NEW HIGH SCHOOL FOR GOOGONG

ADDRESS

200 WELLSVALE DRIVE

REF ARCHITECTURAL DESIGN REPORT

On behalf of the NSW Department of Education

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CONTENTS

1.0 INTRODUCTION

This REF Design Report has been prepared by NBRS on behalf of the NSW Department of Education (DoE) to inform a Review of Environment Factors (REF) for the proposed construction of a new high school for Googong (the activity) located at 200 Wellsvale Drive, Googong, NSW (the site).

The activity relates to the construction and operation of a new educational establishment to serve the needs of the growing Googong township by accommodating up to 700 students from years 7 – 12. Specifically, the activity includes the following:

- Building A, a three to four-storey building in the northern portion of the site, fronting Glenrock Drive, which will accommodate learning spaces and administrative functions of the school.
- Building B, a three-storey building in the north-west portion of the site, fronting Observer Street, which will accommodate learning spaces and administrative functions of the school.
- Building C, fronting Glenrock Drive, which will accommodate a school hall / gymnasium and canteen.
- Outdoor recreation areas, cricket nets, playing court and playing field.
- Main pedestrian entry established from Glenrock Drive.
- Car park and accessible pedestrian entry from Wellsvale Drive.
- Service entry from Observer Street.
- Associated civil works, earthworks, servicing and landscaping.
- Associated off-site works such as the construction of pedestrian crossings, drop off and pick up bays and a bus stop.
- School identification and wayfinding signage.

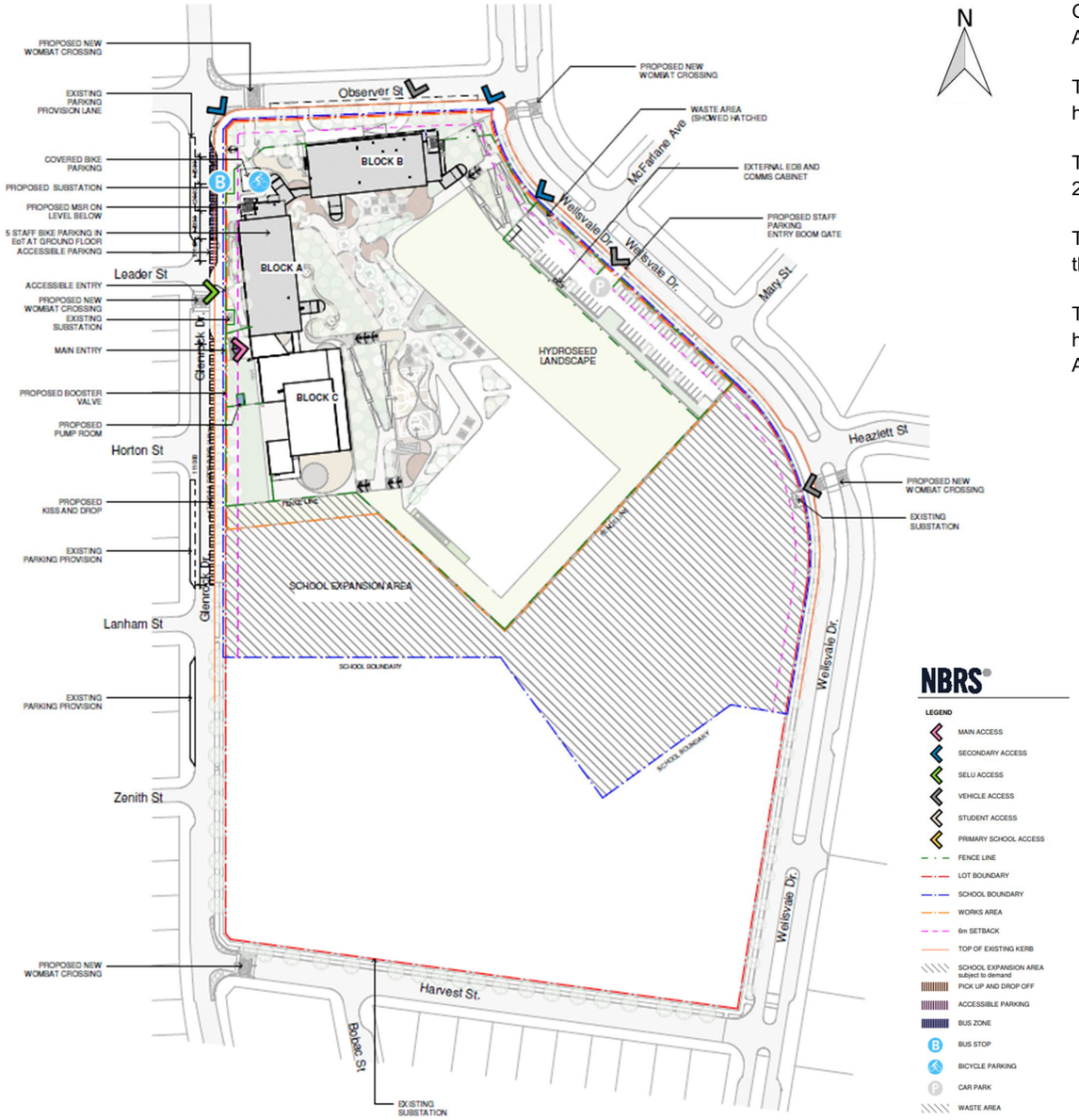
The REF describes the activity, documents the examination and consideration of all matters affecting, or are likely to affect, the environment, and details safeguards to be implemented to mitigate impacts.
The Department of Education is the determining authority for the project under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

1.1 SITE DESCRIPTION

The site is identified in Figure 1 and the activity is shown in **Error! Reference source not found.**.

Figure 1 – Site Location Plan

Source: Mecone



Source: NBRS, 29/011/2024

Googong is a new release area within the Queanbeyan-Palerang Local Government Area (LGA), located approximately eight kilometres south of Queanbeyan and 17 kilometres southeast of the Canberra Central Business District (CBD). Googong Reservoir, a significant waterbody, is located approximately 3 kilometres east of the subject site. Canberra Airport is located approximately 12 kilometres north of the subject site.

The site is legally described as Lot 829 in Deposited Plan 1277372. The proposed new high school site within this Lot has an area of approximately 5.84 hectares.

The site is currently zoned as R1 General Residential in the Queanbeyan Palerang Local Environmental Plan (LEP) 2022 and is located within Neighbourhood 2 of the Googong Masterplan, within the Googong DCP 2010.

The site is surrounded by low-density residential development, recreational areas and a future local centre adjoining the site to the north.

The site is currently vacant with no existing structures and has been cleared of all trees and native vegetation. The site has an approximately 12 metre fall from the southwest corner of the site at RL ~763.550m Australian Height Datum AHD to the northeast at RL ~751.570m AHD.

2.0 PROJECT CONTEXT

The site is located in the suburb of Googong, an emerging suburb within the Queanbeyan-Palerang Regional Council, a new town marketplace will be developed to the north, and the Googong Commons, featuring various sporting facilities, is situated to the southeast. The site has great connection to the various adjacent amenities with proposed wombat crossing in all directions to residential areas.

The proposed site for the new high school, bounded by Glenrock Drive, Wellsvale Drive, and Observer Street, is irregular in shape and presents a 12-meter fall across its expanse. This topography, while posing certain design challenges, also offers opportunities for great views back across the valleys.

Googong region experiences low humidity, a high diurnal temperature range, and four distinct seasons. Summers are hot and dry, winters are cold to very cold with the majority of rainfall, and spring and autumn offer variable conditions.

Accessibility is ensured with bus stops planned for Glenrock Drive. Furthermore, the site acquired has the capacity to accommodate a possible future primary school, enhancing the educational offerings in the area.

2.1 GOOGONG VEGETATION AND WATERWAYS

The site is located near a variety of existing natural green spaces and parklands including Googong Commons zone to the southeast, which stretches from the Googong Reserve to the south. The site has been cleared of remnant endemic vegetation.

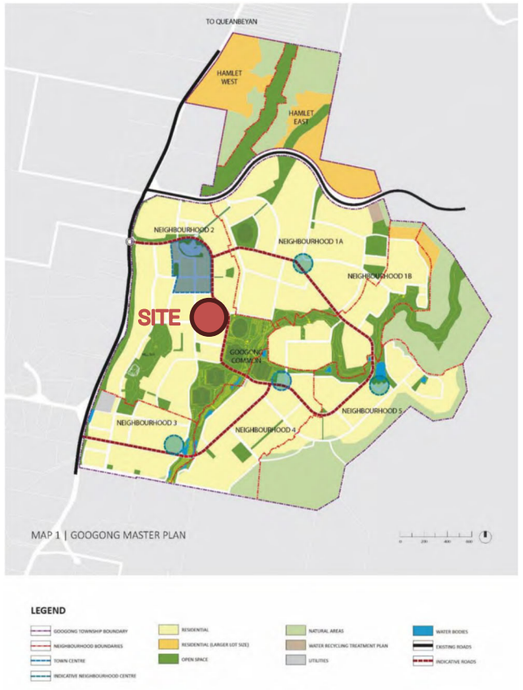


Figure 4. Googong vegetation strategy

SITE LOCATION

Address: 200 Wellsvale Drive, Googong (Lot 829 DP 1277372)

Land size: 9Ha

Existing catchment boundary and High Schools within the SCG are indicated in figure 2 below. A new High School will trigger a review of intake areas.

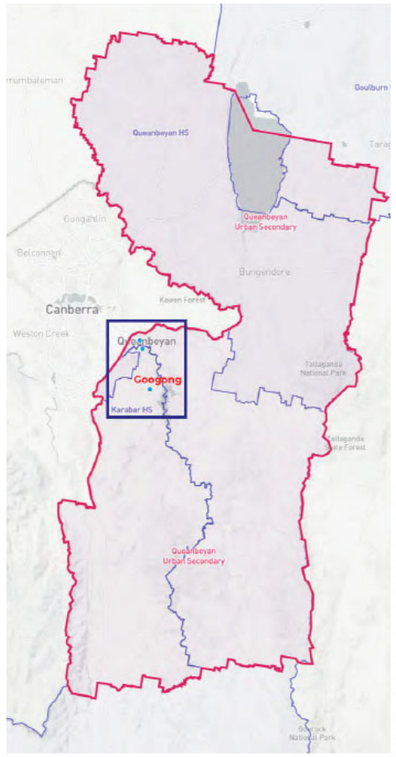


Figure 3. Council Region

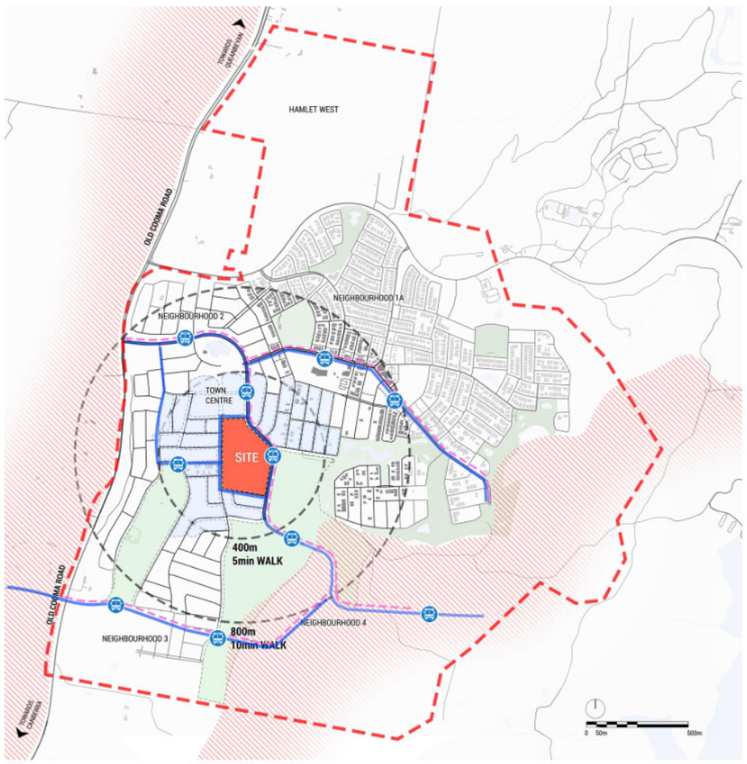


Figure 2. Googong Masterplan

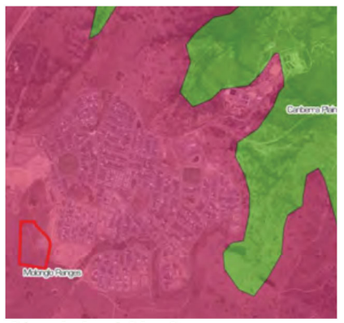
2.2 PLANNING CONTROLS

- The Googong township is divided into five neighbourhoods as shown in the Googong master plan.
- New high school for Googong is located in Neighbourhood 2 (NH2) of Googong township.
- A town centre is planned to the north of the school site which will contribute to local place making but also add to pedestrian and vehicle traffic.
- The adjacent land, south-east of the site is identified as open space and playing fields.
- The site is zoned R1 General Residential under the Queanbeyan- Palerang Regional Local Environmental Plan 2022
- The site has a height limit of 8.5m (southern half of site) and 12m (northern half of site) - the High School is proposed to be located at the northern portion of the site.
- The site is not flood affected.

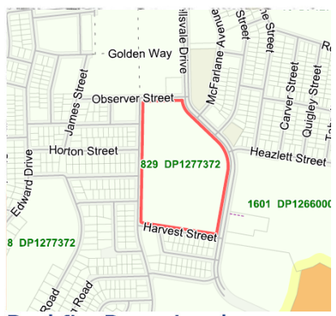
Land Zoning
R1 - General Residential
E1 - Local Centre
(Source: Council Website)

Development Control
Greenfield Housing
Add. Permitted Uses
(Source: Council Website)

Building Height Control
8.5m
12m
(Source: Council Website)



Aboriginal Heritage
(refer to DDWO05227/23)
Molonglo Ranges
(Source: Council Website)



Bushfire Prone Land
Vegetation Buffer
Vegetation Category 3
(Source: Council Website) 2024

2.3 EXISTING AND FUTURE CONTEXT OF THE GOOGONG PRECINCT

The surrounding area is predominantly comprised of residential development with a mix of local businesses and educational facilities. The dominant residential types are low and medium-density housing. Some sites within the Googong area are still not developed and are zoned for future residential developments. A new town centre located north of the site will provide a broad range of market, retail, social, health, and entertainment facilities for the neighbourhood. The new suburb is surrounded by nearby green spaces including parks, reserves, riparian corridor, and seasonal creeks.

The immediate surrounding context to the high school site includes the following:

1. Googong Commons – sporting facilities
2. Googong Primary School
3. Private school K-12
4. Future marketplace, to include fast food, supermarkets and boutique shops.
5. Future residential development

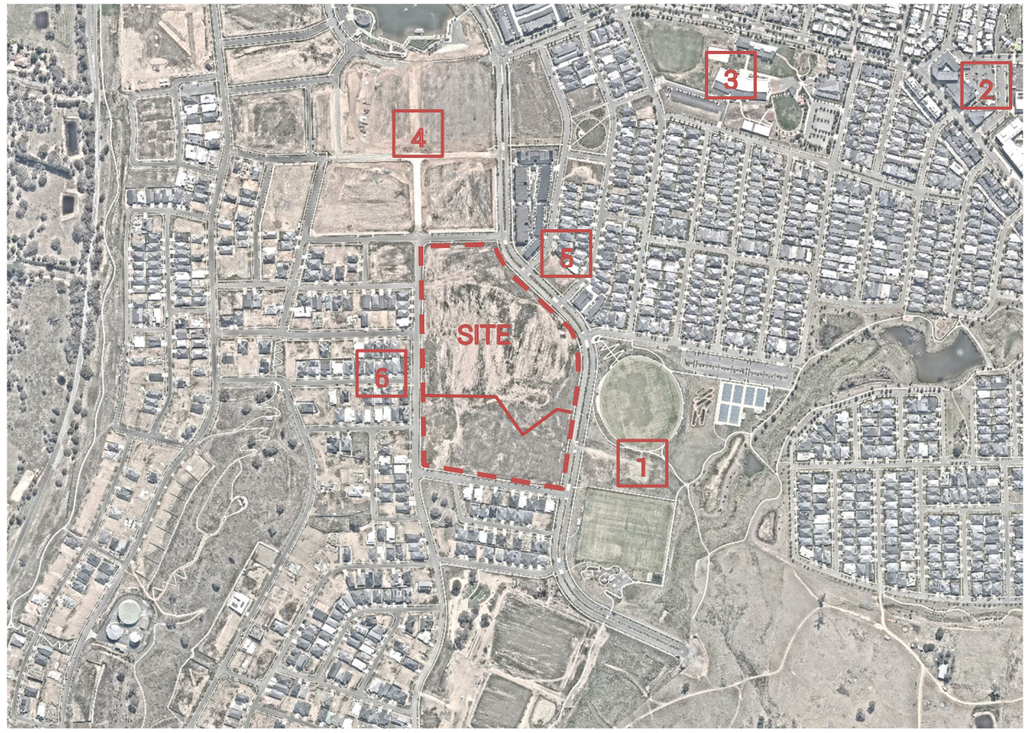


Figure 5. Location map with numbers corresponding to where the following images have been taken.

1. Proposed Googong Commons Sport Facility (Final design to be confirmed)

2. Googong Public School

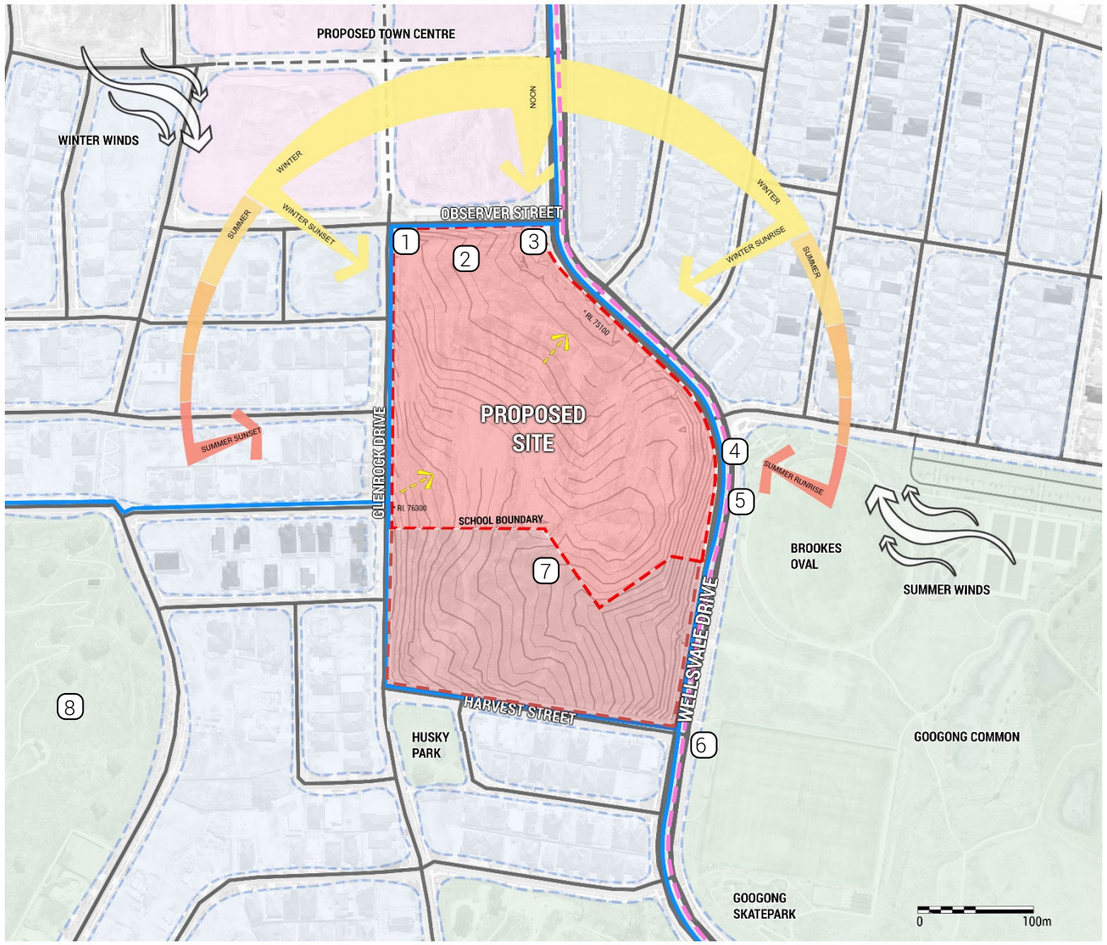
3. Googong Anglican School

4. Artist impression of the proposed Googong town centre (Final design to be confirmed)

5. Adjacent Development

6. Adjacent Development.

2.4 SITE ANALYSIS



1 SITE ANALYSIS PLAN
1 : 2000


1 CORNER OF OBSERVER STREET AND GLENROCK DRIVE


3 WELLSVALE DRIVE


5 WELLSDALE DRIVE LOCKING SOUTH WEST


7 PROPOSED SITE LOCKING NORTH


2 PROPOSED SITE LOCKING SOUTH


4 WELLSDALE DRIVE LOCKING NORTH WEST


6 CORNER OF HARVEST STREET AND WELLSDALE DRIVE LOOKING TOWARDS PROPOSED SITE


8 GOOGONG LOOKOUT LOOKING TOWARDS PROPOSED SITE

2.4.1 WIND AND CLIMATE

Situated in climate zone 7, Googong experiences low humidity, a high diurnal temperature range, and four distinct seasons. Summers are hot and dry, winters are cold to very cold with the majority of rainfall, and spring and autumn offer variable conditions.

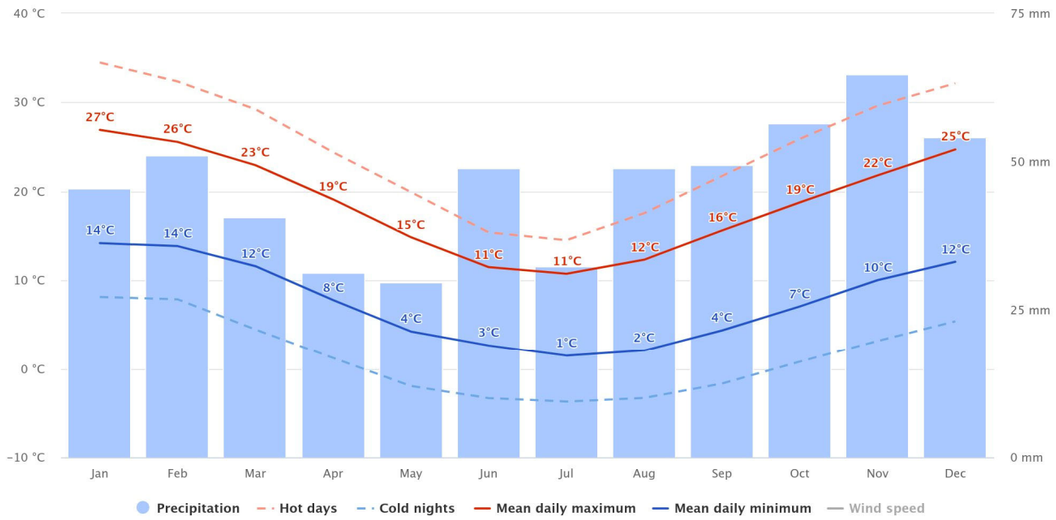


Figure 6: Area weather patterns from Meteoblue

The dominant wind direction in winter (June-August) is from the southwest and in summer (December-February) is from the Northwest direction

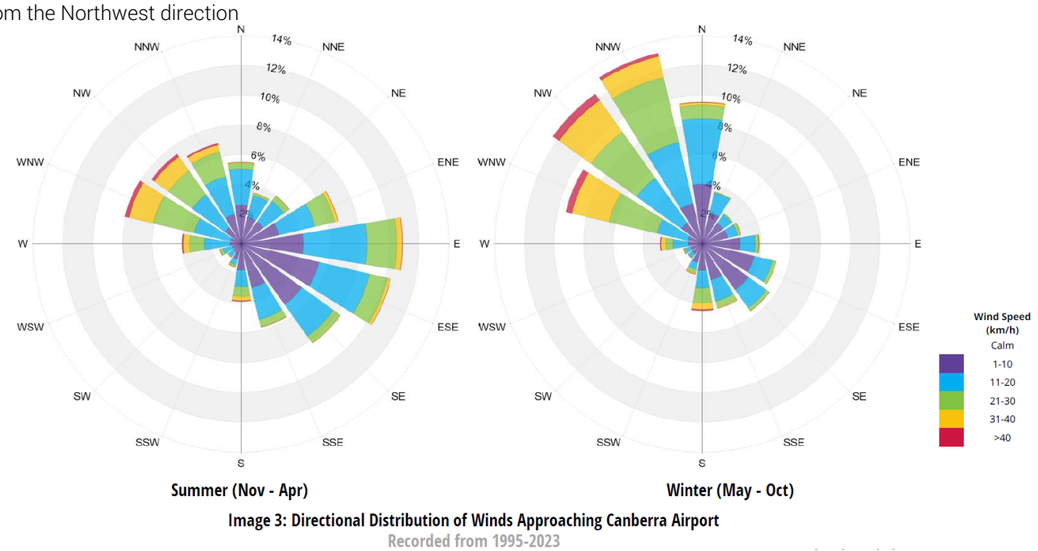


Figure 7: Area wind patterns from RWDI Report Rev A Dec 2024

2.4.2 TRAFFIC AND CYCLEWAYS NETWORK

The following road network diagram highlights the following existing conditions:

- A new bus stop is proposed directly at the eastern frontage of Googong HS on Wellsvalve Dr.
- The newly proposed bus stop will provide a quick and convenient access to different neighbourhood centres and encourage student to use public transport.
- The proposed long term public transport route covers almost the entirety of Googong.
- The proposed enhancements need to be evaluated in more details by bus operator, council and Transport NSW.

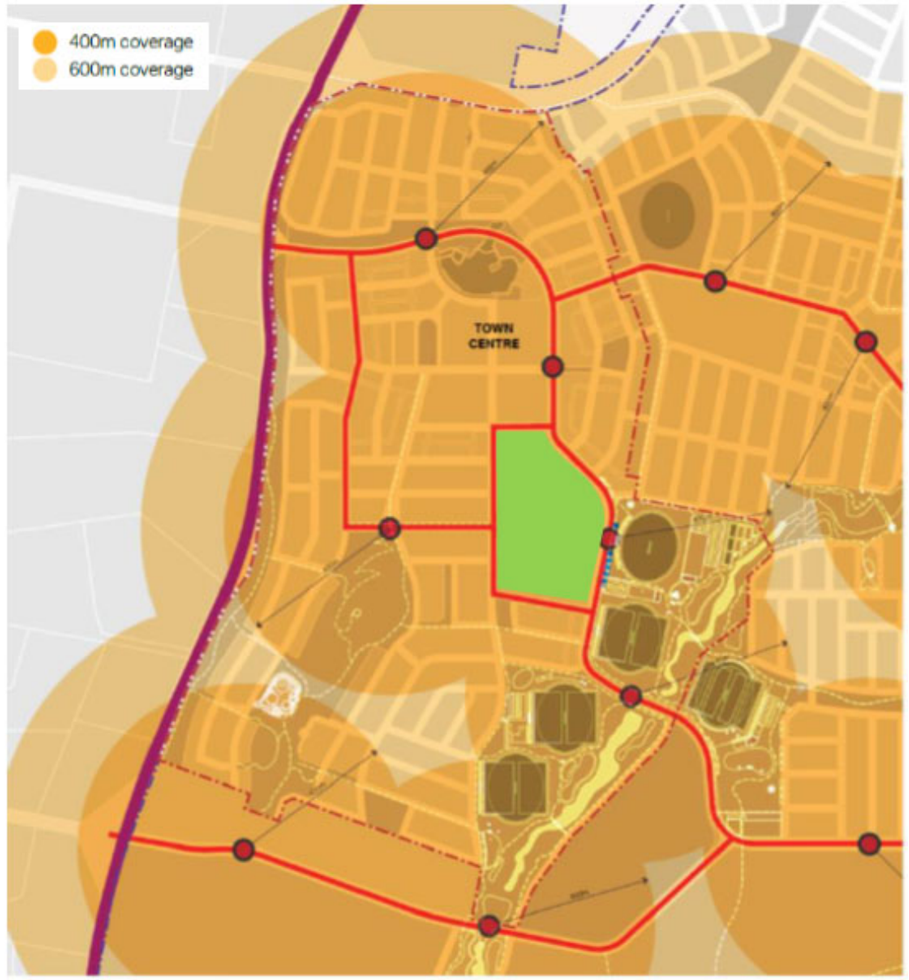


Figure 8: Bus coverage map supplied by Arup RTA

2.4.3 SITE TOPOGRAPHY

The site has an approximate 12m fall from the southwest corner of the site at RL ~763.550 to the northeast at RL ~751.570. Natural overland flow drains to the proposed OSD tank located at the northeast corner of the site. The site has been substantially cleared of natural vegetation

Figure 9. Looking toward the South East from the North West corner of the site

2.5 SITE CONSTRAINTS

Topography:

- Slope Management: The 12m elevation change requires careful planning to manage slopes, minimize cut and fill, and maintain accessibility.
- Grading Challenges: The sloping site may present challenges for creating level playing fields and outdoor spaces, requiring retaining walls or terracing.

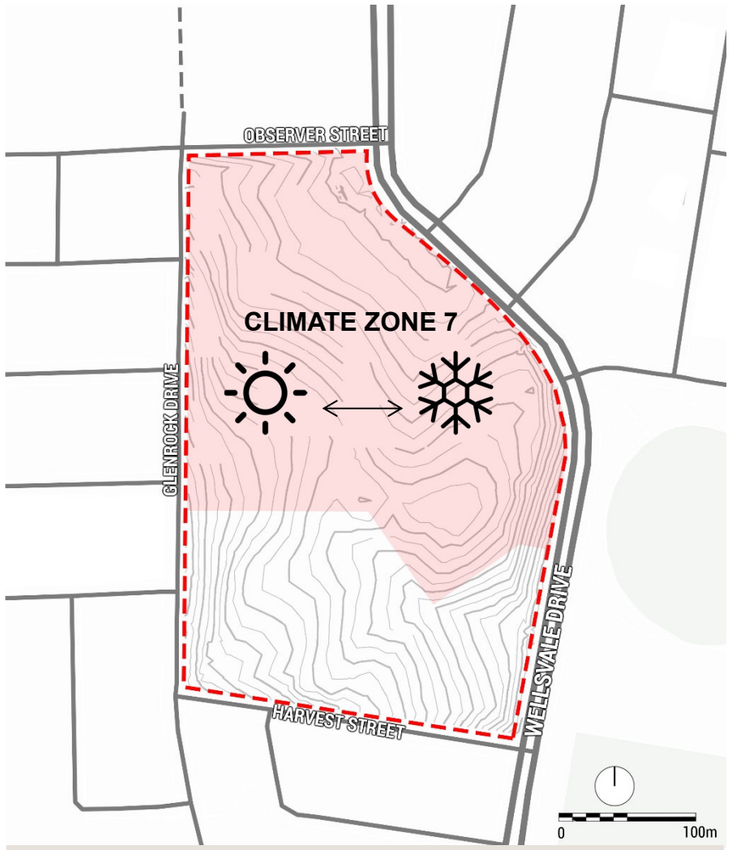
Extreme Weather:

- Thermal Comfort: The extreme temperature variations necessitate design strategies to ensure thermal comfort for students and staff year-round.
- Material Durability: Material selection must account for the harsh climate, including hot dry summers, cold frosty winters.

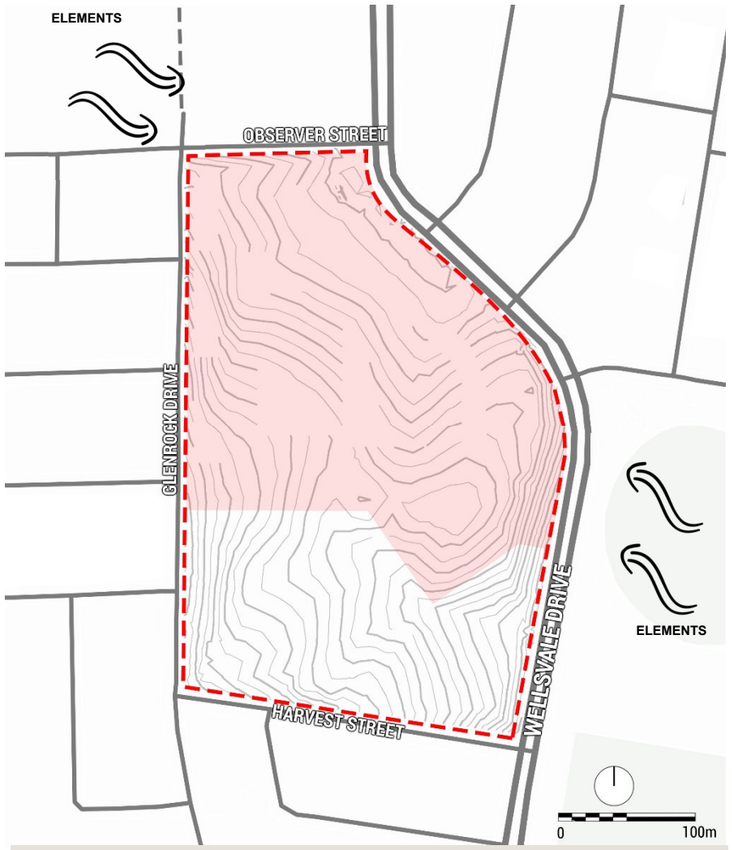
Exposure and Privacy:

- Visual Exposure: The site's openness requires careful consideration of building placement and landscaping to ensure privacy for students and staff.
- Wind Exposure: The site's location may be susceptible to strong winds, requiring windbreaks and sheltered outdoor spaces.

TOPOGRAPHY



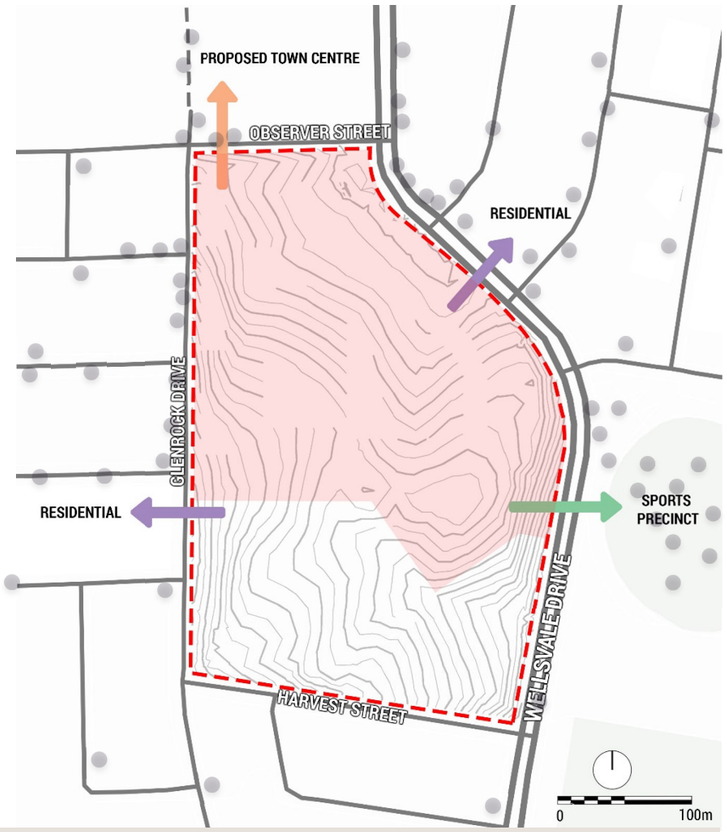
EXTREME WEATHER



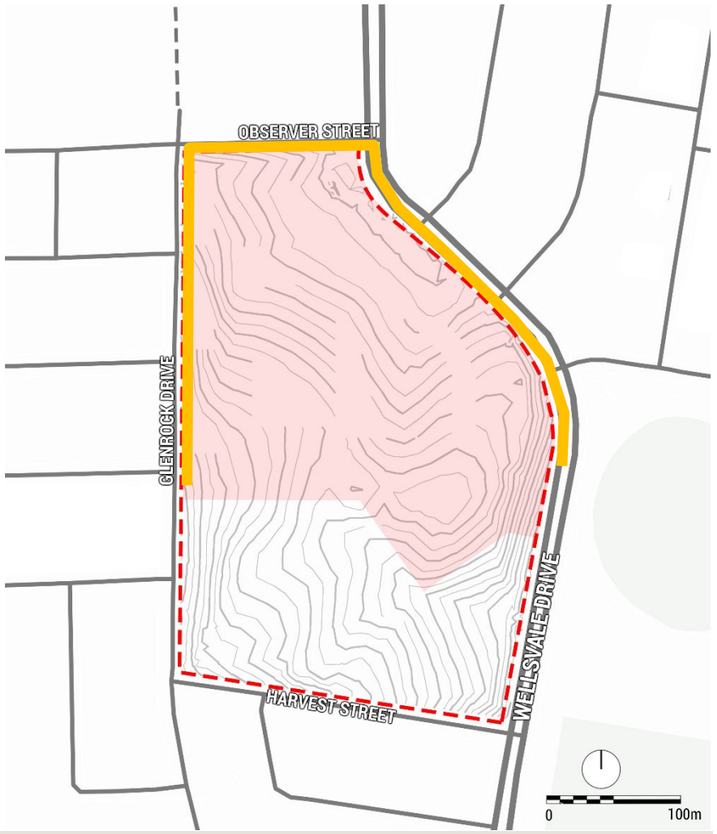
EXPOSURE

2.6 SITE OPPORTUNITIES

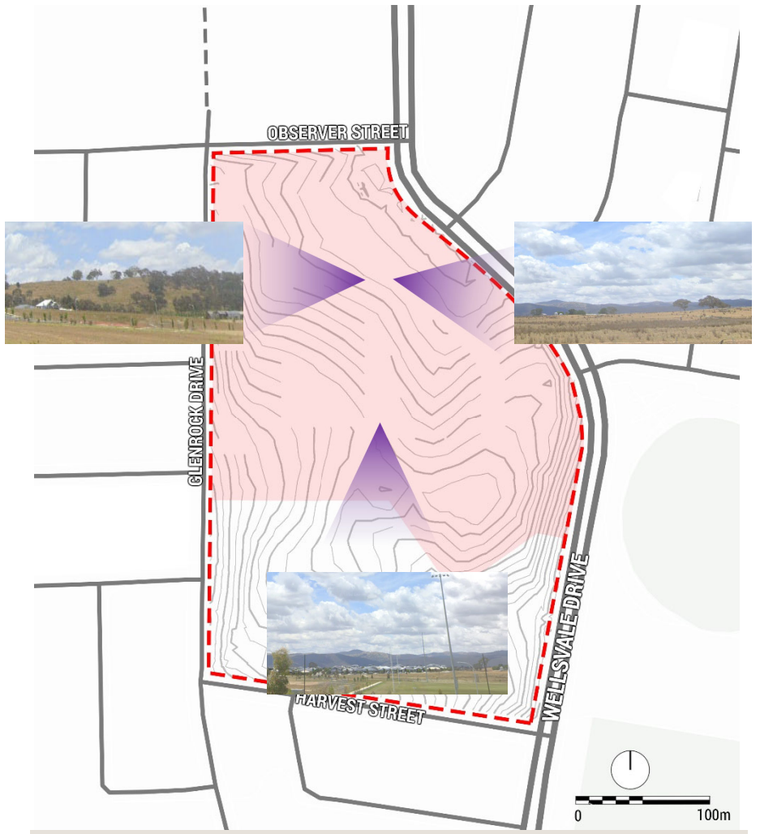
1. Connections to Amenities:
   - Embedded in the Community: The school's proximity to the town centre and Googong Commons creates a unique opportunity to foster a strong sense of belonging within the community. Existing council pathways and visual connections can encourage students and staff to utilize these amenities, blurring the lines between the school and its surroundings.
   - Active Transport: Prioritize safe and convenient pedestrian and cycling routes to encourage active transport to and from school. This includes existing well-maintained footpaths, existing dedicated cycleways, and proposed secure bike storage facilities. This not only promotes physical health but also reduces traffic congestion and the school's carbon footprint.
2. Three Frontages:
   - Optimized Operations: Leverage the three street frontages to effectively separate school operations and manage traffic flow. Designate specific entry and exit points for vehicles, deliveries, and pedestrians to minimize conflict and enhance safety.
   - Enhanced Streetscape: Each frontage presents an opportunity to contribute positively to the streetscape. Considered varied building setbacks, landscaping with native species, and integrated public art to create visually appealing and welcoming street frontages.
3. Picturesque Landscapes:
   - Celebrating the Views: Capitalize on Googong's stunning natural setting by framing views of the surrounding hills and valleys. Incorporate large windows, outdoor learning spaces with panoramic views to maximize the visual connection to the landscape.
   - Integration with Nature: Create a campus that seamlessly integrates with the natural environment. Utilize native plantings, rain gardens, and bioretention areas to enhance biodiversity, manage stormwater runoff, and provide opportunities for environmental education.
4. Connection with Country
   - A deep connection to the country is essential for the design. Understanding the landscape, climate, and traditional heritage allows for designs that are not only functional and beautiful but also sustainable and authentic.



CONNECTIONS



FRONTAGE



SURROUNDING LANSCAPE

3.0 PLANNING PRINCIPLES

3.1 Department of Education's school Vision

Nestled in Ngunnawal & Ngambri Country, the site sits on the undulating landscape travelling down along Murrumbidgee River and Queanbeyan River from Mount Ainslie (Canberra today).

A High School is in need for the emerging communities of Googong. It is aimed to set a benchmark of high quality public education institution to nurture community pride and sustainability.

The Department of Education envisions a high-quality school as a thriving place to learn – a place that serves as a vibrant canvas for learning, a living lesson in sustainability, and a profound Connection with Country and its communities.

As key public assets to NSW, public schools must provide high-quality environments. These should serve as vibrant hubs for the community, where learning flourishes, sustainability is practiced, and a deep connection to Country and local communities is fostered.

These schools aim to be not just places of education but living examples of harmonious coexistence with the environment and a bridge to meaningful relationships with wider communities.

3.2 KEY GUIDING PRINCIPLES

The following principles in schools have been adopted from the *State Environmental Planning Policy (Transport and Infrastructure)* 2021 Chapter 3 Schedule 8 - Design quality principles in schools. These same principles have also been referenced within the Government Architect NSW Design Guide for Schools.

Principle 1—Response to Context

Schools should be designed to respond to and enhance the positive qualities of their surroundings.
In designing built forms and landscapes, consideration should be given to a Country-centred approach and respond to site conditions such as orientation, topography, natural systems, Aboriginal and European cultural heritage and the impacts of climate change.

Landscapes should be integrated into the overall design to improve amenity and to help mitigate negative impacts on the streetscape and neighbouring sites.

Design Response:

- The architecture mimics the colours and textures of the surrounding environment. The buildings are tiered to follow the natural topography, minimizing visual impact and preserving scenic views.
- The planting schedule is prioritise native species where appropriate, creating a biodiverse environment that supports local fauna. Rain gardens and bio-swales have be integrated to manage stormwater runoff and provide educational opportunities.
- The design has allowed to include elements that reflect the Aboriginal cultural heritage of the area, such as a yarning circle, bush tucker garden, or interpretive signage. These spaces would provide opportunities for students and the wider community to learn about and appreciate the traditional custodians of the area.

Principle 2—Sustainable, efficient and resilient

Good school design combines positive environmental, social and economic outcomes and should align with the principles of caring for Country.

Schools should be designed to be durable and resilient in an evolving climate.
Schools and their grounds should be designed to minimise the consumption of energy, water and other natural resources and reduce waste.

Design Response:

- The school is to incorporate passive design strategies to minimize energy consumption and maximize comfort, such as natural ventilation, solar shading, and thermal mass. Drought-tolerant landscaping and water-efficient fixtures would help conserve resources. Refer to section 3.6 for more information.

Principle 3—Accessible and inclusive

School buildings and grounds should be welcoming, easy to navigate and accessible and inclusive for people with differing needs and abilities.

Schools should be designed to respond to the needs of children of different ages and developmental stages, foster a sense of belonging and seek to reflect the cultural diversity of the student body and community.
Schools should be designed to enable sharing of facilities with the community and to cater for activities outside of school hours.

Design Response:

- The school could have multiple entry points with equitable access and improve accessibility for students with disabilities. These entry points have been located near public transportation stops, drop-off zones, and pedestrian walkways.
- The signage package includes clear and consistent wayfinding signage throughout the school grounds, using symbols and colours that are easy to understand for students of all ages and cultural backgrounds.
- All areas of the school, including outdoor spaces, will be accessible via ramps and pathways with gentle gradients, ensuring that students with mobility challenges can easily navigate the entire campus.

Principle 4—Health and Safety

Good school design should support wellbeing by creating healthy internal and external environments.
The design should ensure safety and security within the school boundaries, while maintaining a welcoming address and accessible environment.
In designing schools, consideration should be given to connections, transport networks and safe routes for travel to and from school.

Design Response:

- The building design prioritizes natural ventilation and daylighting to create comfortable and healthy learning spaces. This includes operable windows and shading devices to optimize airflow and natural light. Refer to section 4.2.6 for further information.
- The design could include a variety of outdoor learning spaces, to encourage physical activity and provide opportunities for students to connect with nature.
- The design has integrated Safety and Crime Prevention Through Environmental Design (CPTED) principles, such as natural surveillance, clear sightlines, and controlled access points, to enhance safety and security. Refer to section 4.3 for further information.

Principle 5—Functional and Comfortable

Schools should have comfortable and engaging spaces that are accessible for a wide range of formal and informal educational and community activities.

In designing schools, consideration should be given to the amenity of adjacent development, access to sunlight, natural ventilation, proximity to vegetation and landscape, outlook and visual and acoustic privacy. Schools should include appropriate indoor and outdoor learning and play spaces, access to services and adequate storage.

Design Response:

- The classrooms and other learning spaces have been designed to be flexible and adaptable, utilizing large sliding doors allows them to be used for a variety of formal and informal educational activities.
- The school grounds include a variety of outdoor spaces, such as courtyards, gardens, and playing fields, that are designed to be comfortable and engaging for different active and passive activities for all age groups.
- The school grounds have been designed to provide a strong connection to nature, with landscaping that incorporates native plants, trees, and gardens. This would enhance the visual appeal of the school and provide opportunities for outdoor learning and play.

Principle 6—Flexible and Adaptable

In designing schools, consideration should be given to future needs and take a long-term approach that is informed by site-wide strategic and spatial planning.
Good design for schools should deliver high environmental performance and ease of adaptation, and maximise multi-use facilities.
Schools should be adaptable to evolving teaching methods, future growth and changes in climate, and should minimise the environmental impact of the school across its life cycle.

Design Response:

- Spaces like the library, gymnasium, and classrooms could be designed for multiple uses, accommodating a range of educational activities within the curriculum. Due to the master-planning there are opportunities for shared use agreements with the community to use facilities like hall.

Principle 7—Visual Appeal

School buildings and their landscape settings should be aesthetically pleasing by achieving good proportions and a balanced composition of built and natural elements.
Schools should be designed to respond to and have a positive impact on streetscape amenity and the quality and character of the neighbourhood.
The identity and street presence of schools should respond to the existing or desired future character of their locations.
The design of schools should reflect the school's civic role and community significance.

Design Response:

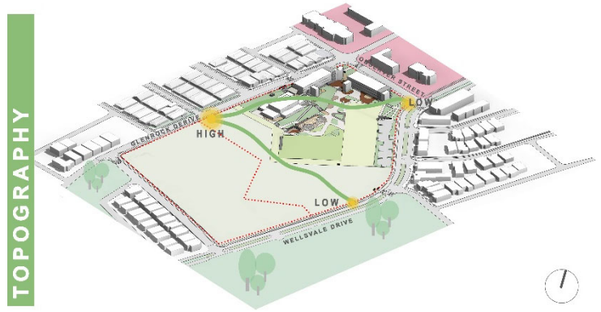
- The buildings and landscape have been designed with proportions and composition of built and natural elements. This involves using a variety of building heights, setbacks, and materials to create visual interest and break down the scale of the buildings. The design integrates the school entries with the surrounding streetscape, using landscaping, pedestrian pathways, and visual connections to create a welcoming and accessible environment.
- The building facades have been designed to draw from a natural palette and resemble the character of the neighbourhood, using a variety of materials, colours, and textures of the area. A combination of a masonry base and metal cladding on the upper levels create a strong base and reducing the scale by having lighter upper levels.

3.3 ARCHITECTURAL DESIGN PRINCIPLES

Topography

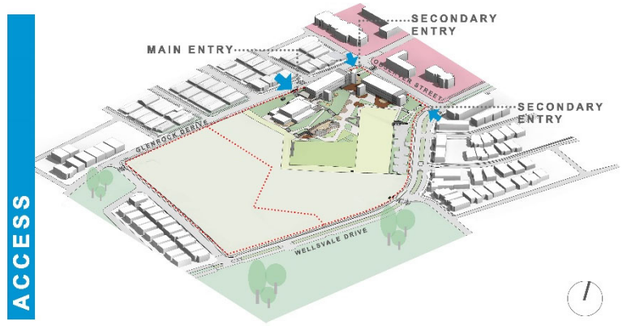
The natural 12m level difference diagonally across the site presents a challenge in maintaining level transition between connecting buildings and within the courtyard spaces. Inevitably, buildings and landscape will be tiered to manage the change of levels.

In order to soften the hard edge of stairs, ramps and walkways, the landscape design will introduce battered landscaping and tree lines to blend the change in levels.



Access

The buildings are designed with a disjointed ground floor to create multiple entry points along Observer Street, promoting accessibility and ease of movement. The main school entrance, situated on Glenrock Drive, features a generous forecourt designed to serve as a welcoming gathering space and manage the flow of students during peak times. Whilst there are two additional access points coming from the two northern corners.



Active vs Passive Play

A variety of outdoor spaces are vital for a well-rounded school experience. This design thoughtfully divides the courtyard into active and passive zones. The active zone features a sports precinct with a playing field, cricket net, and basketball courts, while the passive zone offers assembly courts with seating areas amidst native flora. This balance ensures students have spaces for both physical activity and relaxation, fostering a holistic learning environment.

Heart of the School

The building's footprint strategically hugs the outer edges of the site, creating a sheltered central courtyard embraced by a built form on three sides. This perimeter design offers a panoramic view of the outdoor spaces, facilitating effective supervision and fostering a sense of security within the heart of the school.

3.4 CONNECTING WITH COUNTRY

We respectfully acknowledge the First Peoples of Australia. We acknowledge there are many countries, knowledges and cultures and pay respect to the cultural knowledge-holders who have guided us in the design of the new high school in Googong project. We acknowledge and pay our respects to the traditional owners of the land on which this project is being conducted. We pay our respects to their elders, past and present.

The objective is to recognise the material and spiritual connection of traditional custodians to the land, water and sky of Country, the Ngunnawal and Ngambri people. By committing to a process of equitable and meaningful co-design with Aboriginal cultural knowledge holders, school environments which include culturally safe spaces for Aboriginal people will be developed. Aboriginal cultural knowledge and truth telling will be embedded in these environments.

In consultation with Aboriginal culture knowledge holders embed elements of Aboriginal culture within the design. In addition to physical design elements, explore opportunities for the incorporation of intangible cultural elements into the design, including signage, naming, way findings, artworks, etc.

From the lands and waters where we as NBRS live and work, we acknowledge the; Gamaragal (Sydney), Wurundjeri (Melbourne), and Turrbal (Brisbane) Peoples. Through our projects, we commit to supporting the health and wellbeing of Country by valuing, respecting, and seeking guidance from First Nations Peoples.

The project team has an initial briefing with the different groups and is scheduled to complete a walk on country in January 2025, from there we will develop a response and concept for the project.

3.5 SUSTAINABILITY

Sustainable design is an essential approach for the new high school for Googong project due to its crucial role in mitigating environmental impact and creating a healthier learning environment. By prioritizing sustainable practices, the school minimizes its ecological footprint and contributes to a more sustainable future for generations to come. This commitment is reflected in various design elements, such as energy-efficient systems, water conservation measures, and the use of sustainable materials. Furthermore, sustainable design fosters environmental awareness among students, staff, and the wider community, promoting a sense of responsibility towards the planet. By embracing sustainable design, the project exemplifies a commitment to environmental stewardship and sets a positive example for future developments.

Registered for
Green Star Buildings v1 rating
4 Star target

4 star ★★★★

72 kW
Solar Panels

Renewable Energy

Example of minimizing the heat island effect by reducing hardscaping

100%
Electric building

Expect VET kitchen and science labs

20% Target
Annual energy use reduction
- onsite renewable energy (Initially 70kW)
- efficient systems
- maximise mixed mode ventilation

10%
Upfront Embodied emission reduction
- BOQ to calculate upfront carbon
- Manufacturing structure and envelope targets

Water Fixtures
with Minimum High efficiency WELS ratings

15% site area
for external landscaping; diversity of species

Stormwater
40% annual average flow reduction and meeting pollutant targets

Lighting Comfort
- suitable lighting levels
- glare control
- adequate daylight

Low VOC
paints, adhesives, sealants, carpets, engineered wood products

Outdoor Air
50% improvement above AS1668
or maintain CO2 at 800ppm

End of Trip
Showers, changing facilities, lockers and safe access to building

Light Pollution
Controlled to minimise impact on night sky and neighbours

Waste Separation
Collection of waste streams and
appropriate waste storage

Urban Heat Island
mitigation through vegetated landscaping, high SRI roof colours/materials

Indigenous Inclusion
RAP or inclusion of Indigenous Design

Inclusive Design
Equal access, diverse wayfinding, inclusive spaces

Construction
- 90% C&D Waste Diversion
- Contractor EMS
- Commissioning and Tuning
- Design for and testing of airtightness
- Site worker support and inclusion

4.0 ARCHITECTURAL DESIGN RESPONSE

4.1.1 BIODIVERSITY

The site is currently cleared of vegetation and does not appear to contain any trees or notable shrubbery. The site is not mapped on the Biodiversity Values Map under Queanbeyan-Palerang Regional Local Environment Plan 2022 section 7.3.
The site is not identified as being subject to biodiversity values in accordance with the Biodiversity Values (BV) Map. However, if vegetation is proposed to be removed, the ecological significance of that vegetation should be reviewed.

Figure 10. Googong DCP 2010 plan for Biodiversity

4.1.2 BUSHFIRE

The site is not situated in a bushfire zone as per the recent remapping.

Figure 11. Googong DCP 2024 plan for Bushfire

4.1.3 FLOODING

The site is not situated in a flood affected area. The closest flood affected area is Greenleigh, which is about 6km away.

Figure 12. Googong DCP 2024 plan for Flooding

4.1.4 SETBACKS

The following setback provisions are set out in the Googong Development Control Plan 2010 Part 6 of the Queanbeyan – Palerang Council for non-residential development on residential sites:

- Corner sites require a 6m setback to all sides.

Whilst DCPs do not apply to REFs, the setbacks above have been considered in the design, to ensure the built form responds to the general desired future character for the site and surrounds. Notwithstanding the above setback, the density of the proposed residential developments surrounding the sites resemble a variety of development typologies where reduced setbacks have been accommodated as required:

Figure 13. Project site plan with Setbacks noted in pink

4.1.5 SITE ARRANGMENT

Site Arrangement Concept

The design concept for new high school for Googong, "A School that Embraces the Valley's Embrace," draws inspiration from the natural surrounding landscape. Buildings are terraced down the slope, mimicking the valley's contours, and feature green mounds to blend with the environment. Outdoor learning terraces offer panoramic views, while a central gathering space acts as a community hub. Varying scale of spaces create a sense of openness or intimacy as needed, and natural light floods the interiors. The design promotes interdisciplinary learning, outdoor education, and community engagement, fostering a sense of place and connection to nature.

Site Benching

The 5.84-hectare school site, situated within a larger 9-hectare block, was carefully planned to respond to the existing topography and create a variety of engaging learning spaces. To achieve this, the site was benched at three distinct levels:

- Upper Level: This level accommodates the administration and hall building, with a generous plaza extending from Glenrock Drive. This prominent location provides a welcoming entry for visitors and a clear focal point for the school.
- Middle Level: Accessed from the north-western corner on Observer Street, this level connects to the Googong marketplace and extends through to the southern end of the site. It encompasses the main courtyard, play spaces, and Block B, which houses the TAS workshops on the ground floor.
- Lower Level: Accessed via Wellsvale Drive, this level houses the staff car park, waste zone, and OSD tank. This strategic positioning separates service and delivery areas from the main pedestrian and learning zones.

Central Courtyard

The central courtyard provides a dynamic heart for the school, offering a mix of active and passive play spaces. It includes a variety of seating areas for relaxation and social interaction, basketball courts for sports and recreation, and sports ovals for physical activity. Multiple trees are integrated throughout the courtyard to provide shade and sun protection, ensuring a comfortable environment for students throughout the year.

Sensory Garden

A sensory garden is incorporated along Glenrock Drive, nestled between the site boundary and Block A. This tranquil space provides a quiet retreat for students, particularly those in the support unit, to feel safe, engage with nature, and de-stress. The garden features a variety of native species, creating a calming and restorative environment. A solid wall along the site boundary ensures privacy from neighbouring properties.

Vertical Circulation

The site's multi-level design necessitates a well-considered vertical circulation strategy. A combination of ramps and stairs provides access between the different levels, with a priority placed on ramps with 1:20 gradients to enhance accessibility and minimize the need for handrails. Four sets of stairs are strategically located at the ends of Block A and B to provide access to the upper levels, and a lift is positioned in the north-west corner of the site to ensure full accessibility for all users. With the rest of the level transitions through landscaped zones.

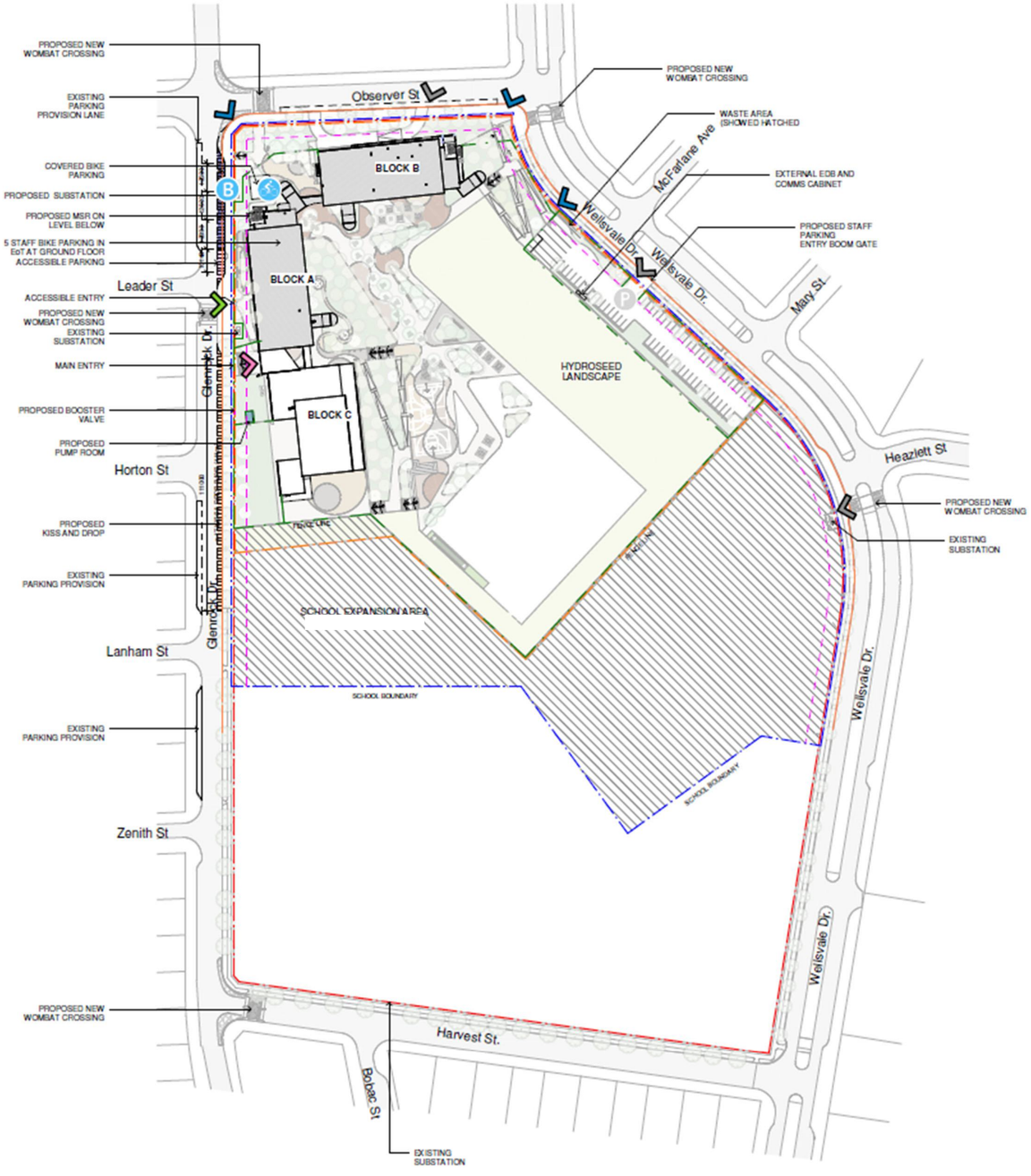
Service Zone

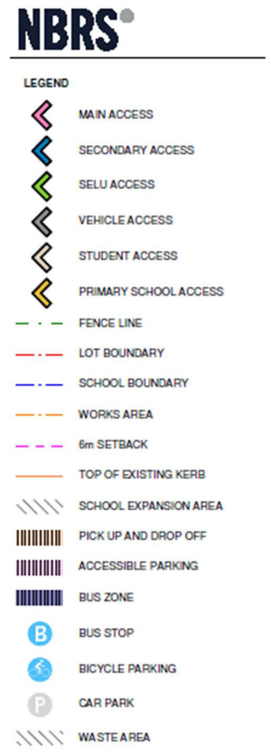
Efficient and safe service access was a key consideration in the site arrangement.

- Delivery and Servicing: A dedicated driveway off Observer Street on the northern boundary provides a convenient point for material drop-off and servicing. Its proximity to Block B allows for easy access to the food tech kitchens, wood/metal workshops, and canteen. This location also provides a safe and designated area for gas bottle replacement.
- Waste Management: The waste area is strategically located within the staff car park, minimizing its visual impact and ensuring efficient waste collection. The 1:20 ramp between the main plaza and the car park facilitates easy movement of waste trolleys by contractors.

For the entry plazas and public domains details please refer to the section 4.1.8 later in this report.

4.1.6 SITE PLAN



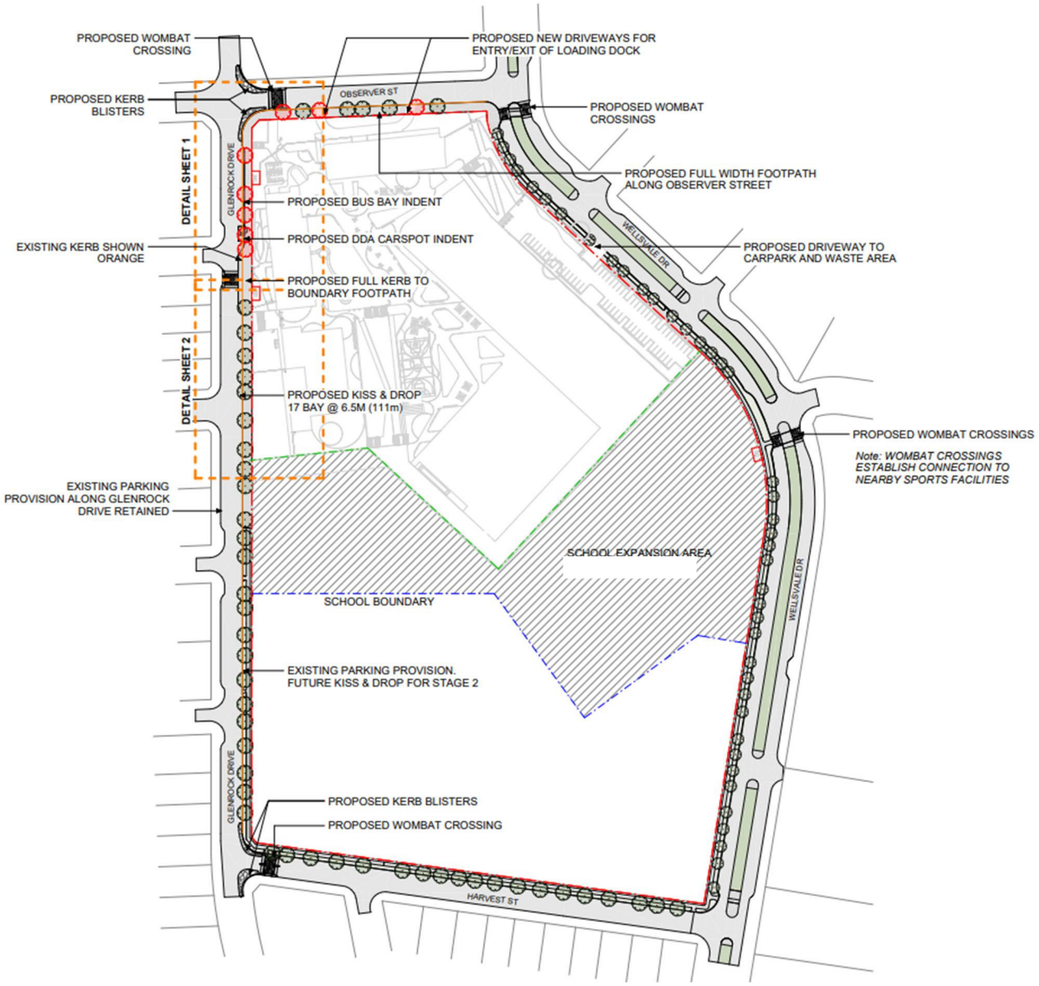


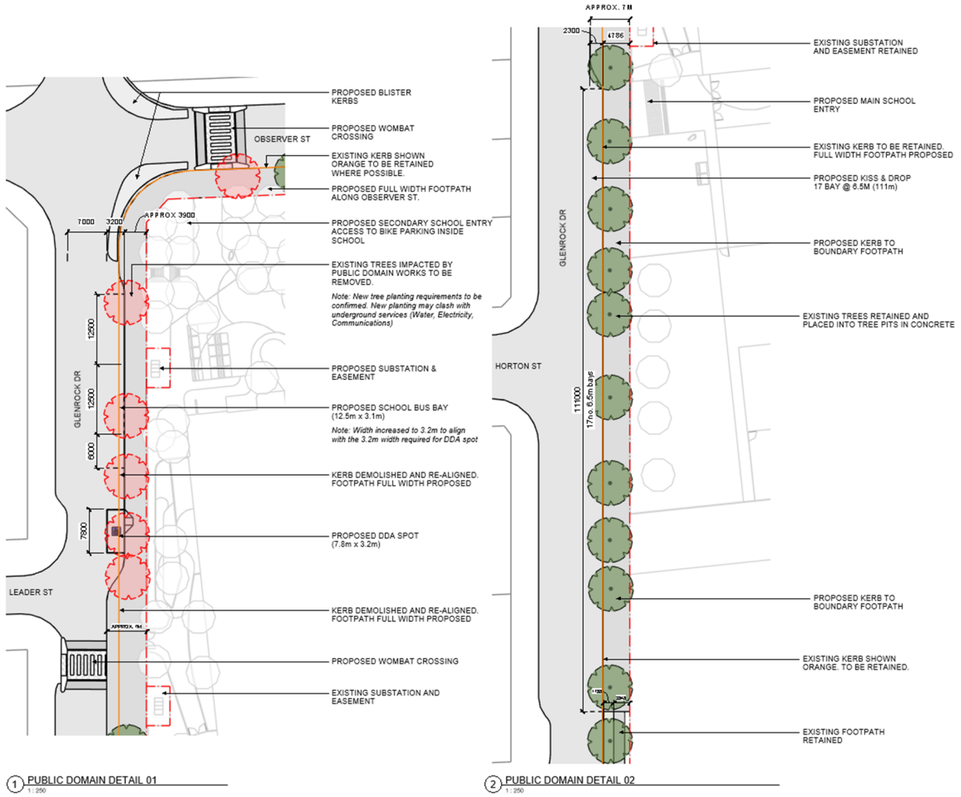
4.1.7 PUBLIC DOMAIN

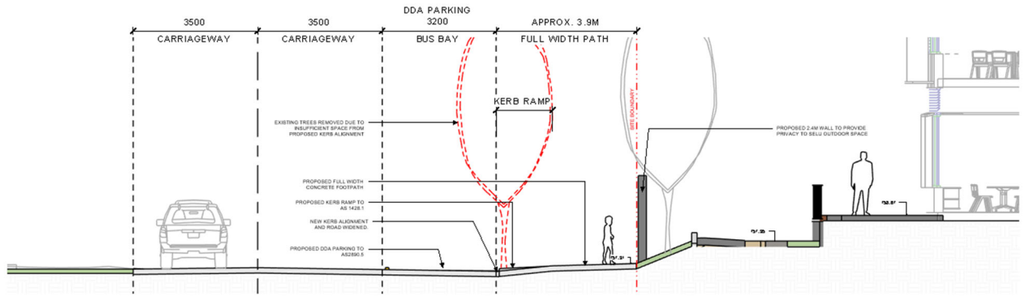
The main school entry is located between the Block C and Block A accessed from Genrock Drive. Subsequently, the proposal is focused on Glenrock drive with proposals for a Bus Bay and Kiss & drop that are separated from each other with a proposed wombat crossing. A DDA accessible spot exists at the south end of the bus bay, located strategically close to the support unit for discrete entry and exit.

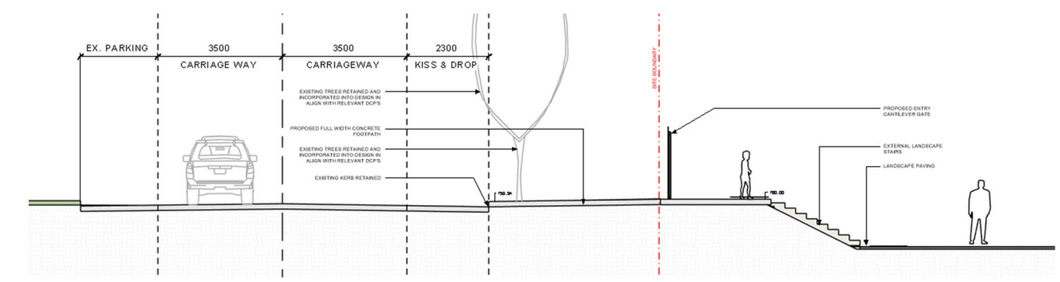
Full width kerb to boundary footpaths is proposed wrapping around the northern end of the site from the main entry through to the corner of Observer Street and Wellsvale drive. Wombat crossings are provided along all surrounding roads to assist with safe movement of students which can be further studied in the supplied public domain drawings. If the school capacity increased in the future, there is provision for the kiss and drop capacity to be lengthened south along Glenrock Drive with further opportunities to utilise Wellsvale Drive.

Refer to drawings from the Landscape concept GHS-NBRS-00-XX-DR-L—6000, GHS-NBRS-00-XX-DR-L-[1]-6001 & GHS-NBRS-00-XX-DR-L-[1]-6100









4.1.8 ENTRY PLAZA

Entry plazas play a crucial role in establishing a welcoming and engaging first impression for schools. They serve as a transitional space between the public realm and the school environment, providing a sense of arrival and orientation. The entry plazas are designed to foster a sense of community by offering a gathering space for students, staff, and visitors at each major node of the site. Clear entry points enhance safety by providing a clear and defined point of access, facilitating pedestrian flow, and separating vehicular traffic. Additionally, we have looked at creating entry plazas that contribute to the streetscape of the area, creating a positive and inviting atmosphere. By incorporating landscaping, seating, and pulling back the fence lines, the entry plazas can become vibrant and welcoming spaces that enhance the overall school experience.

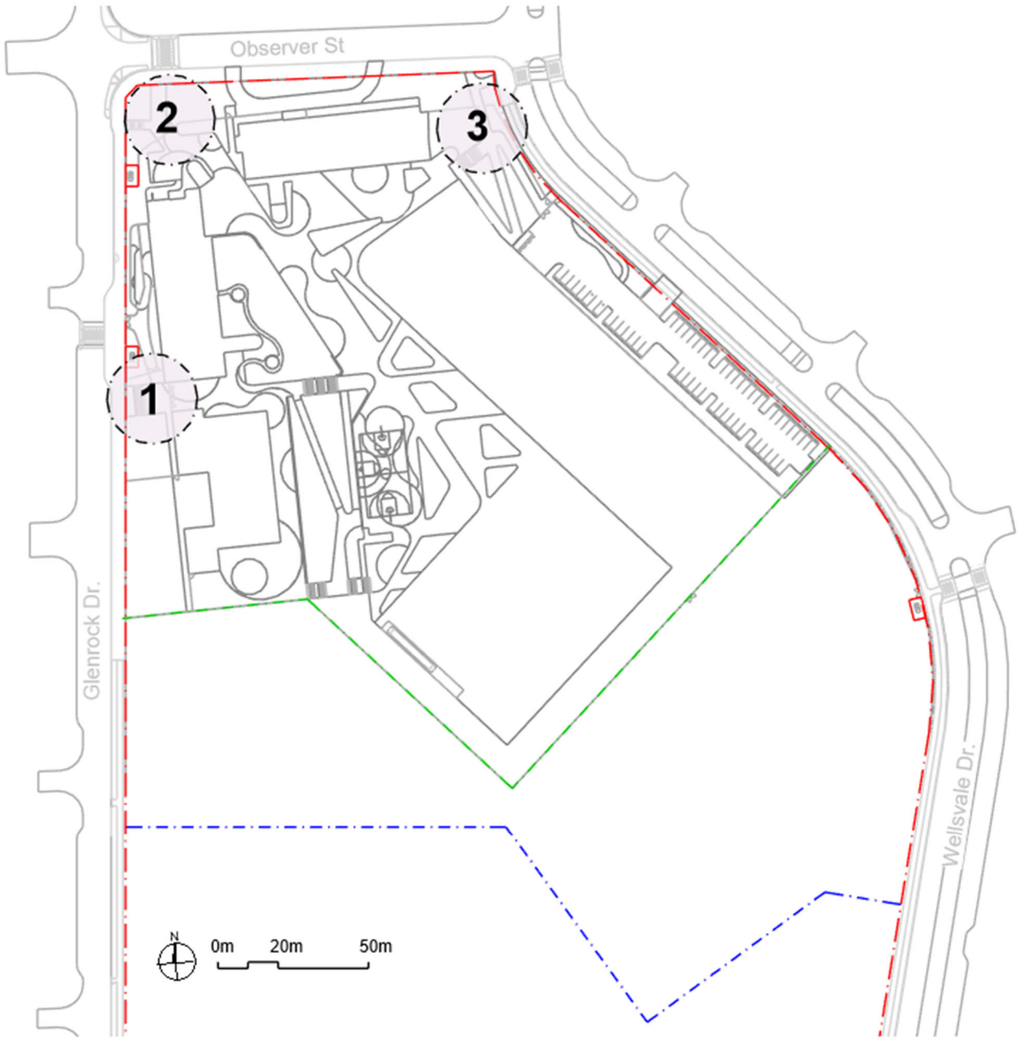


Figure 14. Site plan illustrating the entry plazas

1. Main Entry

The main entry plaza welcomes the community with a sense of openness and calm. Set below street level, it creates a subtle, recessive presence, drawing you in rather than imposing itself. Bordered by the administration building on one side and the hall on the other, the plaza acts as a central hub, guiding movement and offering a sense of arrival. This arrangement allows for community access to the hall while maintaining security for the rest of the school.

2. North West Corner

The northwestern corner of the school site, seamlessly connected to the Googong Marketplace Square, features an inviting entry plaza where the fence line has been pulled back to remove the barrier between public and private. This vibrant space serves as a gathering point for parents and children, as well as a comfortable waiting area for students awaiting buses. From here, the plaza leads directly to the heart of the school – the central plaza – which the entire has been designed around. A prominent circulation spine anchors this corner, complete with a generous stair and lift, facilitating vertical movement throughout the school.

3. North East Corner

Occupying the most prominent corner of the site, the northeastern edge fronts Wellsvale Drive, the main road through Googong. Positioned 3 meters below the central plaza, this area utilizes gentle ramps and stairs to navigate the height difference. Instead of relying on retaining walls, the landscape has been thoughtfully battered down, mimicking the rolling hills that characterize the surrounding region. This creates a visually appealing transition that integrates the school grounds with the natural topography.

4.2 BUILT FORM AND SCALE

4.2.1 HEIGHT

The high school portion of the site has a 12m height limit under the Queanbeyan-Palerang Council LEP Section 7.11.

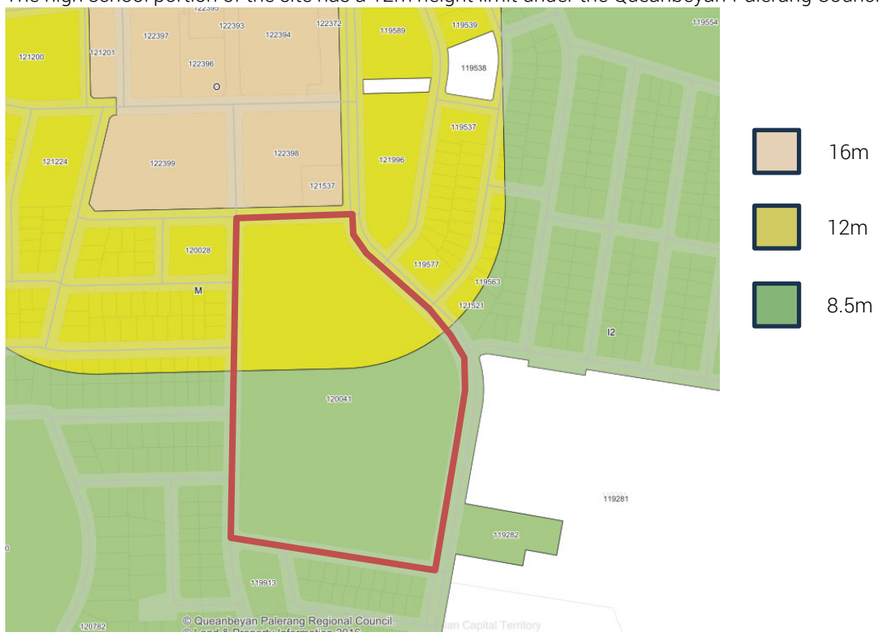


Figure 15. Googong DCP 2010 building height limits

The following diagrams provide indication of building heights relative to 12m cut planes, measuring from the natural ground levels. Noting that Block C site below the height limit.

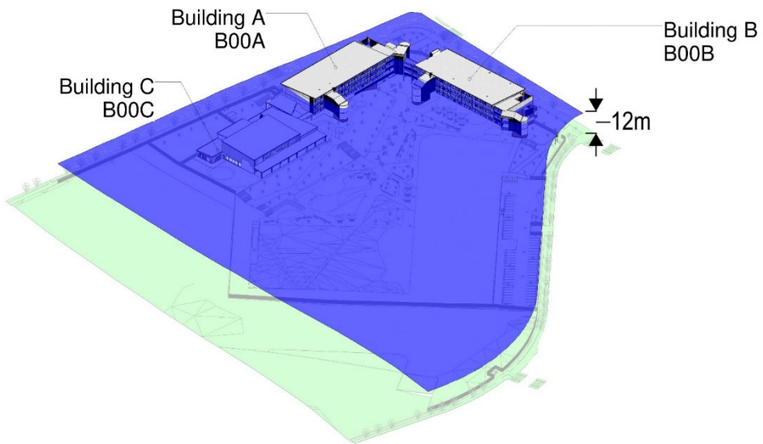
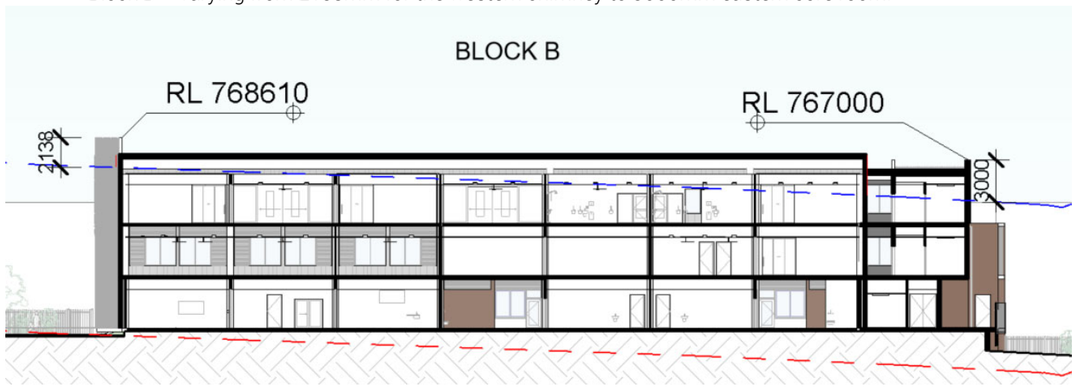


Figure 16. Diagram of the 12m cutting plane and breaching Block And B

The proposed heights of blocks A and B vary but will exceed the 12m height limit;

- Block A – varying from 2987mm on the south west corner through to 4084mm on the north east corner.

- Block B – varying from 2138mm for the western chimney to 3000mm eastern core room.



While the building exceeds the prescribed height limit, block A and B has been designed to work with its surroundings. A change facade materials, with a heavy base and lighter colours ascending towards the top, helps to visually break down the scale. Further mitigating the visual impact, the building is set back from the boundary to create a generous landscape buffer.

Referring to architectural drawing 002500, the project doesn't overshadow any adjacent properties and referring to section 4.3.4 there are no opportunities that school users can see into private open spaces.

4.2.2 BUILDING FACADE

The facade design is a critical element to the new high school for Googong, as it significantly impacts both the aesthetic of the streetscape and functional performance of a building. The facade serves as the interface between the public and the school environment, mediating the passage of light, air, and privacy, while also contributing to the building's visual identity and its relationship to the surrounding context.

Concept

Eucalyptus trees that are so prominent in the area offer strong design concept for the building facades. A layered approach combining bark-inspired textures with leaf-inspired colours, using textured brickwork as a base paired with the inconsistent vertical cladding represent the unique eucalyptus trunks, overlaying them with metal screens that change colour as they move around the building. These screens, inspired by the eucalyptus themselves, can also provide privacy and shade, particularly beneficial for buildings in warmer climates.

Figure 17. Natural colours and textures of the area

Paired with the eucalyptus trees, we have used the surrounding silhouette of the mountain ranges to be reflected in the transition of brickwork to metal cladding. The mountain silhouette is created through the interplay of light and shadow on the facade. The effect would be most dramatic during sunrise and sunset, when the long shadows cast by the building would emphasize the mountain profile.

Figure 18. Sunset in the Googong Valley

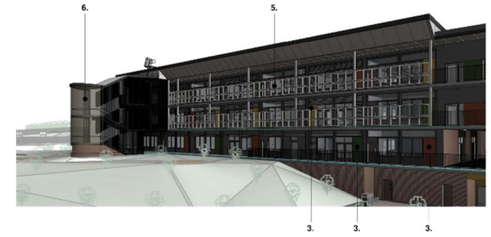
Scale

The proposed high school development has minimised bulk and scale through a combination of varied setbacks (with a minimum 6m), building recesses and articulated facades.

Both Blocks A and B, which front Glenrock Drive and Observer Street, are three-storey structures with a length of 52 meters and a height of 13.5 meters. To reduce the impression of height, the facade is divided into three horizontal sections, with a transition from brick to metal cladding at Level 1. Varying coloured sun shading further breaks down the length and helps to control direct sunlight. The service cores are cladded with matching materials but incorporate acoustic louvres to conceal the mechanical systems from the street.

While Block C is a single storey building, due to the use of the space as a gym, it has a height more consistent with a 2 storey building. It has a 35m façade fronting Glenrock drive which is screened by planting and is battered down from the street level to once again reduce the scale.

All buildings are connected via covered walkways which are generally recessed from the street front façade and/ or have lower roofs, enhancing building bulk minimisation.



LEARNING BUILDING - COURTYARD FACADE

1. BWK01

2. MC01

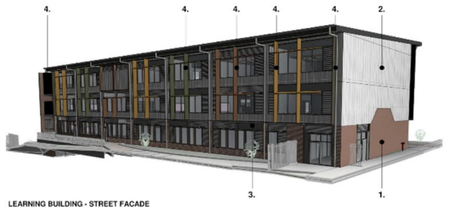
3. CFC01, CFC02, CFC03

4. SCN01, SCN02, SCN03, SCN04 & SCN05

5. WAT01

6. SCN06, SCN07

BWK01 FACE BRICKWORK TYPE 01 - Bowral Remastered Westow
MC01 METAL CLADDING - SHALE GREY
CFC01 COMPRESSED FIBRE CEMENT CLADDING - BLACKISH BASE
CFC02 COMPRESSED FIBRE CEMENT CLADDING - GREENBACK
CFC03 COMPRESSED FIBRE CEMENT CLADDING - MAYA
CFC04 COMPRESSED FIBRE CEMENT CLADDING - QUINTA
SCN01 SHADING BATTEN - MEDIUM BRONZE
SCN02 SHADING BATTEN - GREEN PEARL
SCN03 SHADING BATTEN - GONDOR GOLD
SCN04 SHADING BATTEN - ORDOS
SCN05 SHADING BATTEN - MEDIUM BRONZE
WAT01 GLAZED WINDOWS
WAT03 GLAZED LOUVRE
SCN06 PERFORATED METAL SCREEN - ARTWORK
SCN07 PERFORATED METAL SCREEN - ARTWORK



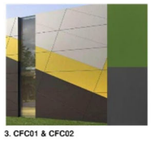
LEARNING BUILDING - STREET FACADE

BLOCK C - NORTH EAST ELEVATION

BLOCK C - SOUTH EAST ELEVATION

1. BWK01

2. MC01



3. CFC01 & CFC02

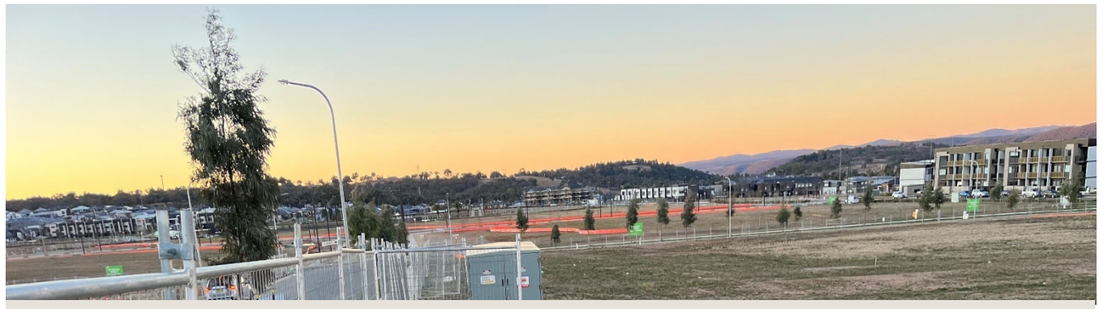
4. RS02

5. FOD01

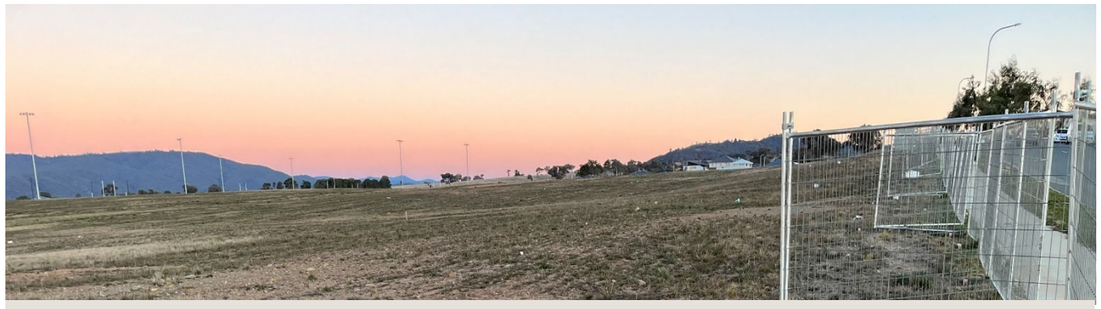
BWK01 FACE BRICKWORK TYPE 01 - Bowral Remastered Westow
MC01 METAL CLADDING - SHALE GREY
CFC01 COMPRESSED FIBRE CEMENT CLADDING - BLACKISH BASE
CFC02 COMPRESSED FIBRE CEMENT CLADDING - GREENBACK
CFC03 COMPRESSED FIBRE CEMENT CLADDING - MAYA
CFC04 COMPRESSED FIBRE CEMENT CLADDING - QUINTA
RS01 ROLLER SHUTTER
FOD01 FOLDING DOOR

4.2.3 VIEWS AND VISTAS

Nestled within the valley, the school will be designed to evoke a sense of shelter and protection, echoing the natural haven that valleys often provide. Buildings will be thoughtfully positioned within the landscape, creating a harmonious relationship with the surroundings. Courtyards will offer protected outdoor spaces, fostering a sense of enclosure and safety. The design will also embrace the natural flow of a valley, acting as a conduit that brings together water, wildlife, and people. Interconnected spaces will encourage movement and interaction, creating a dynamic and vibrant learning environment. Importantly, the school will capitalize on the unique perspective that a valley offers. From the courtyard, one can look up and appreciate the surrounding heights, gaining a sense of scale and wonder. The design will incorporate spaces for both introspection and expansive views, encouraging students to broaden their horizons and connect with the beauty of the surrounding landscape. These vistas will become an integral part of the learning experience, fostering a sense of place and appreciation for the natural world.

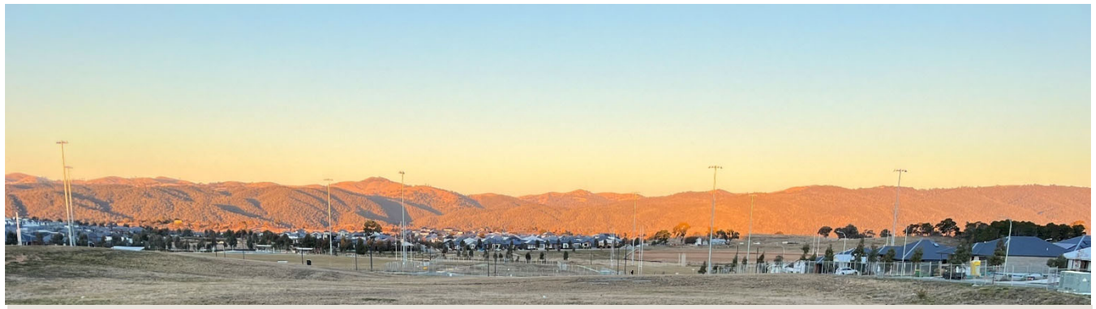


NORTH



SOUTH

EAST



WEST

4.2.4 OVERSHADOWING

Neighbour Impact:

- The development was designed to avoid casting shadows on neighbouring properties between 9 am and 3 pm throughout the year. This ensured that the school did not negatively impact the solar access of surrounding homes.

Courtyard Sunlight:

- The internal courtyard received ample direct sunlight during the warmer months, creating a pleasant and inviting space for students. However, it experienced limited direct sunlight in the mornings during winter. This was considered when planning the use of the courtyard during these months.

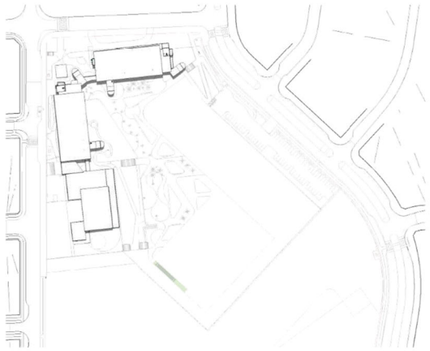
Greenfield Site:

- As the site was a greenfield site, all shadows cast by the new school buildings were new to the area.

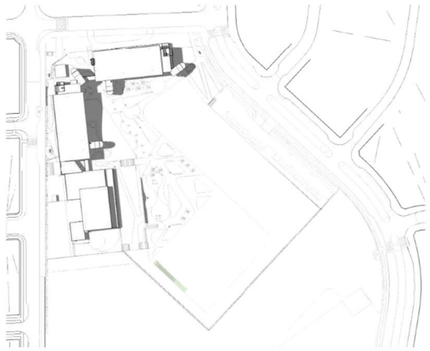
Summer Shading

- During summer the buildings provide minimal protection from the sun for the students but refer to section 6.12 for the tree canopy coverage for size shading.

9am
21st December



12pm
21st December



3pm
21st December

9am
21st June

12pm
21st June

3pm
21st June

4.2.5 NOISE

To summarise the acoustic report:

The New high school for Googong site is situated within a residential area, adjacent to Glenrock Drive, Observer Street, and Wellsvale Drive. Road traffic noise is the main acoustic consideration. The project scope will include Buildings A (Admin), B (GLA), and C (Gymnasium/Assembly Hall).

Acoustic design criteria are based on relevant standards such as the NSW NPI, T&I SEPP, and AAAC guidelines. Specific room criteria, including sound levels, reverberation times, and noise intrusion limits, have been established for various spaces.

The project aims to achieve a 4 Green Star rating, with a focus on controlling internal noise levels and acoustic separation to meet the requirements for acoustic comfort credits. Outdoor areas have undergone noise assessments, and mitigation strategies have been recommended where needed.

The building envelope is designed to minimize noise intrusion, with specific recommendations for glazing, natural ventilation, external doors, façade walls, and roofs. Internal partitions, floors, and finishes have been evaluated to ensure they comply with relevant standards.

Building services noise has been assessed, and recommendations have been made to mitigate noise from sources like condenser units, fans, FCUs, and electrical equipment.

External Noise sources

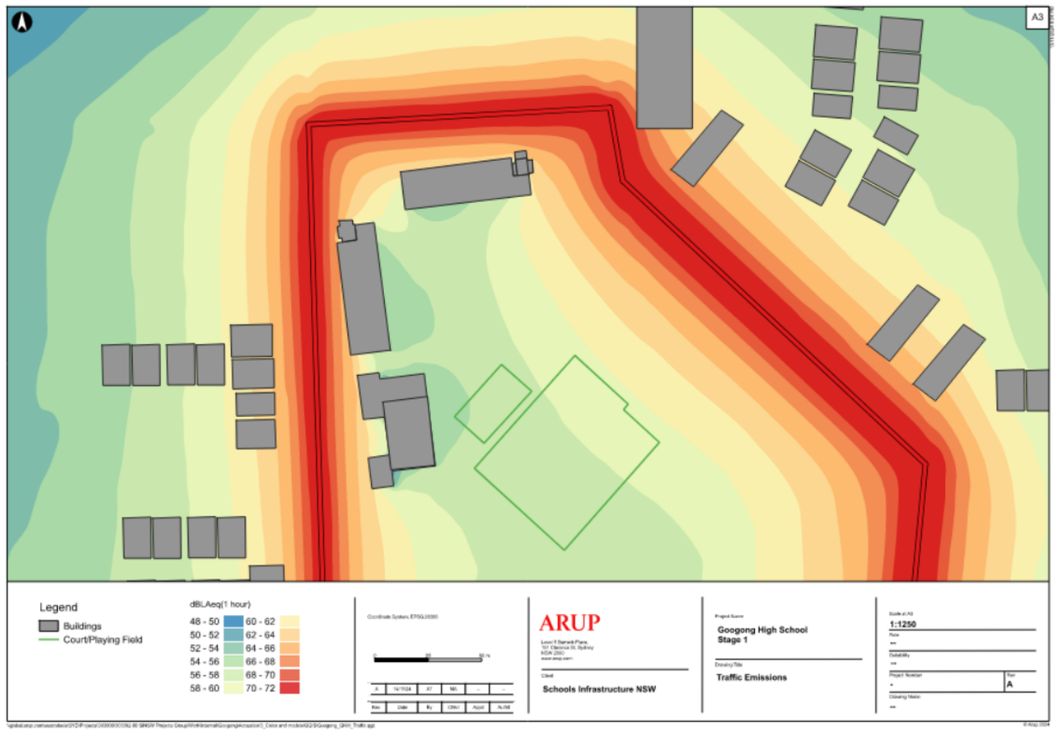


Figure 19. Extract from Arup's Acoustic report, noting the major noise source in the area

4.2.6 ENVIRONMENTALLY SUSTAINABLE FAÇADE DESIGN

The main objective in a façade design is to achieve the balance between natural daylight ingress, providing sufficient ventilation and allowing for adequate glare control.
Daylight ingress design targets net 42% of glazing in a façade whilst natural ventilation targets net openable area of 6.25% of the occupiable space.
Key Recommendations as per Steensen Varming Engineering Standardised Façade Design:
To achieve the above performance outcomes the following guidelines / recommendations must be followed for the façade and services design:

- Any glazing should start at min. 1,000 mm above finished floor level (AFFL) for daylight purposes.
    - Glazing below this level is found to provide a reduced impact on daylight levels.
- A glazed area of 8.2 m2 is required for daylight purposes. This corresponds to a window-to-wall ratio (WWR) for a typical GLS
- hub of 29.6%.
    - In its simplest form this is achieved by 4 glazed panels of 1,200 mm width and 1,700 mm height each.
- A glazed louvre area of 4.3 m2, assuming an effective free-area of 90%.
    - This may be achieved by 2 glazed louvres of 1,400 mm width and 1,700 mm height each.
- Wall R-value 1.4 (all Climate Zones).
- Roof R-3.7 (all Climate Zones, except 6 with R-3.2).
- Slab R-2.0 (all Climate Zones).
- Glazing with an overall U-value of 6.2, SHGC of 0.55 and VLT of 0.6.
    - This can be achieved with single glazing for operable louvres and fixed glazing.
- Vertical and horizontal fins of 600 mm for street-facing facades towards North, East and West, around each of the four glazed panels.
- A mechanical system of a VRF type system with individual fan coil units per space.
- An indoor temperature setpoint of 20°C to 25°C, in line with DG55.
- For standardisation purposes the daylight results are based on the staircase being located directly outside the Learning Commons area which significantly reduces the overall daylight results and therefore increases the amount of glazing required. However, if a staircase is not present, or located more preferentially, the overall glazing extent may be further reduced from the suggestions above.

SINSW design principles for the facades:

Wellness

- Ensuring adequate daylight access in all usable spaces
- Enabling passive comfort strategies such as natural ventilation.
- Thermal performance

Adaptability + Equality

- Facade allows consistent amenity (Daylight and Natural Ventilation) in all spaces.
- System should be suitable for the planning requirements of all school spaces.

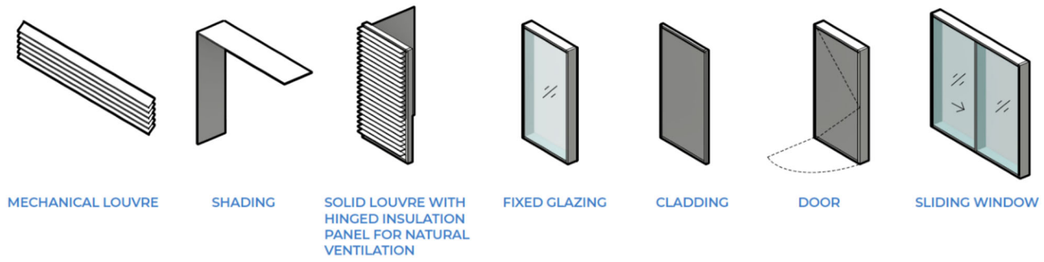
Constructibility

- Enable all construction methods from conventional stick built to window wall system to secure quality and program, and maximise use of budget.
- Standardised detailing addressing performance and maintenance requirements.

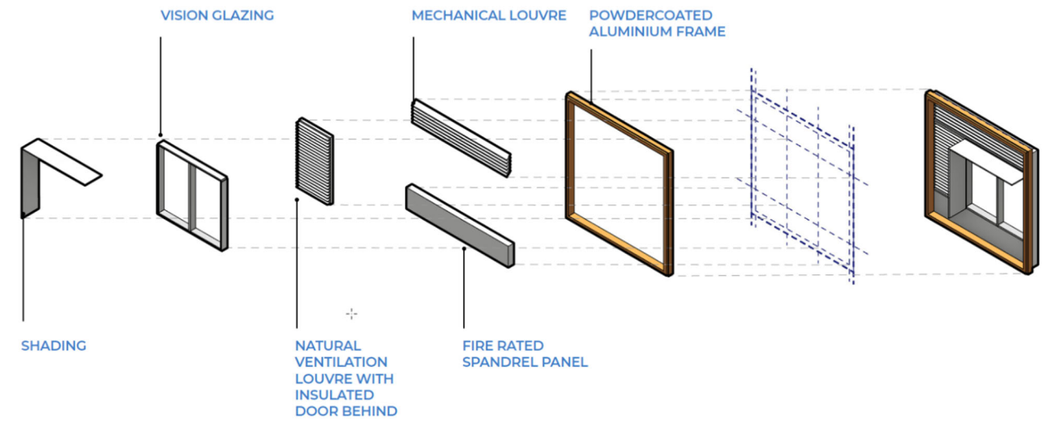
Sustainability

- Climate Resilience - Learning environment needs to be adaptable to a changing climate.
- Standardisation supporting higher performance versus cost.

Components



Example panels



Example for street facing facades

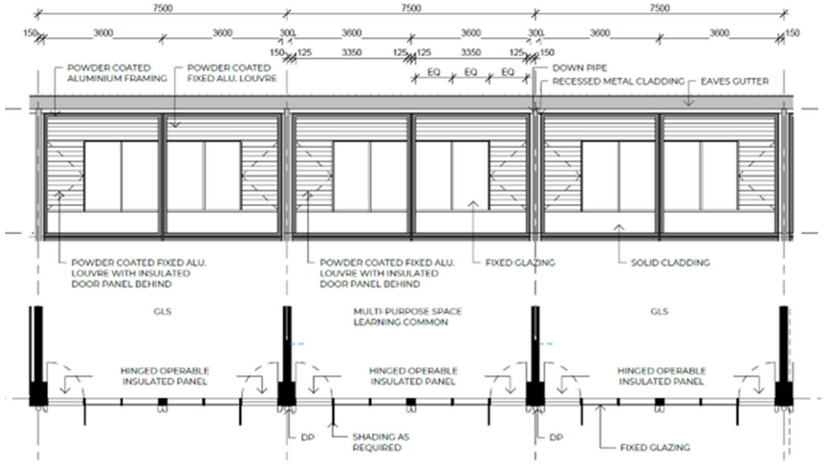
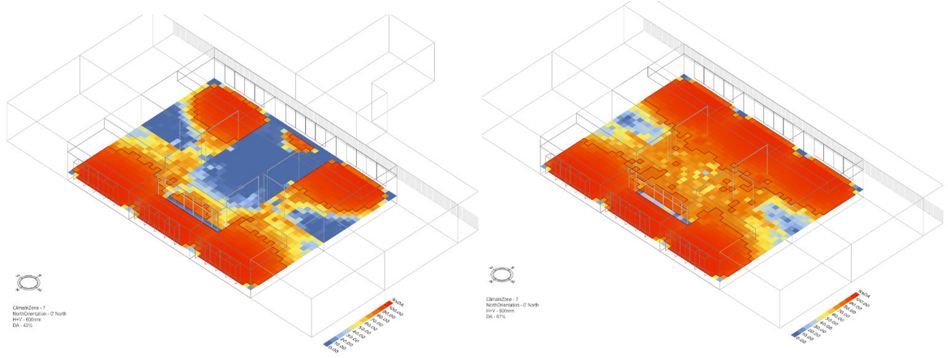


Figure 20. SINSW Patternbook façade kit of parts

4.2.7 PERFORMANCE

The difference in results between the two images below highlights the significant impact the staircase has on the overall daylight results, with an improvement of around 20% in total. This indicates that the overall glazing may be further reduced from the suggested configuration of 4x1.2x1.7 if the staircase can be located in a location where it has minimal impact on the daylight, i.e. the side of the building where no glazing is present.



With Stairs

Without Stairs

Figure 22. Patternbook analysis of natural daylight in learning spaces

Two operable louvre each with a width of 1,400mm width and height 1,700mm height provide an effective free-area of 4.3 m2, with an effective opening ratio of 90%. The louvre should be distributed across the façade to provide the best possible air distribution across the entire occupied area.

Operable louvres have a significantly poorer thermal performance value than fixed glazing, increasing heat losses during winter and heat gain during summer resulting in an increased heating and cooling demand during these periods. Due to this and the fact that the single-sided natural ventilation does not provide an efficient air distribution due to the depth to height ratio, the use of natural ventilation provides a minor overall energy benefit. However, natural ventilation plays a key role in odour minimisation etc. and should not solely be considered as a means of reducing energy.

Initial research indicates that there appears to be a minimal difference in overall energy consumption between a classroom with an opening of 4% of the floor-area vs 6.25%. This is a result of the high occupancy density and the natural ventilation primarily being single-sided. This indicates that cross-ventilation is required to provide an effective and efficient natural ventilation solution that will further reduce energy consumption and improve IAQ.

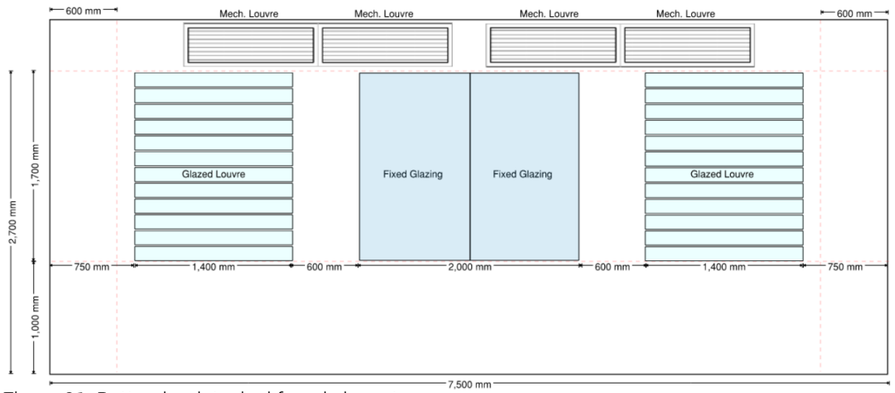


Figure 21. Patternbook typical façade layout

4.2.8 WAYFINDING

Colour is a crucial element in establishing a welcoming and navigable school environment. Our design approach draws inspiration from the rich natural hues found in the local flora and fauna, with a particular focus on the diverse eucalyptus trees and their associated wildlife. This connection to the surrounding environment will foster a sense of place and belonging for the school community.

Each building will be assigned a unique colour drawn from this natural palette, serving as a visual cue for wayfinding. This simple yet effective strategy will facilitate navigation for students, staff, and visitors alike. The colour scheme will be strategically applied to exterior elements such as facade panels, doors, balustrades, and stairwells, creating a cohesive and visually appealing aesthetic along internal courtyards. Additionally, we intend to carry this wayfinding strategy into interior spaces, using colour to define zones and create a sense of identity within each building.

This holistic approach to colour will not only enhance the visual appeal of the school but also contribute to a more intuitive and user-friendly environment, promoting a positive and engaging learning experience for all.

4.3 SAFETY AND SECURITY

4.3.1 CPTED STRATEGY

Crime Prevention through Environmental Design (CPTED) is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients (law, offender, victim or target, opportunity) from intersecting in time and space.

Predatory offenders often make risk-benefit assessments of potential victims and locations before committing crime. CPTED aims to create the reality (or perception) that the risks of committing crime are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

• Maximise risk to offenders (increasing the likelihood of detection, challenge, and apprehension).
• Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime).
• Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards); and
• Minimise excuse making opportunities (removing conditions that encourage / facilitate rationalization of inappropriate behaviour).

CPTED employs four key strategies. These are territorial re-enforcement, surveillance, access control and space/activity management. All CPTED strategies aim to create the perception or reality of capable guardianship. Further, CPTED can also make people, particularly vulnerable people, more comfortable in public spaces and create a sense of safety

4.3.2 CPTED Response

The Crime Prevention Through Environmental Design employs four strategies:

- Territorial Re-Enforcement
  Community ownership of public space sends positive signals to the community. Places that feel owned and cared for are likely to be used, enjoyed, and revisited. People who have guardianship or ownership of areas are more likely to provide effective supervision and to intervene in crime than passing strangers. Furthermore, criminals rarely commit crime in areas where the risk of detection and challenge are high.

  Effective guardians are often ordinary people who are spatially 'connected' to a place and feel an association with, or responsibility for it. Territorial Re-enforcement uses actual and symbolic boundary markers, spatial legibility, and environmental cues to 'connect' people with space, to encourage communal responsibility for public areas and facilities, and to communicate to people where they should/not be and what activities are appropriate.

  Well Designed Communal / Public Areas
  The below are several design requirements to ensure natural surveillance in communal and public spaces within the school grounds:
  • It is important to position active uses or habitable rooms with windows adjacent to these areas, such as playgrounds, gardens, and car parks.
  • Communal spaces and utilities such as student toilets and waste areas should be easily visible.
  • Stairwells should use open or transparent materials for doors and walls.
  • Waiting areas and entries to stairwells should be well activated and visible from the building entry, and seating should be strategically located in active use areas.

  Design Response:
  The outdoor play area has been designed to provide a sense of safety for users, where they are not isolated in secluded areas and help is readily available if needed. Additionally, it deters illegitimate users, as their presence and misuse of the space is noticeable. The courtyard spaces are open and are visible from ground level in the outdoor, from inside the ground floor learning areas and from the walkway of the upper levels.

  Communal stairwells in the high school have been designed to be transparent to enhance safety and facilitate effective supervision. By promoting open and visible structures, these communal stairwells discourage illicit activities and provide a clear line of sight for monitoring. This design approach ensures a secure environment, minimising hidden corners and promoting a sense of safety for students and staff.

Figure 23. Central courtyard

Consider Mixed Uses
In the case of a school, the opportunity will rarely present for mixed use of school facilities with retail, and commercial use. However, the school can consider extending the school facilities to be used after school hours for broader community uses.

Design Response:
The strategic placement of the high school gym and outdoor sports facilities along the southern boundary brings multifaceted benefits. Primarily, this design approach encourages shared use of these spaces with the possible future primary school to the south, fostering physical connections between the two institutions. By promoting collaborative use, the high school extends beyond its role as an educational facility and transforms into a community hub. This initiative enhances community engagement, addressing educational and recreational needs. Facilitating the broader community use of school facilities through appropriate design reflects the Department of Education's commitment to maximising the positive impact of the school on the local community and underscores the institution's role as a dynamic and inclusive space.

Figure 24. Googong Site Plan with mixed use zone.

Creating a Positive Image

To foster a positive image, prioritise the prompt repair and cleaning of damaged or vandalised property, and swiftly address graffiti. Additionally, offer information on where to seek assistance and report maintenance or vandalism issues. Research supports that well-maintained and 'cared for' properties are less prone to criminal activities.

Additionally, to maintain the aesthetic appeal of the school buildings and landscape, it is essential to use materials that minimise opportunities for damage and vandalism.

Design Response:

The new high school for Googong, has been designed with the following robust building materials:

• Face brick external wall cladding is proposed for the ground floor only. Face brick is robust and can withstand wear and tear in highly transient areas.

• Colour-through compressed fibre cement (CFC) cladding is proposed on courtyard facing facades. CFC can withstand low to moderate impact and therefore suitable for use on the upper floors where moderate transient spaces are located.

• Metal cladding with up to three different corrugation profiles is proposed to be used on the upper levels of the street facing façades where there will be no pedestrian traffic .

• Powdercoated aluminium window framing and glazing system throughout the campus.

• Powdercoated steel balustrade posts with powder coated aluminium metal infill.

Creating a sense of place

Promoting design that fosters community pride and a sense of place plays a vital role in maintaining the longevity of the design, as it encourages people to identify and report issues. It is integral to encourage broader community engagement in the design and use of school facilities. This includes identifying Country and consulting with representatives from relevant local Aboriginal language groups in a respectful and structured Connecting with Country process. Encouraging community engagement with the design could also involve offering parts of the design such as the Library and Hall for sporting and/or cultural events outside of core-functional hours.

Design Response:

The design of the new high school in Googong will include an Acknowledgement of Country sign and other Connecting With Country features. The design is currently working with Yerrabingin, through the design process we will come with a strategy to incorporate a design through the school.

Additionally, the school incorporates Covered Outdoor Learning Areas (COLAs) and a gymnasium, offering potential shared use agreements for outside of school hours use. Further amenities, such as the sports field, sensory gardens, and yarning circle, may also be considered for shared use beyond school hours by the school principal.

Extending the use of school facilities beyond school hours encourages positive social interactions and community ownership, contributing to increased natural surveillance. This inclusive approach enhances the overall safety and security of the school premises, as well-maintained and well-utilised spaces are less prone to criminal activities. The design of the school facilities from a crime prevention perspective supports a welcoming and secure environment for both students and the community.

Surveillance

Public spaces are perceived as safe by individuals when they have the ability to observe and engage with others, particularly those who are closely associated with that environment, like store owners or neighbouring residents. Criminals are often discouraged from engaging in unlawful activities in areas that are well-monitored. Natural Surveillance is established when regular users of a space can both observe and be observed by others. This emphasises the significance of a well-considered built environment in its design, layout, orientation, location of buildings, landscaping, and lighting to enable natural surveillance to occur.

On the other hand, technical or mechanical surveillance relies on mechanical and electronic measures such as CCTV, emergency help points, and reflective building materials. These methods are frequently employed as temporary solutions to monitor isolated and high-risk areas. Formal or organized surveillance, in contrast, involves the strategic placement of guardians. An example of this would be the deployment of on-site supervisors, such as security guards, in locations at greater risk of criminal activity.

Ensuring safety in public spaces hinges on effective surveillance. The ability for individuals to observe and engage, particularly with familiar figures like school staff or students, creates a sense of security. Natural surveillance emphasises the importance of visibility in layouts, lighting, and landscaping.

Avoid Blind Corners

The design of pathways, stairwells, hallways, and car parks should prioritise the avoidance of blind corners. To achieve this, pathways must be designed with direct routes, and all barriers, including landscaping and fencing, should be permeable for visibility. The use of mirrors and glass panels can enhance sight lines.

Avoiding blind corners is essential to create spaces that feel safe and comfortable. Concealed areas or 'blind corners' can make users feel uneasy and deter them from maximising space utilisation. Neglecting 'blind corners' in design can lead to hidden areas that compromise safety and discourage use. Therefore, these spaces should prioritise openness and exposure to ensure users can navigate confidently and comfortably.

Design Response :

The high school design includes linear external walkways that have visibility from the central courtyard as an approach to enhance safety and security within the school campus. The upper-level walkways have perforated metal balustrade, allowing transparency for supervision from ground level. By maintaining a clear line of sight throughout the outdoor areas, the risk of blind corners and hidden spaces is minimised, providing a safe and well-monitored environment for students.

Provide Entries Which Are Clearly Visible

Providing clearly visible entrances is a fundamental aspect of designing spaces that are both accessible and secure. To meet this objective, entrances should be strategically placed in prominent positions, making them easily recognisable and accessible. Moreover, the design of these entrances should allow users to peer into the area before they physically enter it.

Prominent entries serve a multifaceted purpose. Firstly, they enhance natural surveillance from the street, bolstering the overall safety of the area. Secondly, they foster a sense of security among users, granting them the confidence to enter the space with ease. Finally, they facilitate swift access for emergency services, ensuring rapid response times when the need arises.

Consider allowing clear and well-placed signage at site entrances, exits, and throughout the school premises, all executed in strict accordance with SINSW standards. These measures collectively contribute to creating a safe and user-friendly environment.

Design Response:

The visibility of the school entrances from adjacent streets has been designed to improve the school's accessibility and strengthen its identity within the community. This strategic approach is aligned with the overarching principle of establishing welcoming, accessible, and inclusive environments. The goal is to facilitate easy navigation for students, staff, and visitors, ensuring they can readily locate the main entry points, thereby contributing to a positive and identifiable presence in the community.

The inclusion of external signs that are visible from the street aligns with urban planning principles that emphasise the importance of clear wayfinding and legibility within the built environment. These signs have an added function in that they promote safety by assisting emergency services in locating the school quickly if the need arises.

Effective Lighting Design

Effective lighting is crucial for safety and security. To achieve this, lighting should avoid glare and dark shadows. Areas like entrances, exits, service areas, pathways, and car parks need to be well lit when in use during the evening and night.

Well planned lighting enhances safety and deters illegitimate users but also encourages legitimate users to use spaces after dark. It supports natural and formal surveillance. Good lighting should aim to enhance natural surveillance and visibility at night.

Design Response:

Assisted by our Electrical Engineer, Arup, the external lighting strategy for the proposed school has been designed to accommodate:

- External lighting which focuses on specific areas of the school, including covered walkways, car parks, bus drop-off locations, access roads, and pedestrian pathways within the site boundary.
- Lighting standards in accordance with Educational Facilities Standards & Guidelines (EFSG), AS/NZS 1158.3.1 Lighting for Roads and Public Spaces, and AS 4282-1997 Control of the obtrusive effects of outdoor lighting are followed.
- All external lighting to be specified as 4000K. The 4000K colour temperature provides a neutral and natural illumination, enhancing visibility and promoting a sense of security in outdoor areas.
- This lighting temperature is suitable for educational environments as it helps create well-lit spaces, contributing to increased safety during evening and night use.
- Environmental light spill and light spill into neighbouring properties will be controlled by selecting luminaires with downward distribution and applying glare shields where necessary. All boundary located fittings are directed away from neighbouring properties.

Ensuring Clear Sight Lines in the Carpark

Carparks, by their nature, can sometimes be perceived as unsafe. Thus, it is crucial for site and building layouts to prioritise easy access, clear signage, adequate lighting, and alignment with established safety strategies.

To enhance security and safety, ensure clear sight lines throughout parking areas so to allowing for natural surveillance. Avoid extensive parking expanses, and if they are necessary, provide additional surveillance measures such as security cameras. Access to elevators, stairwells, and pedestrian pathways should be highly visible, with no hidden recesses. Place disabled parking spaces in visible and convenient locations and ensure car parks are in areas observable by neighbouring uses.

Incorporate clear sight lines into the design is essential for facilitating natural surveillance and improving security. In the case of school buildings, efforts should be made to ensure both active and passive surveillance over new construction. Additionally, the positioning of new structures along the street frontage should maintain a high level of surveillance outside the school grounds.

Design Response:

The staff carpark and the services maintenance access area are located to the East of the site which is visible from inside the Plaza as well as from the public domain area such as footpath and Wellsvale Drive.

Apply strict limitation of carpark access to staff use only. This ensures that vehicular access within the school grounds is limited to authorised personnel, reducing potential risks, and enhancing safety. Only the school staff will be issued swipe cards to operate the gate for entering the carpark

Access Control

Access control treatments restrict, channel, and encourage people and vehicles into, out of and around the development. Wayfinding, desire-lines, and formal/informal routes are important crime prevention considerations. Effective access control can be achieved by using physical and symbolic barriers that channel and group pedestrians into areas, therefore increasing the time and effort required for criminals to commit crime. Natural access control includes the tactical use of landforms and waterways features, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens. Technical/Mechanical access control includes the employment of security hardware.

Defining Spaces for Restricted Entry

Defining spaces is crucial in conveying a sense of ownership and reduce unauthorised use or entry. This is achievable through physical and psychological barriers like fences, gardens, lawn strips, and varied textured surfaces. Clear boundaries serve the purpose of helping people recognise private property and inform passers-by when someone is trespassing or using the premises unlawfully. In essence, creating boundaries between private and public spaces is vital.

The effectiveness of fence design is centred around maximising natural surveillance from the street to the building and vice versa, while concurrently minimising area where intrudes may be hiding.

Design Response:
In line with this approach, school identification and Acknowledgement of Country signs have been strategically placed at site entrances, exits, and throughout school premises to mitigate unintentional access to restricted areas. The signs serve as a form of communication, alerting visitors to specific zones and ensuring that boundaries between public and private spaces are welldefined.

The proposed high school secured area is defined by the perimeter 2.1m high fencing, as shown in the landscape drawing package. Several perimeter gates are equipped with electronic access systems, which include intercoms and electronic key card access. The intercoms facilitate communication between visitors and school administrative staff, enabling them to request access and identify themselves before entry is granted. The electronic key card access system further ensures that only authorised personnel can gain entry, thus reducing the risk of unauthorised intrusion.

The inclusion of transparent fences, such as palisade fencing, presents a proactive approach to enhancing the high school security. Corromesh fencing is durable and transparent, serves the purpose of maximizing natural surveillance and maintaining a secure perimeter. By providing clear visibility into the school grounds, these fences facilitate passive surveillance, allowing both internal and external stakeholders to monitor activities. The high school design deters potential intruders by minimising area of concealment but also fosters a sense of openness and safety. Additionally, the durability of corromesh fencing aligns with the standards specified for NSW public schools, ensuring a robust and effective solution for maintaining security.

Clear Building Identification
Clear building identification serves to prevent unintended access and aids individuals, including emergency vehicles, when locating specific buildings especially in urgent situations. In practical terms, this involves clearly displaying the street number, with a minimum height of 7cm, positioned between 0.6m and 1.5m above ground level, and made from durable materials, preferably reflective or luminous. They should also be unobstructed.

Design Response:
Property number is typically mounted on the school letter box. This practice ensures clear and identifiable signage for emergency responders, enhancing their ability to locate and access the school quickly during urgent situations. By prominently displaying the property number, the school adheres to regulatory standards and contributes to a safer environment by facilitating rapid response times in emergencies, such as medical incidents or fires.

For the new high school in Googong, school identification signs will be placed on the school buildings at site entrances as seen in the architectural signage drawing. In the event of an emergency, clear school identification signs can help emergency responders quickly locate and access the school. This is vital in situations such as medical emergencies or fire incidents.

Space / Activity Management
Space/Activity Management strategies are an important way to develop and maintain natural community control. Space management involves the formal supervision, control, and care of the development. All space, even well planned and well-designed areas, need to be effectively used and maintained to maximise community safety. Places that are infrequently used are commonly abused. There is a high correlation between urban decay, fear of crime and avoidance behaviour.

Design Response:
At completion, NSW public schools will monitor access to the different areas and using appropriate security devices like intercom or remote locking systems in alignment with a Security Design guide prepared by SINSW School Security Unit (SSU).

The objective is to minimise unauthorised access while ensuring legitimate users are not inconvenienced. School security measures are outlined on the SSU's security brief, including strategic placement of CCTV cameras.

The choice of vegetation has been designed to prioritise low shrubs and high canopy planting to reduce concealment areas. Refer to the Landscape Design drawings prepared by NBRS – Landscape for comprehensive selection of plants and planting locations.

Detailed documentation produced by SINSW School Security Unit (SSU) are not available for public viewing to protect sensitivity of the school security documentation.

CONCLUSION

The Crime Prevention Through Environmental Design (CPTED) principles form a comprehensive framework for the creation of safer, more secure public spaces. By emphasising Territorial Re-enforcement, Surveillance, Access Control, and Space/Activity Management.

Territorial Re-enforcement focuses on fostering community ownership and discouraging criminal activities by connecting people with space through visible markers. The inclusion of well-designed communal areas, transparent stairwells, and shared use of the school facilities. Additionally, promoting a positive image through prompt maintenance and community engagement contributes to a sense of pride and shared responsibility.

Surveillance strategies prioritise the creation of spaces with clear sightlines, visible entrances, and permeable security elements. The design responses, including the use of transparent fencing, visible entrances, and effective lighting, collectively enhance natural and mechanical surveillance, deterring potential criminal activities.

Access Control involves defining spaces through physical and symbolic barriers, as demonstrated by the placement of identification signs and transparent fences. The design ensures controlled access, increasing the effort and time required for potential criminals by incorporating visible entrances and utilising permeable security elements.
Space/Activity Management strategies, such as the promotion the use of CCTV monitoring. Design responses, including the strategic placement of vegetation and the choice of low shrubs, align with these strategies, minimising hiding opportunities and enhancing overall safety.

The design responses for new high school for Googong effectively integrate CPTED principles, creating a secure, welcoming, and community oriented environment. The school aims to provide a safe place for students and extends its role as a community hub, fostering positive interactions and shared responsibility.

4.3.3 EMERGENCY ACCESS

Emergency access considers ambulance and fire brigade access as close as possible to the boundary of the site as follows

- Access to the service area adjacent to staff carpark to provide a closest path to the playing field & courts
- A hardstand will be provided at the base of the main entry forecourt for ambulance & fire brigade. Fire brigade will have access to the fire booster.
- A hardstand will be provided at the South entry along East Road for emergency vehicle parking.

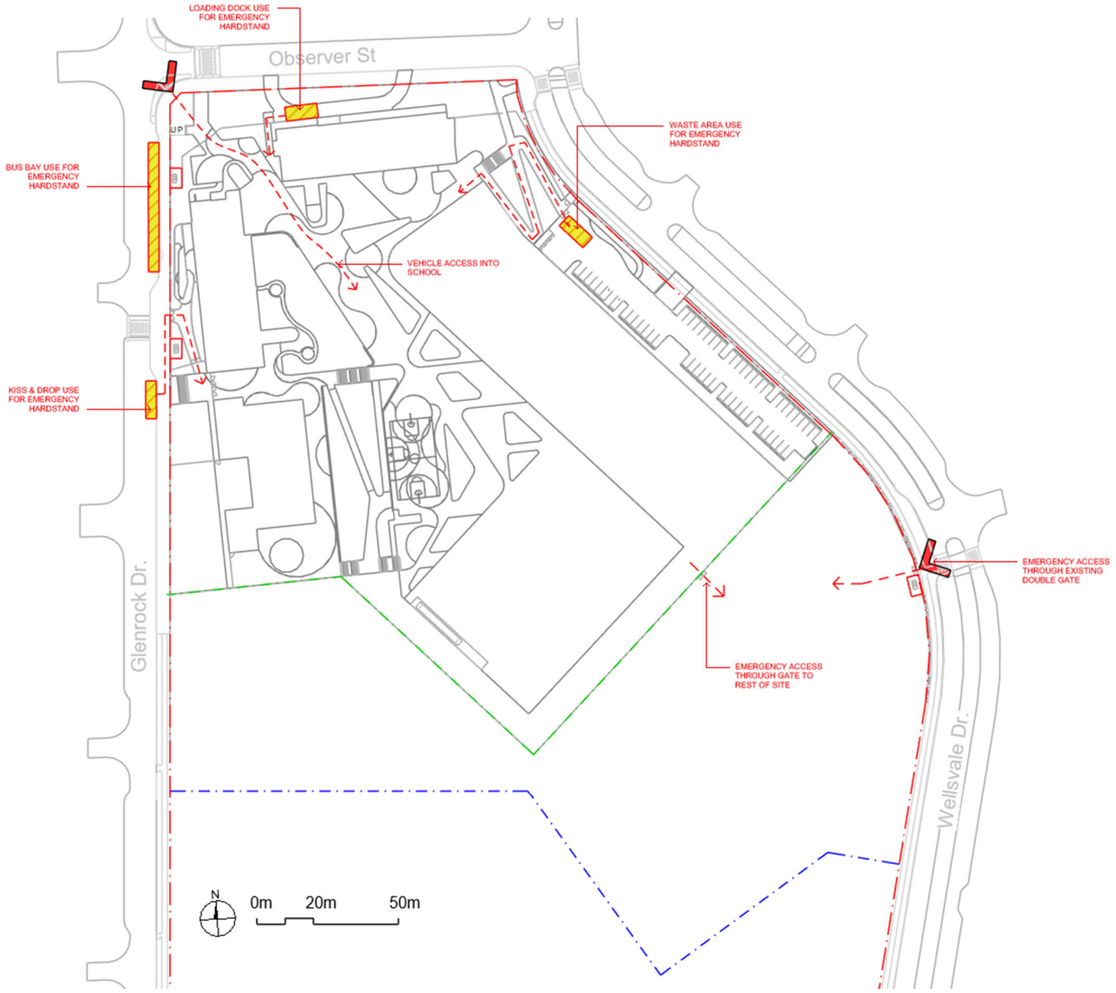


Figure 25. Emergency Access strategy

SITE SECURITY

In line with SINSW Asset Management Unit (AMU) and security stakeholder, site security strategy the perimeter site security is as follows:

The school has a 2.1m secure line adjoining a Cyclone fence for the remainder of the block. The landscape between the Hall and the boundary fence of Glenrock Drive has been fenced off to restrict student access. Maintenance access gates have been provided.

Refer to GHS-NBRS-00-XX-DR-L-0200

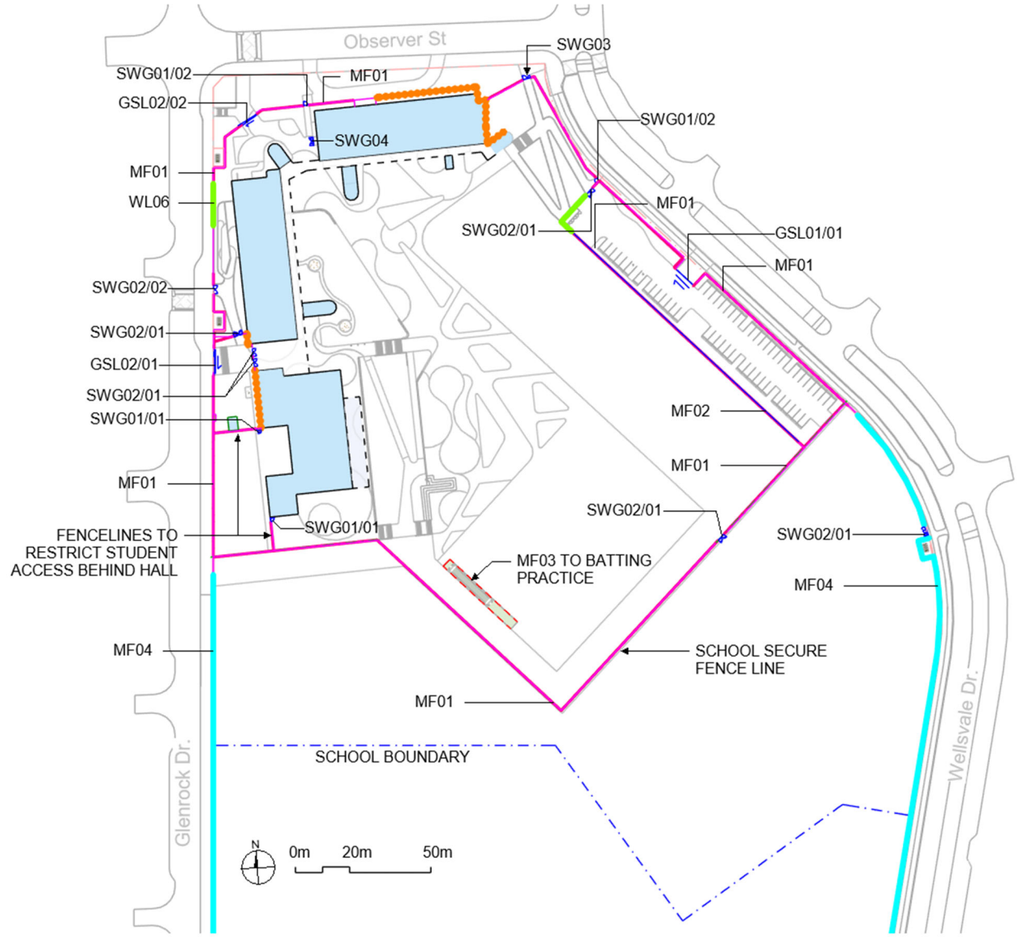


Figure 26. Site security strategy

4.3.5 SAFETY IN DESIGN

The purpose of the Safety in Design (SiD) Report is to identify the hazards relating to the design component of the asset that potentially creates a risk to the health and safety of persons both internal and/or external of the asset, and to work through design measures to eliminate, or minimize as much as is reasonably practicable that hazard.

The report encompasses the hazards that arise for a new or modified asset (structure, space, building system, plant or equipment) throughout its lifecycle i.e., whilst it is:

- constructed.
- in use.
- during maintenance and repair, and
- when it is decommissioned at the end of its life cycle.

A summary of some of the items identified are (please refer to the report for the full extent of risks)

1- Due to the excessive fall across the site, substantial amount of ramping is required to traverse the height changes.

2- The Googong region is in climate zone 7, resulting in harsh winters and summers. Further consideration needs to be given to how to manage the extremes of these two seasons
   - Further consideration around the protection of exposed hydraulic services. Pipes could be susceptible to freezing through if not treated.
   - Further consideration on finishes to ramps and stairs, during winter could become icy.

3- Ground are to be maintained to discourage local fauna making a home, the area is known for various species of snakes that like to hide in long native grasses.

4- The Googong region is known for strong winds, this is impact the comfort levels in thunderstorms as well as in the general operations of the schools like the closing of doors.

5- The site is surround on all sides by high voltage cabling with other services crossing the corridor. Further investigation on safe connection points.

6- Window cleaning strategy for the three storey buildings.

7- Roof access to Blocks A and B, 3 storey buildings, to be done off fixed ladders over ladder brackets.

4.3.6 PRIVACY

Privacy is essential in a school environment to foster a sense of security and well-being for both students and the surrounding community. For students, privacy enables focused learning, free from distractions and self-consciousness, particularly in sensitive areas like the Special Learning Unit. It allows for comfortable transitions between classes and activities, ensuring personal space is respected. The site arrangement allows Block A and B to shield against the west and north. Whilst the east is open, Wellsvale Drive is setback behind a the staff carpark and vegetation strip allowing for only distance view lines.

Figure 28. Sight lines around the site

The neighbours privacy is just as important, design elements like acoustic louvres, full-height glazing, and strategic landscaping help mitigate noise and visual intrusion. As seen below, the current design has reviewed view lines into private open space, even with a single level house the residents will retain their privacy. This approach respects the privacy of residents in surrounding homes while maintaining a positive relationship between the school and the community.

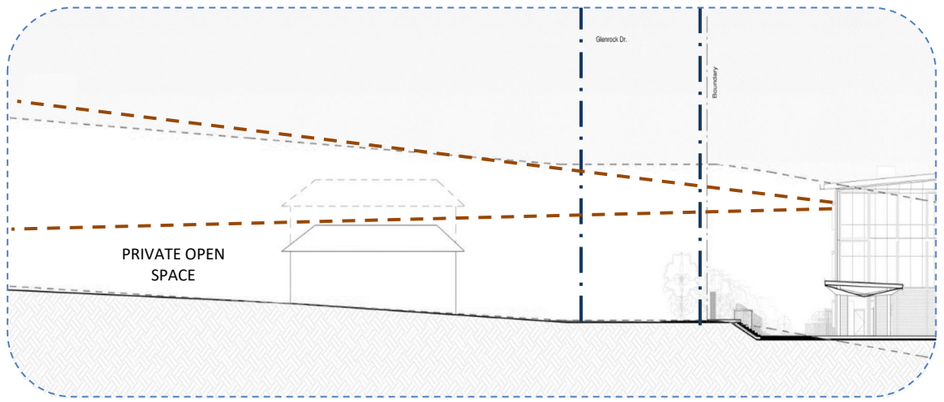


Figure 27. Sig

5.0 ARRIVAL AND MOVEMENT

5.1 PEDESTRIAN MOVEMENT

The site has three main entry points, each designed to respond to its surrounding context. The north-east corner caters to Googong residents coming from the east, allowing convenient walking and cycling access. The north-west corner, featuring a large plaza, connects with the Googong Marketplace and anchors this major intersection. The main school entry, positioned on Glenrock Drive (away from the busy Wellsvale Drive), provides access for students coming from the west.

These entry points establish major axes that run through the school, creating clear circulation paths. Connecting to these major axes are minor axes that link various facilities within the school. Vertical circulation, including stairs and a lift, is strategically integrated to provide access to the upper levels of the school buildings.

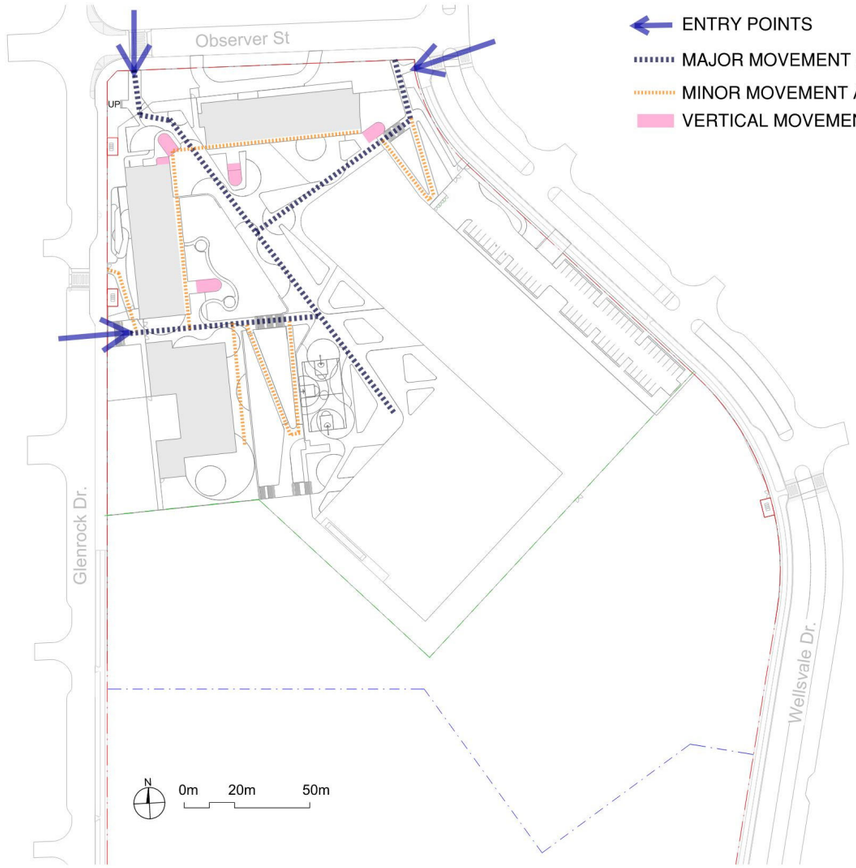


Figure 29. Pedestrian movement paths

5.2 VEHICULAR MOVEMENT

To ensure the safety of students and staff, pedestrian and vehicle movement have been deliberately separated. The car park, located on Wellsvale Drive, is designed as a left-in, left-out configuration following consultations with the council to optimize local traffic flow. This driveway also accommodates a Heavy Rigid Vehicle (HRV) for efficient waste removal from the bin area. For more details, refer to the dedicated section on waste management.

The designated delivery driveway is situated to the north, off Observer Street. Its primary function is to facilitate the delivery of materials for the TAS workshops and supplies for the canteen. Access to this driveway will be strictly managed by the school to prevent unauthorized parking by neighbors and parents.

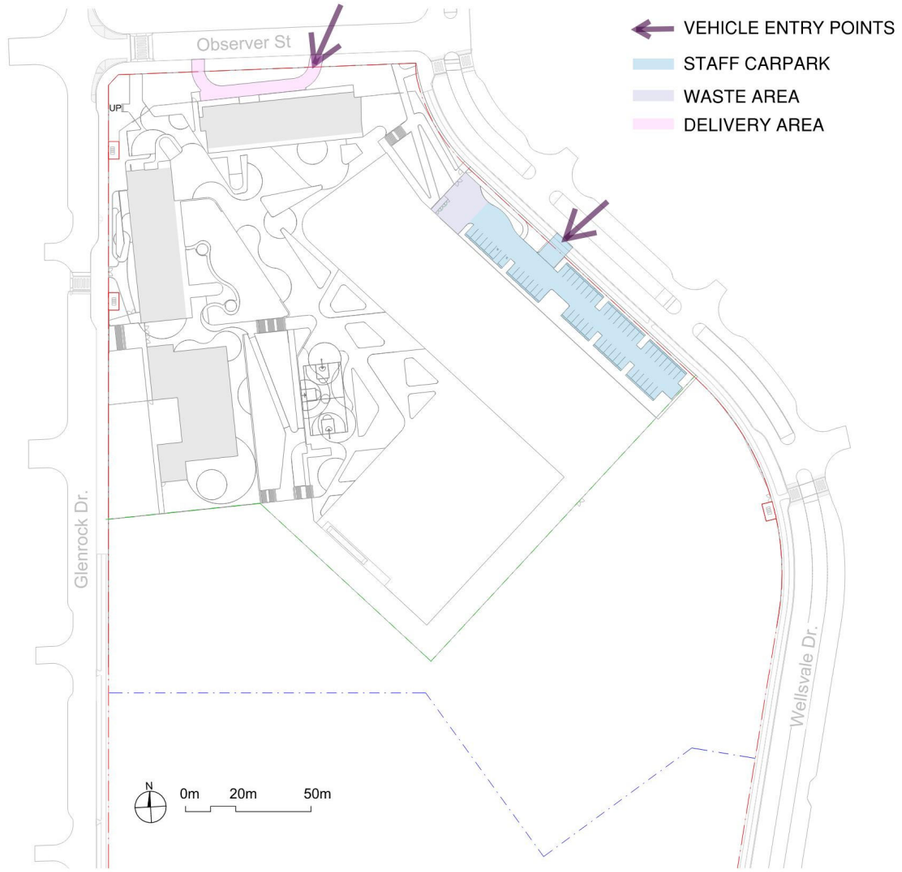


Figure 30. Vehicle movement paths

5.3 BUS ZONE & DROP-OFF/PICK UP

The main school entry is located on the western boundary adjacent Glenrock Drive. As such, the design has located the Bus Bay and Kiss & drop at this location. The bus stop (refer figure 31) is located to the north of Glenrock Drive, the existing kerb alignment will be indented to accommodate the bus. A DDA accessible spot has been located at the south end of the bus bay, close to the support unit (entry of the western side of Block A) for discrete entry and exit.

The proposed wombat crossing has been located south of Leader Street intersection and will provide safe pedestrian access from the west. This crossing aligns with the main school entry and separates the bus zone and the drop off/pick up zones

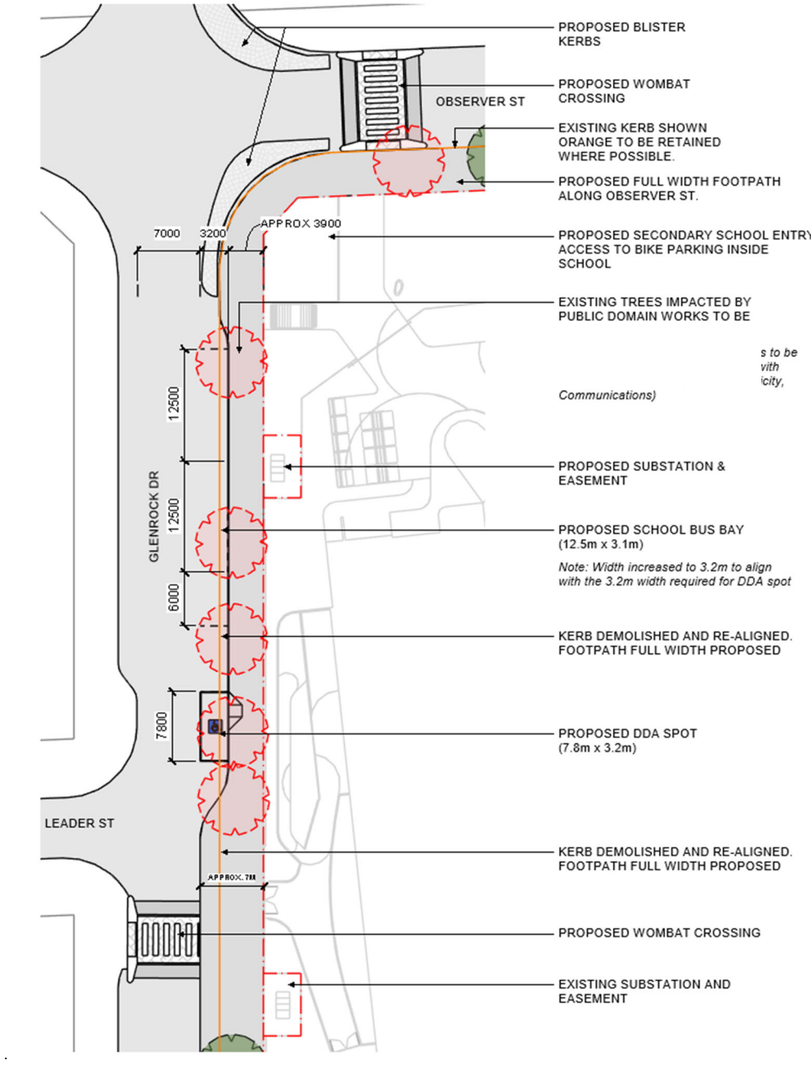


Figure 31. Bus stop public domain works.

The pickup/drop off zone has been located south of Leader Street and extend south for approx. 111m and accommodates 17 spaces for student drop off/pickup (refer figure 32). The existing kerb, street trees and footpath are retained, with this location being in close proximity to the hall & the main entry to the school.

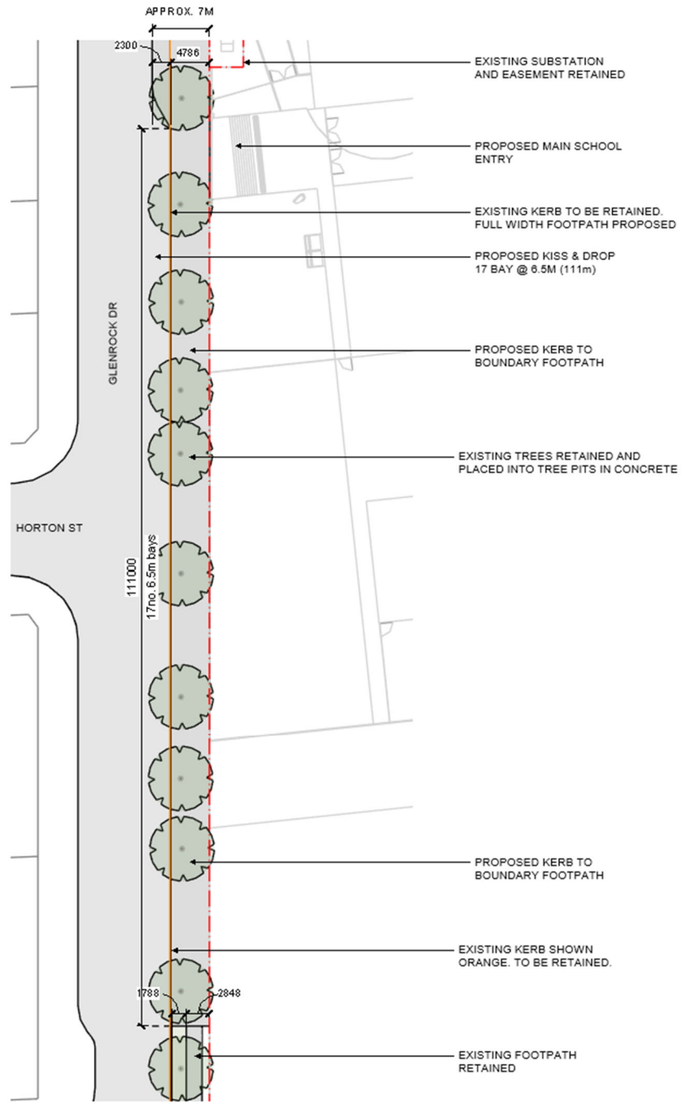


Figure 32. kiss and drop public domain works

Full width kerb to boundary footpaths is proposed wrapping around the northern end of the site from the main entry through to the corner of Observer Street and Wellsvale drive. Wombat crossings are provided along all surrounding roads to assist with safe movement of students which can be further studied in the supplied public domain drawings. Refer to landscape drawings for exact extent of the public domain works.

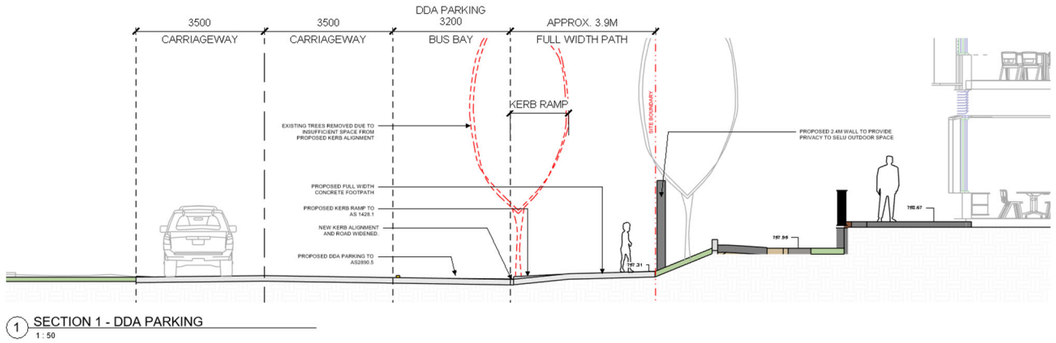


Figure 33. Bus Parking/DDA parking and SELU entry off Glenrock Drive

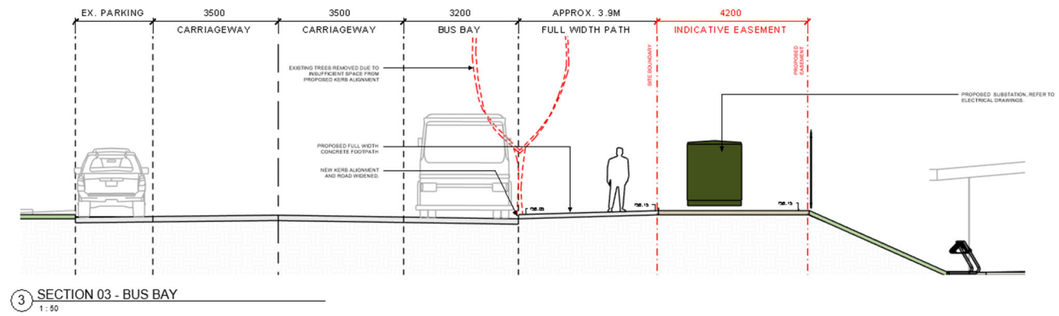


Figure 34. Bus Parking at the northern end of Glenrock Drive

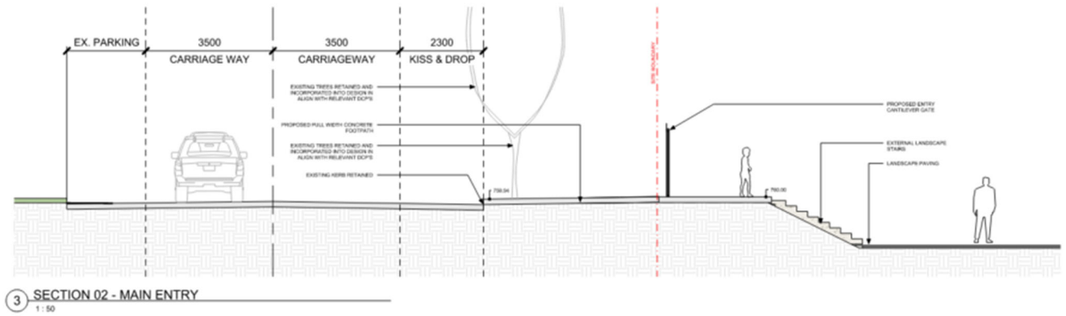


Figure 35. Kiss and drop location adjacent main entry off Glenrock Drive

Refer to drawings from the Landscape concept GHS-NBRS-00-XX-DR-L—6000, GHS-NBRS-00-XX-DR-L-[1]-6001 & GHS-NBRS-00-XX-DR-L-[1]-6100

5.4 OPERATIONAL WASTE MANAGEMENT

The Operational Waste Management Plan (OWMP) details the strategies for waste handling, disposal, and collection to meet the requirements of the Queanbeyan-Palerang Regional Council. It aims to promote responsible source separation and reduce landfill waste through the implementation of a convenient and efficient waste management system.

The designation bin holding area for waste and recycling collection is located within the carpark. Labelled waste and recycling receptacles will be strategically placed throughout the campus, and groundskeepers and cleaners will monitor and empty these receptacles regularly. The bin holding area will be designed to meet the Googong Development Control Plan 2010, and meet the requirements outlined by Department of Education.

Bin Quantities

Type	Size	Quantity	Static/Mobile
General Waste	4500L	2	Static
Recycling	4500L	1	Static

A private waste contractor will be responsible for the collection of general waste and recycling based on a scheduled frequency. The collection procedures will align with the Department of Education's contracts with the waste collection service provider.

Additional waste management recommendations have been made; include providing collection bins and sanitary bins in washrooms and designated areas for storing paper receptacles and used toner/printer cartridges in printing/photocopying rooms. The school management will be responsible for managing bulky waste, ensuring that reusable furniture is stored or donated, and non-reusable furniture is disposed of at an appropriate recycling facility.

School management will oversee the overall waste management process, conduct audits, manage non-compliances, and ensure safety. Cleaners, staff, and students are responsible for the correct disposal of waste, compliance with regulations, and supporting source separation. The waste collection contractor will provide reliable bin collection services and offer feedback on waste management practices. Gardeners/landscapers will remove garden organics for offsite recycling.

The bin areas will include appropriate natural ventilation, lighting, bin washing facilities, and drainage.

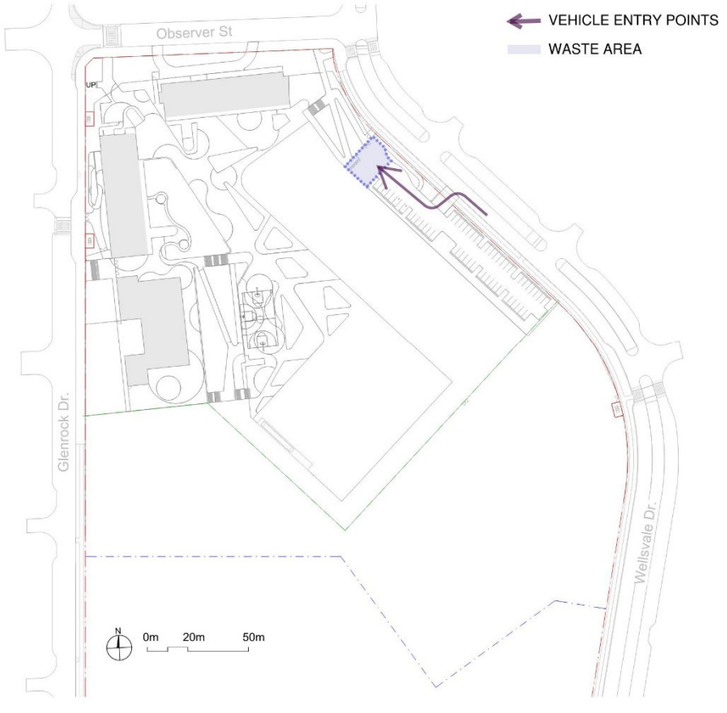


Figure 36. Waste truck movement paths

Below is the initial analysis from Arup's traffic engineer, the proposed design seen in figure 36 has been designed to meet the required swept paths provided by traffic engineer.

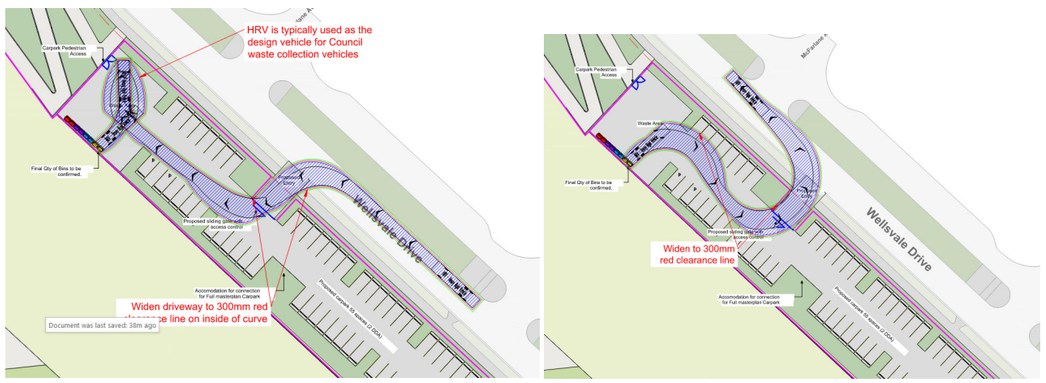


Figure 37. HRV swept path analysis

6.0 OUTDOOR OPEN SPACE AND LANDSCAPE

6.1 LANDSCAPE STATEMENT

The objective of landscape design of new high school for Googong is to provide a design that celebrates the site's cultural and natural characters, establishing tree canopy for natural shade and amenity, and resolving the existing topography, with the emphasis on creating equitable access to all areas of the design.

The overall landscape design will resolve the sites complex topography whilst generating a diverse range of spaces with different scales to cater for social, learning, active uses, and that perform under the site's variable microclimate. These areas will be reinforced with natural endemic planting to restore the connection to the endemic flora and fauna of the region.

6.2 LANDSCAPE STRATEGY

Refer to Section 6.5 of the Report for detailed Landscape proposal and accompanying Landscape drawings.

The site is bounded by Observer Street (to the north), Wellsvale Drive (to the east), Harvest Street (to the south), and Glenrock Drive (to the west). With approximate 12m level difference from west to east with the lowest point of the site siting in the north-east corner.

The built form has been located to the perimeter of the site (west, north, and east) which creates a sheltered and protected centralised external play space. To accommodate the site topography three distinct terraces have been created; the upper terrace is located to the west with a RL of 758.75 which address Glenrock Drive, the central terrace has a RL of 755.00 with an on-grade link to the northwest corner, and the lower terrace to the east with an RL of 752.00 which ties into Wellsvale Drive.

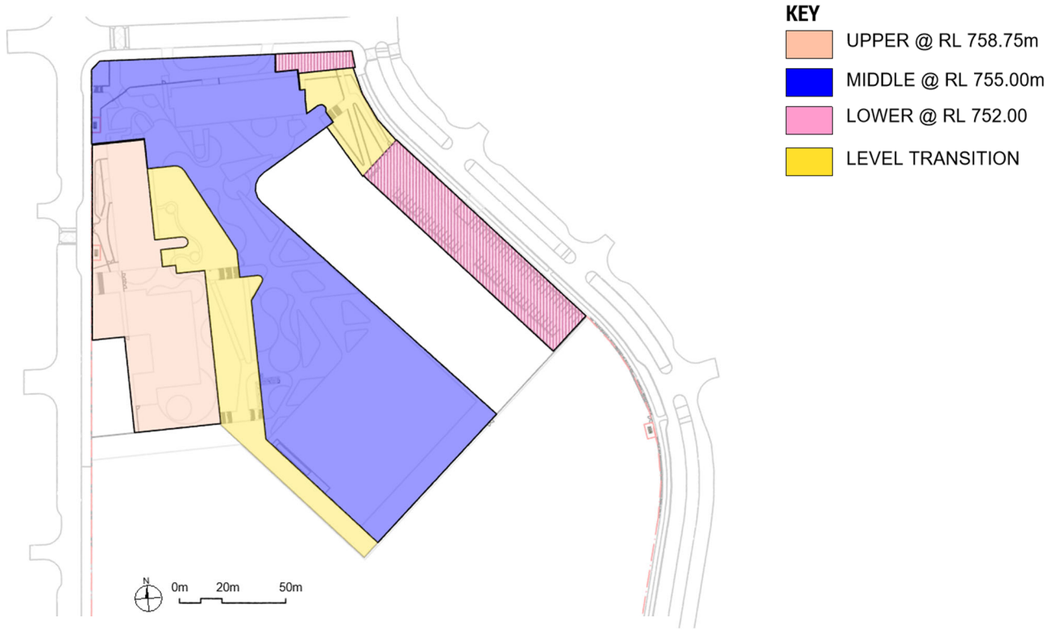


Figure 38, Landscape key levels diagram

The overall landscape strategy is to navigate the three distinct terraces of the site and to use this as the catalyst to provide inclusive and equitable access to the protected centralised courtyard. The level differences are navigated by a stair and 1:20 walkways which has reduced the clutter of handrails and tactiles. The walkways/transition areas between levels provide opportunity for endemic understory and tree planting to provide habitat, re-establish the link to the remnant plant communities, amenity, natural shade, and allow students & staff to enjoy a vegetated path of travel. The large space has been compartmentalised into distinct smaller spaces that cater for a diverse program, activities, and sized groups to enjoy social, educational, and active experiences.

Establishing a strong urban connection to the surrounding area is critical in enabling healthy link between the school and the surrounding community. The design aims to create a strong public link at the northwest of the site with a plaza connection (at grade) to the school. This is to address the future development of a town centre to the north of the school and cater for the increase pedestrian activity in this area. The northwest plaza sits at the beginning of a social promenade that extends south to the playing fields. This promenade is a generous 15m wide and has an alignment of new trees and seating along its central axis and has multiple smaller areas branching off. The promenade intersects the east west link that extends from the upper terrace where the main entry, admin, hall, and canteen are located. Finally, the promenade terminates at the multicourt and field area where the targeted play elements have been located.

The site is located on the boarder of two local plant communities being *Moanary-Queanbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland*. However, the site has seen significant earthworks and infrastructure works for a new housing development. As a result, there is no retained existing vegetation on site, which significantly increases the environmental conditions of the site. To address this the landscape design looks to establish a future mature tree canopy across the site using local endemic tree species from the two plant communities to re-establish the connection. This would be further reinforced by drawing upon the endemic understory planting (shrubs, clumping grasses, and ground covers) to strengthen the connection and to provide habitat to local Fauna and provide future Connection to Country opportunities to celebrate these species, their uses, and their importance to the Country.

6.3 LANDSCAPE DESIGN INITIATIVES

The landscape design of the new high school for Googong has applied the following key design initiatives.

Scale responsive design

The landscape design for the new high school responds to the required built form and function for the 700 students. The design will provide a hierarchy of outdoor spaces to meet different needs and uses, ensuring that all students feel comfortable in the space. The Landscape Design chapter of this Report describes all the elements of the design and provides details of all the different areas of the landscape design and open space.

Water Sensitive Urban Design

The landscape design seeks to utilise all best practices regarding WSUD principles. Rainwater harvesting, natural irrigation and appropriate planting selection will see the school's reliance on water infrastructure be reduced.

Constructable and usable

The landscape form is set out to be as functional as possible. Each space is flexible to suit the needs of the day. The materials and furniture selected are robust as suitable for the school environment. Using standard details, ensuring coordination with all the services, and providing consistency to the design elements such as walls, balustrades and paving will result in a construction package easy to build. We have also specified for the outdoor fixtures and furniture proprietary products and furniture off-the-shelve where we could make the construction and delivery process as simple as possible.

Pre-contract grown trees

The landscape design includes 200 new 200L trees within the high school site. The intention of the project team and the main stakeholders is for these trees to be grown through nurseries in a pre-contract form. This will result in larger trees to be available, providing a greater impact on day one.

Good ESD principles

The ESD SSDA Report prepared by Steensen Varming provides detailed information on the ESD initiatives proposed for the new New high school for Googong to reduce the environmental impacts associated with the new buildings and landscape design. The following strategies highlight the measures adopted within the proposed landscape design to ensure a sustainable outcome:

- Adopt Water Sensitive Urban Design (WSUD) principles that includes rainwater reuse for landscape irrigation, planting of low water species and stormwater management.
- Utilise paving and hardscape materials with high Solar reflectance index (SRI) to reduce the heat island effect and improve outdoor thermal comfort.
- Rainwater collection and reuse to include landscape irrigation.
- 15% of site area to be mass planted.

6.4 LANDSCAPE DESIGN PRINCIPLES

SITE RESPONSE

- Ensure the strategic use of terracing and retaining will be critical in creating useable programable space as well as providing delineation of spaces.
- Ensure the design presents an accessible, inclusive, and welcoming environment, both physically and culturally.
- Ensure equal access is provided and structured to allow for clear navigation through the site.
- Allow for passive/dynamic activities and learning spaces for groups of different age and ability.
- Provide access and connections to the natural environment that encourages learning and social interactions, whilst providing areas for respite and reflection.

RESTORE LANDSCAPE

- Planting palette that focuses on reintroducing and restoring the *Moanary-Queenbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland* communities as well as appropriate in a school environment.
- Planting selections are responsive to local environment, with opportunities to provide shade and reinstate the local habitat.
- Provide Canopy trees and WSUD initiative in carpark spaces to mitigate heat island effect, treat surface water runoff, provide shade, and mitigate the visual impact of car parks.
- Maximise mature canopy coverage.
- Planting to accommodate the varying climate conditions and requires low maintenance and low water use.
- Provide different types of habitats for local wildlife through the succession of trees and planting.

GREEN PRESENCE

- Ensure a green presence is considered for all types of landscape where appropriate.
- Design to maximise planting and permeable surfaces.
- Planting to be used as soft buffer to delineate different types of spaces.
- Green presence along the perimeter to alleviate the visual impact from security fencing.
- The sensory garden and the natural trails through the design will provide the opportunity to re-establish that endemic planting with reference to the Moanary-Queenbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland communities.
- Green transitions across site.

VARIETY OF SPACES

- A mixture of passive, active and targeted play areas to be integrated into the design accommodate different ability, skill level and age groups.
- Flexible spaces to be included throughout the site to provide a variety of social and play opportunities whilst also facilitating larger groups and school assemblies.
- COLA spaces and under croft spaces to provide a sheltered environment for outdoor activities in all-weather conditions.
- Intimate courtyards and terraced spaces to provide opportunities for accommodating specific programming and user groups.
- Varies game types and line marking overlay to provide multiple opportunities for outdoor activity.

6.5 PROPOSED LANDSCAPE CONCEPT PLAN

1. Main Entry Forecourt
   The primary gateway to the school, the main entry forecourt is designed to provide a welcoming space for students, staff, and visitors. The forecourt is situated on an east/west link which provides direct access from the upper terrace to the mid terrace.
2. East/West link
   Provides access from the upper terrace to the mid terrace of the school. This links the main entry, hall, canteen, and block A to the social promenade and the active play areas to the south.
3. Secondary Entry
   The secondary entry offers additional access for students and staff, helping to distribute pedestrian movements at the start and finish of the school day. The secondary entry sits at the beginning of a social promenade that extends south to the playing fields and the east/west link.
4. Social Promenade
   This promenade is a generous 15m wide and has an alignment of new trees and seating along its central axis and has multiple smaller areas branching off and connects to the east/west link and the active play areas to the south.
5. Tiered Outdoor Learning
   A dynamic outdoor space for flexible learning, this area incorporates tiered seating for lessons, group discussions, and informal gatherings. It fosters creativity and collaboration in an engaging open-air environment. It also provides spectator and social seating during non-class times.
6. Connection Between upper & mid terrace
   1:20 walkway connect the main level difference between the hall/canteen and block A to the social promenade and targeted play areas. These pathways are essential for inclusive mobility, accommodating all students and visitors.
7. Activated Play Areas
   Play areas are thoughtfully designed to encourage active recreation and social interaction. These spaces support physical activity and provide diverse opportunities for students to engage with peers.
8. Yarning Circle
   The yarning circle have been located within cultural endemic planting that showcase the local endemic species. The yarning circle is a dedicated space for storytelling, sharing, and community connection. It promotes cultural learning and respectful dialogue in a natural setting.
9. Loading & Deliveries
   The loading area provides a vehicle access to an elevated loading dock attached to the building. This maintains a separation between vehicles and students as supplies are delivered to the school.
10. Waste/Carpark
    The carpark accommodates staff and visitor vehicles, with designated areas for waste management. This design supports an efficient and safe consolidation of vehicle movements and the schools' logistical requirements.
11. Hydroseeded Landscape
    The hydroseeded areas contribute to a sustainable green environment. This eco-friendly landscaping technique ensures rapid establishment of grass and vegetation, enhancing the school's aesthetics. To be utilised as informal garden with opportunities for additional play space pending demand. Area subject to future expansion and buildings pending demand.
12. SSU Sensory Garden
    This area features planting to stimulate the sensors and to be enjoyed by students. The pavement material will have a level of embellishment to provide some relief from the adjacent pavement materials.
13. School Expansion area
    Existing condition to be retained where possible and utilised for Civil cut/fill earthworks. Area subject to future school expansion.
14. Landscape Behind Hall
    Landscaped area behind hall to be fenced off to restrict student access. Boundary fence to remain due to steep landscaping between Glenrock Dr and the hall.

Figure 39, Landscape site Plan

6.6 UNENCUMBERED PLAY AREA

Unencumbered play area typically refers to a designated space or area that is free from obstacles, obstructions, or hazards, where children can engage in unstructured and spontaneous play. This project is targeting and exceeding the standard 10m2/student.

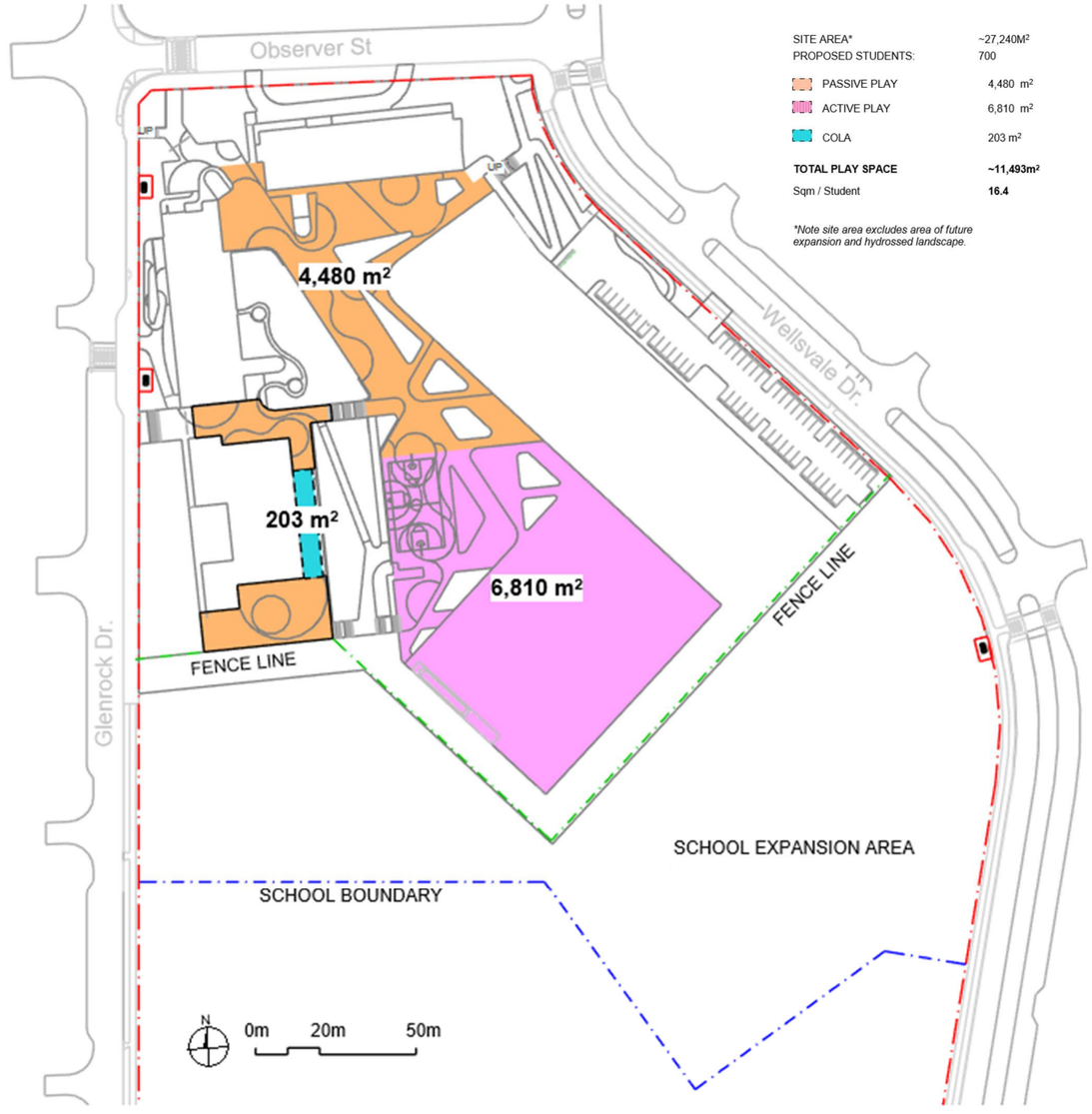


Figure 40, Unencumbered Play area calculation

6.7 ACTIVE SPACES

The targeted play area (indicated in yellow) includes an open grassed field 80m x 60m in size with an option to expand the playing field dimension to a full-size football field if budget permits. One external multi-sport court (indicated in pink) has been provided to the central courtyard which will support netball, basketball, volleyball, and tennis by the use of moveable equipment. A hit up wall has also been included adjacent the multicourt which will offer a range of additional activities and will include a wall mounted basketball hoop. A cricket practice net (indicated in blue) has also been provided adjacent field to consolidated target play elements into a centralise area.

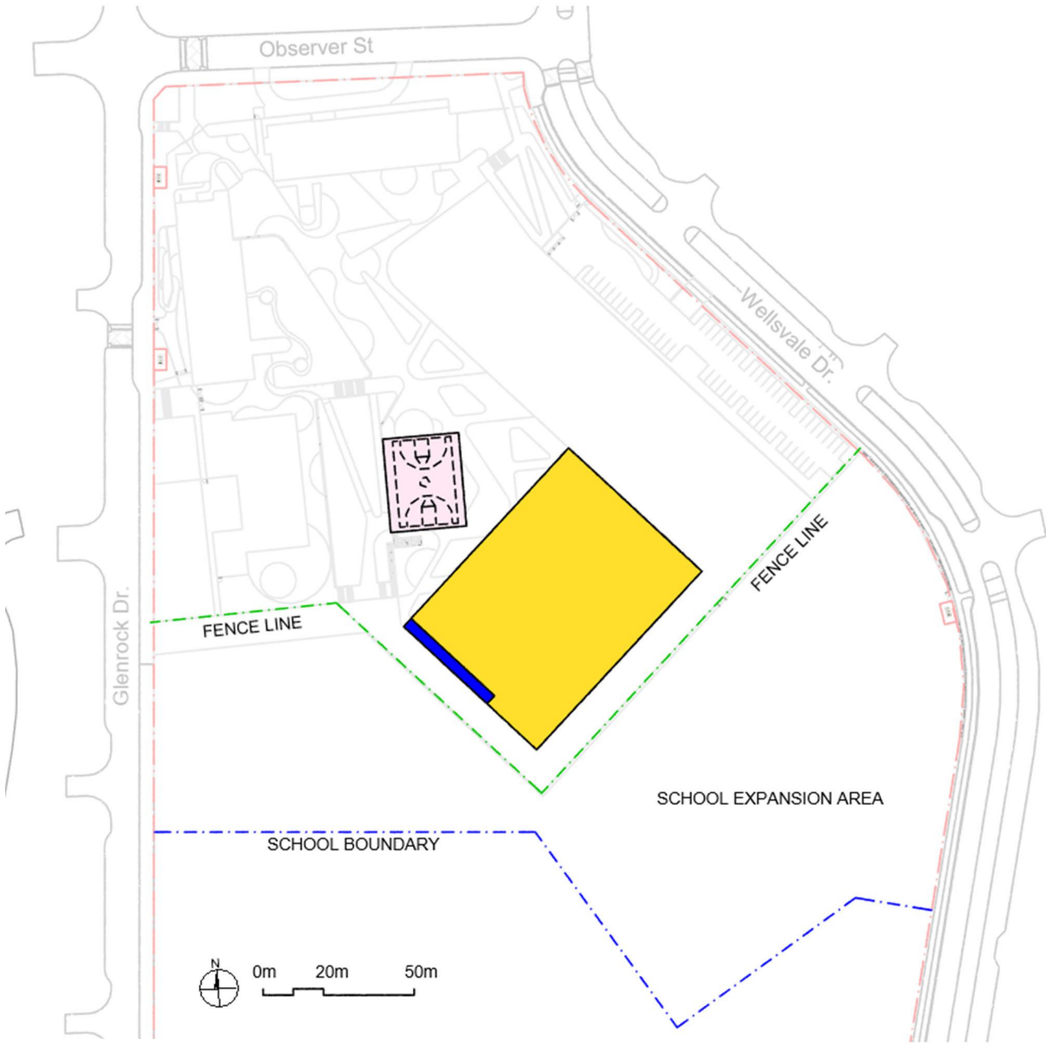


Figure 41. Landscape Active spaces Diagram

6.8 SOCIAL SPACES

This social promenade (indicated in yellow) is a generous 15m wide and has an alignment of new trees and seating along its central axis. Smaller social spaces (indicated in pink) branch off from the promenade, these spaces are framed by vegetation and offer a mix of natural and artificial shade, they will allow for educational programming during classes and will include a range of seating typologies to create a variety of social spaces to cater for a range of ages, group sizes, and social competencies. The multicourt area and the area south of block C (indicated in blue) have been designed to cater for larger group gatherings or assemblies.

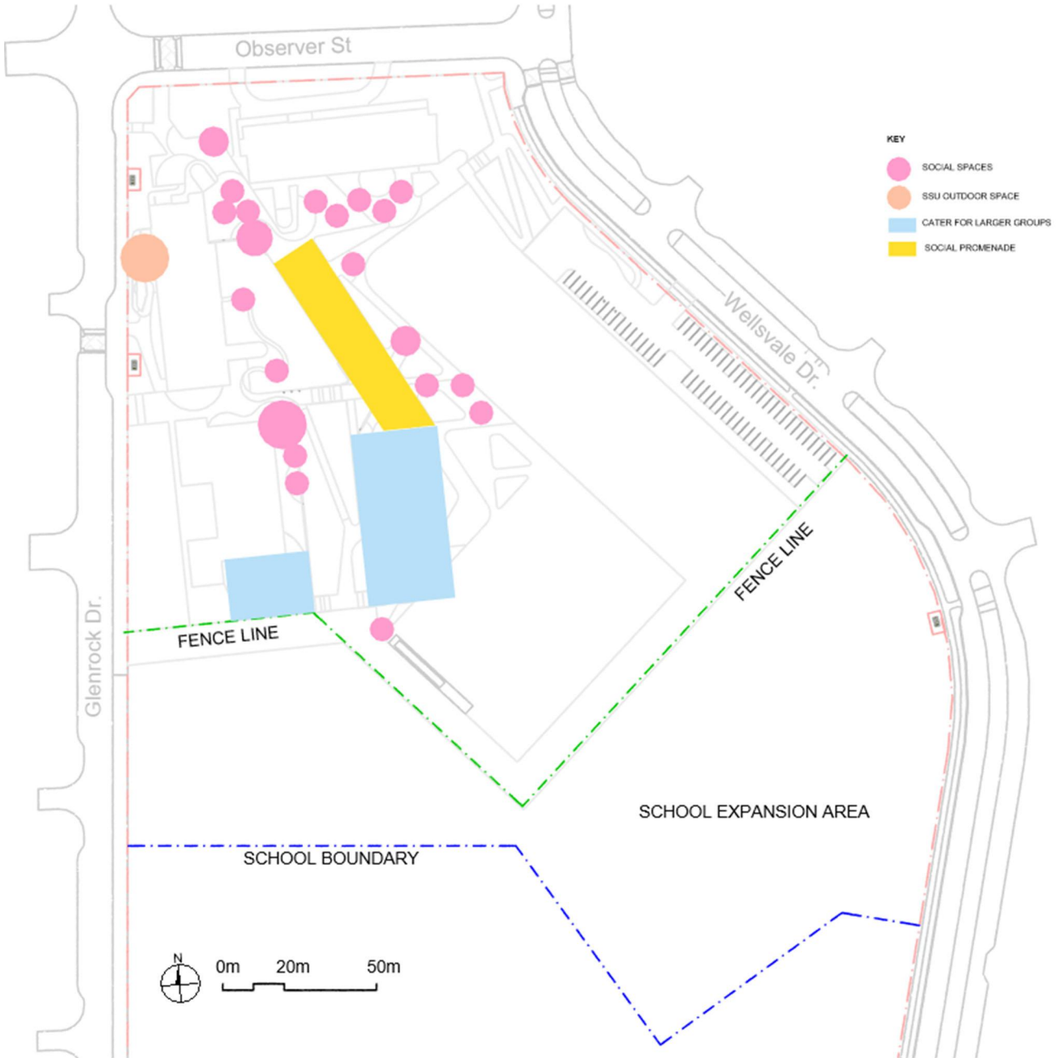


Figure 42, Landscape Social spaces diagram

6.9 EDUCATIONAL & SPECALISED SPACES

The feature cultural planting area (indicated in green) is situated within a re-instated planting area which will showcase local *Moanary-Queanbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland* community plant species and highlight the botanical and local First Nations names of the species and the Cultural uses of each species. Two yarning circles will be located within this area to accommodate targeted cultural learnings.

The SELU external play space is located on the western boundary adjacent Glenrock Drive. This space includes a 1:20 walkway down to a small gathering space which will allow students respite from the learning environment and an opportunity to enjoy a sensory landscape. Privacy is provided to this area by the use of a solid boundary wall at 2.1m which will reduce the exposure of this area to the public.

The outdoor tiered seating area will provide space for flexible learning lessons, group discussions, and informal gatherings. It fosters creativity and collaboration in an engaging open-air environment.

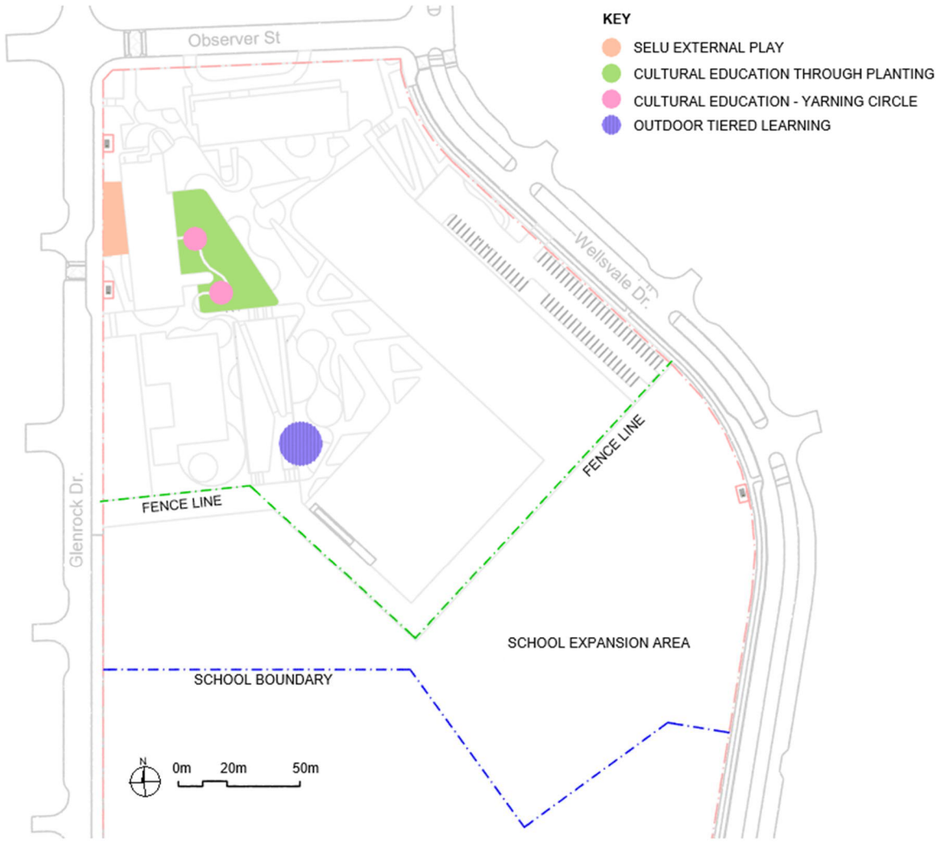


Figure 43, Landscape educational spaces diagram

6.10 CAR PARKING & BIKE PARKING

The carpark has been located off Wellsvale Drive on the lower terrace of the site, this allows on grade access to the 55-car space (including 2 DDA spaces). The 55 spaces are for staff use only and the carpark is secured by a 2.1m high fence. The waste area has also been located to the north of the carpark to consolidate the vehicle movements to the eastern boundary and to maximise the central external play area. Tree planting has been provided through the carpark to reduce the heat island effect and provide shade and amenity. A pedestrian pathway links the carpark to the 1:20 walkways to the central terrace.
The proposed design accommodates parking for 140 student bike parking, the parking has been consolidated to the northwest corner of the site and further spots provide outside of admin, at the main entry (see below). This bike parking area is secured by the perimeter 2.1m high fence and is covered by a structure to ensure bikes are protected from rain & heat.
An End of Trip facility has been included at the ground level of Building A, to include 2 showers and bike storage for 5 bikes for staff use.

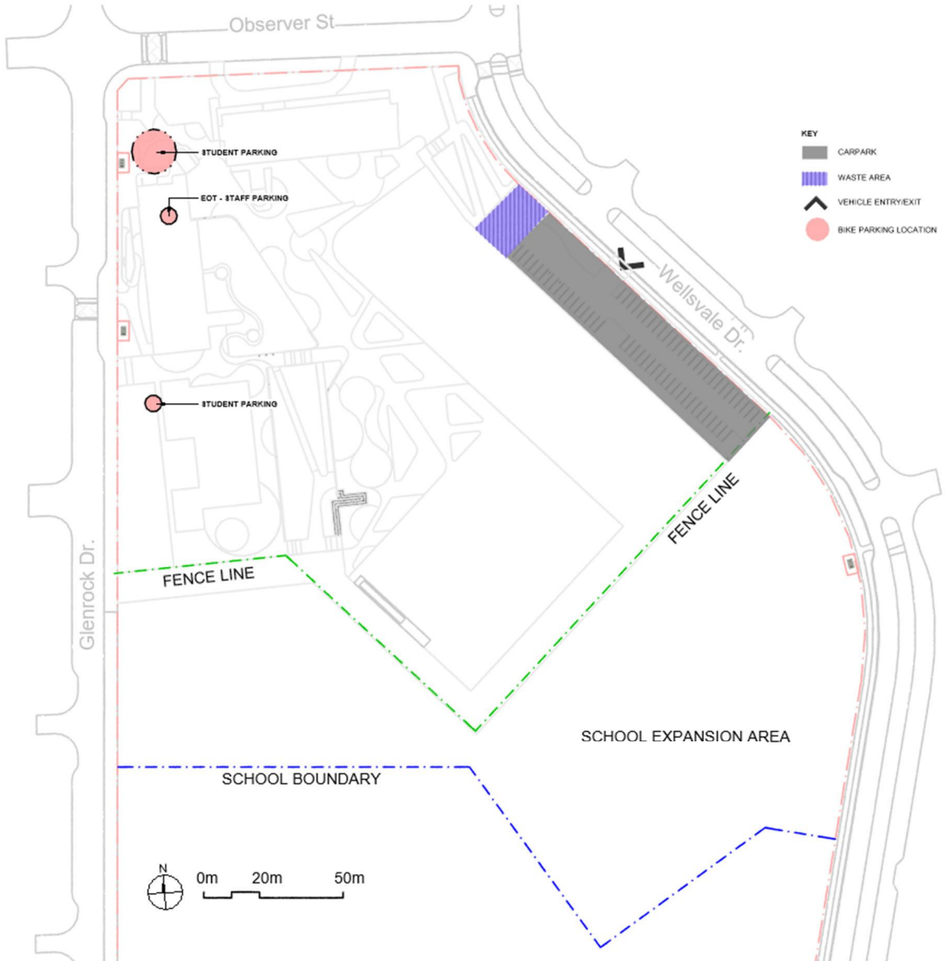


Figure 44, Carparking and Bike parking Diagram

6.11 MATERIAL TYPOLOGY

The material palette in the landscape design has been chosen to complement the Architectural built form's materiality. In addition to interpreting some of the Connecting with Country themes, the landscape design also utilises materials to delineate spaces and break down large areas.

These are the principles that have informed the material palette selection:

- Pragmatic design approach to minimise ongoing maintenance and running costs.
- Light tones to mitigate the urban heat island effect and ensure appropriate comfort levels on-site.
- Ways to achieve aesthetically pleasing design outcomes.
- The standard and quality for materials used on school projects to establish an achievable benchmark.
- The cost for construction in close consultation with the Quantity Surveyor.
- The use of materials to delineate spaces.
- The use of materials for interpretive design and reflect some of the Designing with Country themes.

The new high school for Googong design includes the following:

- Post applied colour/stain to the concrete (anti glared tone) for the main circulation areas.
- Decomposed Compacted Granite for pathways on the Native Garden.
- Natural boulders for passive retaining, habitat, and informal seating.
- Concrete bleachers, walls, and edges.
- Coloured Balustrades.
- Natural turf for the sports fields.
- Synthetic turf for the cricket practice net.
- Range of fixed furniture with colour and shade elements
- Hit up wall with dynamic colouring.
- Native Hydroseed


PAV01/04 - CONCRETE PAVING


PAV02 - POST APPLIED FINISH/COLOUR TO CONCRETE PAVEMENT


PAV03 - DECOMPOSED GRAVEL


MP01 - MASS PLANTING


MP02 - HYDROSEED


WL01 - CONCRETE WALL


WL03 - FEATURE HITUP WALL

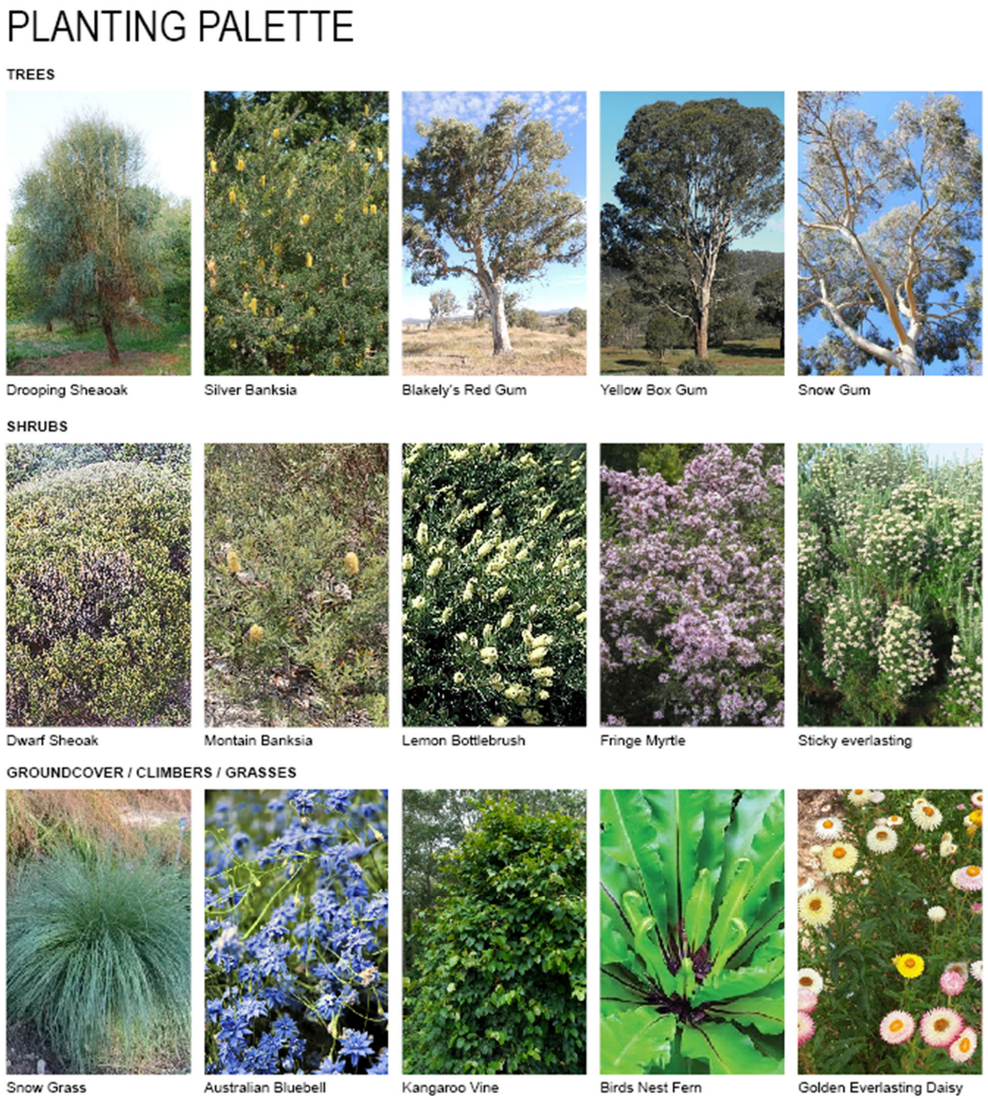

FX04 - STOOL SEATING


TP01 - TREE PIT


TRF01 - NATURAL TURF

6.12 PLANTING TYPOLOGY

The planting selection for this project is based on the *Moanary-Queanbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland* Community. This palette has been distributed across the site to adapt to shade, wind and sunlight. Their growth habits, colours, and textures have been also considered to create a visually pleasing and cohesive landscape as well as responding to some of the Connecting with Country themes. Refer to the L-2000 series for Planting schedule & proposed planting zones/plans.



MATURE TREE CANOPY

Due to the site having no existing trees the proposed design is relying on new tree planting only. All tree species are local endemic species which are suited to the sites conditions and will relink the remnant endemic landscape adjacent the site. The design will use pre procured advanced tree stock (200 litre pot size) to ensure the new trees are advanced as possible at the opening of the school. These trees will take time to mature and provide shade and amenity to the site, but this has been considered in the design of the external space. As such, the design is currently achieving a 24% mature tree canopy coverage.

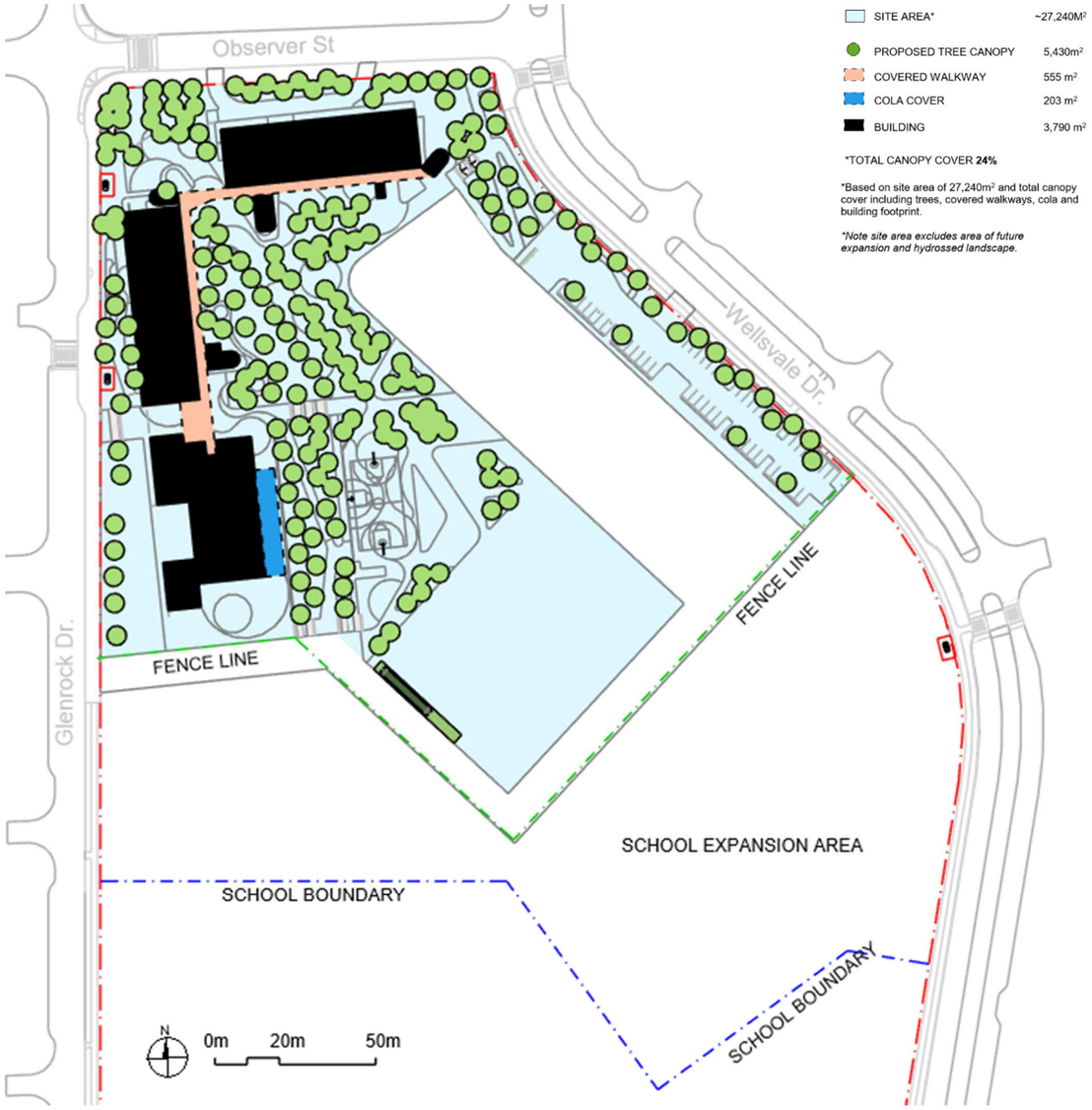


Figure 45, Landscape Canopy cover calculation diagram

6.13 MASS PLANTED AREA

The design aims to revegetate the site using local endemic native species from *Moanary-Queanbeyan Rolling Hills Grassy Forest & Southern Tableland Grassy Box Woodland* Communities. This will help to relink the plant communities to the adjacent remnant pockets of vegetation. In turn this will also reduce the impacts of heat Island Effect, and the runoff of surface water. As such the current design is achieving the Greenstar requirement of 15% of the site area to be mass planted as can be seen in the diagram below.

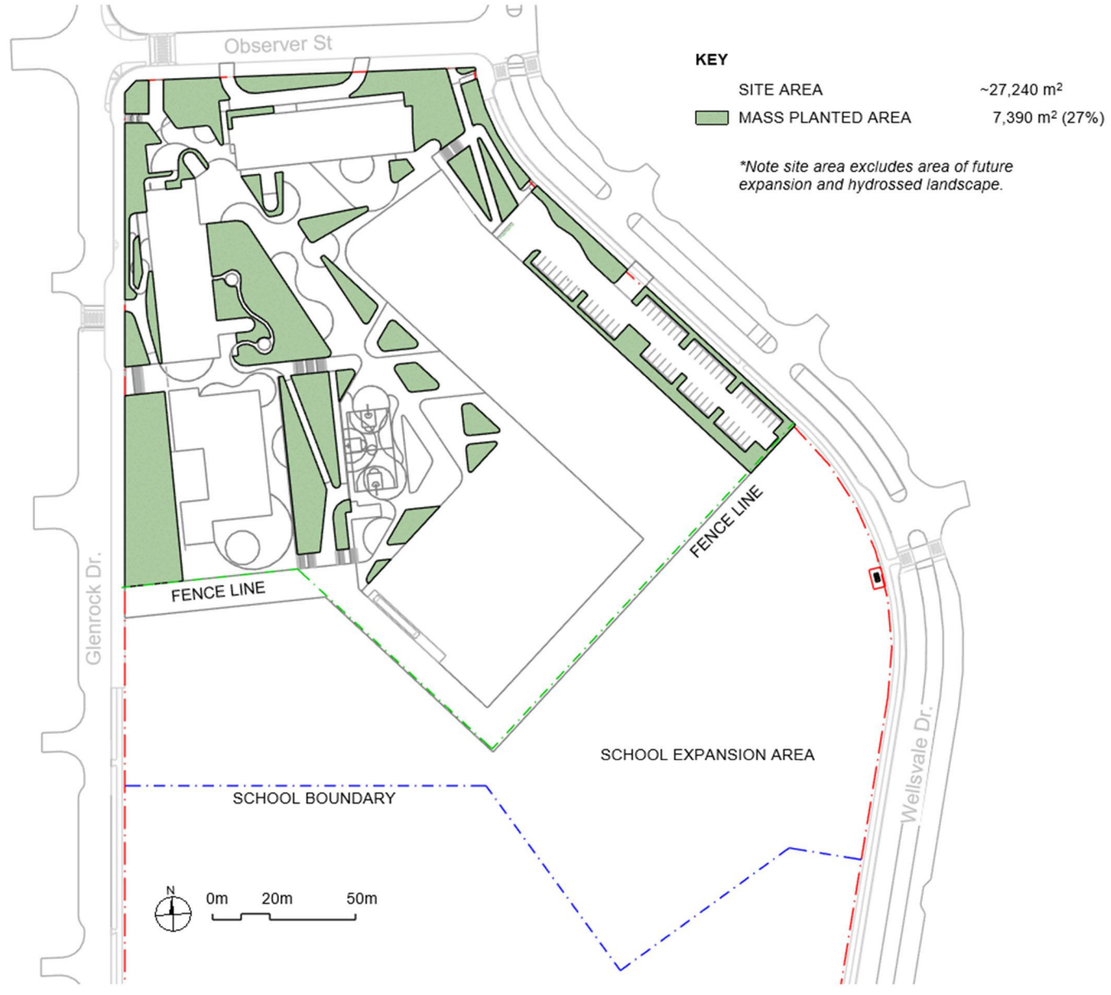


Figure 46, Landscape mass planted area diagram

6.14 WATER SENSITIVE URBAN DESIGN (WSUD)

The design implements passive irrigation initiatives across the site with hard surfaces typically falling towards vegetated areas. This will help utilise any rainfall that occurs and provide additional water to the new vegetation. In addition to the above the design also includes several dedicated rain gardens along the social promenade, these gardens will collect water runoff and filter it before it is picked up by the sub soil drainage system and directed to the sites OSD tank. The OSD tank has been located under the waste area (indicated below) on the eastern boundary which will allow for ease of access for maintenance and servicing.

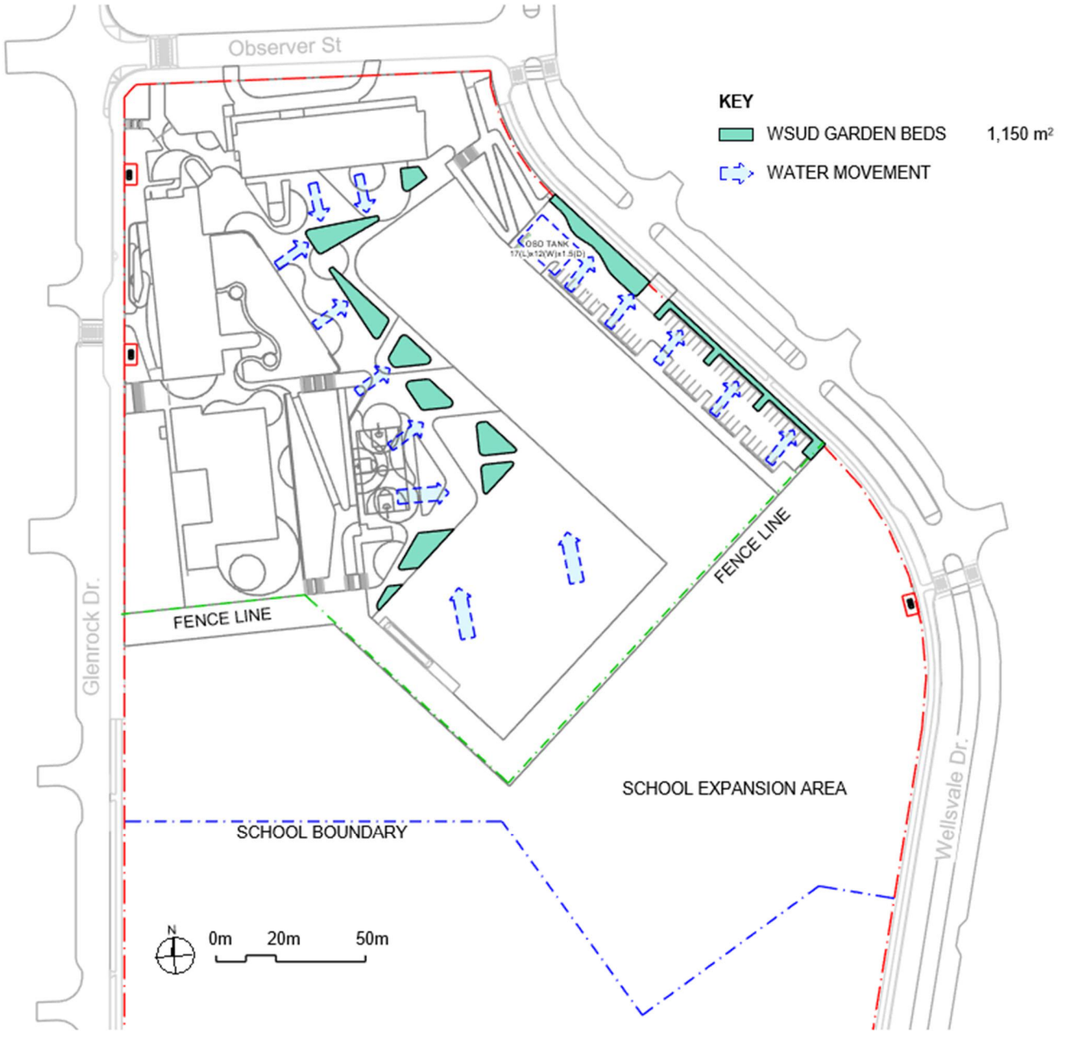


Figure 47. Landscape Water sensitive urban design diagram

6.15 PUBLIC DOMAIN

The landscape design objective is to provide a welcoming, generous and a sense of place at the main entry whilst ensuring that the other entries have a strong relationship to the existing public domain. A generous landscaped setback will provide a transition between the public domain and the school. This buffer will provide space to negotiate any level difference, soften the secure fence line with the use of planting, allow space for new tree planting for shade and amenity, transition the scale of the building and the street, and demonstrate an adequate urban understanding and resolution to all interfaces.

The main entry (refer figure 48) indicates the building setback and relationship to Glenrock Drive. The secure fence is softened by tree and understory planting to reduce the visual impact of the required fencing and gates. Figure 49 shows the significant setback achieved along Glenrock Drive, the fence line remains at the boundary but the area beyond is densely planted with local endemic understory planting and reinforced with proposed tree canopy.

Figure 50 shows a solid masonry wall/secure line adjacent the SELU entry to provide privacy and shelter to the SELU courtyard located between the boundary and block A. The wall will match the architecture language of the building and will transition a change in the fence alignment from the boundary to pulling back to the building. This will provide an improved urban design outcome.

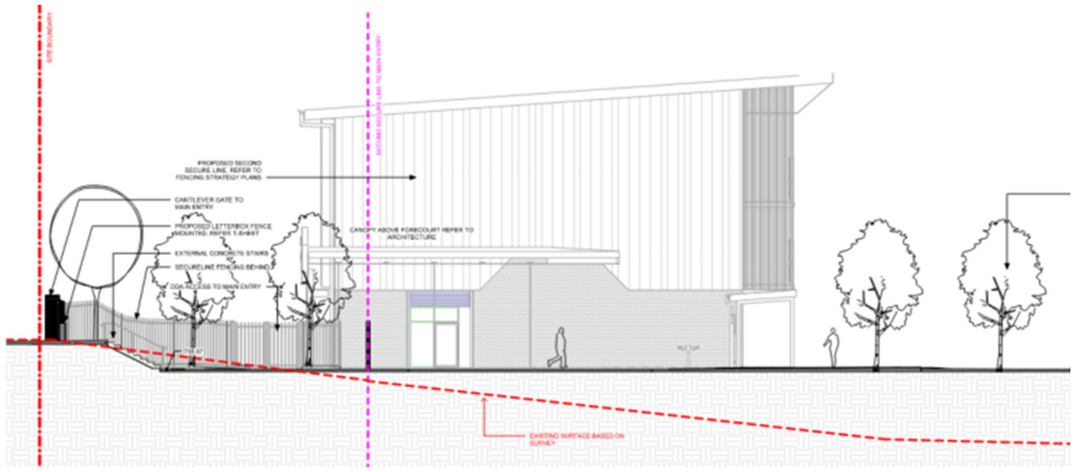


Figure 48. Main entry section off Glenrock Drive

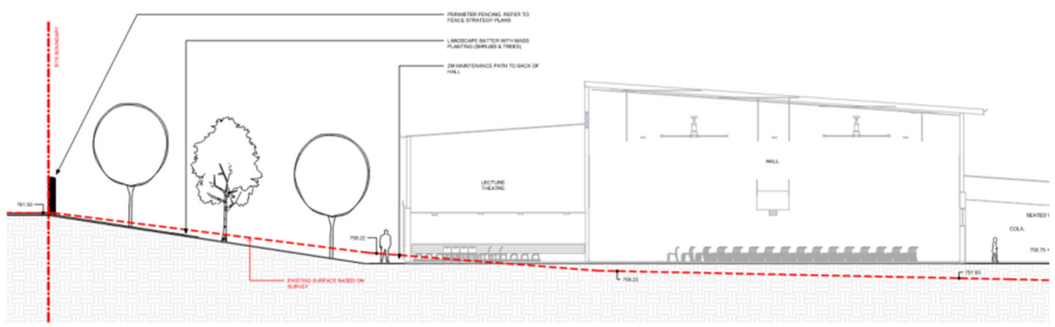


Figure 49. Hall setback and relationship to Glenrock Drive

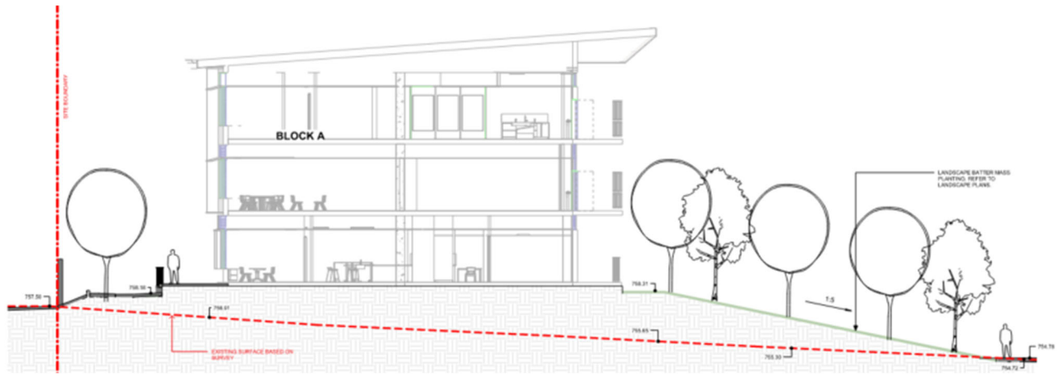


Figure 50. SELU entry off Glenrock Drive

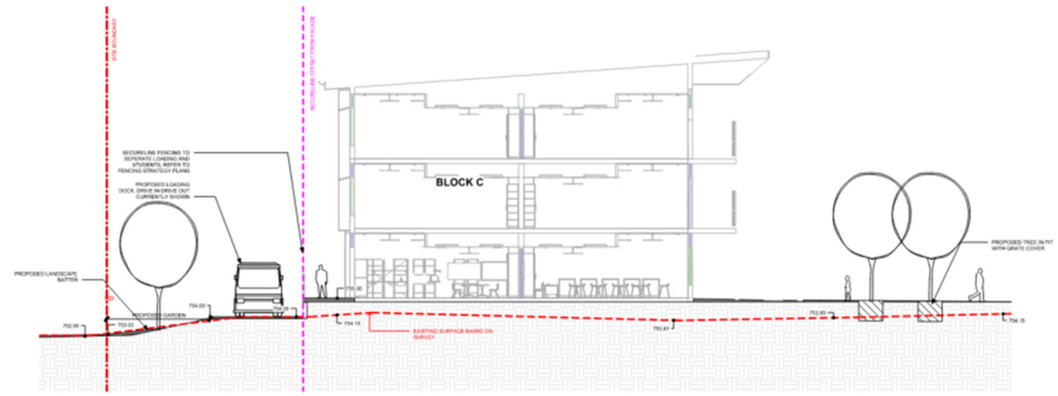


Figure 51. Block C & Observer Street interface

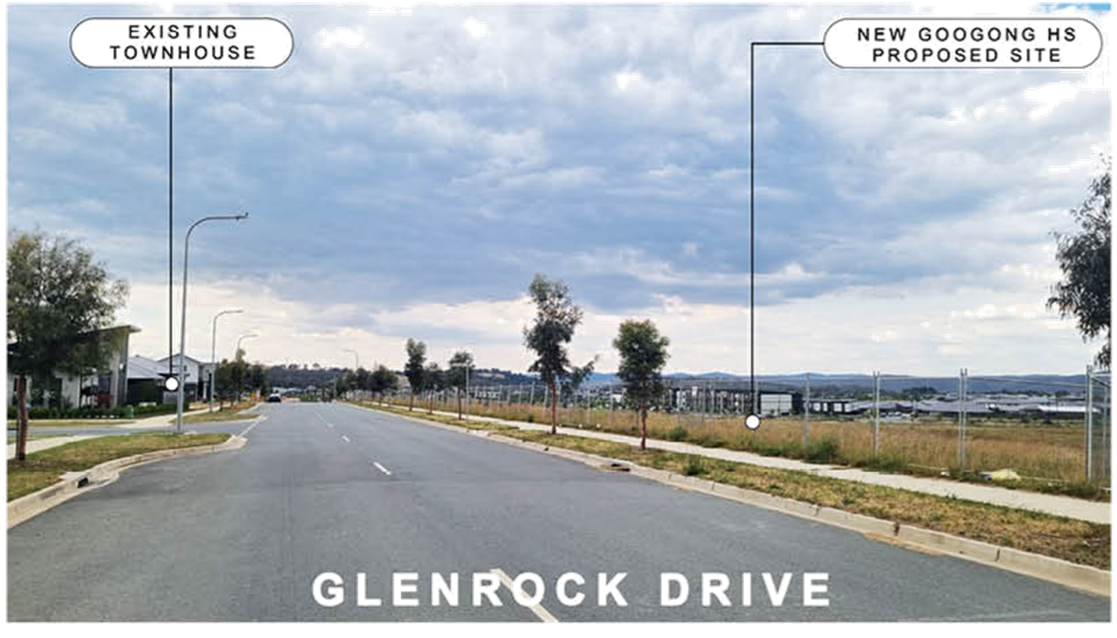
Figure 51 indicates the northern public domain interface along Observer Street. The secure line has been pulled back to the building interface allowing a generous vegetated buffer along Observer Street. This setback includes significant new tree planting to provide shade, amenity, and reduce the scale of the building.

7.0 VISUAL IMPACT ANALYSIS

VIEW 01 - South/West

View from Glenrock Drive looking north

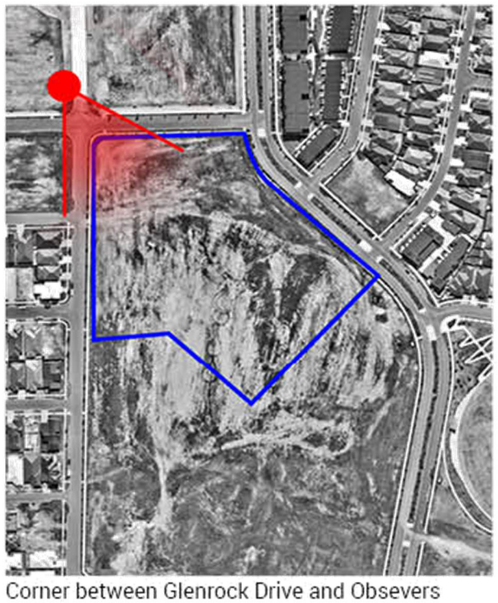
EXISTING VIEW



	Characteristic	Comment
Characteristic	Distance from site	50m
	Relative viewing level	Level with site
	Use at the viewpoint	Vehicular access road, parking and pedestrian paths
	Purpose of being at viewpoint	View from surrounding residential properties
	Dominate elements	Gymnastics and Main Entry
Magnitude	Amount of fabric change	Medium
	View composition change	Medium – New buildings have been added, from this angle the buildings sit lower than the street level reducing the scale and impact.
	Prominence	The new gymnastics hall utilises the material palette from the context helping settle the building into its surroundings.
	Overall Rating	Medium

PROPOSED VIEW

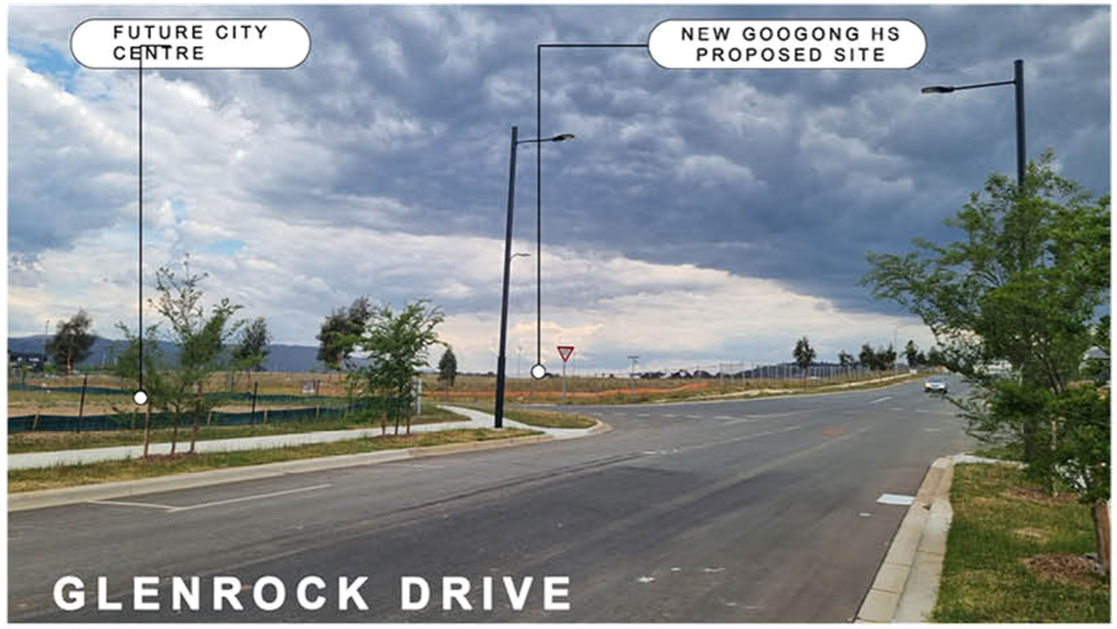
VIEW 02 - North/West



Corner between Glenrock Drive and Obsevers street looking south.

	Characteristic	Comment
Characteristic	Distance from site	70m
	Relative viewing level	Level with site
	Use at the viewpoint	Vehicular access road, parking and pedestrian paths
	Purpose of being at viewpoint	View from Googong village centre
	Dominate elements	Block A & B and the entry plaza
Magnitude	Amount of fabric change	High
	View composition change	High –From this angle the new buildings are quite prominent.
	Prominence	The entry plaza bookended by Blocks A and B, with the circulation spine centred in the plaza. The proposed buildings utilise the material palette from the context helping settle them into their surroundings.
	Overall Rating	High

EXISTING VIEW



PROPOSED VIEW

VIEW 03 - North/East

Corner between Obsevers street and Wellsvale Drive looking south.

	Characteristic	Comment
Characteristic	Distance from site	60m
	Relative viewing level	Level with site
	Use at the viewpoint	Vehicular access road, parking and pedestrian paths
	Purpose of being at viewpoint	View from main arterial road of Googong (Wellsvale Dr) - South
	Dominate elements	Block B
Magnitude	Amount of fabric change	High
	View composition change	High –From this angle the new buildings are quite prominent.
	Prominence	The most prominent corner of the site to the suburb, could be used as a wayfinding symbol to the suburb. The proposed Block B utilises the material palette from the context helping settle it into its surroundings.
	Overall Rating	High

EXISTING VIEW

PROPOSED VIEW

VIEW 04 - South/East

Corner between Wellsvale Drive and Heazlett street looking north-west.

	Characteristic	Comment
Characteristic	Distance from site	50m
	Relative viewing level	Level with site
	Use at the viewpoint	Vehicular access road, parking and pedestrian paths
	Purpose of being at viewpoint	View from main arterial road of Googong (Wellsvale Dr) -North
	Dominate elements	Nil
Magnitude	Amount of fabric change	Low
	View composition change	Low –From this angle the new buildings are quite recessive.
	Prominence	The proposed buildings will not be very visible from this angle with the proposed vegetation hiding them when reaching full maturity.
	Overall Rating	Low

EXISTING VIEW

PROPOSED VIEW

8.0 MITIGATION MEASURES

The design team has incorporated a number of mitigation measure to assist with reducing the impact of the project to the surrounding context. As an example (but not limited to), the design team has incorporated:

- screening to the mech plant areas to reduce the noise impact to the adjacent housing,
- overhead doors around the outdoor workshop to reduce the noise impacts when louder machinery is being used

Some of the outstanding measures include:

IMPACT	STAGE OF PROJECT	MITIGATION MEASURE	RESPONSIBILITY
Impacts upon undiscovered archaeological artefacts or archaeological potential	Construction	Prior analysis has been undertaken, with no expected artefacts to be found. An unexpected finds protocol (with appropriate induction) will be in place during works to identify and protect any artefacts that may be discovered. The unexpected find protocol shall be documented in the Contractor's Construction Management Plan.	Contractor
Loading zone driveway	Operations	Working with the traffic engineer, the loading zone driveway on the northern end of the boundary has been designed to cater for a MRV to be completely off the site whilst unloading. The current design allows for suitable swept paths for the MRV to cross the pedestrian footpath, the school is to program deliveries outside high pedestrian movement times.	School

9.0 CONCLUSION

The architectural and landscape design for the new high school in Googong, responding to the site's unique characteristics and opportunities. The design prioritizes student well-being, community integration, and environmental responsibility.

A key aspect of the design is the sensitive response to the site's topography. The terraced levels not only minimize cut and fill but also create a dynamic and engaging learning environment. The buildings are strategically placed to work with the existing slope, reducing the need for extensive earthworks and preserving the natural beauty of the site.

The design also addresses the challenges of Googong's climate. Passive design strategies, such as building orientation and shading devices, are employed to ensure thermal comfort throughout the year. The selection of durable, low-maintenance materials ensures the longevity of the school and minimizes its environmental impact.

Furthermore, the design prioritizes privacy and security for both students and staff. Landscaping and building design are thoughtfully integrated to create privacy from surrounding properties and roads, while still allowing natural light into the school. A variety of versatile outdoor spaces provide comfortable areas for students to learn and play throughout the year.

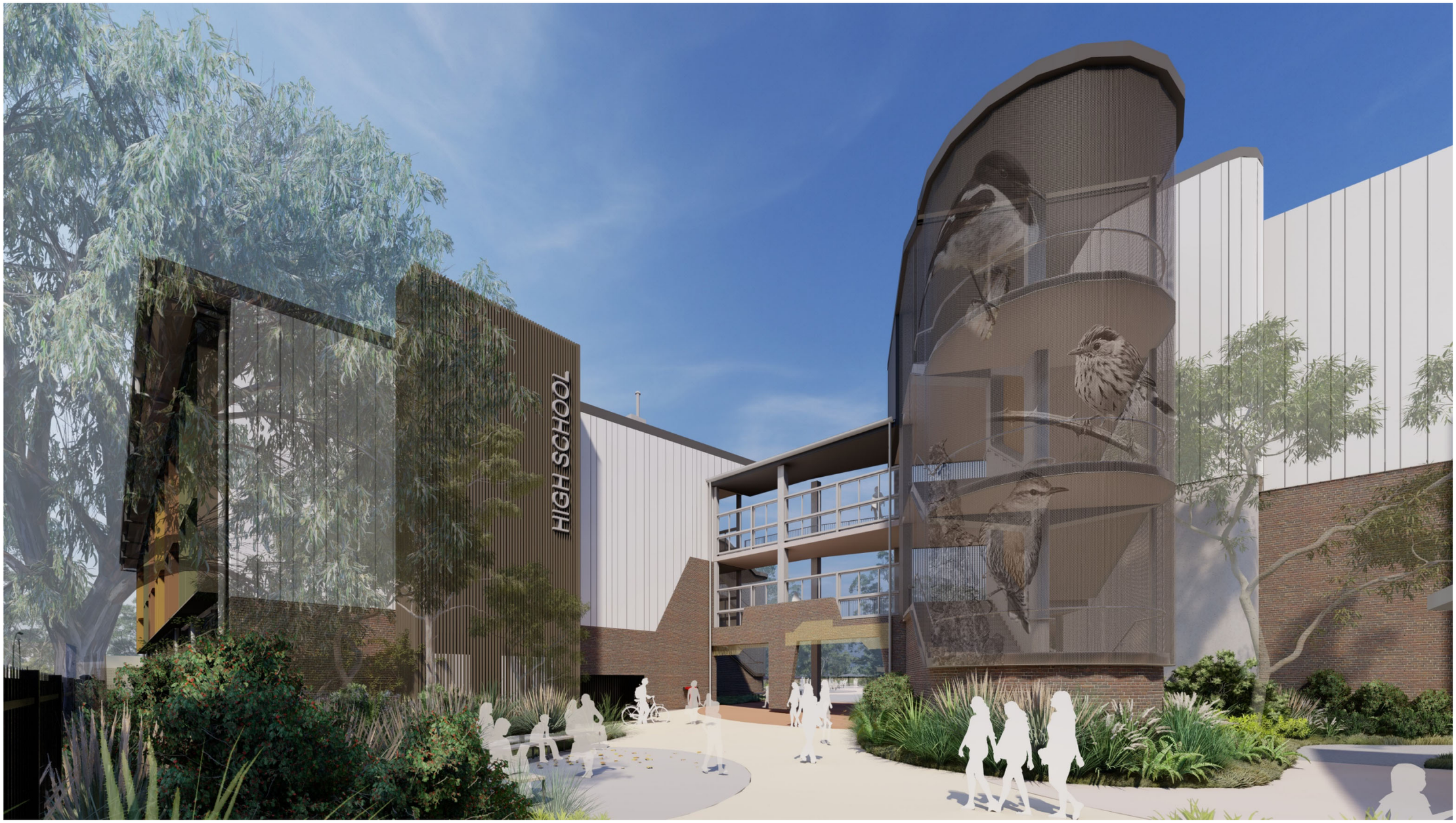
The school's connection to the surrounding community is another important aspect of the design. Pedestrian and cycle-friendly access to the town centre, Googong Commons, and the future primary school promotes active transport and fosters a sense of belonging within the community. The three street frontages are optimized for different purposes, enhancing safety and contributing positively to the streetscape.

The landscape design complements the architectural design by restoring the connection to the endemic flora and fauna of the region. Native plantings, rain gardens, and bioretention areas enhance biodiversity, manage stormwater runoff, and provide opportunities for environmental education.

Subject to the implementing the recommendations / mitigation measures set out in Section 9.0 of this report, *this assessment report has examined and taken into account to the fullest extent possible all* (traffic, services infrastructure, landscaping, civil/ overland flow, acoustics, sustainability, operational waste, deliveries) *matters affecting the construction and operation of the proposed new high school for Googong. The assessment found the activity would be unlikely to cause a significant impact on the environment subject to the implementation of appropriate mitigation measures as contained in this report.* The design for the new high school in Googong is a thoughtful and comprehensive response to the site's unique context and the needs of the school community.

APPENDIX A

Main Entry (Glenrock Drive)



Northwest Entry

Northeast Entry

Central Courtyard

Courtyard Aerial View

APPENDIX B

EDUCATIONAL PRINCIPLES

The NSW Department of Education is committed to ensuring the infrastructure meets the needs of a growing population and enables future-focused learning and teaching to support outcomes for students.
The following Education Principles should underpin the design of all learning environments:

1 Education Principle 1
First and foremost, focus on the needs of learners and learning.

School Planning Considerations:
Development of the Child: The public school system, caters for children ranging from 3-4 years old (preschool*), all the way through to 17-18 years (seniors). Recognizing that the development needs of children vary significantly as they grow, school environments must be designed with a deep understanding of the age and particular needs of their student cohort. This includes consideration for how the environment meets the physical, cognitive, emotional, and developmental needs of children, including the following:

- Physical Development: The physical environment of the school should be designed to encourage physical activity and motor skill development. Provide spaces for playing, running, climbing, and playing sports appropriate to the children's age. Additionally, environments should encourage children's healthy physical growth by ensuring access to natural daylight, fresh air and thermal comfort.
- Cognitive Development: Create environments that stimulate curiosity, exploration, and learning. This might involve incorporating age-appropriate interactive displays, and spaces that encourage discovery and problem-solving.
- Social Development: Designing spaces that foster social interaction, collaboration, and empathy. This includes creating areas for group activities, team projects, and peer interaction, as well as quieter spaces for solitary activities or reflection.
- Emotional Development: Ensuring that environments promote a sense of security, belonging, and emotional well-being. This can be achieved through the use of comforting colors, textures, and lighting, as well as providing areas for relaxation or emotional support.




Early Learning*	Primary	Secondary	Seniors
Preschool Age: 3-4 Years **Refer to NSW Child Care Planning Guideline and the SINSW Preschool Design Brief for Early Learning design requirements*	K-6 Age: 5- 11 years Stages: Kindergarten Stage 1 (Years 1-2) Stage 2 (Years 3-4) Stage 3 (Years 5-6)	Years 7-10 Age: 12-15 years Stages: Stage 4 (Years 7-8) Stage 5 (Years 9-10)	Years 11 -12 Age: 16-18

2 *Education Principle 2*
Foster community and identity by cultivating a culture of welcome, inclusion, and belonging that celebrates and reflects the diversity of the school community.

School Planning Considerations:
Connecting with Country: With over 70 different Aboriginal Nations in NSW, all with different natural and cultural systems, each school site is unique. As such, there is no universal design for Connecting with Country. How the site relates to its context – its community, natural environment, built environment, and cultural setting – should inform the project. Responding to the specific character and identity of a location will allow the school site to compliment and care for Country and allow for deeper connection between Country and people. Additionally, incorporating elements of Aboriginal knowledge throughout the school environment by displaying artworks and symbols that reflect local stories, will promote a sense of pride and shared belonging. For more information refer to the Connecting with Country Framework.
Inclusive Design: School environments should be designed to ensure that the physical space is inclusive and accessible to students, staff, and visitors. Where possible, this includes accessible entrances, pathways, and facilities that accommodate individuals with disabilities or different needs. Outdoor areas should consider children with special needs and create spaces which allow for children of different abilities to take part in play and learning activities. A comprehensive approach to Inclusive Design fosters a welcoming and supportive educational environment for everyone. For more information refer to the Inclusive Design Framework.

Shared Community Use: Public schools are central to all communities across the state and local schools play an important role in shaping the culture, environment and economy of each local area. By creating shared use opportunities between community groups and the school, we maximize resources, enhance access to facilities, and foster stronger community connections, benefiting both educational and local development. For more information refer to the Shared Use information page.

3 *Education Principle 3*
Provide built environments which are aesthetically pleasing, engaging and safe, designed to inspire joy, learning, and a sense of wonder.

School Planning Considerations:
Scale of the Child: The physical design of the school must recognise that children are physically smaller, have different capabilities and sensitivities compared to adults, and require spaces and designs that cater to their unique requirements. Spaces should be appropriately scaled for the size of the child, ensuring that children are not overwhelmed by vast open areas and spaces and objects are physically dimensions for the comfort and ergonomics of the child.

Elements of Play and Delight: Incorporate features that spark joy, creativity, fun and engagement for children, including whimsical shapes, colours, and interactive components that invite exploration and discovery. Incorporating sensory experiences, such as varied textures, sounds, and lighting effects, can also enhance delight. By integrating these elements, spaces become more dynamic and enjoyable, fostering a sense of curiosity, happiness and learning. For more information refer to the Landscape Design Framework.

Safety Needs: School environments should be places where children feel emotionally and physically secure and supported. This involves designing spaces that are welcoming and nurturing. Additionally, children's physical safety should be front and centre in the design of a school, with design measures implemented to minimize risks of injury or accidents. A well-designed physical environment which promotes supervision of children, will also ensure that educators feel supported in their duty to keep children safe. For more information refer to the Safety in Design Framework.

4	*Education Principle 4* *Provide contemporary, sustainable learning environments, which promote children's understanding and appreciation of the natural world.*

School Planning Considerations:
Environmental Stewardship: Incorporate sustainable design principles that demonstrate stewardship of the environment and promote responsible citizenship. This can include green spaces such as community gardens, outdoor classrooms and nature discovery areas to provide environmental education. Making environmental efforts visible to students through for example rain gardens, recycling stations and energy monitoring devices can also enhance environmental stewardship. For more information refer to the Sustainability Framework and the Environmental Design in Schools Guide.

Sustainable Buildings and Environments: By creating ecologically sensitive outdoor spaces and energy-efficient buildings, schools can foster healthy learning environments. Schools should utilise renewable energy sources, incorporate water-saving fixtures and rainwater harvesting systems, and use sustainable, non-toxic building materials. Sustainable transportation options, such as biking and carpooling, are encouraged, along with active community involvement in sustainability initiatives. By implementing these principles, schools not only reduce their environmental footprint but also educate and inspire students to be responsible stewards of the planet. For more information refer to the Sustainability Framework and the Environmental Design in Schools Guide.

5	*Education Principle 5* *Embed the potential for re-configurability, both in the present for multi-purpose use and over time for changing needs.*

School Planning Considerations:
Sense of Ownership: Provide opportunities for students, teachers, and staff to personalize and contribute to the school environment. This could involve designated spaces for student artwork, collaborative projects, or community gardens that promote a sense of ownership and pride.

Future-Proofed Layouts: Schools must be designed with flexibility and adaptability in mind to accommodate evolving educational needs and changing demographics. Using a modular grid system, spaces can be easily reconfigured for different school uses over time, and expanded as needs grow. Advanced technological infrastructure is integrated to support digital learning tools and seamless connectivity. By anticipating future trends and needs, future-proofed school layouts ensure that educational facilities remain relevant, efficient, and conducive to student success for years to come. For more information refer to the Standardised Approach Framework.

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