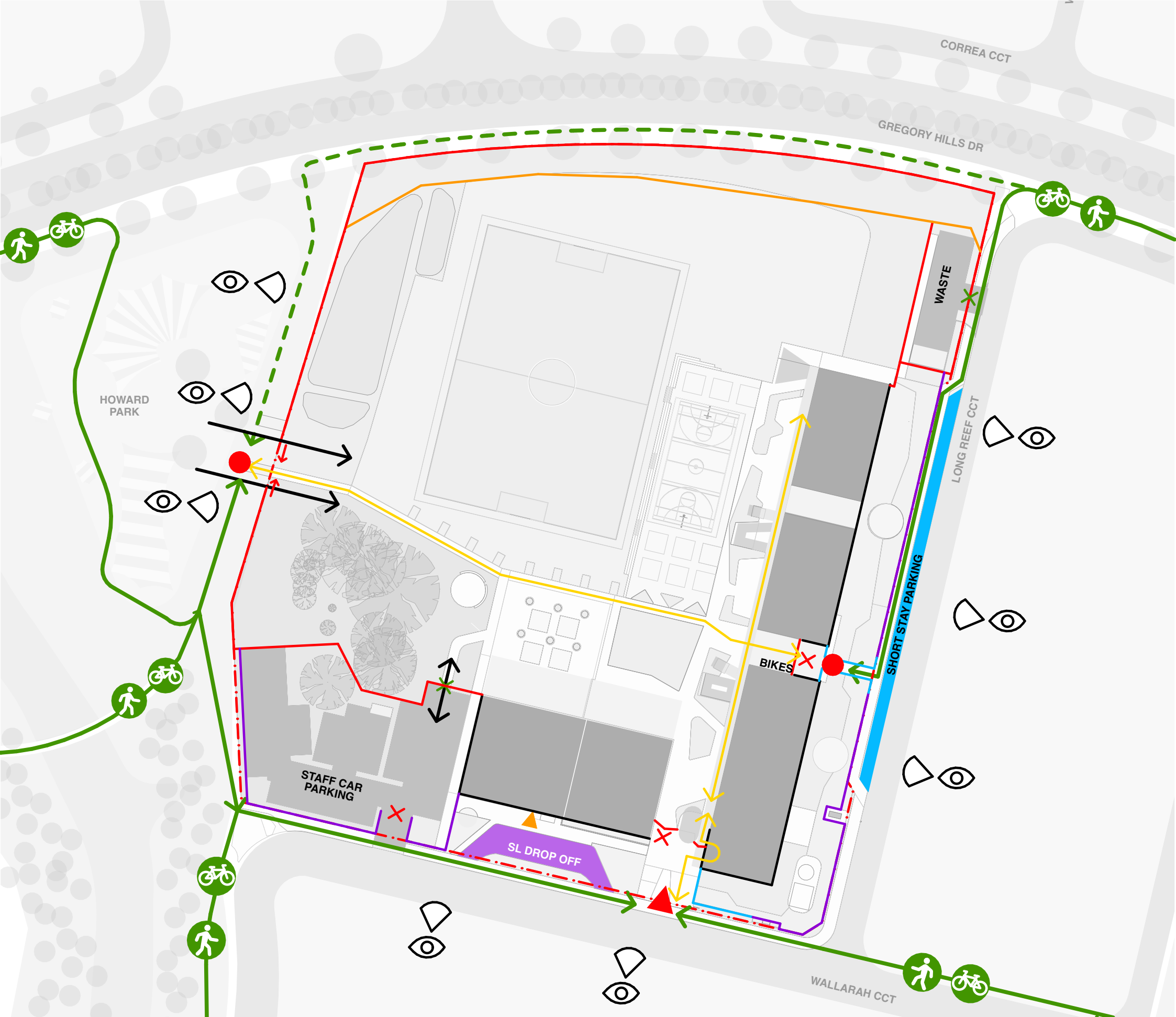
Accessible pathways from the three school entries are provided to all areas of the school via walkways, ramps and lifts.

Accessible bathrooms for students, staff and visitors are co-located with all other amenities.

LEGEND

- Site boundary
- Accessible pathway
- 1:20 walkway/ramp
- Accessible bathroom
- Lift
- Accessible Pickup & Drop off
- Support Learning Spaces

ACCESS, SECURITY AND CIRCULATION



ACCESS PRINCIPLES

Access, security and circulation are important and complex aspects to school planning and operation.

A balance must be found between that maintains the safe operation of the school while providing an open and welcoming public school for young children.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The four key CPTED strategies are territorial re-enforcement, surveillance, access control and space/activity management. The response to these strategies are outlined below.

TERRITORIAL RE-ENFORCEMENT

- Distinguishing private and public spaces, and encouraging community ownership of public areas. This means encouraging positive user groups who discourage negative/anti social groups.*
- A secure area is formed around all areas accessible to the school students. This perimeter uses the DoE standard 2150mm high palisade fencing.
 - In order to present an open and welcoming school to the community, children, visitors and users of the hall and library, the school frontage along Wallarah Circuit uses a low height fence and landscape elements to present a clear demarcation between school property and the public domain. Additional security measures including CCTV may be appropriate in this location.

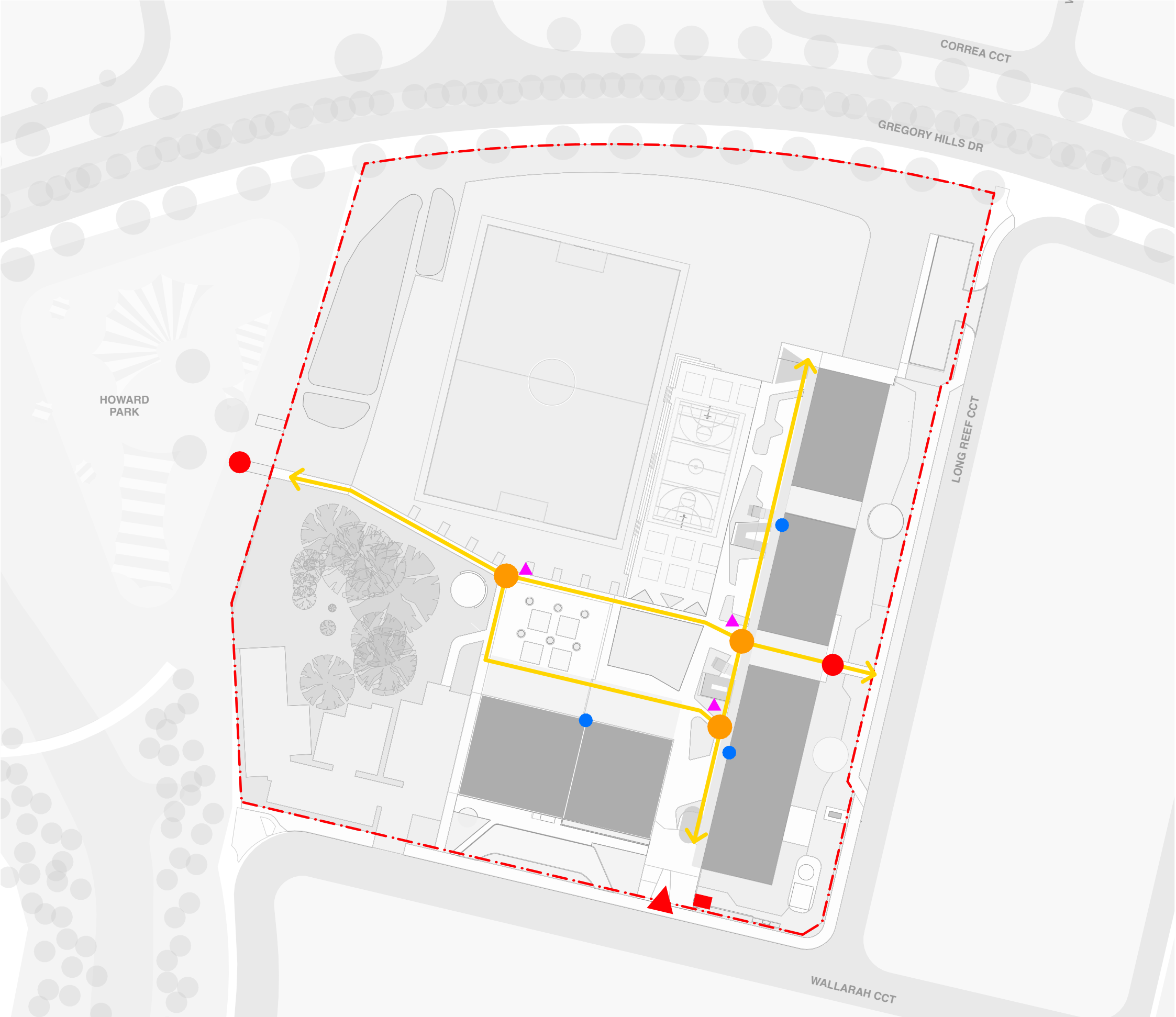
SURVEILLANCE

- Increasing the opportunity for seeing and being seen. Natural surveillance discourages anti social behaviour/criminal behaviour as criminals feel they are more likely to be seen and caught access control. Using physical and symbolic markers to restrict and encourage movement.*
- All areas not visible from the public domain are within the secure perimeter
 - Areas outside the 2150 high perimeter have very high visibility from the public domain and residents on the other side of the street
- ### ACCESS CONTROL
- Access control treatments restrict, channel and encourage people and vehicles into, out of and around the development.*
- Access gates are located at school entries and vehicular entries
 - Visitors to the school must enter through the Admin reception area
 - Possible shared use arrangements with the playing fields, hall and library will require access gates. A management plan will need to be developed between Camden Council and the school in this instance.
- ### SPACE / ACTIVITY MANAGEMENT
- Creating formal uses for spaces to ensure maximum usage.*
- Shared use of the Hall and Library activates the street frontage along Wallarah Circuit

LEGEND

- - - Site boundary
- ▲ Main school entry
- Secondary entries
- ✕ Secure gates
- Fencing 2150mm high
- Fencing low height (1200mm)
- Fencing to stormwater channel easement
- ▲ After hours entries to Hall
- 👁 Passive surveillance
- ↔ Shared use managed access
- Building as Perimeter. Security mesh over windows up to 2100mm high

WAYFINDING AND SIGNAGE



WAYFINDING STRATEGY

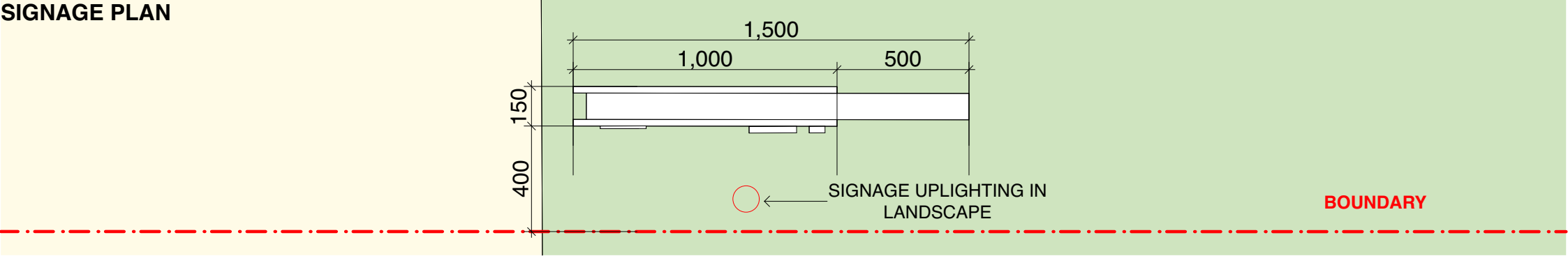
- TYPE 1 - MAIN ENTRY SIGNAGE**
Identification
Supports the clear identification and branding of the school at main entry visible on both approaches.
- TYPE 2 - BLOCK SIGNAGE**
Identification
Supports the clear identification and branding of school blocks visible from the central grounds within the school.
- TYPE 3 - DIRECTIONAL PLINTH**
Directional
Ensures provision of high level information supporting navigation to and from primary destinations within the site.

LEGEND

- Site boundary
- Main school entry
- Secondary entries
- Main entry signage
- Block signage
- Directional plinth
- Circulation pathways
- Nodal points

WAYFINDING AND SIGNAGE

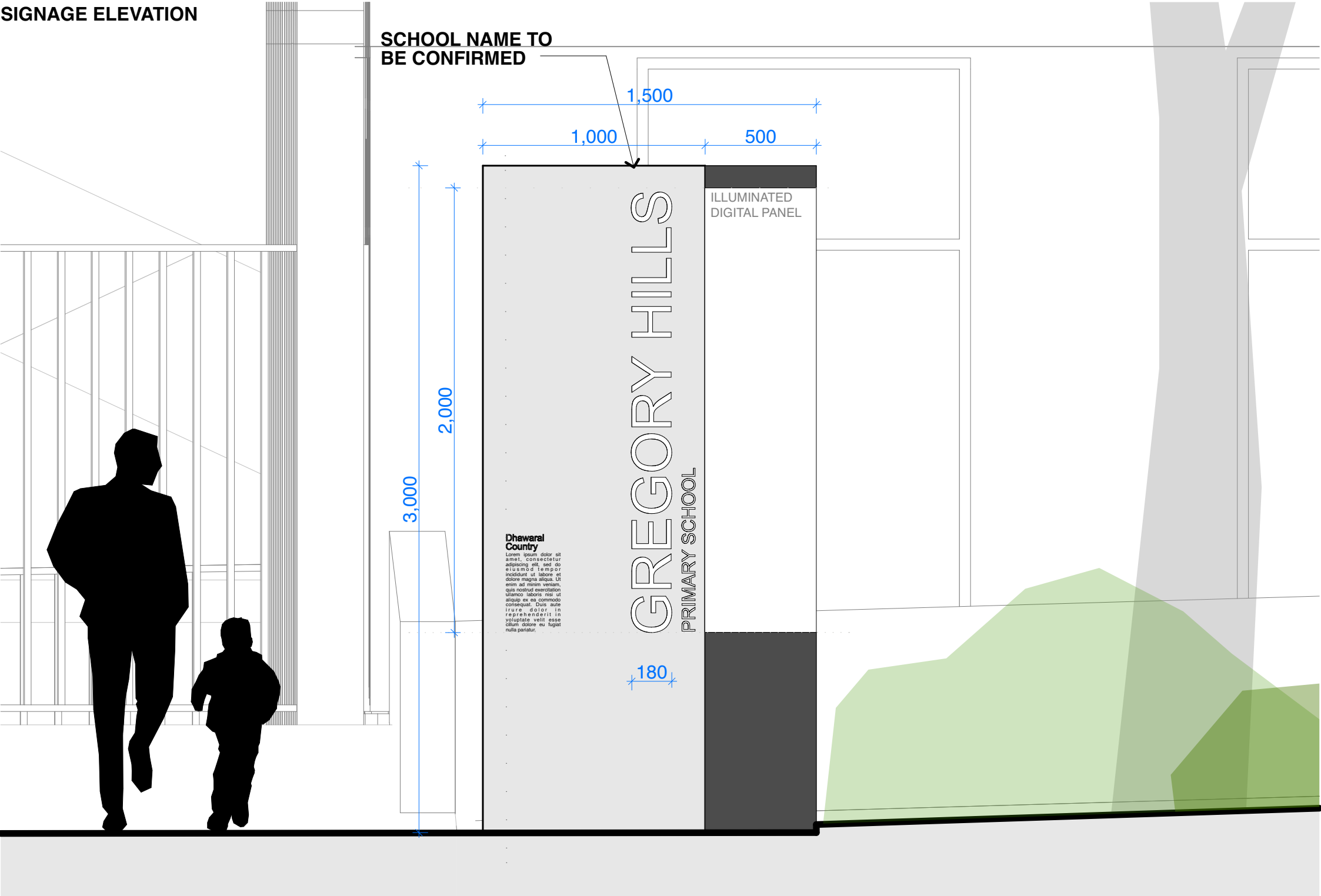
SIGNAGE PLAN



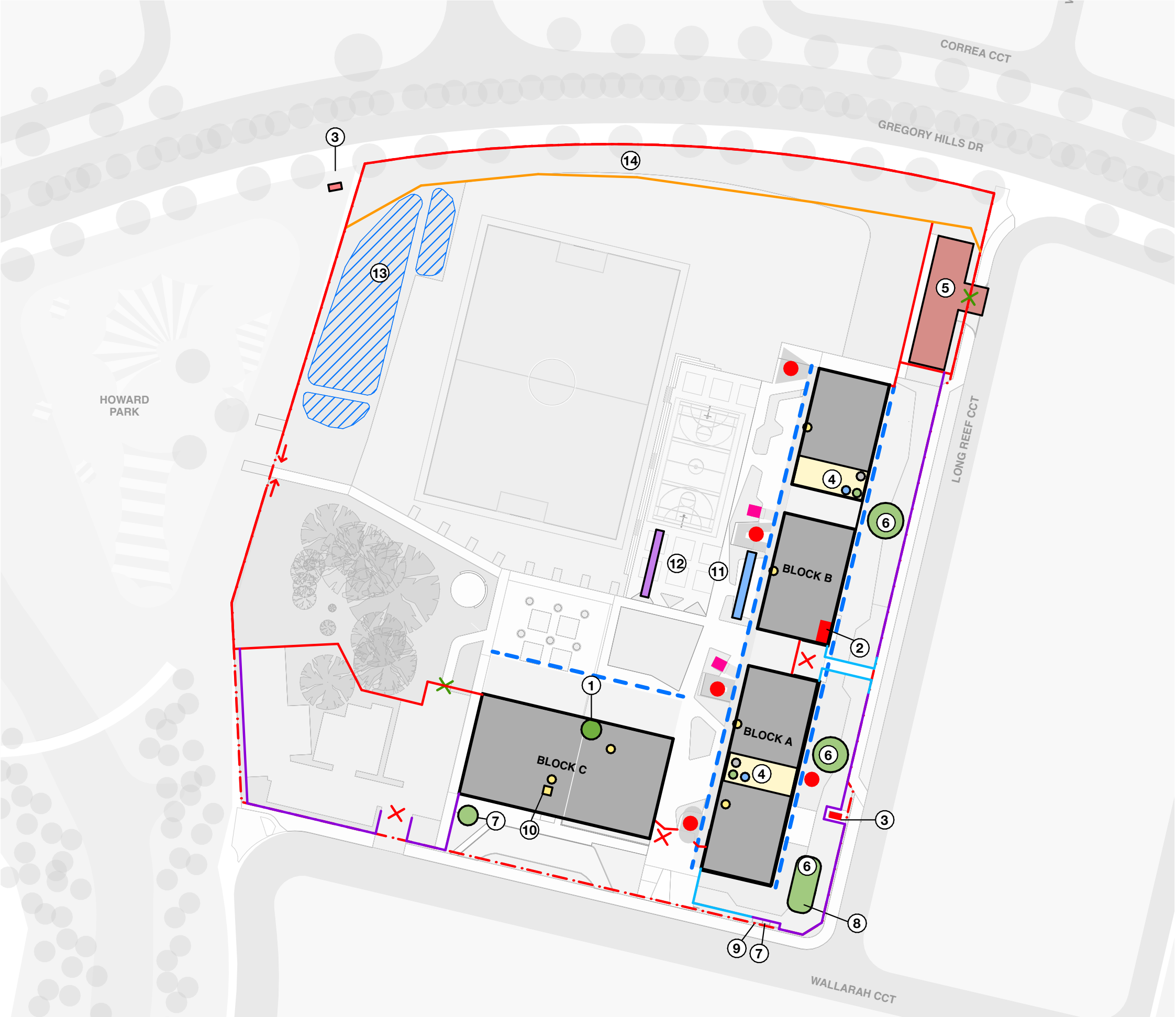
ENTRY SIGNAGE

TYPE 1 - MAIN ENTRY SIGNAGE
Identification
Supports the clear identification and branding of the school at main entry visible on both approaches.

SIGNAGE ELEVATION



TECHNICAL STAKEHOLDERS AND SERVICES OVERLAY



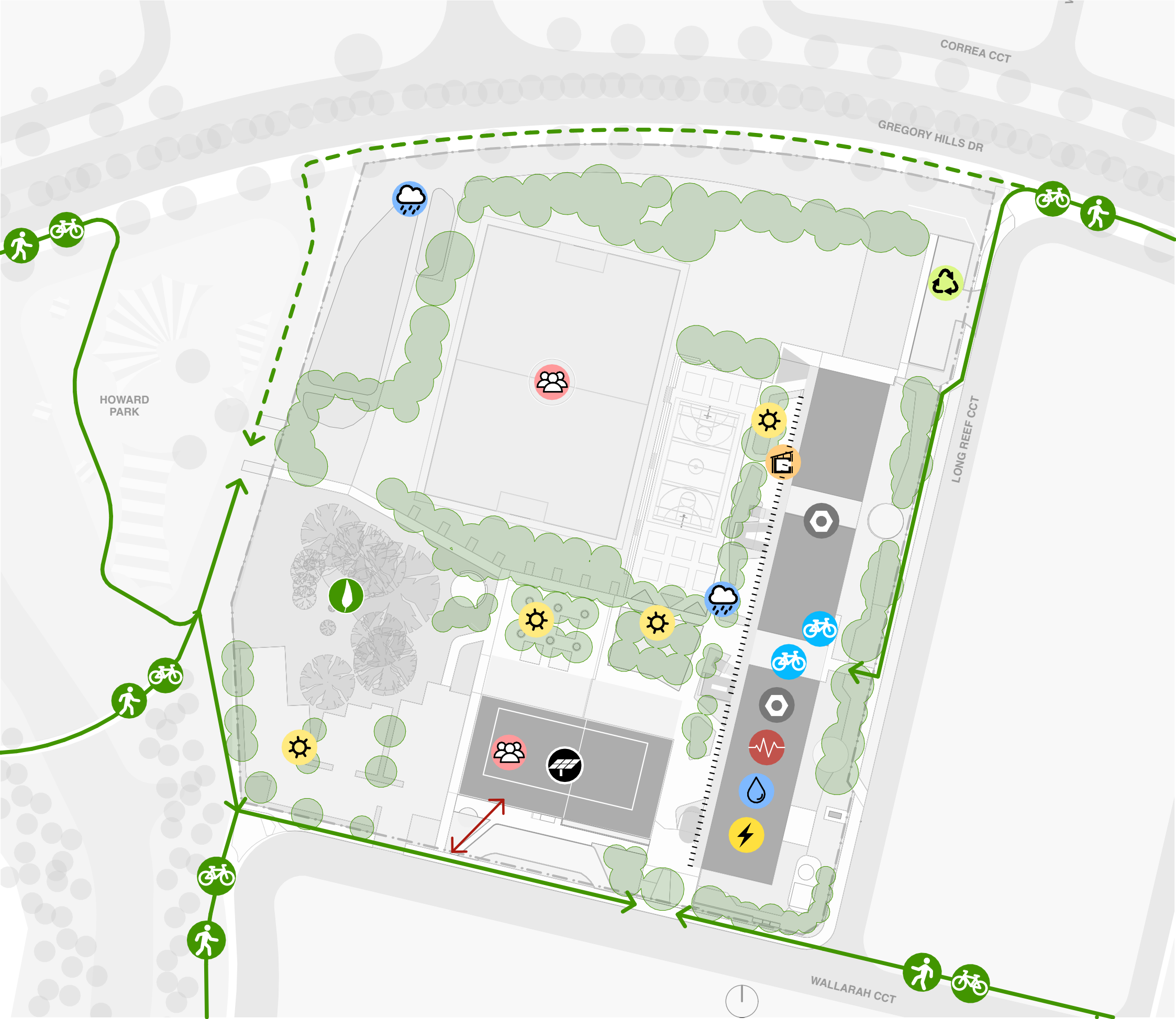
KEY ELEMENTS

- 1. Main comms room
- 2. Main switchboard room
- 3. Location of new substation in existing substation location. Refer to Electrical and Communications Services Report by NDY.
- 4. Building core:
 - Comms room (1x per building, per level)
 - Store
 - Hydraulic riser
 - Hot water plant
 - Cleaners store
- 5. Waste pad
- 6. External mechanical plant enclosure
- 7. Fire brigade fire hydrant booster assembly
- 8. Fire pump room
- 9. Potable water meter for the building
- 10. Solar panel inverter cupboard
- 11. Rainwater storage tanks (below ground - nom. 30kl)
- 12. Location of in-ground OSD forming part of the hybrid natural OSD option.
- 13. Location of natural OSD as part of the hybrid natural OSD option approved under DA2022/742/1
- 14. Easement for drainage

LEGEND

- | | |
|-----------------------|---------------------------|
| - - - Site boundary | High level fencing |
| ● Main comms room | Low level fencing |
| ● Building comms room | Secure gate |
| ● EDB | Eaves gutters |
| ● Hydraulic Riser | Stair |
| ● Cleaner store | Lift |
| | OSD (Indicative location) |

ENVIRONMENTAL SUSTAINABILITY DESIGN (ESD)

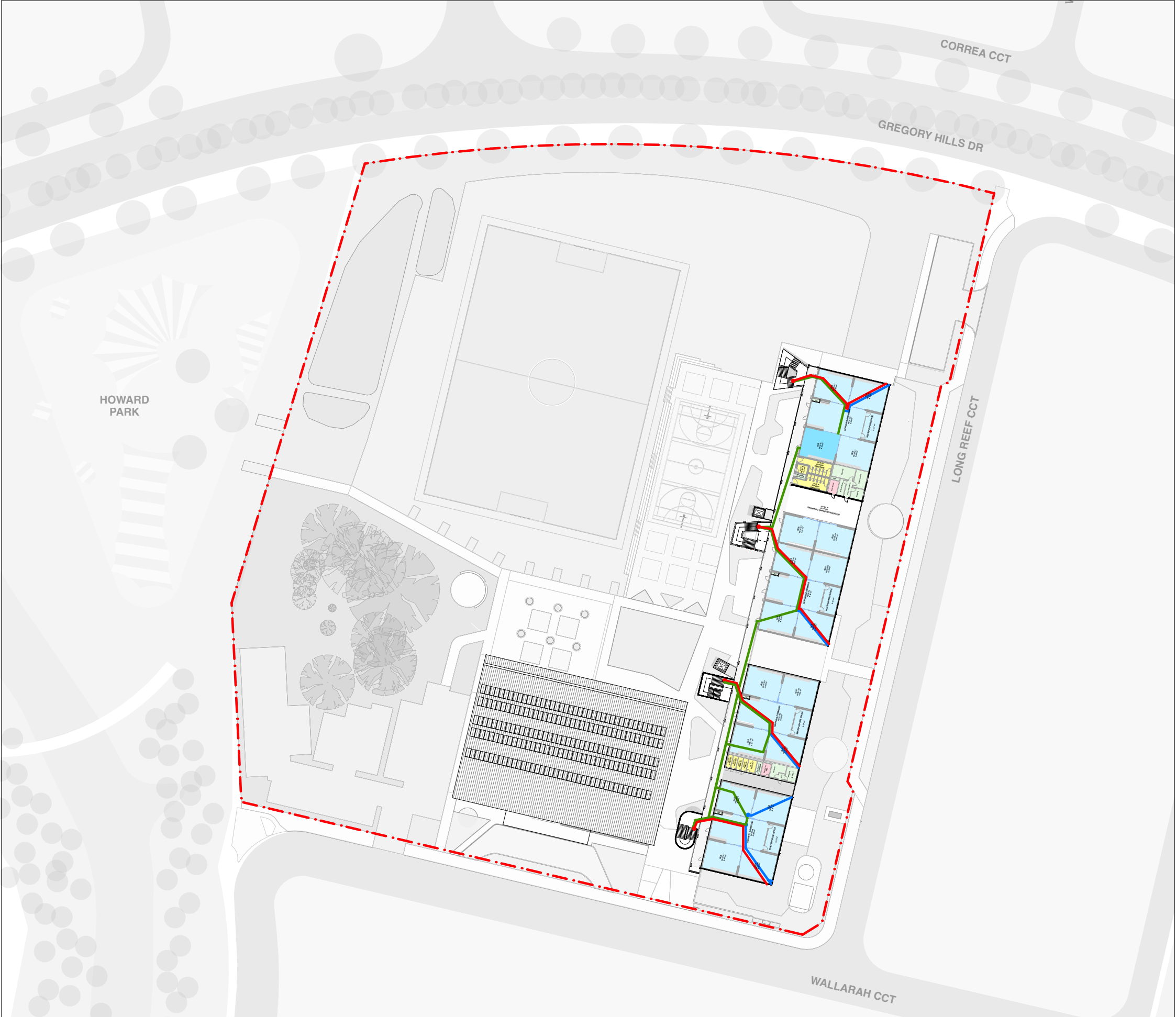


The following sustainability principles and approaches have been incorporated into the concept design for the school:

- GREEN STAR**
The project is being designed to 5 Star Green Star certification using the V1.3 Design and As-Built tool. Refer to the Sustainable Development Plan Report by NDY for details of Green Star targets.
- MMoC / PREFABRICATION**
The MMoC kit or parts methodology reduces on-site waste, and enables future adaptability, as well as the disassembly and reuse of construction materials.
- ECOLOGY**
Retain and protect existing, established trees. Maximise use of local native species, and use the landscaped areas as opportunities for learning and discovery.
- COMMUNITY USES**
The Hall, Library, playing field and open spaces are identified for possible shared uses with for community groups.
- HEALTH & AMENITY**
Provide a high level of environmental amenity considering lighting, glare control, thermal comfort, air quality, natural ventilation, acoustics and visual comfort.
- HEAT ISLAND EFFECT**
A site wide cooling strategy is being targeted (where permissible outside of bushfire APZs) to provide shade, particularly to hard surfaces and outdoor play areas, to reduce heat island effect. Light coloured materials and finishes are selected for roofs, facades and paving
- SUSTAINABLE TRANSPORT**
Active transport options are encouraged and made accessible for the community. Shared paths and bicycle/scooter parking areas are provided.
- FACADE DESIGN**
Facades provide passive control of solar gain while maintaining connections to the exterior, daylight access, and ventilation.
- STORMWATER MANAGEMENT**
Integrate WSUD to manage stormwater, prevent pollutants entering the water cycle and minimise peak flows including the provision of natural absorption features.
- WATER**
Minimise the schools portable water usage through the selection of efficient fixtures and fittings and native planting species. Maximise rainwater collection and reuse for irrigation and toilets.
- ENERGY**
Minimise energy consumption through the use of energy efficient fixtures and passive design principles.
- SOLAR**
Maximise on site renewable energy generation with PV cells located on the buildings roofs. Building design to enable efficient PV arrays.
- MATERIALS & WASTE**
Provide recycling streams to minimise operational waste. Minimise construction waste and optimise planning to allow for an efficient use of materials.

TECHNICAL OVERLAY

EGRESS PATHS



Egress Paths

Indicative egress strategy and compliance for the school. Egress is via non-isolated fire starts form each level of the building.

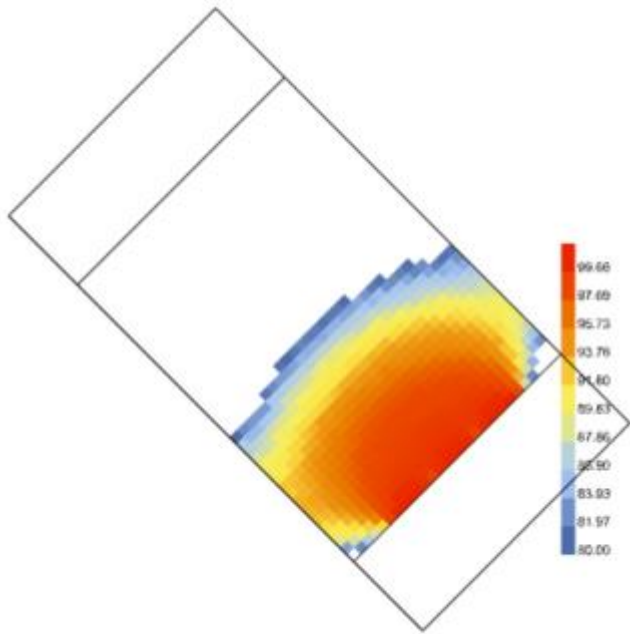
LEGEND

- Site boundary
- < 20m Distance to point of choice
- < 40m total distance to top of first riser of egress stair
- < 60m between stairs
- Non-isolated fire stair

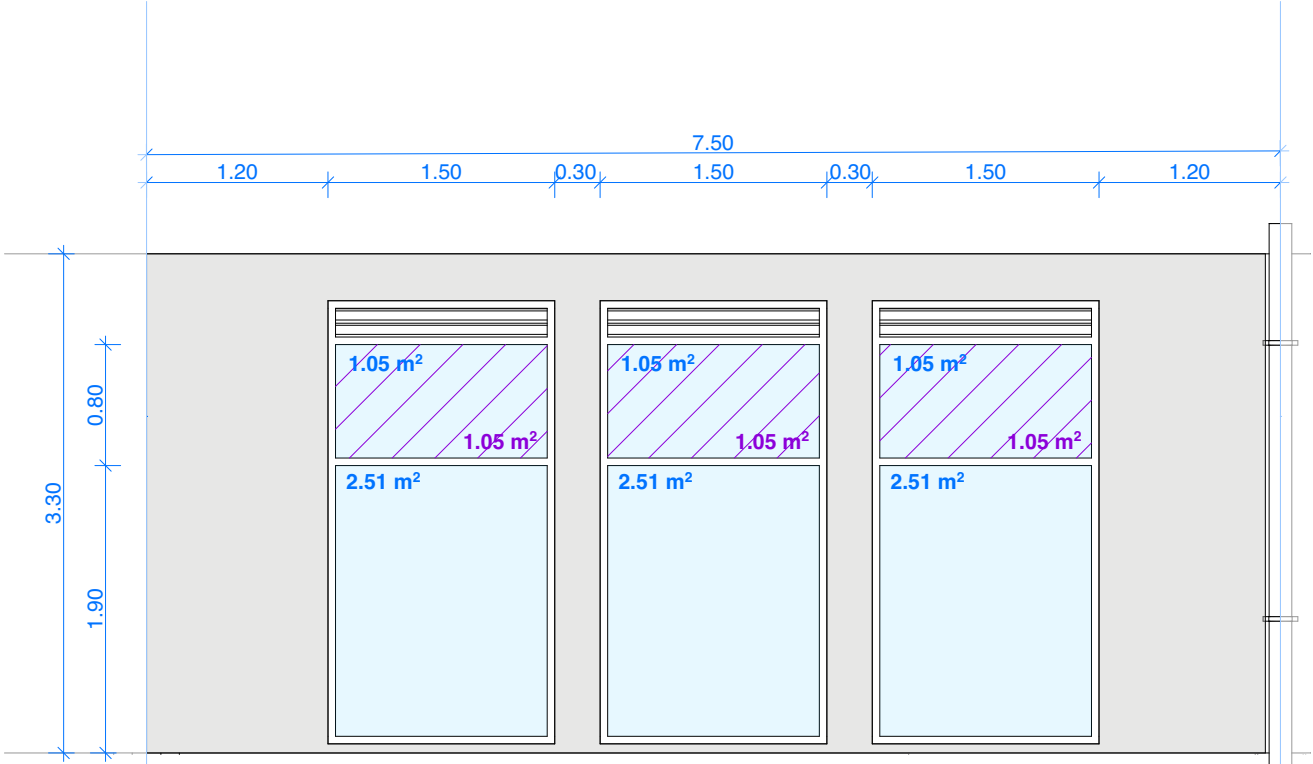
TECHNICAL OVERLAY

DAYLIGHT AND AMENITY

TYPICAL LEARNING HUB FACADE (EASTERN)



DRAFT DAYLIGHT ANALYSIS - EASTERN FACADE
EXTRACT FROM ATELIER TEN DAYLIGHT ANALYSIS



Eastern Elevation Summary
Natural Daylight = $(3 \times 1.05\text{m}^2) + (3 \times 2.51\text{m}^2) = 10.68\text{m}^2$ (16.9% of GLS floor area)
Natural Ventilation = $3 \times 1.05\text{m}^2 = 3.15\text{m}^2$ (5% of GLS floor area)

DFMA GUIDELINES AND NCC (Section J)

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

1 x GLS @ $63\text{m}^2 \times 10\% = 6.3\text{m}^2$ minimum natural daylight opening

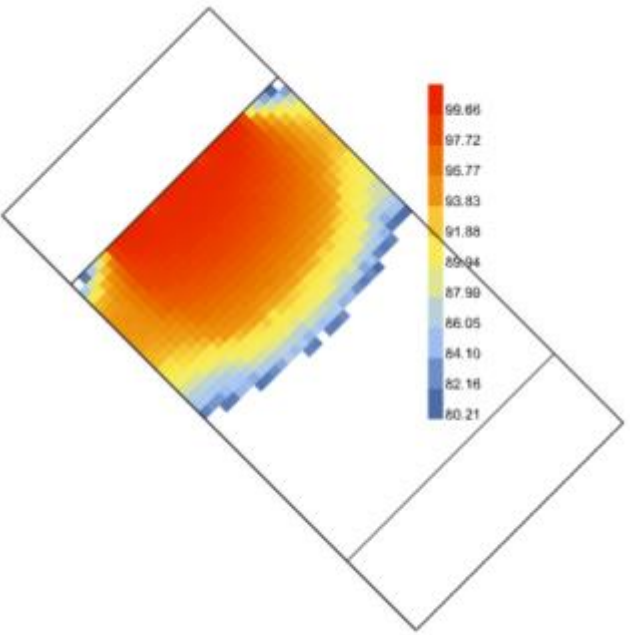
BCA Required Ventilation - 5% of floor area **or** mechanical ventilation or air-conditioning system compliant with AS 1668.2

1 x GLS @ $63\text{m}^2 \times 5\% = 3.15\text{m}^2$ minimum natural ventilation opening

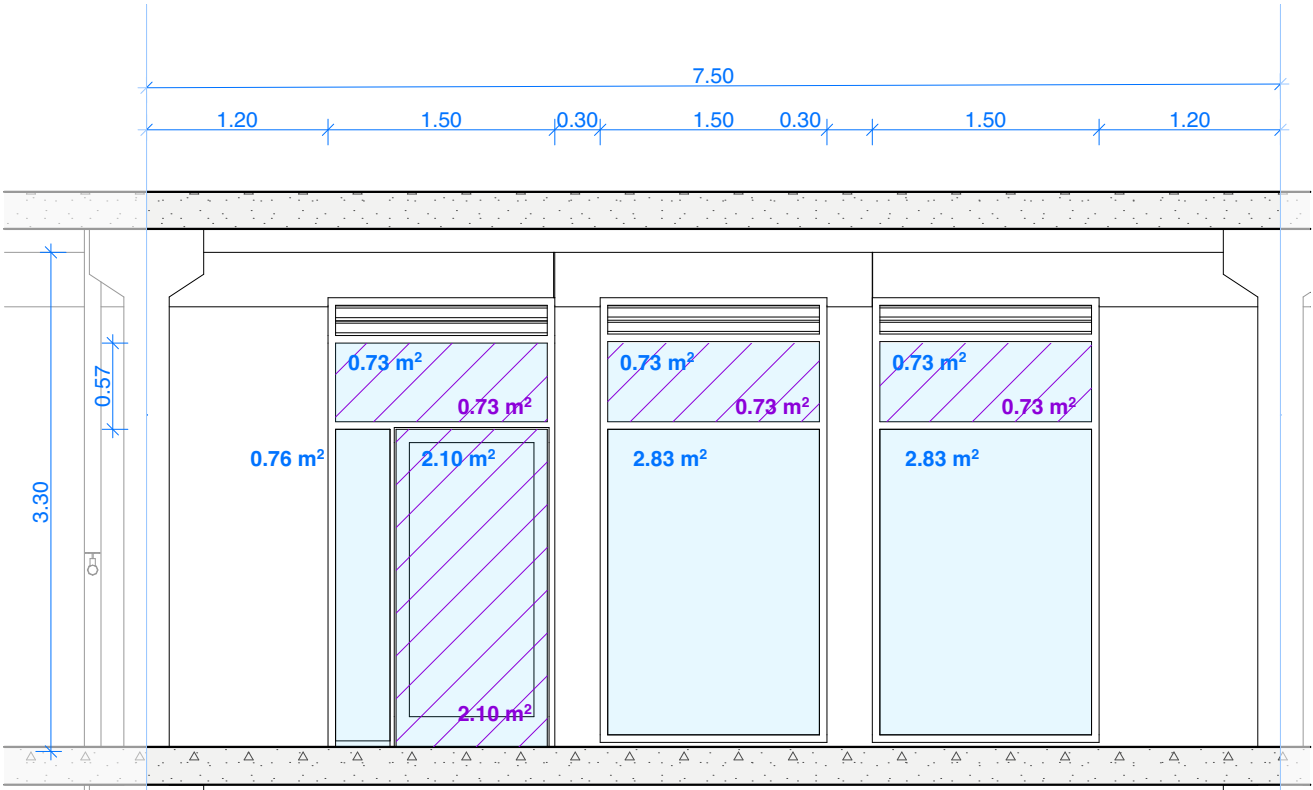
NOTE: The air-condition system has been designed to be in compliance with AS 1668.2. Supplementary natural ventilation is provided and benchmarked against BCA requirements.

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

TYPICAL LEARNING HUB FACADE (WESTERN)



DRAFT DAYLIGHT ANALYSIS - WESTERN FACADE
EXTRACT FROM ATELIER TEN DAYLIGHT ANALYSIS



Western Elevation Summary
Natural Daylight = $(3 \times 0.73\text{m}^2) + (2 \times 2.83\text{m}^2) + 2.1\text{m}^2 + 0.76\text{m}^2 = 10.71\text{m}^2$ (17% of GLS floor area)
Natural Ventilation = $(3 \times 0.73\text{m}^2) + 2.1\text{m}^2 = 4.29\text{m}^2$ (6.8% of GLS floor area)

OUTDOOR PLAY AREA

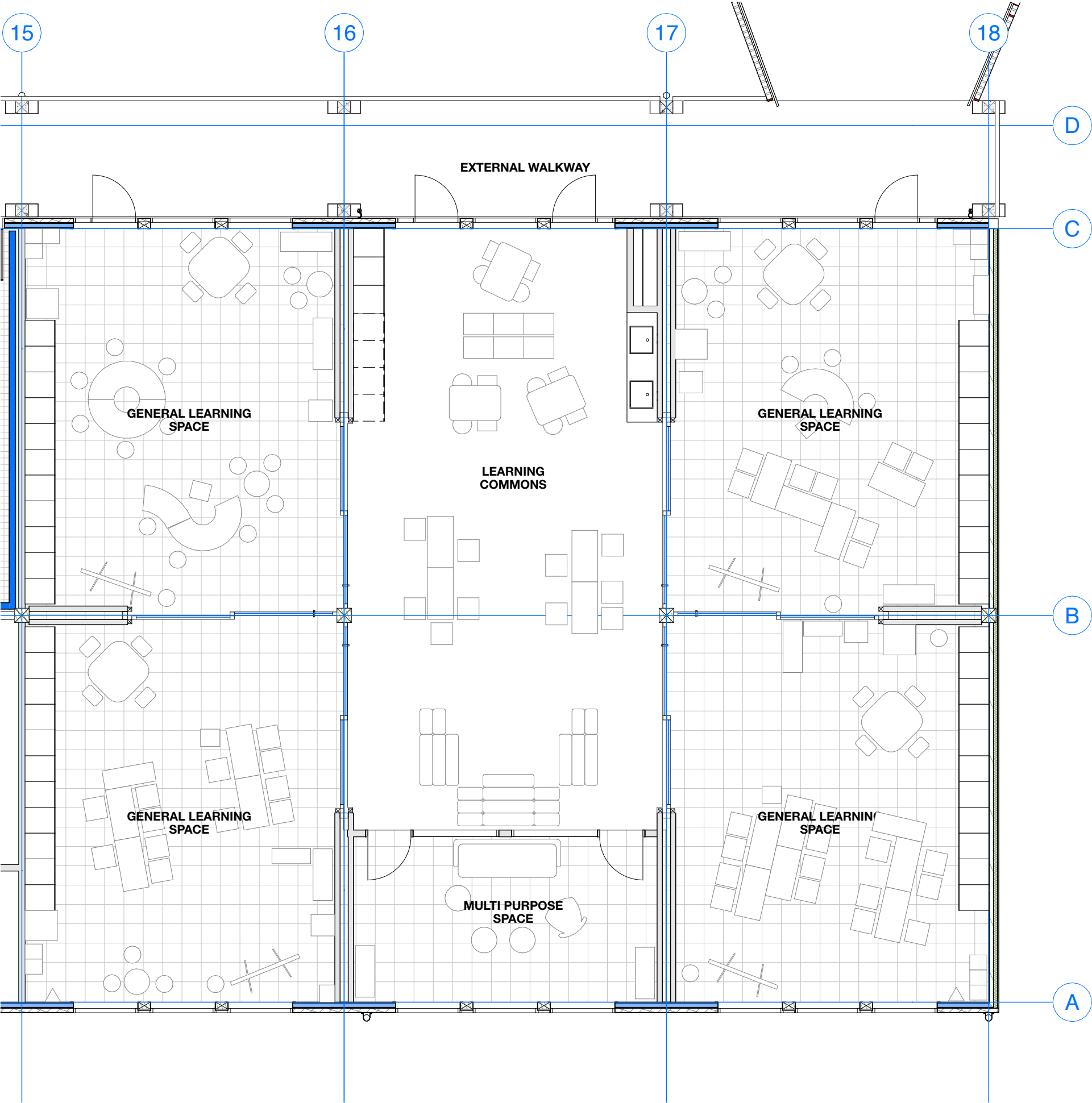


The existing school has the following open space areas available for student access and play:

Total outdoor play space:	14,007m ²
Proposed student population:	1,012
Play space (m²) per student:	13.8m²

The proposal comfortably exceeds the 10m² open space per student requirement and allows for future expansion of the school.

TYPICAL CLASSROOM CONFIGURATION



GENERAL LEARNING HUBS

General Learning Spaces are as set out in the Standard Hub Layouts with four homebases arranged around a central Learning Commons.

Operable walls between the learning spaces and the learning commons provide a flexible learning environment where classes may be combined, demonstrations may be made to large groups, and single classes may be taught in the traditional manner.

The diagrams on this page illustrate the flexibility of this hub layout.

ENVELOPE



ENVELOPE

ELEVATIONS

EAST ELEVATION (LONG REEF CIRCUIT)



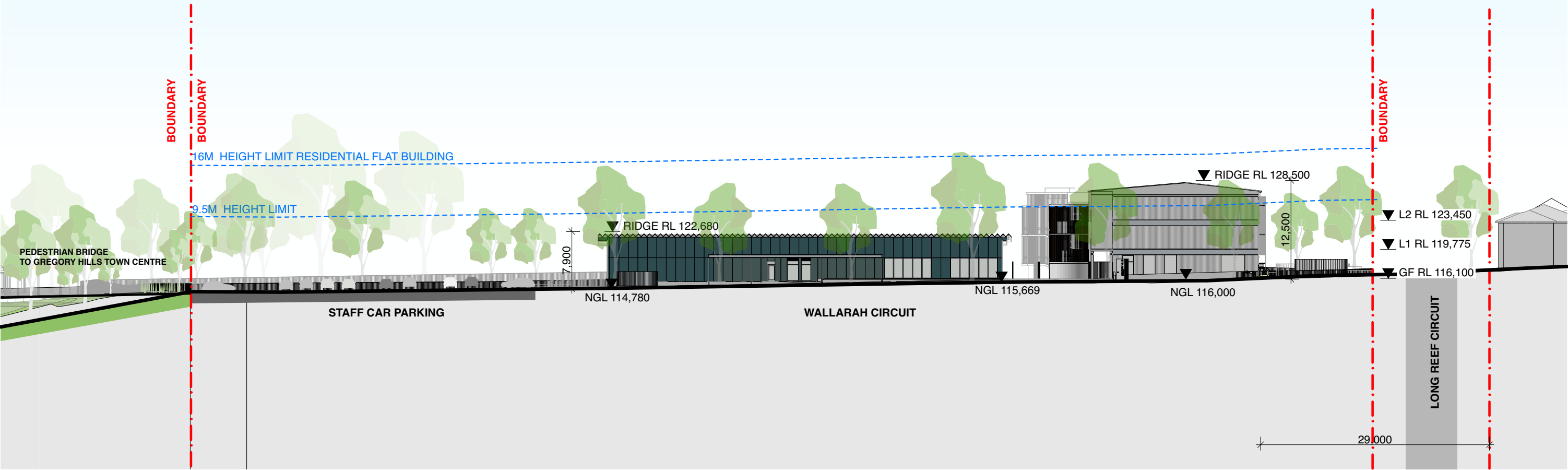
WEST ELEVATION



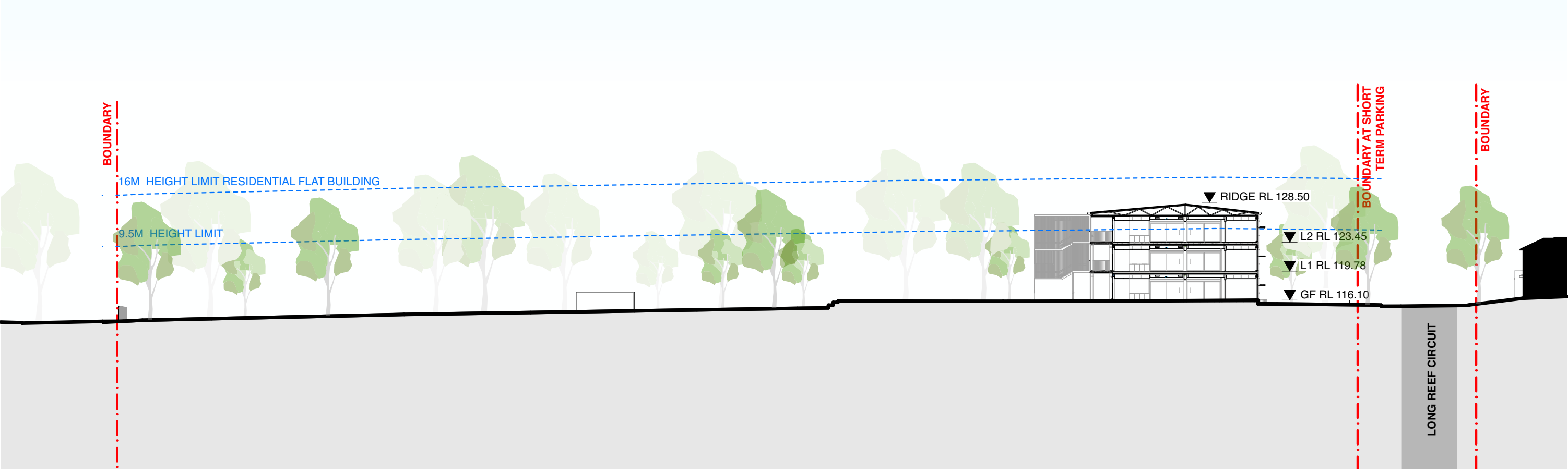
ENVELOPE

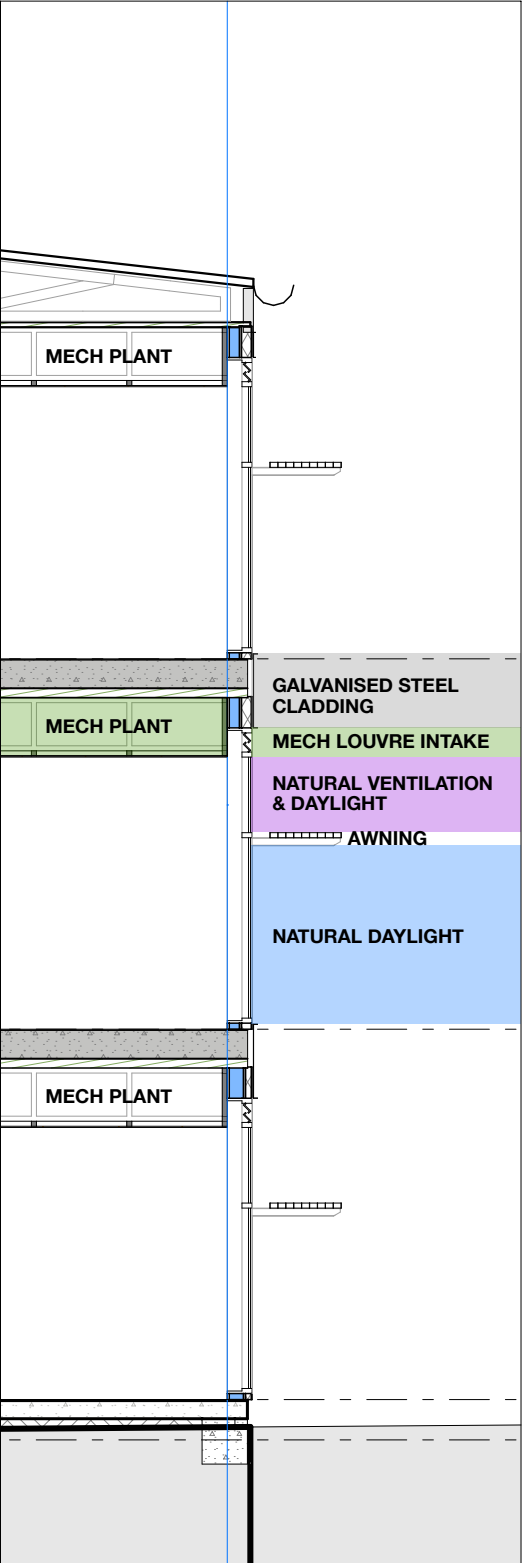
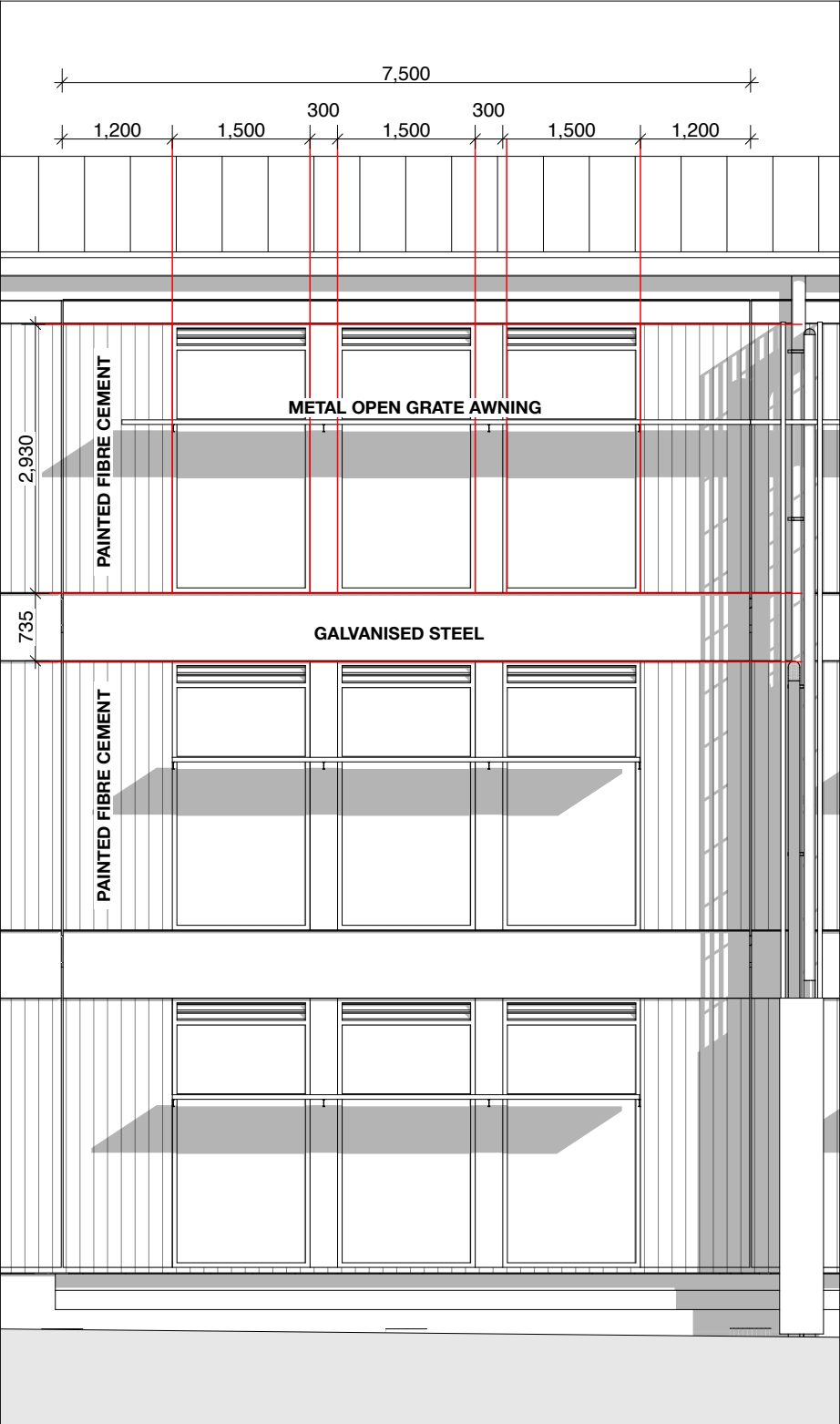
SITE SECTIONS

SOUTH ELEVATION (WALLARAH CIRCUIT)



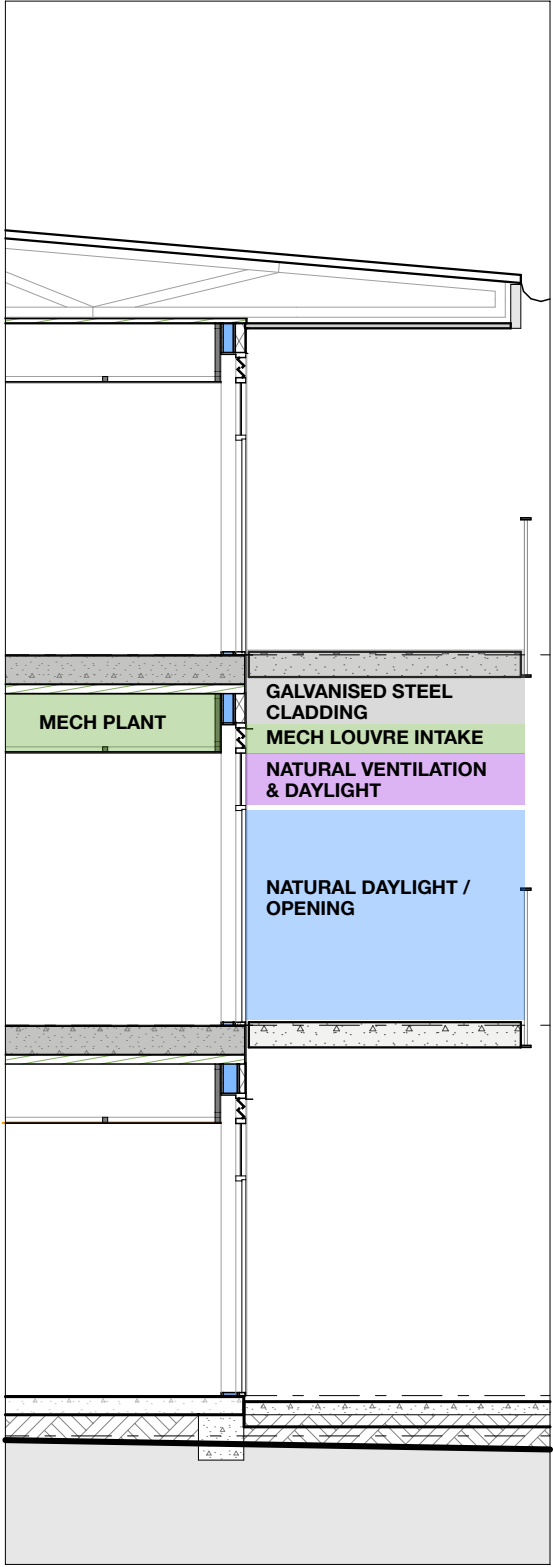
EAST WEST CROSS SECTION THROUGH SITE





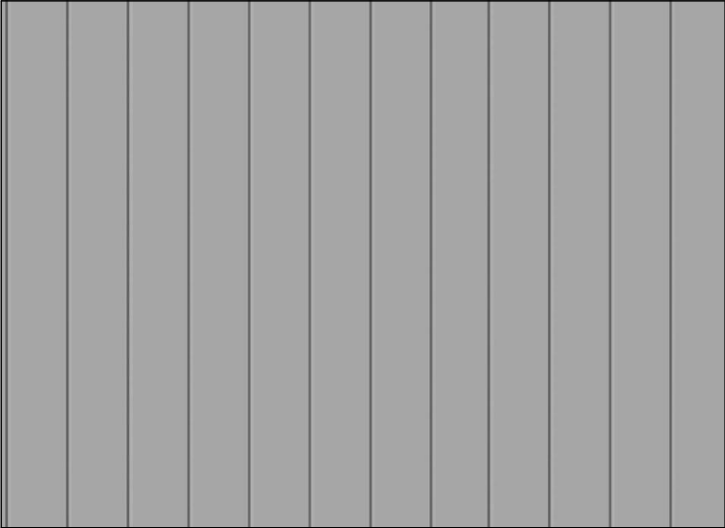
ENVELOPE

WESTERN FACADE

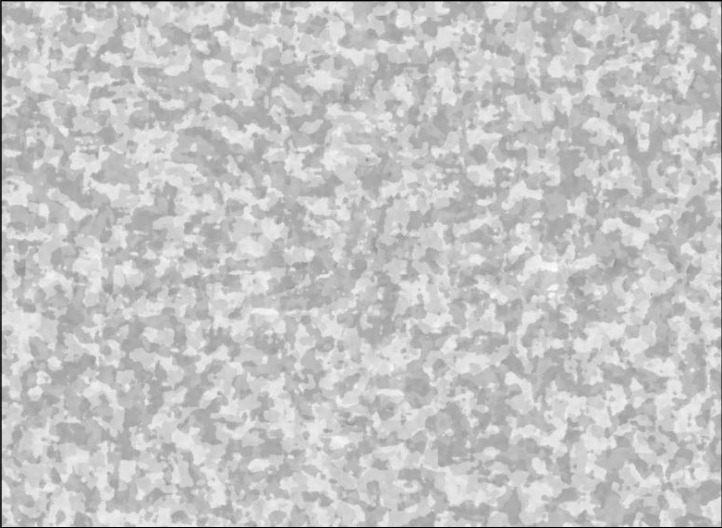


ENVELOPE

MATERIALS



FIBRE CEMENT BOARD WITH EXPRESSED VERTICAL GROOVES



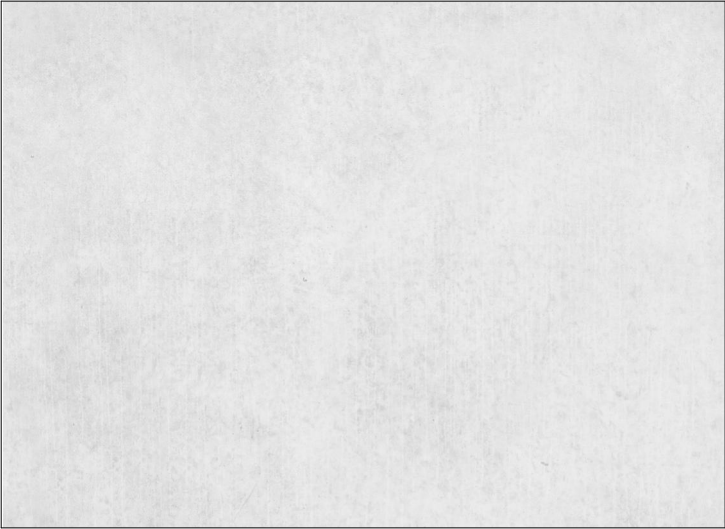
GALVANISED STEEL CLADDING



MASSLAM VIC ASH BEAM



GLULAM TIMBER SOFFIT



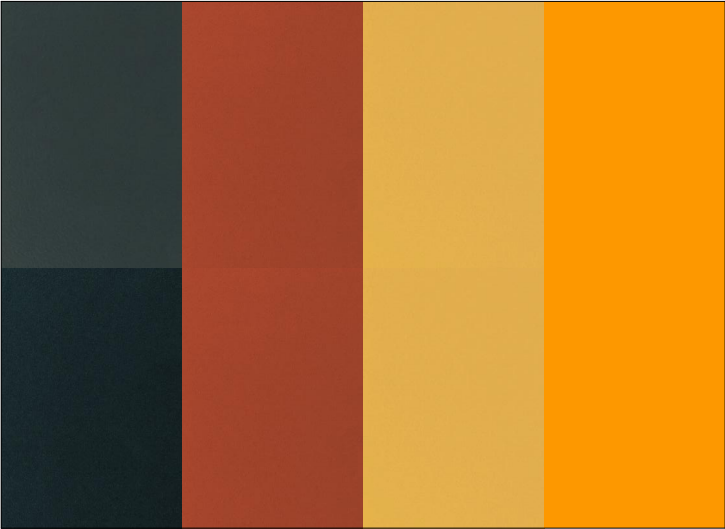
Precast concrete



ALUMINIUM SUN SHADES



GALVANISED BALUSTRADE



Colour Palette



Context colour and textures

DESIGN VERIFICATION STATEMENT

SEARS REQUIREMENTS

PLANNING SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT

The Architectural Design Statement is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-41306367. This table identifies the SEARs and relevant reference within this report;

SEARS REQUIREMENT

RESPONSE LOCATION

3. DESIGN QUALITY

- Demonstrate how the development will achieve: - design excellence in accordance with any applicable EPI provisions. - good design in accordance with the seven objectives for good design in Better Placed.	Connecting with Country Key Principles Architectural Concept Modern Methods of Construction Public Domain Fencing Daylight and Amenity Typical Classroom Configurations Transport and Infrastructure SEPP Design Guide for Schools Better Placed SDRP	p06 p14 p16 p18 p35 p36 p45 p47 p56-57 p58-59 p60-61 p62
Where required by an EPI or concept approval, or where proposed, demonstrate how the development has been subject to a competitive design process, carried out in accordance with an endorsed brief and Design Excellence Strategy. Recommendations (from the jury and Design Integrity Panel) are to be addressed prior to lodgement.	Not Applicable	
In all other instances, demonstrate that the development has been reviewed by the State Design Review Panel (SDRP). Recommendations are to be addressed prior to lodgement.	SDRP 1 SDRP 2 SDRP	23/3/22 21/7/22 p62

4. BUILT FORM AND URBAN DESIGN

- Demonstrate how design quality will be achieved in accordance with the Education SEPP Design Quality Principles and the Design Guide for Schools, including: - how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality.	Greater Site Context Local Context Site Analysis Existing Site Photos Public Domain Site Sections Design Guide for Schools Better Placed SDRP Height Plane Shadow Studies	p04 p05 p09 p11 p34 p44 p58-59 p60-61 p62 p63 p68
how the building design will deliver a high-quality development, including consideration of façade design, articulation, roof design, materials, finishes, colours, any signage, integration of services, and the principles of Crime Prevention through Environmental Design.	Key Principles Architectural Concept Modern Methods of Construction Views Fencing Access, Security, and Circulation Technical Stakeholders and Services overlay Environmental Sustainability Design Daylight and Amenity Outdoor play Area Eastern Facade Western Facade	p13 p16 p18 p23-28 p36 p39 p42 p43 p45 p46 p51 p52
Assess how the development complies with the relevant accessibility requirements.	Accessibility	p37

SEARS REQUIREMENT

RESPONSE LOCATION

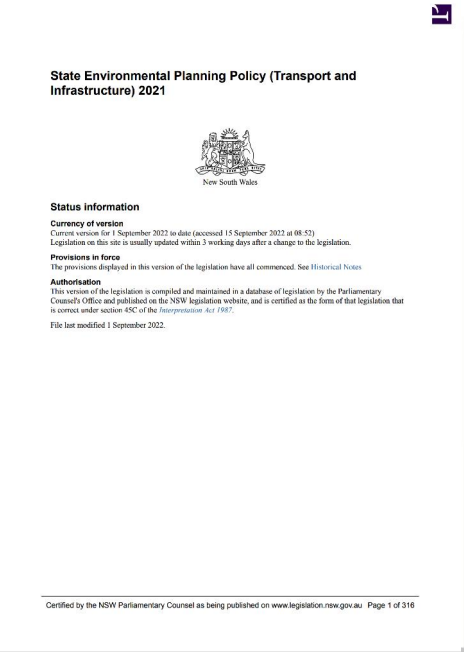
5. ENVIRONMENTAL AMENITY

Address how good internal and external environmental amenity is achieved, including access to natural daylight and ventilation, pedestrian movement throughout the site, access to landscape and outdoor spaces.	Architectural Concept Plan - Ground Floor Functional Relationships Transport and Connectivity Public Domain Fencing Shared use opportunities Accessibility Access, Security and Circulation Daylight and Amenity Outdoor Play Area Typical Classroom Configurations Eastern Facade Wester Facade	p16 p19 p30 p34 p35 p36 p37 p38 p39 p45 p46 p47 p51 p52
Assess amenity impacts on the surrounding locality, including lighting impacts, solar access, visual privacy, visual amenity, view loss and view sharing, overshadowing and wind impacts (including the preparation of a wind assessment where the development has a height above four storeys). A high level of environmental amenity for any surrounding residential or other sensitive land uses must be demonstrated.	Views Site Sections View Analysis Shadow Studies	p23-28 p50 p64-67 p68
Provide a solar access analysis of the overshadowing impacts of the development within the site, on surrounding properties and public spaces (during summer and winter solstice) at hourly intervals between 9am and 3pm, when compared to the existing situation and a compliant development (if relevant).	Shadow Studies	p68

6. VISUAL IMPACT

Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development.	Site analysis Existing site photos View Analysis	p10 p11 p64-67
Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that addresses the impacts of the development on the existing catchment.		

TRANSPORT AND INFRASTRUCTURE SEPP



STATE ENVIRONMENTAL PLANNING POLICY - (TRANSPORT AND INFRASTRUCTURE) 2021

The Transport and Infrastructure 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.

DESIGN PRINCIPLES

RESPONSE

1.CONTEXT, BUILT FORM AND LANDSCAPE

- context
- cultural/historic continuum

- 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.
- School buildings and their grounds on land that is identified in or under a local environmental plan as a scenic protection area should be designed to recognise and protect the special visual qualities and natural environment of the area, and located and designed to minimise the development’s visual impact on those qualities and that natural environment.

The new primary school at Gregory Hills has been designed in response to its specific context and urban condition. The built form is arranged to address to the two street frontages and to form a large consolidated open play area that connects with adjacent playgrounds and open spaces.

The existing site is a green field site that was nominated for a school when the site was rezoned and later subdivided and developed. An existing stand of trees that exists on the site is being retained as much as possible and integrated into the landscape design of the school. Trees that are not able to be retained are kept where possible on site and repurposed for seating, play, and discovery elements.

The site is bordered on two sides by recently completed detached dwellings. On the north it is bordered by Gregory Hills Drive, and to the west by the riparian corridor and Howard Park. The Gregory Hills town centre is connected to the site across a pedestrian footbridge. The school masterplan and entry points have been configured in direct relation to these varied boundary conditions.

The site is relatively flat, allowing an easy and accessible navigation the site through the varied outdoor spaces and to the ground floor of all buildings without the need for excessive ramps. The landscape and built form has been developed following on-site meetings, discussions, and a smoking ceremony involving local indigenous elders and landowners.

The site has been masterplanned to best fit with the specific urban context. The buildings address the two street frontages and define the corner with the main entry to the school located at the junction of the two buildings. Generous setbacks to both streets are provided that provide an appropriate buffer to the residential areas opposite and limit overshadowing to homes and private outdoor areas.

The two wings of the building then provide a visual and acoustic buffer between the large outdoor play area of the school and neighbouring residential areas.

DESIGN PRINCIPLES

RESPONSE

2. SUSTAINABLE, EFFICIENT AND DURABLE

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

The design proposal is using the SINSW Modern Methods of Construction approach to design and building. Whole of lifecycle sustainability is inherent in this approach. Prefabrication and a kit of parts leads to a reduction in construction waste, efficient structures, and less site disturbance.

The primary structure of the school is to be made from glulam timber beams sourced from sustainable forestry sources. Timber will be used through the floor and wall structure, and on finished linings to the interiors of the new building.

In addition to this, a portion of the Learning Hubs has been selected as a pilot project to test design for disassembly, meaning that it may be pulled apart and reassembled in a new location in the future. Increasing the lifespan of the materials, and reducing future waste. The new school includes a 70kW solar panel system to assist in mitigating the school’s energy usage. Rainwater will be collected in rainwater tanks and on site detention tanks to save water for reuse and to limit the impact of stormwater on the local water network. Materials have been selected that are durable and resilient. The material selections are outlined in the architectural drawing package that forms part of the SSDA.

A site wide cooling strategy has been employed including; light coloured wall and roofing materials, extensive tree canopy area particularly over hard landscaping, reduced areas of hard landscaping.

3. ACCESSIBLE AND INCLUSIVE

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

The site is relatively flat, allowing an easy and accessible navigation the site through the varied outdoor spaces and to the ground floor of all buildings without the need for excessive ramps.

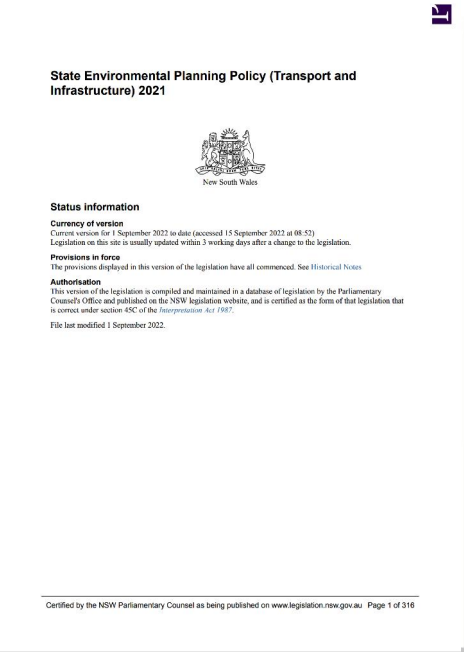
The new school will include Support Learning Spaces for students with a disability, or require additional learning and support. A dedicated support learning pickup and dropoff area is located at the main school entry, provide equitable access to all students at the school. The Support Learning Unit is located on ground level close to both street entries, and a lift providing access to the upper levels of the school.

Signage and wayfinding will comply with all standards and codes and will be welcoming and accessible to people with differing needs and capabilities.

The role of the school as an open and inclusive public facility for the community is a key principle for the project. To reinforce this, low scale fences to the street frontages, entries, and carpark are proposed. High fences are proposed to the perimeter of the student accessible open space due to the large scale of the open area, and the proximity to the main road, Gregory Hills Drive.

Large sliding gates are proposed in the fence on the boundary with Howard Park, enabling easy and managed community access to the field, hall and library, as determined as appropriate by the school.

TRANSPORT AND INFRASTRUCTURE SEPP



STATE ENVIRONMENTAL PLANNING POLICY - (TRANSPORT AND INFRASTRUCTURE) 2021

The Transport and Infrastructure 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.

DESIGN PRINCIPLES

RESPONSE

4. HEALTH AND SAFETY

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

The role of the school as an open and inclusive public facility for the community is a key principle for the project. To reinforce this, low scale fences to the street frontages, entries, and carpark are proposed. High fences are proposed to the perimeter of the student accessible open space due to the large scale of the open area, and the proximity to the main road, Gregory Hills Drive.

Large sliding gates are proposed in the fence on the boundary with Howard Park, enabling easy and managed community access to the field, hall and library, as determined as appropriate by the school.

The proposed building will have an open and welcoming facade opening onto the open play areas of the school. The exposed timber structure internally, and the coloured elements within the facade and stair screening provide opportunities for playful elements suitable for a primary school environment.

5.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.

The proposed school building includes classrooms and spaces that align to the SINSW standardised hub layouts and planning grid. This allows for large glazed openings providing light and ventilation to the learning spaces within.

The alignment of the building provides a buffer to the adjacent road and residential uses, providing visual and acoustic privacy to the residents, and allows for the learning spaces to open out onto the adjacent open play areas.

The proposed MMC structural system will provide for ceiling heights in excess of the 2.7m minimum, and will include timber soffits, and exposed timber columns and beams. The use of exposed timber within learning spaces is a new opportunity within school projects and provides an environment with warmth and texture.

DESIGN PRINCIPLES

RESPONSE

6. WHOLE OF LIFE, FLEXIBLE AND ADAPTIVE

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

The proposed school has been considered in the context of the future life of the school. The new building will provide new learning spaces that will reduce the demand on other local schools that are currently under enrolment pressure.

The proposed building uses the SINSW standardised structural and planning grid that is consistent across all new primary and secondary schools. This enables flexibility and adaptability within the building for future changes of use.

Areas of the site have been nominated for future expansion if required.

The structural system includes perimeter structural walls and internal structural columns. Within the Learning Hubs internal walls are non-load bearing allowing flexibility and adaptability as needs change in the future.

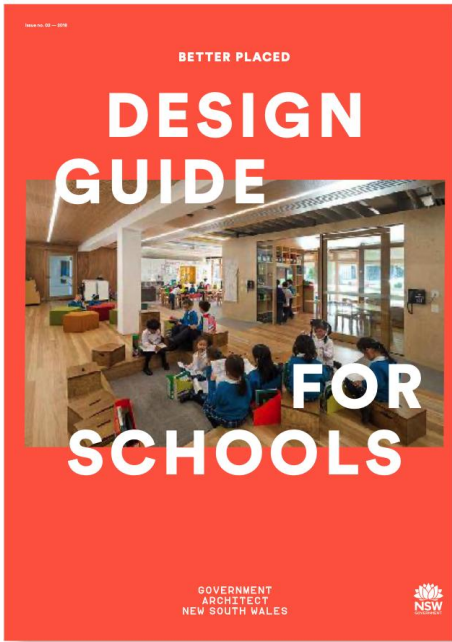
In addition to this, a portion of the Learning Hubs has been selected as a pilot project to test design for disassembly, meaning that it may be pulled apart and reassembled in a new location in the future. Increasing the lifespan of the materials, and reducing future waste.

7. AESTHETICS

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

The proposed buildings have been designed with a palette of materials that are durable, low maintenance, but simple and refined. The selected materials provide a refined backdrop when viewed from the public domain through the foliage of the existing trees. Coloured panels within the facade provide an accent to the glazed areas. On the school side, the precast concrete structure for the walkways and steel balustrades provide a clearly articulated structural language that reflects the innovative assembly/disassembly project approach. Coloured durable wall linings enliven the walkways of the school, and colourful screens to the external stairs, each with their own geometry and character, provide a playful and unexpected sequence of spaces suitable for a primary school.

DESIGN GUIDE FOR SCHOOLS



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.

DESIGN CONSIDERATIONS

RESPONSE

1.CONTEXT, BUILT FORM AND LANDSCAPE

• Respect and respond to its physical context, neighbourhood character, streetscape quality and heritage	✓ Local Context ✓ Site Analysis ✓ Existing Site Photos	p05 p10 p11
• Consider interpretation of Aboriginal cultural heritage within the design of buildings and open spaces in consultation with local Aboriginal community	✓ Connecting with Country ✓ Designing with Country	p06 p15
• Respond to its natural environment including scenic value, local landscape setting and orientation	✓ Site Analysis ✓ Daylight and Amenity ✓ View Analysis	p10 p44 p64-67
• Retain existing built form and vegetation where significant	✓ Site Analysis ✓ Refer Landscape Plans Report	p10
• Include tree planting and other planting that enhances opportunities for play and learning	✓ Refer Landscape Plans Report	
• Ensure landscaping improves the amenity within school grounds and for uses adjacent to the school	✓ Refer Landscape Plans Report	
• Be informed by a current Conservation Management Plan (CMP) and consider local heritage items both on the school site and in the local neighbourhood	✓ Site Heritage Investigation ✓ Site Analysis	p07 p10
• Take advantage of its context by optimising access to nearby transport, public facilities and local centres	✓ Site Analysis ✓ Transport and Connectivity ✓ Shared use opportunities	p10 p34 p37
• Consider height and scale of school development in relationship to neighbouring properties.	✓ Site Section ✓ Shadow Studies	p50 p68

2. SUSTAINABLE, EFFICIENT AND DURABLE

• Be responsive to local climate including sun, wind and aspect	✓ Environmentally Sustainable Design ✓ Daylight and Amenity ✓ Eastern Facade ✓ Western Facade	p43 p45 p51 p52
• Select materials and approaches to detailing that are robust and durable	✓ Daylight and Amenity	p40
• Integrate landscape, planting and Water Sensitive Urban Design (WSUD) principles to enhance amenity and building performance	✓ Refer Landscape Plans Report	
• Include deep soil zones for ground water recharge and planting	✓ Refer Landscape Plans Report	
• Minimise reliance on mechanical systems	✓ Environmentally Sustainable Design	p43
• Include initiatives to reduce waste, embodied energy and emissions, through passive design principles and the use of advanced energy production systems where possible	✓ Environmentally Sustainable Design	p43
• Maximise opportunities for safe walking, cycling and public transport access to and from the school.	✓ Environmentally Sustainable Design ✓ Daylight and Amenity ✓ Eastern Facade ✓ Western Facade	p43 p45 p51 p52

DESIGN CONSIDERATIONS

RESPONSE

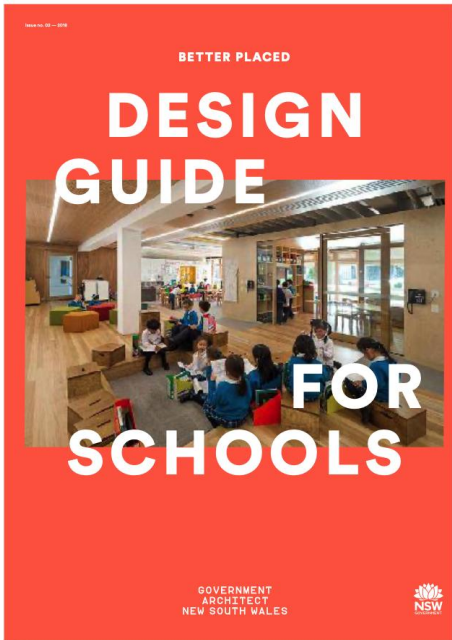
3. ACCESSIBLE AND INCLUSIVE

• Establish security requirements early to ensure any required secure lines can be designed and integrated with built form	✓ Fencing ✓ Access, Security and Circulation	p36 p39
• Balance security with accessibility and inclusiveness by minimising the use of fencing particularly along street frontage	✓ Fencing ✓ Accessibility	p36 p38
• Engage students, educators and the community in development of the vision and design brief for the school	New school. Local community engagement has been undertaken by SINSW. School DEL and local school principals have been engaged with throughout.	
• Allow for passive and dynamic play of different age groups	✓ Open Play Area ✓ Refer Landscape Plans Report	p46
• Provide school frontages and entrances that are visible, engaging and welcoming	✓ Fencing ✓ Shared Use Opportunities	p36 p37
• Encourage access for members of the community to shared facilities after hours	✓ Fencing ✓ Shared Use Opportunities	p36 p37
• Ensure clear and logical wayfinding across the school site and between buildings for all users including after hours community users	✓ Architectural Concept ✓ Shared Use Opportunities	p16 p37
• Ensure accessibility for all users of the site	✓ Assessibility	p38
• High rise schools should consider the impact of circulation times on timetables and pedagogical models, particularly when accessing core learning spaces. This may have design implications for spatial planning, lift and circulation requirements.	Not Applicable	

4. HEALTH AND SAFETY

• Locate buildings and design facades that optimise fresh air intake and access to daylight	✓ Architectural Concept ✓ Daylight and Amenity ✓ Eastern Facade ✓ Western Facade ✓ Environmentally Sustainable Design	p16 p45 p52 p53 p43
• Prioritise pedestrians and avoid conflicts between vehicles and people	✓ Transport and Connectivity	p34
• Provide covered areas for protection from sun and rain	✓ Refer Landscape Plans Report	
• Support safe walking and cycling to and from school through connections to local bike and foot paths and the provision of bike parking and end of journey facilities	✓ Transport and Connectivity	p34
• Support passive surveillance, including through the location of toilets and areas for communal use outside of school hours	✓ Access, Security, and Circulation ✓ Shared Use Opportunities	p39 p37
• Incorporate Crime Prevention Through Environmental Design (CPTED) principles	✓ Access, Security, and Circulation	p39
• Clearly define access arrangements for after school hours	✓ Access, Security, and Circulation ✓ Shared Use Opportunities	p39 p37
• Consider location and number of toilet facilities to allow safe use by different age groups and genders.	✓ Plans SSDA.03 to SSDA.05	

DESIGN GUIDE FOR SCHOOLS



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.

DESIGN CONSIDERATIONS

RESPONSE

5.AMENITY

• Be integrated into, and maximise the use of the natural environment for learning and play	✓ Outdoor Play Area ✓ Refer Landscape Plans Report	p46
• Ensure access to sunlight, natural ventilation and visual outlook wherever possible	✓ Environmentally Sustainable Design ✓ Daylight and Amenity ✓ Eastern Facade ✓ Western Facade	p43 p45 p51 p52
• Facilitate flexible learning by providing access to technology	✓ Typical Classroom Configuration	p47
• Seek opportunities for buildings and outdoor spaces to be learning tools in themselves	✓ Refer Landscape Plans Report	
• Provide a diversity of indoor and outdoor spaces to facilitate informal and formal uses	✓ Refer Landscape Plans Report	
• Provide buffer planting in setbacks where appropriate to reduce the impact of new development	✓ Refer Landscape Plans Report	
• 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.	✓ Shadow Studies	p68
• Ensure outdoor play ground space is sufficient to accommodate the student population including future growth.	✓ Outdoor Play Area	p46
• Locate buildings away from noisy roads and other noise sources to ensure acoustic levels within teaching and learning spaces are acceptable	✓ Site Analysis ✓ Architectural Concept	p10 p16
• Where teaching and learning spaces must be located alongside noise sources, arrange built form to ensure dual aspect that will allow for natural ventilation away from the noise source. In extreme cases, mechanical systems and other technologies may be necessary to ensure acoustic levels can be maintained along with cross flow ventilation and natural light.	Not Applicable	

6. WHOLE OF LIFE, FLEXIBLE AND ADAPTIVE

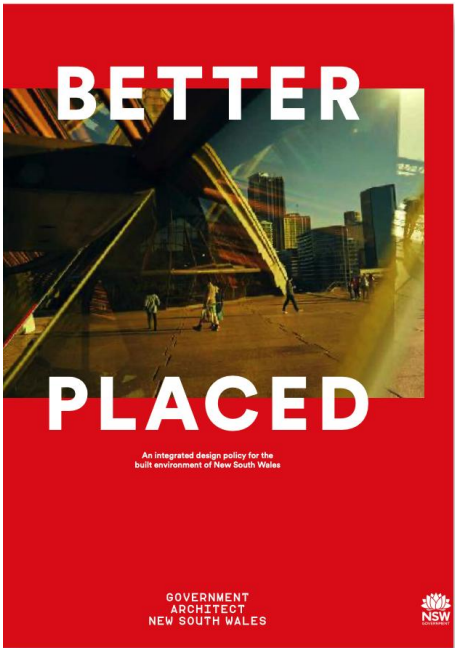
• Allow for future adaptation to accommodate demographic changes, new teaching and learning approaches and the integration of new technologies	✓ Modern Methods of Construction	p18
• Be based on a masterplan of the school site that includes the testing of options for future potential growth	✓ Modern Methods of Construction	p18
• Take a whole-of- lifecycle approach when considering cost and consider wider public benefits over time	✓ Architectural Concept ✓ Modern Methods of Construction	p16 p18
• 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	✓ Architectural Concept ✓ Modern Methods of Construction	p16 p18
• Understand the potential impacts of future local projected growth	✓ Site Analysis	p10
• Design learning spaces to cater for a range of learning styles and group sizes	✓ Typical Classroom Configuration	p47
• Consider providing areas for collaboration, group learning, presentations, specialised focus labs, project space and wet areas, display areas, student breakout, teacher meetings, and reflective / quiet spaces.	✓ Typical Classroom Configuration	p47

DESIGN CONSIDERATIONS

RESPONSE

7. AESTHETICS

• Reflect a commitment to and investment in design excellence	✓ Key Principles ✓ Architectural Concept ✓ Views	p14 p16 p23-28
• Create engaging and attractive environments	✓ Key Principles ✓ Architectural Concept ✓ Views	p14 p16 p23-28
• Achieve a purposeful composition of materials and elements through a rigorous design process	✓ Views ✓ Eastern Facade ✓ Western Facade ✓ Materials	p23-28 p51 p52 p53
• Provide an engaging environment for pedestrians visually and materially along public street frontages	✓ Views ✓ Eastern Facade ✓ Western Facade ✓ Materials	p23-28 p51 p52 p53
• Seek opportunities to enhance public facing areas with landscaping and ensure landscape and building design are integrated	✓ Refer Landscape Plans Report	
• Integrate service elements with the building design	✓ Views ✓ Eastern Facade ✓ Western Facade ✓ Materials	p23-28 p51 p52 p53
• Balance internal spatial requirements with an external mass and scale that responds to its environment	✓ Views ✓ Eastern Facade ✓ Western Facade ✓ Materials	p23-28 p51 p52 p53
• Avoid long stretches of security fencing to public facing areas through arrangement of building edges, landscaping, gates and other openings	✓ Fencing	p35
• Look for opportunities to include public art.	✓ Connecting with Country ✓ Designing with Country	p06 p15



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.

OBJECTIVES

OBJECTIVE 1
BETTER FIT

Good design in the built environment is informed by and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, and communal aspirations. It also contributes to evolving character and setting.

- **LOCAL**
A building, place or space that relates to an area, or neighbourhood.
- **CONTEXTUAL**
A building, place or space that responds to the context in which it is designed.
- **OF ITS PLACE**
A building, place or space that relates to its surrounds.

RESPONSE

The school is long awaited, and much needed, for the local community, and will be an important public and community institution at the centre of this new growing suburb.

The new primary school at Gregory Hills has been designed in response to its specific context and urban condition. The built form is arranged to address to the two street frontages and to form a large consolidated open play area that connects with adjacent playgrounds and open spaces.

The location adjacent Howard Park and the riparian corridor has shaped the masterplan and informed the shared use strategy including the open and inclusive fencing approach.

OBJECTIVES

OBJECTIVE 3
BETTER FOR COMMUNITY

The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.

- **INCLUSIVE**
A building, place or space that embraces the community and individuals who use it.
- **CONNECTED**
A building place or space that establishes links with its surrounds, allowing visitors and residents to move freely and sustainably.
- **DIVERSE**
A building, place or space that embraces a richness in use, character and qualities.

RESPONSE

The new primary school is an important piece of the growing Gregory Hills community. A local school will give the local community a school that is within walking distance,

OBJECTIVE 2
BETTER PERFORMANCE

Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.

- **SUSTAINABLE**
Relates to the endurance of systems, buildings, spaces and processes their ability to be maintained at a certain rate or level, which contributes positively to environmental, economic and social outcomes.
- **ADAPTABLE**
A building, place or space that is able to adjust to new conditions, or to be modified for a new purpose.
- **DURABLE**
A building, place or space that is built to be able to withstand wear and pressure.

The school has been design to a 5 Star Greenstar rating. Further to this, the design proposal is using the SINSW Modern Methods of Construction approach to design and building. Whole of lifecycle sustainability is inherent in this approach. Prefabrication and a kit of parts leads to a reduction in construction waste, efficient structures, and less site disturbance.

The primary structure of the school is to be made from glulam timber beams sourced from sustainable forestry sources. Timber will be used through the floor and wall structure, and on finished linings to the interiors of the new building.

In addition to this, a portion of the Learning Hubs has been selected as a pilot project to test design for disassembly, meaning that it may be pulled apart and reassembled in a new location in the future. Increasing the lifespan of the materials, and reducing future waste.

OBJECTIVE 4
BETTER FOR PEOPLE

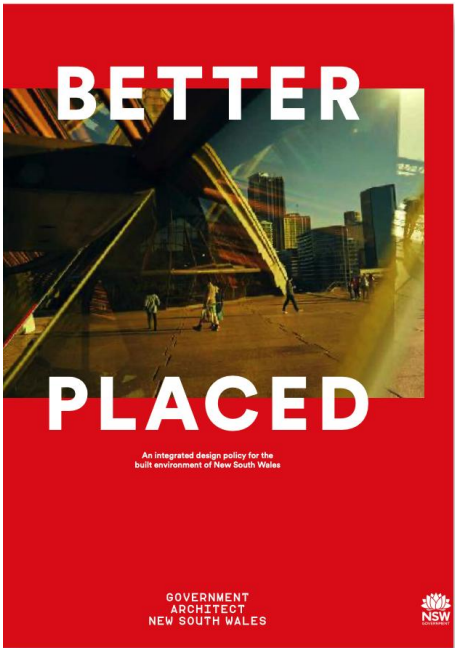
The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.

- **SAFE**
A building, place or space that protects its people from harm or risk of harm.
- **COMFORTABLE**
A building, place or space that provides physical and emotional ease and well-being for its people.
- **LIVEABLE**
A built environment which supports and responds to people's patterns of living, and is suitable and appropriate for habitation, promoting enjoyment, safety and prosperity.

The school has been designed specifically as a place for young children, with varied play opportunities, and colourful building elements.

The use of exposed timber structure within the school will provide a warm and natural material within the learning hubs, creating a comfortable and sustainable learning environment.

Safety and security is an important factor that has been considered alongside the civic role of a school in its community. The school will provide a secure environment for the students while also reducing the amount of fencing to the public domain, particularly along the street frontages.



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.

OBJECTIVES

OBJECTIVE 5
BETTER WORKING

Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to changes over time. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.

- **FUNCTIONAL**
A building, place or space that is designed to be practical and purposeful.
- **EFFICIENT**
A building, place or space that is constructed and functions with minimal wasted effort.
- **FIT FOR PURPOSE**
A building, place or space that works according to its intended use.

RESPONSE

The proposed school has been considered in the context of the future life of the school. The new building will provide new learning spaces that will reduce the demand on other local schools that are currently under enrolment pressure.

The proposed building uses the SINSW standardised structural and planning grid that is consistent across all new primary and secondary schools. This enables flexibility and adaptability within the building for future changes of use.

Areas of the site have been nominated for future expansion if required.

The structural system includes perimeter structural walls and internal structural columns. Within the Learning Hubs internal walls are non-load bearing allowing flexibility and adaptability as needs change in the future. In addition to this, a portion of the Learning Hubs has been selected as a pilot project to test design for disassembly, meaning that it may be pulled apart and reassembled in a new location in the future. Increasing the lifespan of the materials, and reducing future waste.

OBJECTIVES

OBJECTIVE 7
BETTER LOOK AND FEEL

The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings. The visual environment should contribute to its surroundings and promote positive engagement.

- **ENGAGING**
A building, place or space that draws people in with features that generate interest.
- **INVITING**
A building, place or space that is welcoming to visitors, community and individuals.
- **ATTRACTIVE**
A building, place or space that is aesthetically pleasing, or appealing.

RESPONSE

The proposed buildings have been designed with a palette of materials that are durable, low maintenance, but simple and refined. The selected materials provide a refined backdrop when viewed from the public domain through the foliage of the existing trees. Coloured panels within the facade provide an accent to the glazed areas.

On the school side, the precast concrete structure for the walkways and steel balustrades provide a clearly articulated structural language that reflects the innovative assembly/disassembly project approach. Coloured durable wall linings enliven the walkways of the school, and colourful screens to the external stairs, each with their own geometry and character, provide a playful and unexpected sequence of spaces suitable for a primary school.

OBJECTIVE 6
BETTER VALUE

Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.

- **CREATING VALUE**
Conceiving and designing in new opportunities to a building, place or space for increased social, economic and environmental benefits to the community.
- **ADDING VALUE**
Leveraging and building on the existing characteristics and qualities of a building place or space to increase social, economic and environmental benefits to the community.

The design of the school has balanced a lean construction budget that delivers value, with the needs and requirements of a primary school. Materials are robust and long lasting, with areas of colour and detail as appropriate to a school for young children.

The position of this school as a pilot program for the MMC approach, means the design of this school and the implementation of future MMC projects will deliver design and cost value to communities throughout NSW in the future.

SDRP

STATE DESIGN REVIEW PANEL (SDRP) - 21ST JULY 2022 - SECOND REVIEW

The tables outlines the feedback on the design as well as suggestions for improving the design from State Design Review Panel (SDRP) second review on 21st July 2022 and BAT response.

The following elements of the design are supported and should be maintained as the design develops:

- The conservation of the Cumberland Plain Woodland tree cluster.
- Using Connecting with Country principles to integrate the neighbouring riparian corridor into the masterplan.
- The landscape strategy, which provides opportunities for informal and playful outdoor learning integrated into the campus.
- The approach to managing site levels.
- The combination of site-specific boundary conditions rather than using standard fencing.
- Commitment to making available the school facilities for wider community use, including the sports fields, the hall, and the car park.
- The approach of using MMoC to create a legible building of simple but not simplistic design language and the use of the façade to create a unique identity and character.
- Playful and sculptural character of the external stairs.
- Promotion of active transport, easily accessible bike/scooter parking, and end of trip facilities for staff.

SDRP COMMENT

The following commentary provides advice and recommendations for the project and should be read in conjunction with the previous advice letter:

- **CONNECTING WITH COUNTRY**

1. The use of Country principles throughout the landscape is commended. The architectural response should incorporate the same rigor, beyond the appropriation of shapes and graphics, to offer a meaningful and responsive design solution.
- **COOLING STRATEGY**

The likelihood of more frequent and intense hot days in western Sydney is a key challenge the design needs to address. Develop a site-wide cooling strategy to ensure the school can provide adequate environmental comfort for children on a regular basis and during extreme weather events.

Consider:
a. increasing tree canopy cover

b. using permeable or cool ground surfaces

c. materials selection

d. temporary and/or permanent shade structures

e.integrating water features.
- **LANDSCAPE DESIGN**

2. Investigate alternative locations for the carpark to enable a larger number of trees in this area.

3. Further develop the landscape design to increase the provision of canopy cover. Consider adding trees around the basketball and handball courts.
- **LANDSCAPE DESIGN**

4. The east-west pedestrian route that connects the secondary entrances appears to cut straight through the Cumberland wooded area and intersect some existing trees.

a. Review path to suit the tree cluster.

b. Consider a more sinuous language for this east-west path, which could better relate to the Cumberland cluster and provide a counterpoint to the strong north-south linearity of the scheme.

RESPONSE

The Connecting with Country process is ongoing. Consultation to date has identified opportunities more appropriate to the landscape design. The opportunities for the architecture are limited by SINSW masterplanning guidelines, and standardised layouts.

Architectural and built form elements being explored include the design of the screening to the stairs, the use of Australian timber for structural beams and columns, and the reuse of the felled trees from the remnant cluster within school and landscape play areas.

Canopy cover has been reconsidered to better shade hardstand areas, within the constraints of the bushfire controls. Refer to Landscape design documentation.

The area of permeable soft landscaping has been substantially increased.

Light coloured materials have been selected for wall and roof claddings.

Permanent shade areas are provided by an enlarged COLA area, covered movement areas and covered outdoor learning areas.

Water features are not included as SINSW has determined that they present a risk to students.

Alternate locations were investigated and options tested. The transport planner would not accept the alternatives due to the increased strain they put on the surrounding streets at peak times.

Canopy cover has been reconsidered to better shade hardstand areas, within the constraints of the bushfire controls. Refer to Landscape design documentation.

The path has been realigned to the north of the tree cluster.

The landscape design has been updated with more varied spaces and articulation of the hard and soft landscaping elements. Refer to Landscape design documentation.

SDRP COMMENT

The following commentary provides advice and recommendations for the project and should be read in conjunction with the previous advice letter:

5. Provide a plan clearly showing the trees to be removed and retained and exclusion zones for canopy cover.

6. Recommend developing a sitewide Water Sensitive Urban Design strategy. This element can provide learning and waterplay opportunities.

- **TRANSPORT AND ACCESS**

It was noted the streets adjacent to the school do not have capacity for buses and therefore the existing stops in the town centre will be used to serve the school.

7. Provide a plan showing walking distances and routes from the bus stops to the school. Demonstrate that:

- a. travel paths between the bus stops and the school are safe
- b. crossings are minimised or eliminated completely
- c. a safe crossing is provided at the corner of Wallarah Circuit and Long Reef Circuit.

- **ARCHITECTURE**

8. Consider increasing the width of the stairs and landings to increase the potential for informal gathering, playing & learning spaces.

9. It is recommended that the language and character of the elevational façade treatment be derived from performance requirements such as responding to the internal teaching spaces, sunlight, and climatic conditions. Provide elevational and cross-sectional façade studies.

RESPONSE

Shown in Design Report “Existing Site Infrastructure”

OSD and Bio-retention basins are provided on site under approved DA/2022/724/1. There are opportunities for the school to use these for learning opportunities.

This is included in the “Local Context” page, and in the Preliminary School Travel Plan.

Refer to Preliminary School Travel Plan.

Refer to Preliminary School Travel Plan.

Refer to Preliminary School Travel Plan.

Stairs and landings are generous to accommodate student movements. The SINSW brief for the stairs is that they are for circulation, not gathering.

Facades have been developed based on internal amenity, structural considerations, services, cost, and character. Elevations and facade sections are provided within the Design Report.

.....

DESIGN VERIFICATION STATEMENT

HEIGHT PLANE

The site is subject to a 9.5m height plane.
The proposed school sits above this height plane.

This is justified for the following reasons:

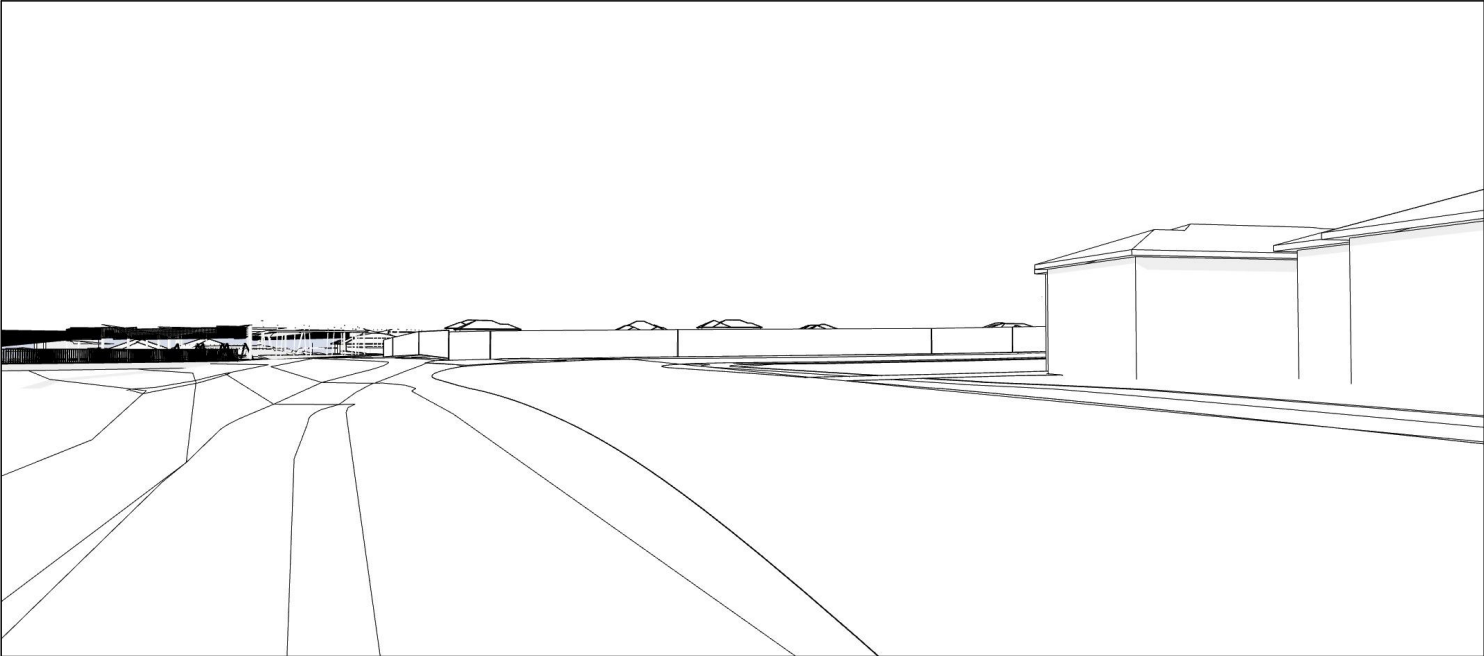
- large setbacks to both streets allows for a large buffer between the school and residential uses
- the shadow studies show no impact on adjacent residential properties at the prescribed times.

NOTE: The site has a second 16m height plane reserved for residential flat buildings. The proposed school would sit well under the 16m plane.

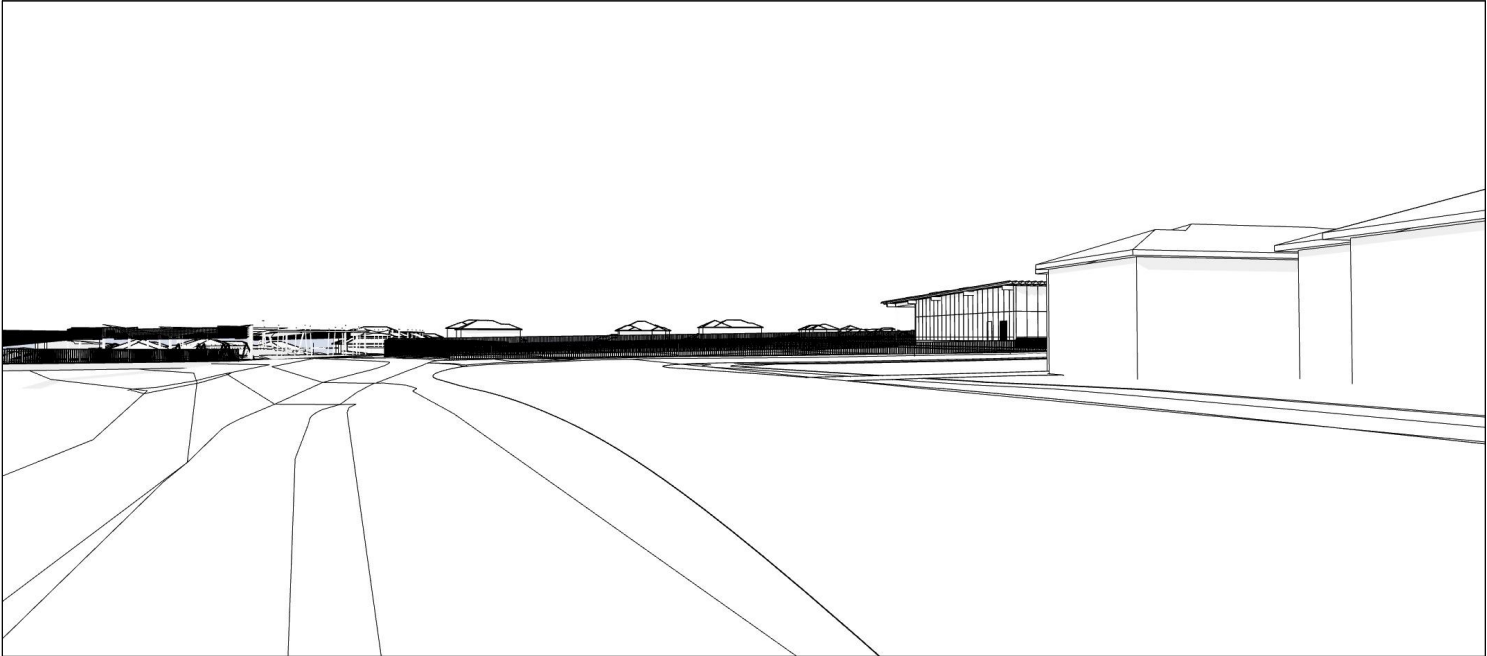


DESIGN VERIFICATION STATEMENT

VIEW ANALYSIS

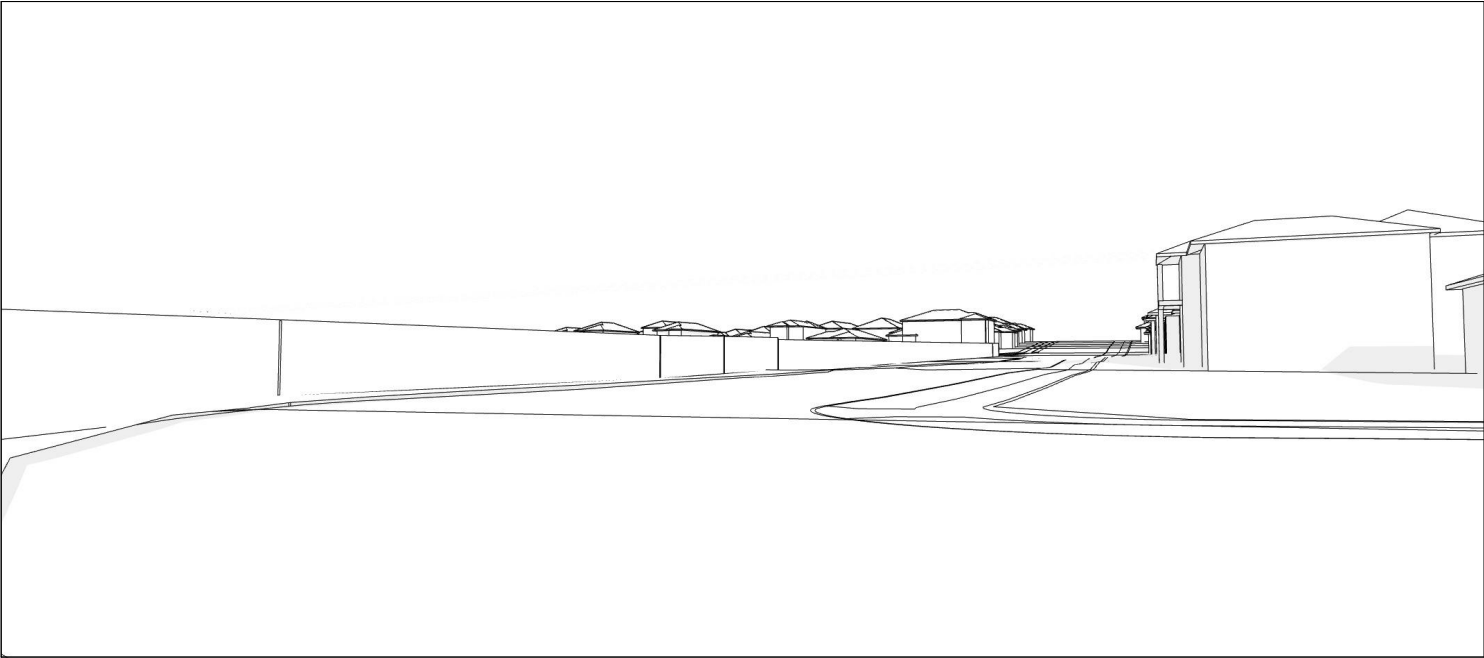


EXISTING VIEW 1 - LOOKING NORTH ALONG WALLARAH CIRCUIT

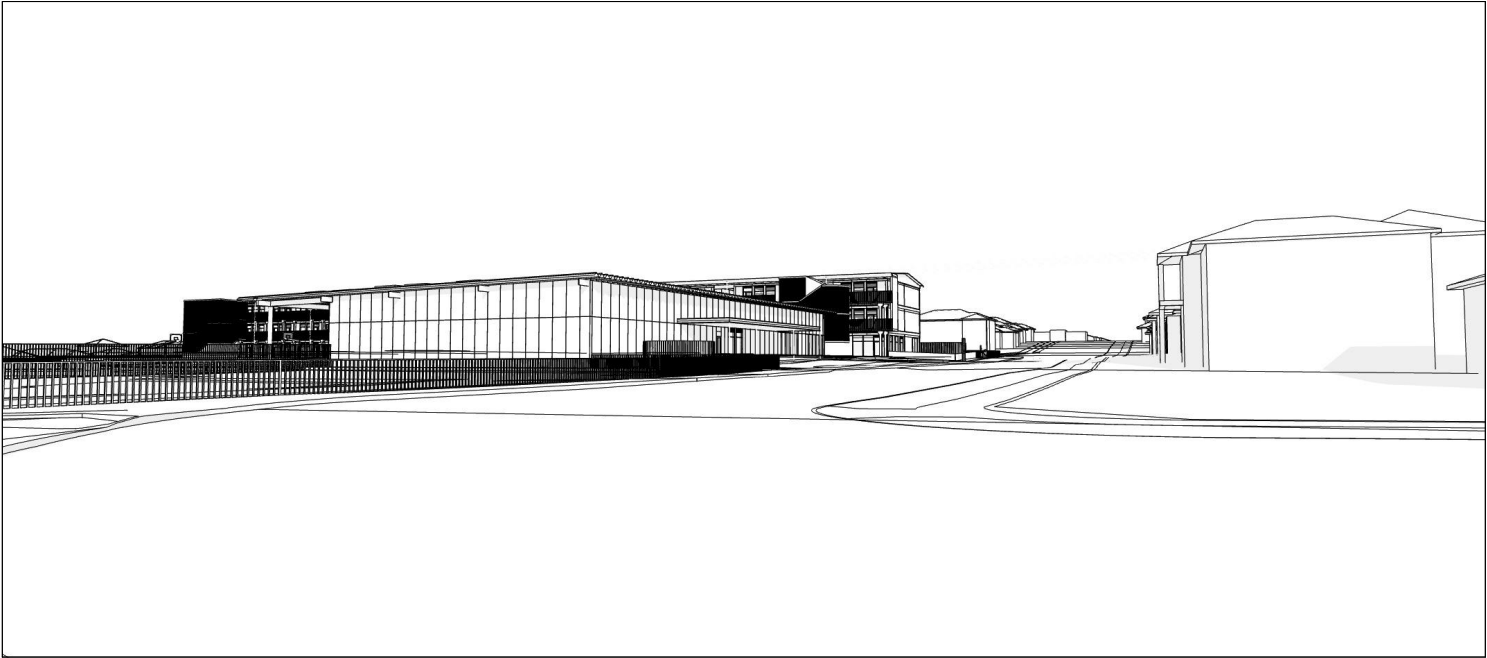


PROPOSED VIEW 1 - LOOKING NORTH ALONG WALLARAH CIRCUIT
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The view from this location is primarily over the staff carpark towards the existing trees that will remain
- There will be lower fences than existing (the fence along Wallarah will be 900mm. The existing fencing is ~2100mm)

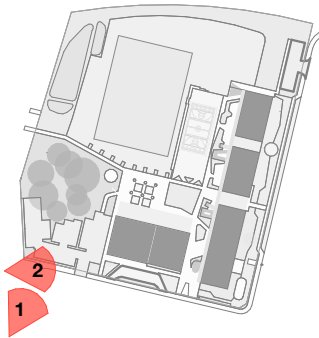


EXISTING VIEW 2 - LOOKING EAST ALONG WALLARAH CIRCUIT



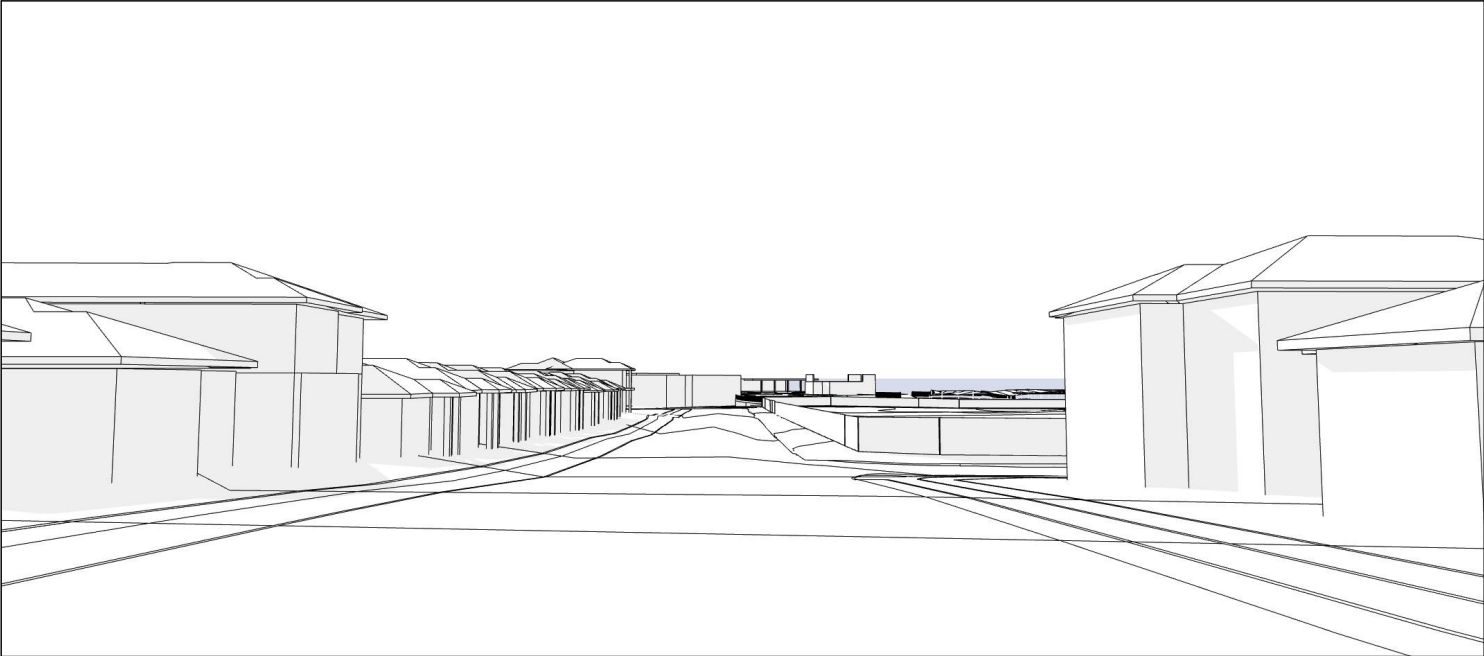
PROPOSED VIEW 2 - LOOKING EAST ALONG WALLARAH CIRCUIT
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The large setback to Wallarah Circuit provides a visual break and buffer between the street and school buildings
- There is an appropriate scale relationship between the school and residences opposite
- The buildings step up along the site towards the corner, towards the main school entry
- There will be lower fences than existing (the fence along Wallarah will be 900mm. The existing fencing is ~2100mm)

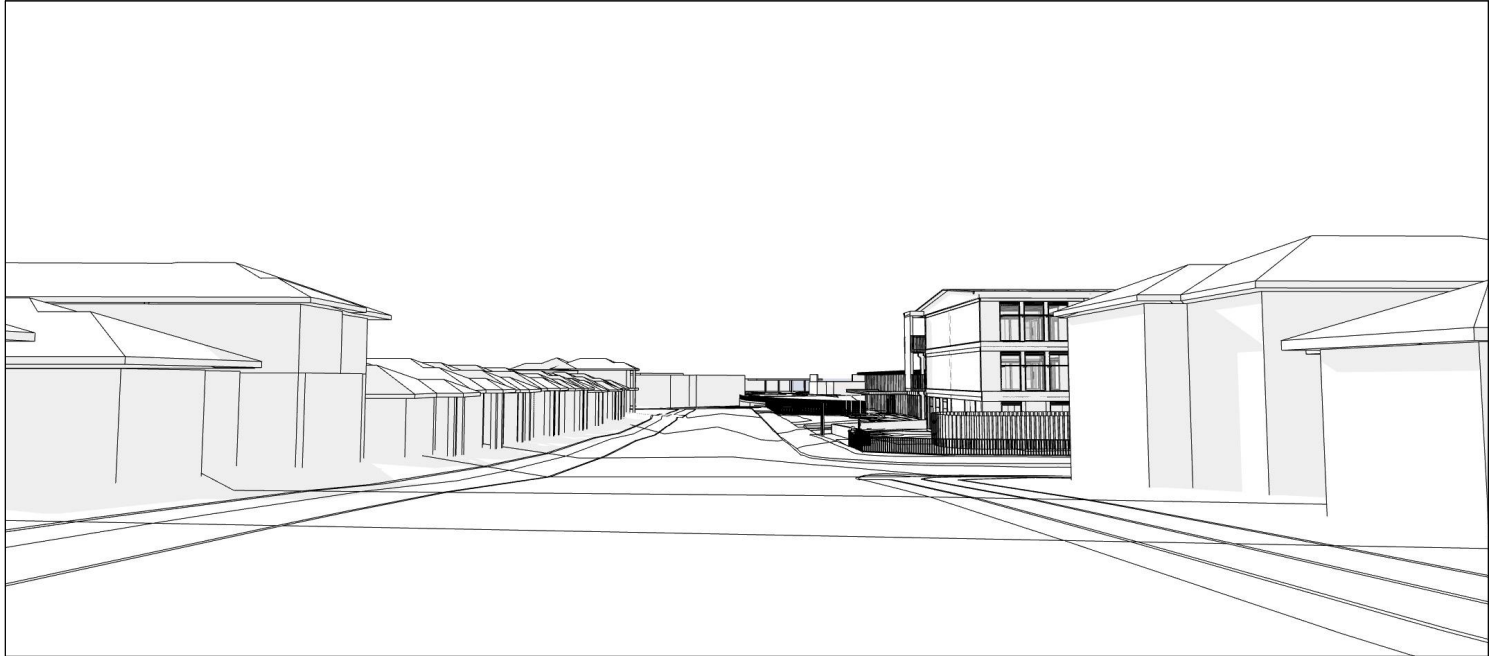


DESIGN VERIFICATION STATEMENT

VIEW ANALYSIS

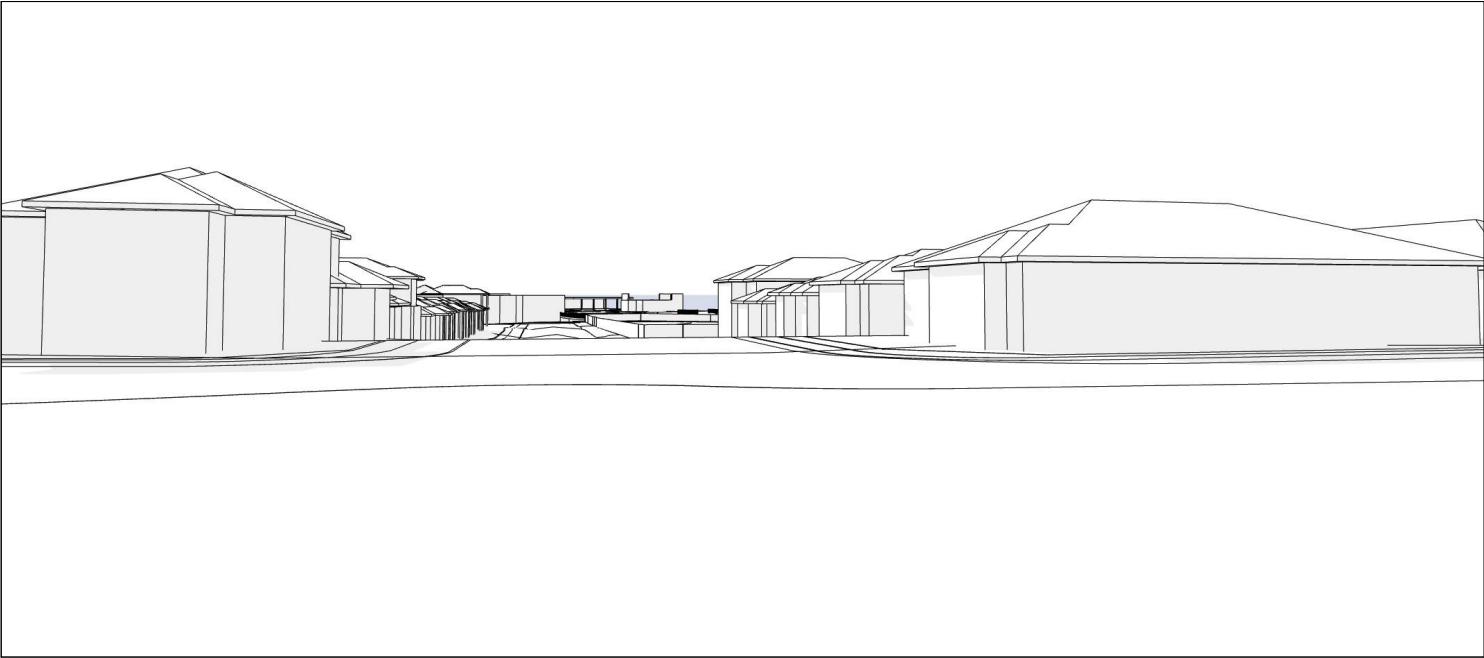


EXISTING VIEW 3 - LOOKING WEST ALONG WALLARAH CIRCUIT

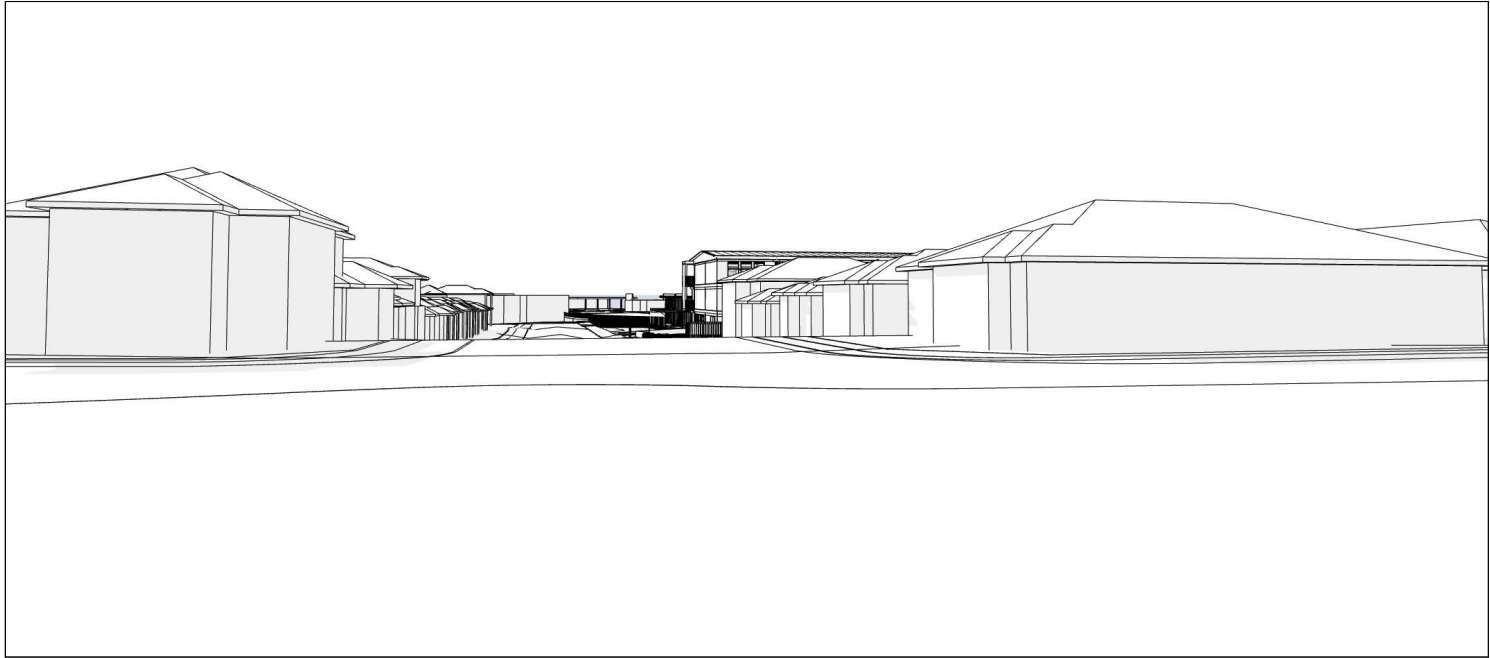


PROPOSED VIEW 3 - LOOKING WEST ALONG WALLARAH CIRCUIT
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The large setback to Wallarah Circuit provides a visual break and buffer between the street and school buildings
- As the site is falling away from this position, the school buildings sit relatively lower than the houses at the higher end of the street
- The open space at the staff carpark draws people toward the entry to Howard Park and the pedestrian footbridge to the town centre.

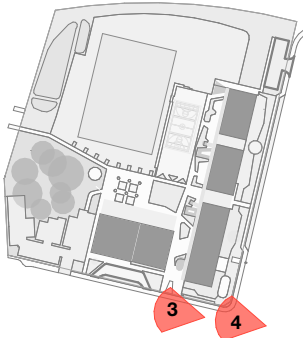


EXISTING VIEW 4 - LOOKING WEST ALONG WALLARAH CIRCUIT



PROPOSED VIEW 4 - LOOKING WEST ALONG WALLARAH CIRCUIT
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The large setback to Wallarah Circuit provides a visual break and buffer between the street and school buildings
- As the site is falling away from this position, the school buildings sit relatively lower than the houses at the higher end of the street
- The open space at the staff carpark draws people toward the entry to Howard Park and the pedestrian footbridge to the town centre.



DESIGN VERIFICATION STATEMENT

VIEW ANALYSIS

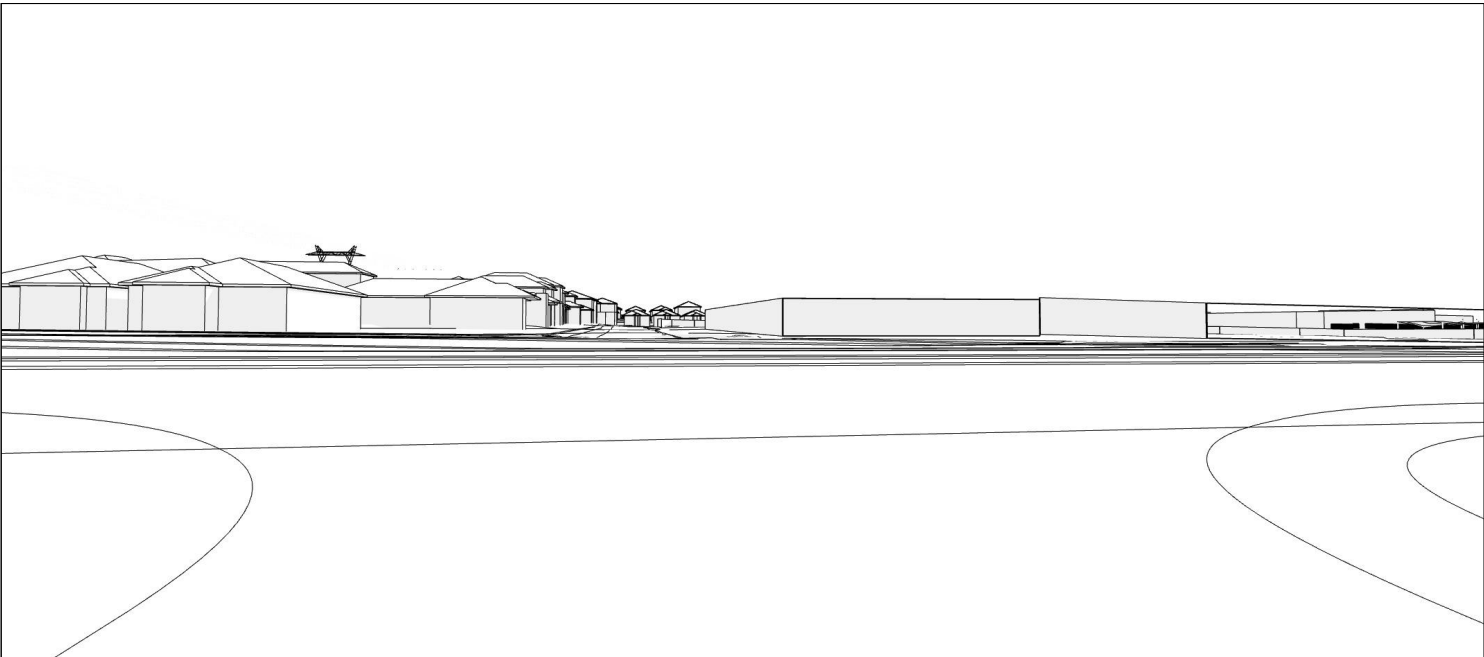


EXISTING VIEW 5 - LOOKING NORTH ALONG LONG REEF CIRCUIT

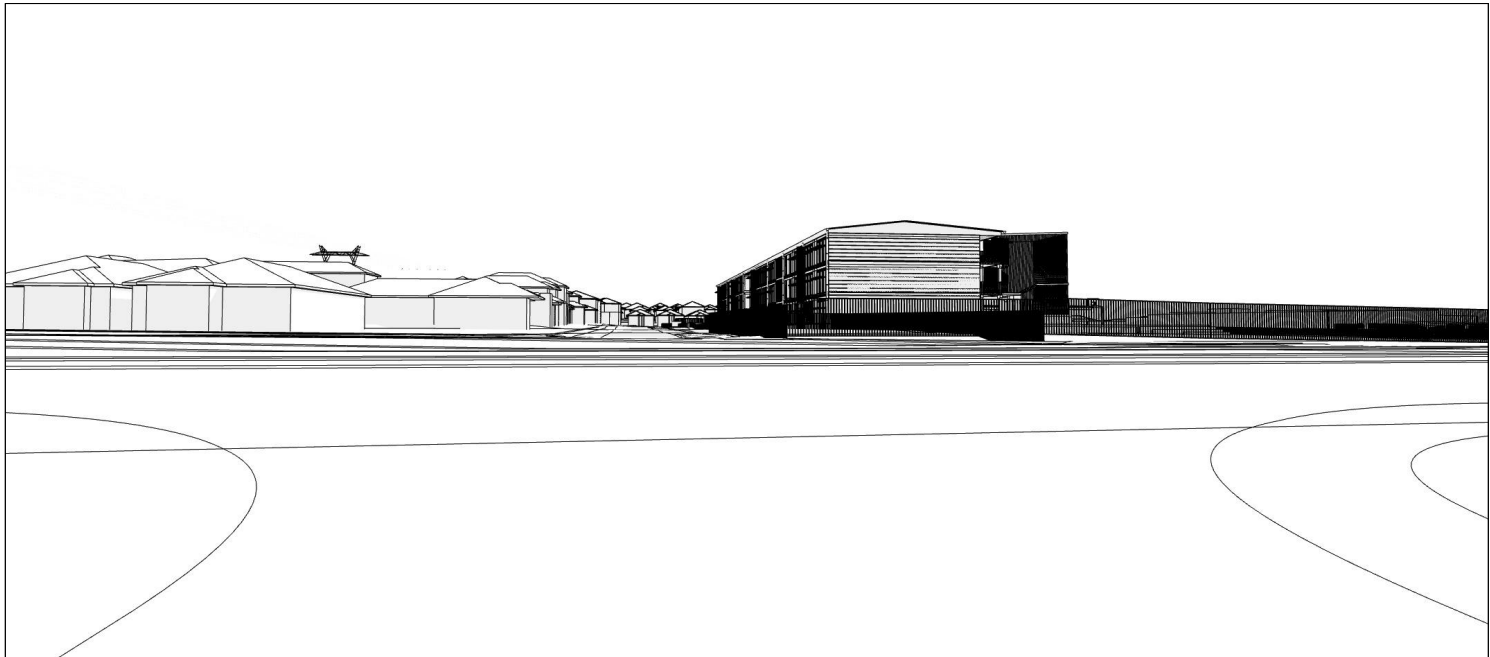


PROPOSED VIEW 5 - LOOKING NORTH ALONG LONG REEF CIRCUIT

- This change in view corridor is deemed appropriate for the following reasons:
- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
 - The large setback to Long Reef Circuit provides a visual break and buffer between the street and school buildings
 - As the site is lower than the residences opposite, the school buildings sit at a relatively lower level
 - The articulation of the facade, and the large open break in the centre of the building provides character and variation
 - There will be lower fences than existing (the fence along Wallarah will be 900mm. The existing fencing is ~2100mm)

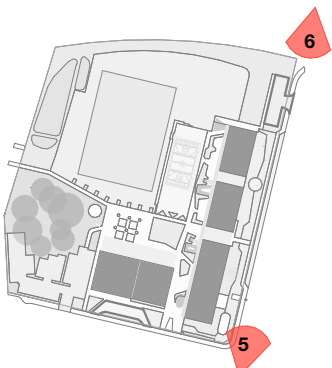


EXISTING VIEW 6 - LOOKING SOUTH ALONG LONG REEF CIRCUIT FROM WARRIGAL STREET



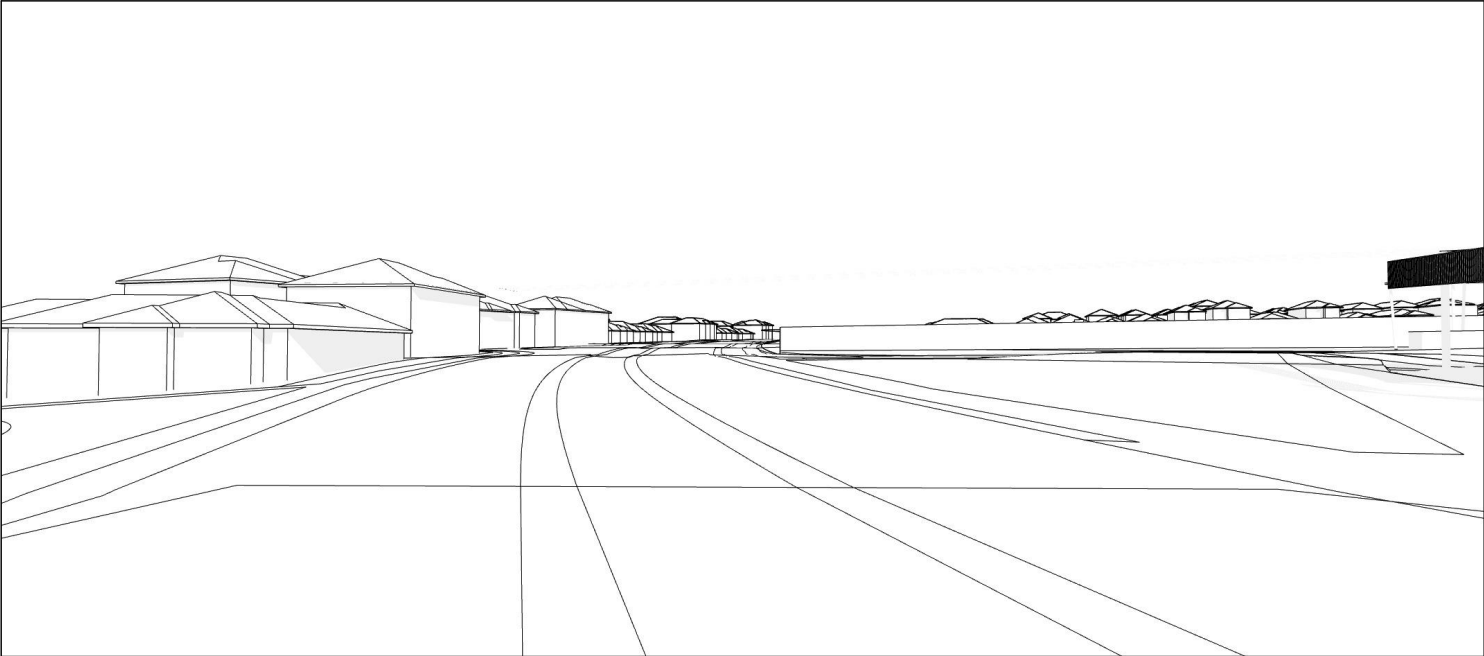
PROPOSED VIEW 6 - LOOKING SOUTH ALONG LONG REEF CIRCUIT FROM WARRIGAL STREET

- This change in view corridor is deemed appropriate for the following reasons:
- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
 - The large setback to Long Reef Circuit provides a visual break and buffer between the street and school buildings
 - As the site is lower than the residences opposite, the school buildings sit at a relatively lower level
 - The articulation of the facade, and the large open break in the centre of the building provides character and variation
 - There will be lower fences than existing (the fence along Wallarah will be 900mm. The existing fencing is ~2100mm)

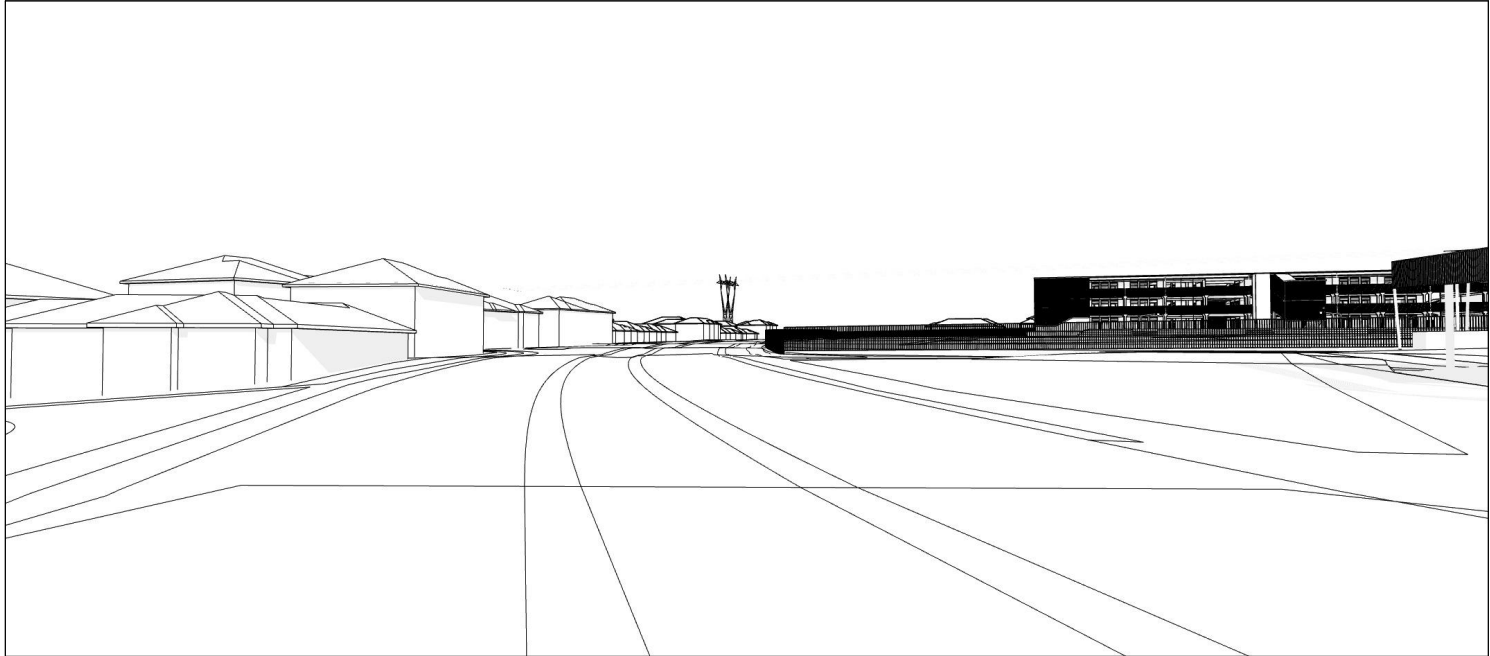


DESIGN VERIFICATION STATEMENT

VIEW ANALYSIS

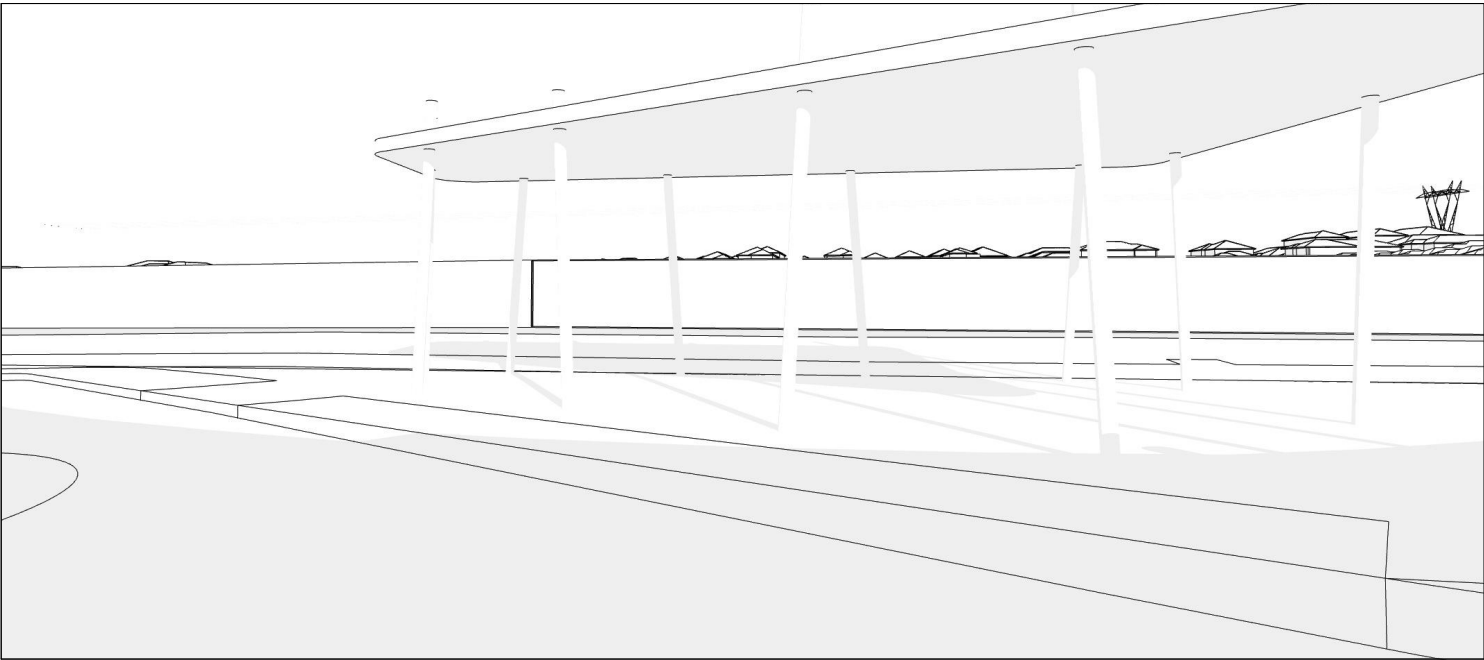


EXISTING VIEW 7 - LOOKING EAST ALONG GREGORY HILLS DRIVE



PROPOSED VIEW 7 - LOOKING EAST ALONG GREGORY HILLS DRIVE
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The large setback to Gregory Hills Drive provides a visual break and buffer between the street and school buildings

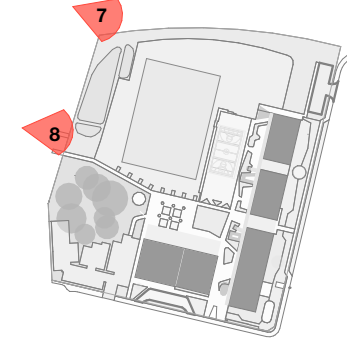


EXISTING VIEW 8 - LOOKING EAST FROM HOWARD PARK



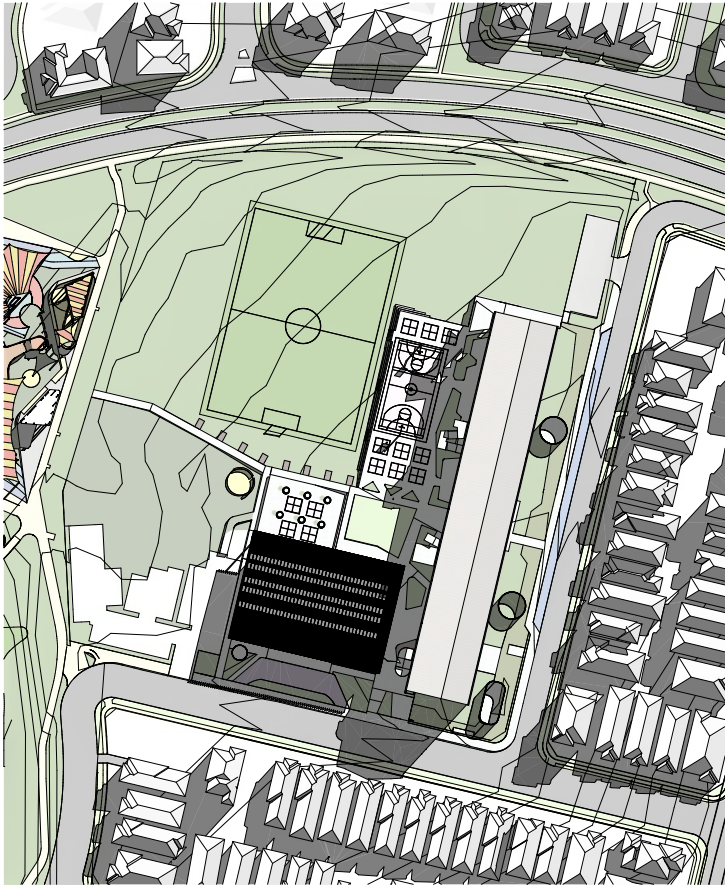
PROPOSED VIEW 8 - LOOKING EAST FROM HOWARD PARK
This change in view corridor is deemed appropriate for the following reasons:

- The site has been planned to be a large public school since the subdivision was developed, and the proposed buildings are in line with typical school building height and scale.
- The school provides an appropriate backdrop to the playground
- The open space of the school will have a visual connection to the playground

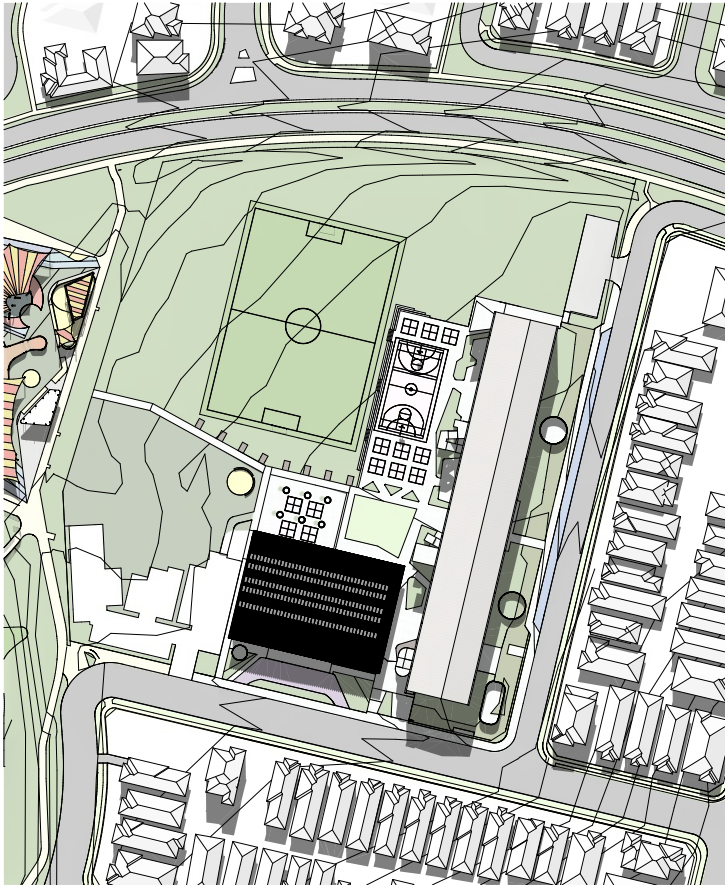


DESIGN VERIFICATION STATEMENT

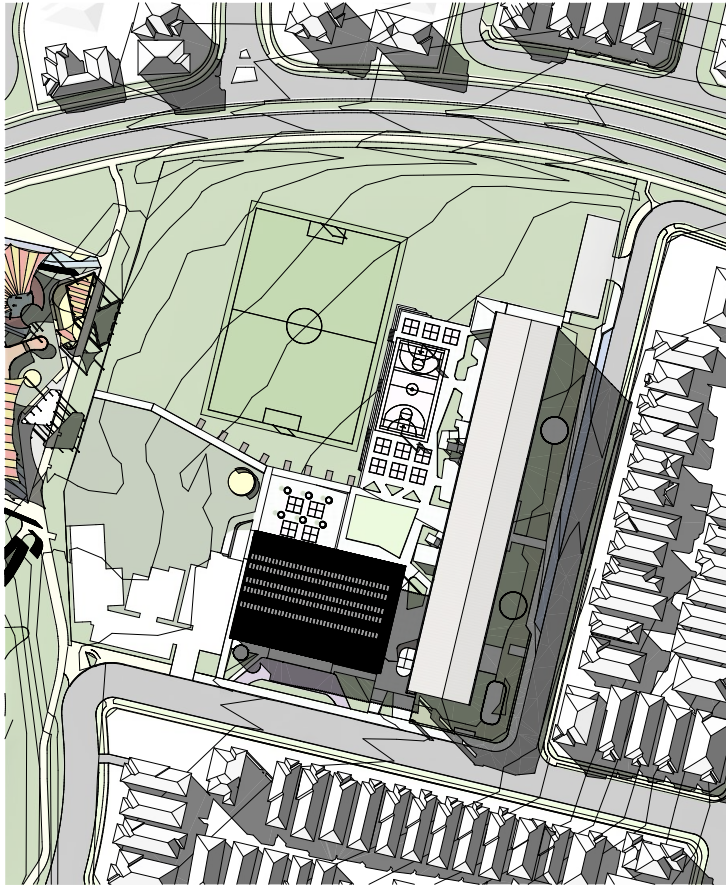
SHADOW STUDIES



June 21st
9am



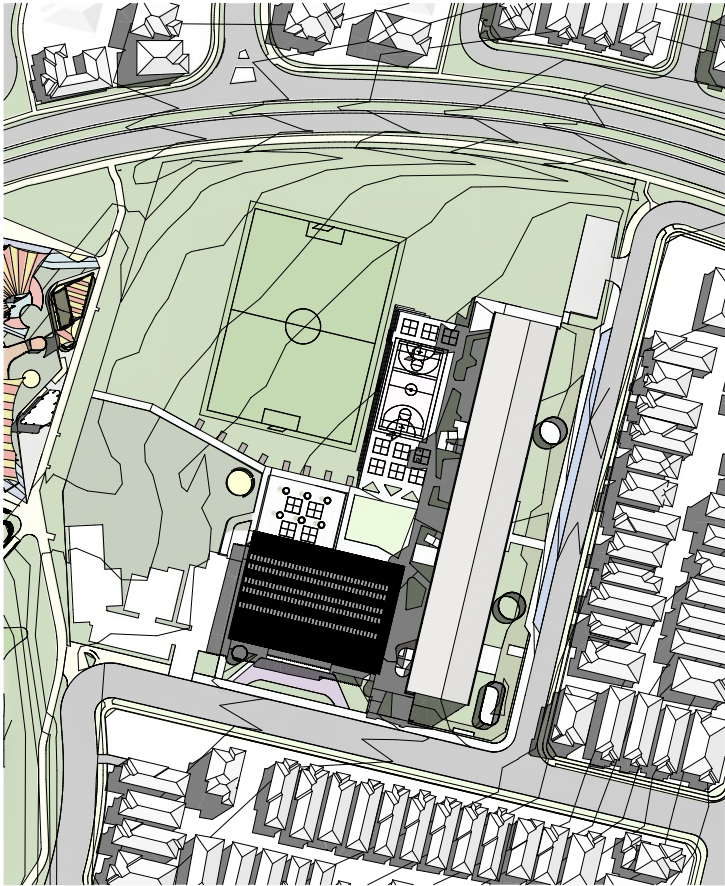
June 21st
12pm



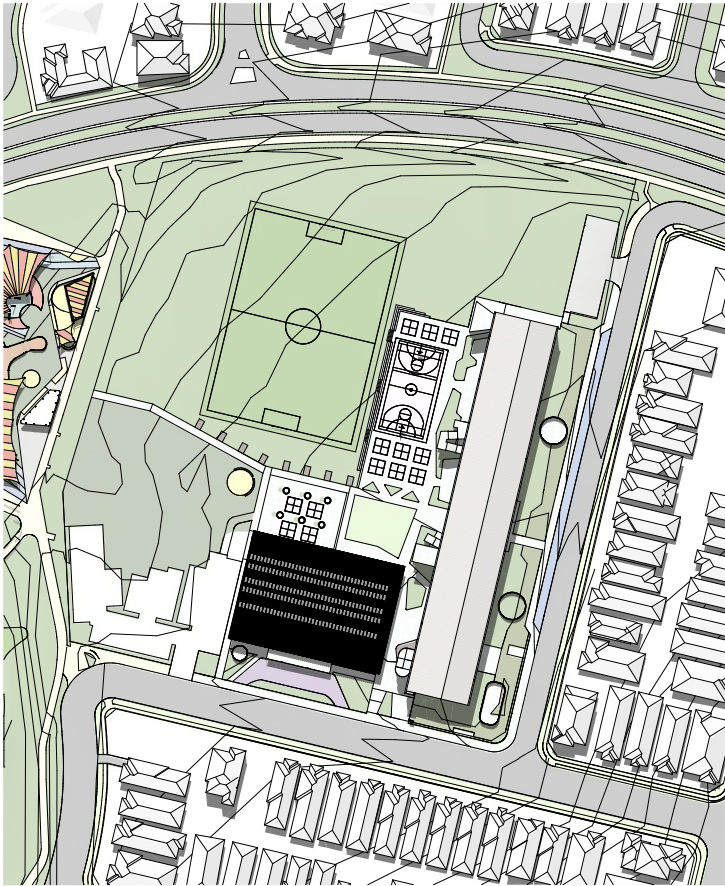
June 21st
3pm

The large setbacks to Wallarah Circuit and Longreef Circuit mean that the built form does not impact on the built form, living areas, or private outdoor space of the neighbouring residences.

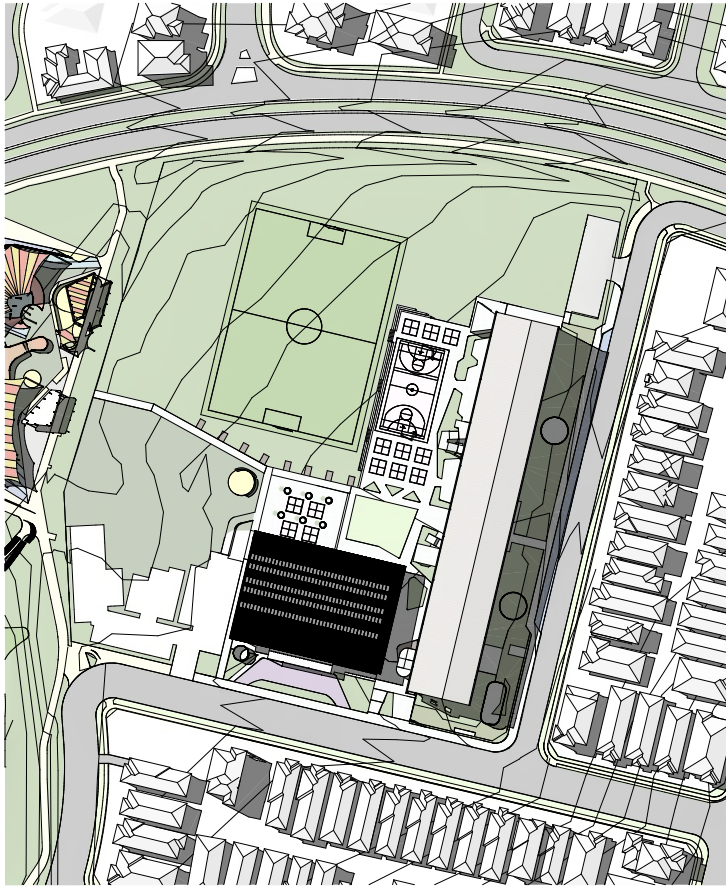
- There is some minor overshadowing of the driveways and front lawns at the northern end of Long Reef Circuit at 3pm on June 21st
- There is some minor overshadowing of the driveways and front lawns of three properties on Wallarah Circuit at 9am on June 21st



September 21st
9am

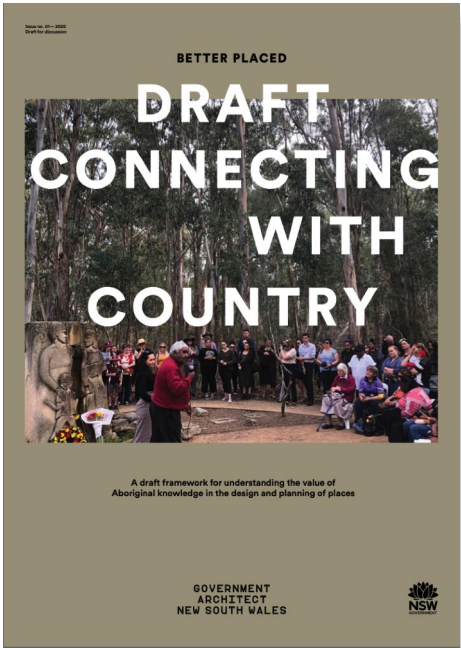


September 21st
12pm



September 21st
3pm

CONNECTING WITH COUNTRY - STATEMENT OF COMMITMENT



Better Placed - Draft Connecting with Country (GANSW) Issue no. 01 — 2020 Draft for discussion

A draft framework for understanding the value of Aboriginal knowledge in the design and planning of places

Throughout the design of this project we have sought to be guided by the Draft Connecting with Country framework.

We have met with local indigenous landowners and elders, and witnessed the smoking ceremony carried out on the site prior to any site disturbance.

We will continue to follow the guidance of the Connecting with Country framework as the project develops and moves forward.

STATEMENT OF COMMITMENT

1. We will respect the rights of Aboriginal peoples to Indigenous cultural intellectual property, and we will support the right of Country to be cared for.
2. We will prioritise Aboriginal people's relationship to Country, and their cultural protocols, through education and enterprise by and for Aboriginal people.
3. We will prioritise financial and economic benefits to the Country where we are working, and by extension to the Traditional Custodians of that Country.
4. We will share tangible and intangible benefits with the Country where we are working, and by extension the Traditional Custodians of that Country, including current and future generations.
5. We will respect the diversity of Aboriginal cultures, but we will prioritise the local, place- specific cultural identity of the Country we're working on. Aboriginal people will determine the representation of their cultural materials, customs, and knowledge.
6. We will prioritise recognition and responsibility of Aboriginal people, supporting capacity building across Aboriginal and non-Aboriginal communities, and across government project teams.
7. We will support Aboriginal people to continue their practices of managing land, water, and air through their ongoing reciprocal relationships with Country. We will create opportunities for traditional first cultures to flourish.

Bennett and Trimble Pty Ltd
Level 2, 333 George Street
Sydney NSW 2000

PREPARED FOR
School Infrastructure
NSW Department of Education
Level 8, 259 George Street
Sydney NSW 2000

BENNETT AND TRIMBLE | PTW