

GREYSTANES PUBLIC SCHOOL

Design Analysis Report



EducationJOHNSTAFF



DOCUMENT CONTROL

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DOCUMENT STATUS

The Design Analysis Report has been prepared as a review of the design against the Design Guide for Schools as prepared by the Government Architect of New South Wales.

The design guide has been developed for new school development and upgrades accompanying the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP). The document outlines design quality principles that provides a practical guidance on how school projects can be designed to best address the design quality principles in the Education SEPP.

The outcome of this document is to deliver a project that respond to the Design Guide for Schools that is intended for new developments to positively support physical, social and environmental factors and its attendance to overall performance.

PROJECT INTRODUCTION

JDH Architects has undertaken the design of the new learning and administration building at Greystanes Public School. The scope of works includes construction of 24 new permanent homebases, covered outdoor learning area (COLA), staff and administration facilities, minor refurbishment of a multipurpose space and the removal of existing temporary learning accommodation and existing administration accommodation. The design of these buildings has been undertaken in accordance with the requirements of the Education Facilities Standards and Guidelines (EFSG) as published by the NSW Department of Education. The design is consistent with the requirements of the EFSG.

In accordance with the State Environment Planning Policy (Educational Establishments and Child Care Facilities) 2017, under the Environmental Planning and Assessment Act of 1979, the design of this project has considered the following principles:

Principle 1 – Context, built form and landscape

Principle 2 – Sustainable, efficient and durable

Principle 3 – Accessible and inclusive

Principle 4 – Health and safety

Principle 5 – Amenity

Principle 6 – Whole of life, flexible and adaptive

Principle 7 – Aesthetics

During the State Significant Development Approval process, the project has been reviewed by the Government Architect NSW who have been asked to review and provide comment on the proposal. The Design Analysis Report has been developed to respond in detail to comments raised by the Government Architect NSW and includes a detailed analysis of the design when reviewed against the principles identified in the *Design Guide for Schools* as published by the Government Architect NSW in November 2017.

Project description**Project Description**

Expansion of Greystanes Public School by adding 24 permanent home bases, upgrade of core facilities and removal of existing demountable buildings.

Design Capacity

Current Enrolments: 713

Projected Enrolments: 897

Project Drivers

This project has been identified as a priority project to the NSW Department of Education due to a number of key project drivers, namely:

- Poor quality of temporary classroom accommodation which need to be replaced to meet current standards;
- Continued expansion and growth of the school population which needs to be accommodated;
- Need to upgrade staff facilities to accommodate growing school population and to meet current standards;
- Opportunity to address site masterplan and public interface;
- Requirement to provide staff and student amenities across the site.

PRINCIPLE 1 - CONTEXT, BUILT FORM AND LANDSCAPE

The design of the new buildings has considered the existing site context, location of existing buildings, neighbours and the local community. Most of the buildings on site date from the 1970s & 1980s when the original timber buildings were replaced due to extensive termite damage, with the school having since grown out of the existing facilities and into demountable structures. The demountable facilities front Merrylands Road, lacking adequate teaching facilities, as well as community and street presence required for the scale of the school. The new learning facility will take advantage of the prominent street location and replace the temporary structures with modern facilities to adequately house the student population. Consideration has been given to neighbouring properties to reduce bulk of the new building by splitting the levels and stepping the building down the natural levels of the site from Merrylands Road to the playing field located in the north west of the site.

The location of the new administration building has been carefully considered to provide a welcoming and inclusive entry for staff, students, parents and the community. Both buildings will be complemented by new landscaping, with new trees and plants selected to suit the requirements of the local area.

Respect and respond to its physical context, neighbourhood character, streetscape quality and heritage

Designing and siting new developments to respect neighbourhood character is a fundamental objective of the development provision in planning schemes. The design response derives from and responds to the key features identified on site and the neighbourhood includes the following:

Responding to the topography of site



Figure 1 Existing topography from K-Y2 Playground towards proposed building site

The site slopes from the south east to the north west corner and contains significant changes in levels across the site. The highest point is in the south east Corner (approximate RL 67.5) and slopes toward the north (approximate RL 56.0 along the boundary) and north west (approximate RL 49.5) at the far corner of the site.

The topography of the site has presented design challenges and the buildings have been carefully sited to address the levels. As the street frontage to Merrylands Road is the high part of the site, the

concept for the project was to split the project into two connected buildings and step the buildings down the site to respond to the changing levels.

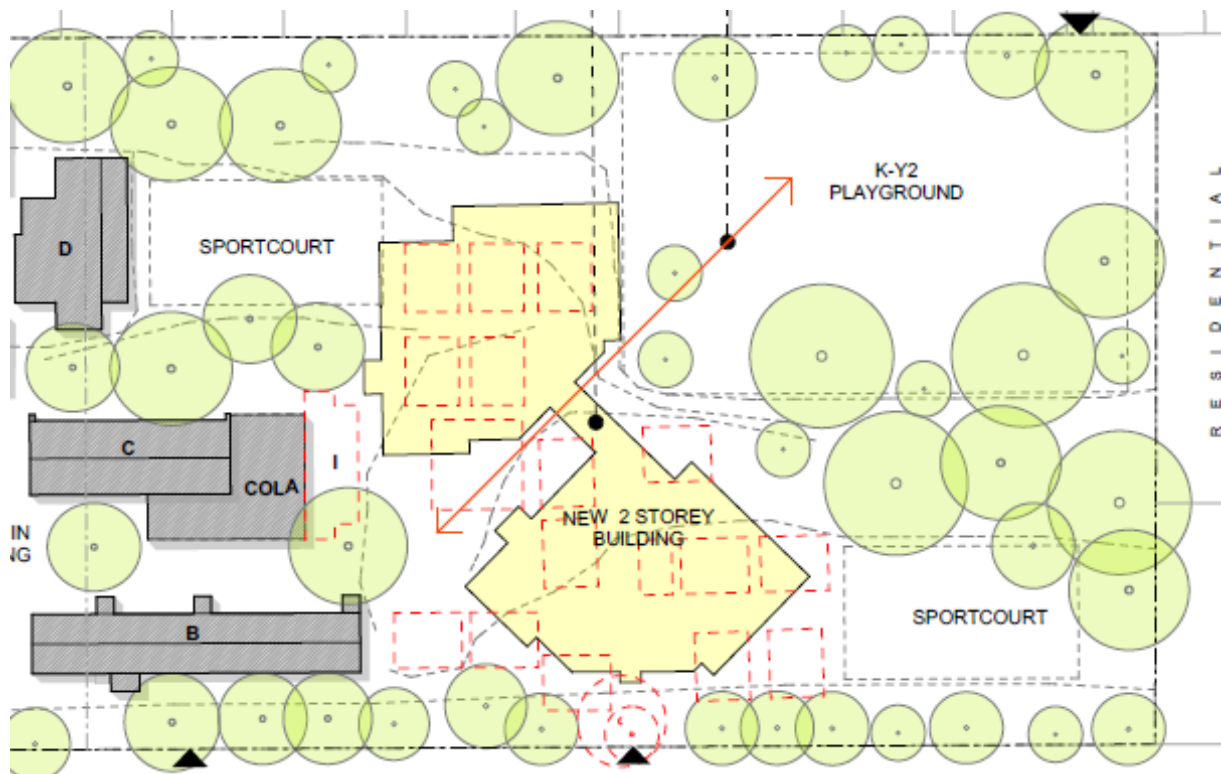


Figure 2 Early concept design strategy demonstrating a split building stepping down the site

Other concept design options considered two storey buildings with greater street presence to Merrylands road – these options were excluded due to their impact on the streetscape and poor ability to address the changing levels across the site.

Neighbourhood Character

The surrounding neighbourhood at Greystanes Public school is typified by single and two-storey residential dwellings. The existing learning buildings on site are typically two storeys or split level, making use of the level changes across the site. There are single storey buildings such as the BER hall and ancillary buildings and the demountable buildings which will be removed from site at the end of construction.

The streetscape quality include large/tall trees along perimeter of site boundary and there are several parks and sporting facilities in the nearby area. These include the Greystanes Sportsground on the South side of Merrylands Road, Cumberland Country Golf Club North of Whalans Road, Roberta Street Park, and a reserve West of Kippax Street.

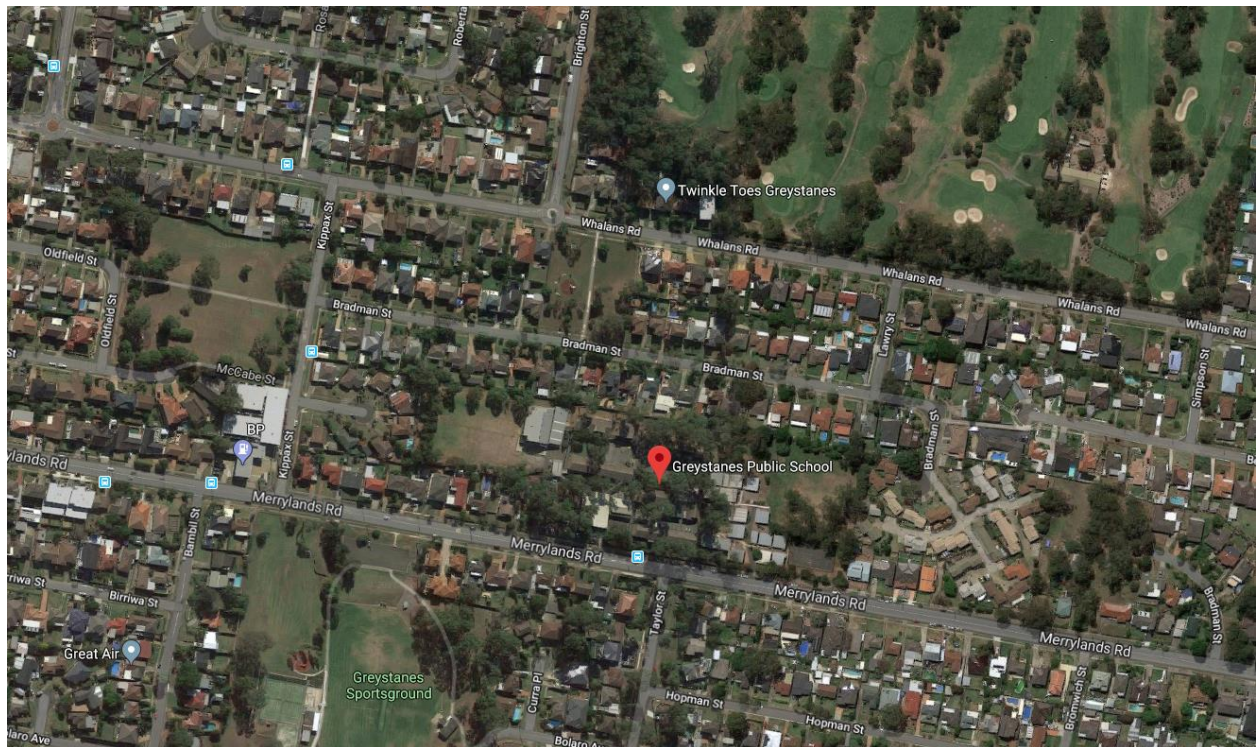


Figure 3 Parks and reserves around Greystanes Primary School

The proposal seeks to retain as many trees and established landscaping as possible, particularly along the boundaries of the site. This will protect the existing neighbourhood character and respect the existing neighbours.

Streetscape Quality

The streetscapes surrounding the site contain a mix of one and two-storey detached dwellings.



Figure 4 Single and two-storey residential developments along Merrylands Road

In order to complement the existing streetscape, the proposal minimises new building work adjacent the streetscape and instead the development runs perpendicular to the street, into the site. The proposal utilises the site area formerly occupied by demountable classrooms, minimising impact on existing established vegetation.

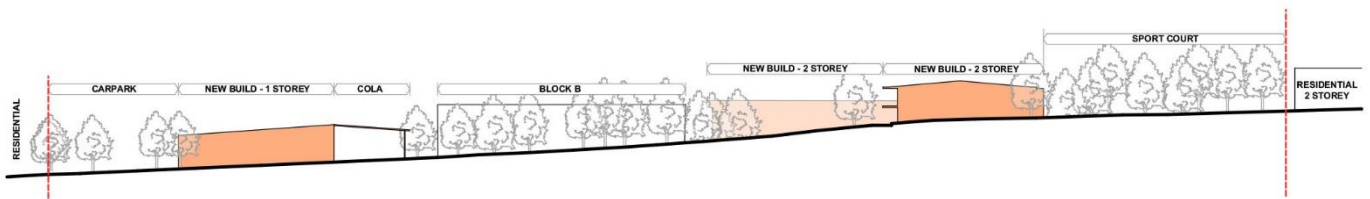


Figure 5 Street elevation demonstrating proportion of new work to whole street

Consider interpretation of Aboriginal cultural heritage within the design of buildings and open spaces in consultation with local Aboriginal community

A review has been undertaken of potential Aboriginal Cultural Heritage items or archaeological items of significance on the site and these have not been identified.

Respond to its natural environment including scenic value, local landscape setting and orientation

Scenic value and Local landscape setting

Greystanes public school is bounded by significant trees and vegetation areas while built form is generally grouped in the centre of the site. Vegetation, green play areas and sports courts surround the buildings, providing a buffer between the neighbouring properties and the indoor learning areas. The proposal seeks to maintain the local landscape setting by locating buildings in areas currently occupied by existing built form or demountable buildings. This enable the majority of existing vegetation to be maintained at the perimeter of the site.

Part of the site has been identified as containing Cumberland Plain Woodland – refer to BDAR by SLR consulting.



Figure 6 Mapped Cumberland Plain Woodlands – SLR Consulting

The report identifies that while Cumberland Plain Woodland has been mapped on site, there has been destruction of the existing mid and understorey vegetation, and the greatest value is in the trees to the North and East of the site. Care has been taken to retain these trees where ever possible and to provide replacement planting in new landscaped areas. By retaining the majority of the boundary trees, the scenic value of the neighbourhood is maintained and additional landscaping will enhance the local landscaped setting of the suburb.



Figure 7 Native trees (Grey Box) with a managed understorey within the school grounds – SLR Consulting

Orientation & Location

The two proposed buildings have carefully reviewed the overall existing site and how masterplanning can be improved and enhanced through the proposal. With the administration building proposed and located close to the street, it can easily be identified which improves wayfinding for visitors in comparison to its existing location. Carefully located close to the street along Merrylands Road introduces a new street presence and a welcoming entrance to the school. The administration block is oriented North and South to maximise natural daylighting and cool breezes through the work spaces.

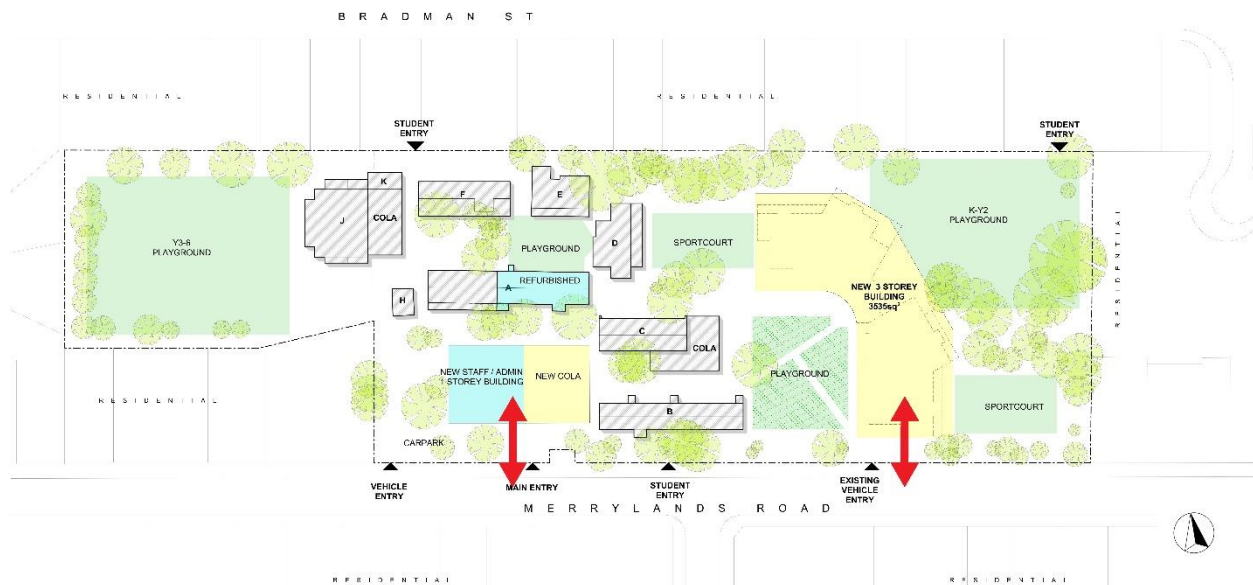


Figure 8 Early masterplan of 2 building proposal locations and its relationship to Merrylands Road

The proposed learning building is located adjacent to existing learning buildings creating a learning precinct that is primarily shaded from the northern and eastern sun by the 'wings' of the proposed learning building. The orientation of these 'wings' create a central play landscaped to provide opportunities for outdoor learning and engagement. The connection between the building wings to sports courts and external play areas are landscaped to create engaging connections while enabling supervision of play areas.

Homebases are oriented north and south as much as possible to maximise natural lighting and where homebases are orientated east and west balconies are used as an extension to the learning area and, combined with vertical shading louvres, provides shading and minimises glare to the learning areas.

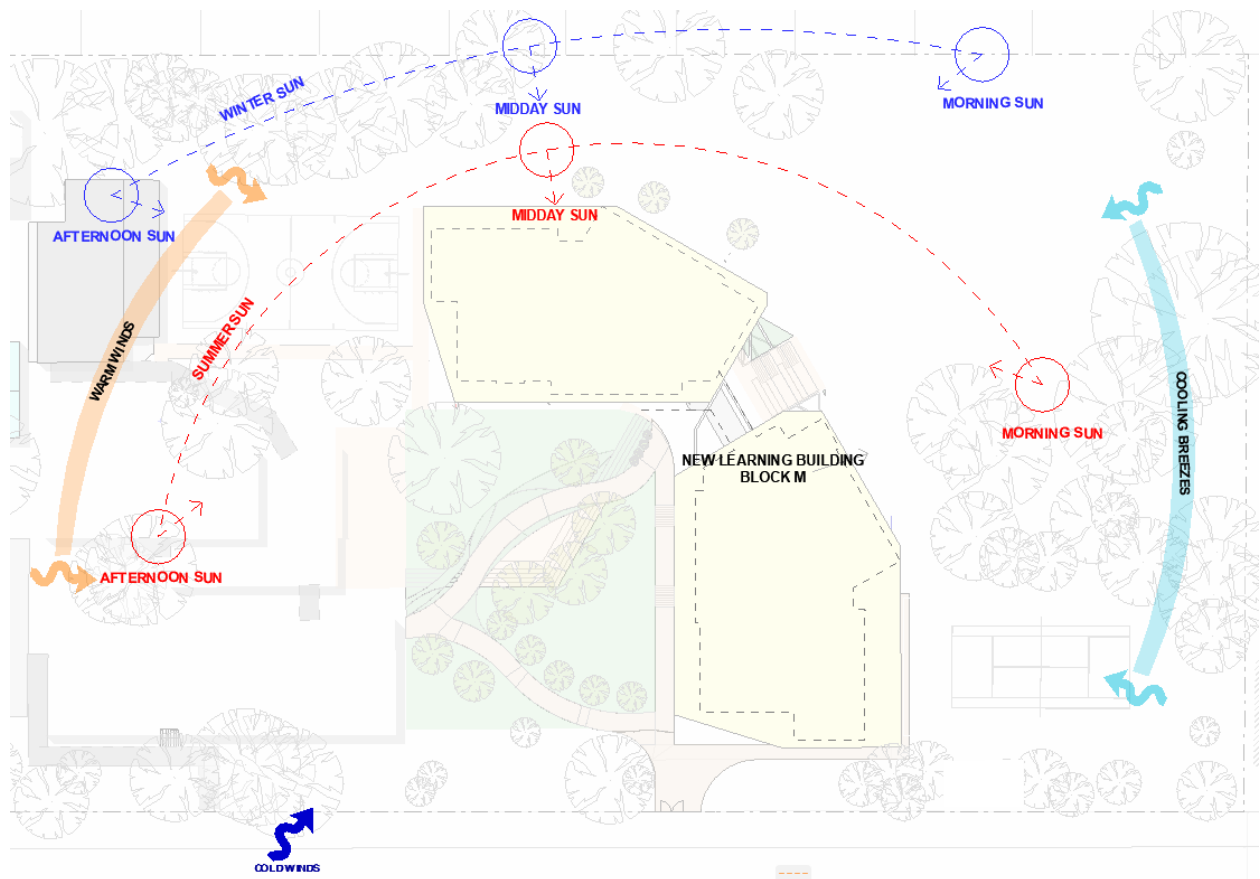


Figure 9 Summer and winter sun paths and prevailing wind direction

Retain existing built form and vegetation where significant

Built form

The majority of the existing built form on site is retained and dates back to the 1970s and 1980s when the original buildings were replaced due to extensive termite damage. The exception to this is the Hall completed in 2010 as part of the BER process. Buildings that are proposed to be demolished include:

Block G – former demountable which has been permanently installed on site which now has aged and deteriorated. It does not meet current standards and has reached the end of its useful life.



Figure 10 Block G – Former demountable

Block H – Garden store. It is a small free-standing masonry building. The existing facilities will be relocated into the new learning building.



Figure 11 Block H – Existing garden store

Block I – Amenities block. Requires heavy refurbishment to comply with current AS 1428.1. New facilities are included in the new learning building. The ground floor facilities will easily accessible from play areas to provide access for students during play times



Figure 12 Block I – Existing amenities block

COLA (covered outdoor learning area) – A new COLA of equivalent size is provided adjacent to the new administration building (Block L) to improve passive surveillance of the play area.

Buildings that are refurbished include Block A where existing staff and administration facilities are relocated into the new administration building. A new multi-purpose learning space is provided in replacement of the existing staff areas.



Figure 13 Block A – Existing staff and administration block

Vegetation

Boundary trees are retained throughout the site while existing vegetation is retained wherever possible. Trees and vegetation identified in the biodiversity zones are retained as far as practicable.

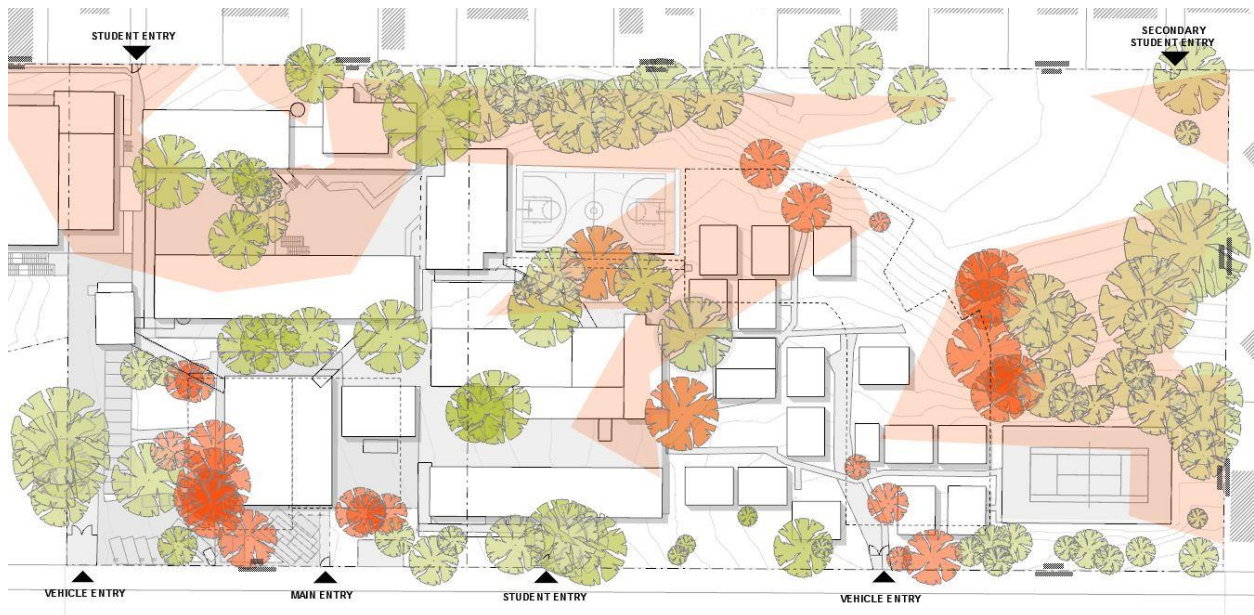


Figure 14 Trees and vegetation retained within biodiversity zones
[Orange fill – Biodiversity Zone, Green tree – retained, Red tree – removed]



Figure 15 Group of eastern trees retained

New planting is proposed to replace removed existing to protect new soil and to remove water during the winter months when deciduous plants are dormant. Some of the species proposed are as follows.



Figure 16 Proposed planting adjacent the administration building



Figure 17 Proposed planting adjacent the learning building

Include tree planting and other planting that enhances opportunities for play and learning

A central courtyard has been proposed and established to provide opportunities for play and outdoor learning. It includes features such as tiered seating that can be used by class or stage groups for outdoor activities. Trees and vegetation planting has been implemented to provide shading to ensure that the space is usable during the spring and summer months. There is existing planting and vegetation that follow paths from existing buildings to new works and to the new central courtyard which provides a playful transition through the landscape of the site and opportunities for learning about the natural environment integrated into the landscape. This configuration connects buildings on different levels at different access points.

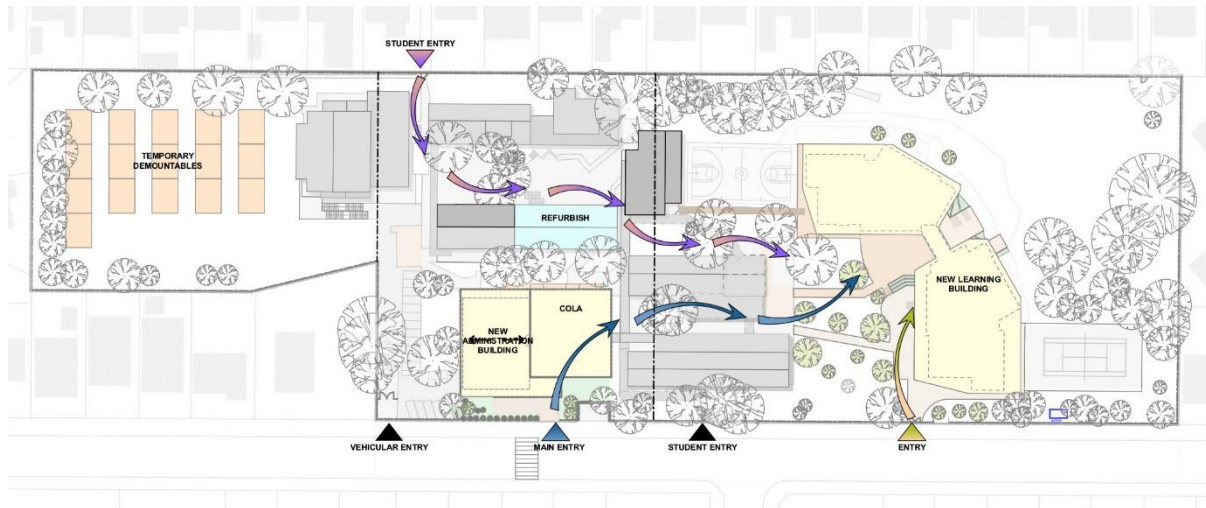


Figure 18 Site plan showing access points and paths of travel

Ensure landscaping improves the amenity within school grounds and for uses adjacent to the school

The proposed landscaping protects and enhances amenity for users within the school ground and neighbouring buildings adjacent to the school. To protect the adjacent neighbours and students, existing trees and planting has been protected and retained where possible to maintain visual and acoustic screening between the two spaces. Additional landscaping is proposed to minimize the impact of the new learning building facing the street. This will benefit the school users by providing engaging landscaped areas with a variety of planting types and sizes. Trees provide shade and sheltered play areas to lower scale planting to provide interactive garden and provide curricular outdoor learning.

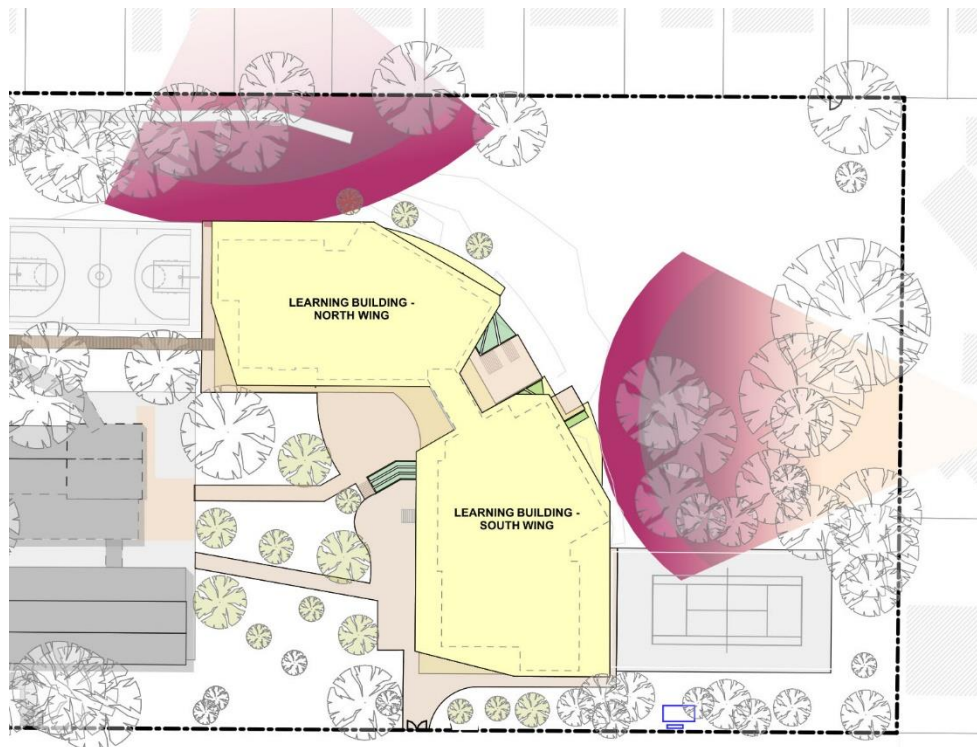


Figure 19 Location of existing trees shielding neighbours from learning buildings

Be informed by a current Conservation Management Plan (CMP) and consider local heritage items both on the school site and in the local neighbourhood

A review of existing buildings has been undertaken and no heritage items currently apply to this site. A small collection of existing timber buildings dated from the early 1900s however these were demolished in the 1980s due to extensive white ant damage. Other major learning buildings were built during the 1970s and in the 2000s the covered outdoor learning area was constructed providing an all-weather space and additional shade. The newest construction built on site is the hall which was completed in 2010 as part of the BER process. The school has since expanded with the addition of demountables as needed to suit the increasing accommodation requirements.

Greystanes Public School has a long and proud tradition of providing quality education to the students. The proposal to construct a new administration and learning buildings adds to the existing site and maintains and further develops the site's original educational use.

Take advantage of its context by optimizing access to nearby transport, public facilities and local centres

Transport facilities

Pendle Hill station is the nearest train station to the school, located within 4km away from Greystanes Public School. Merrylands station is also a similar distance from the school. The image

below identifies that there are no railway stations within walking catchment to the school, however, there are local busses that run between the stations and the school.

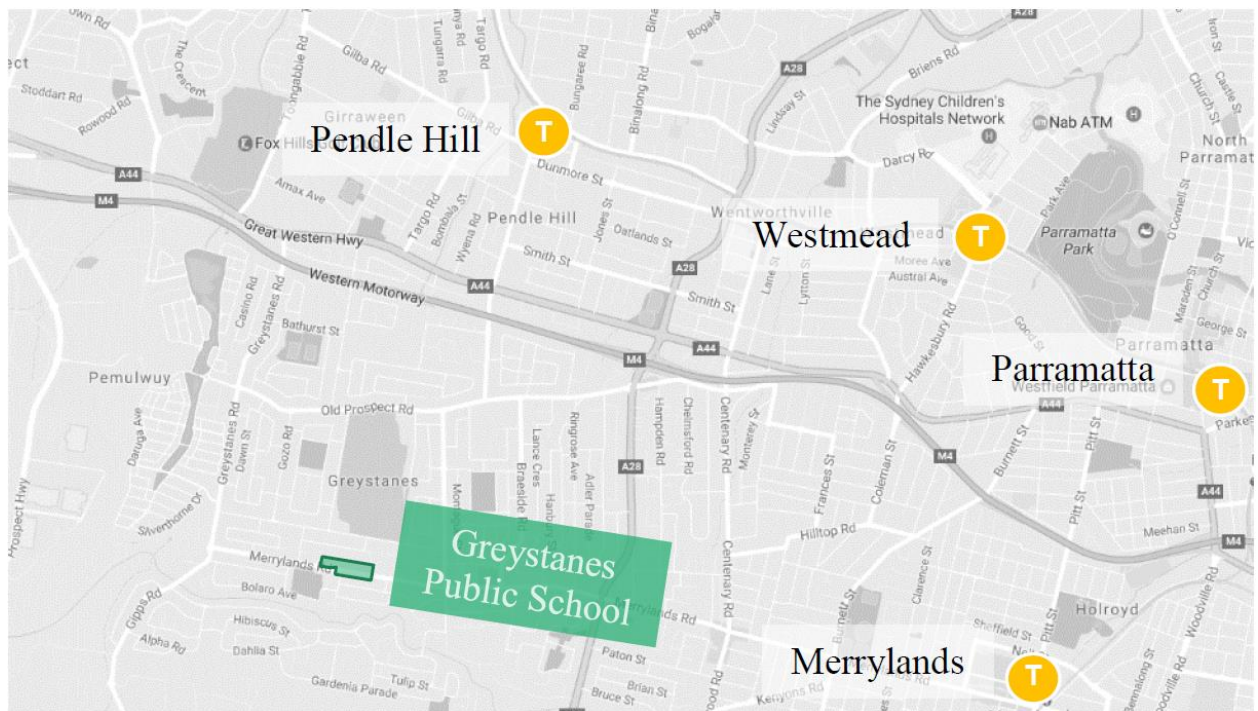


Figure 20 Train station locations closest to Greystanes Public School – Source ARUP Traffic and Transport Assessment

The school is serviced by a series of public buses and bus stops servicing routes in each direction from Merrylands Road. The routes generally travel along and through Pemulwuy and Merrylands (809 bus), Parramatta and Merrylands (810 bus).

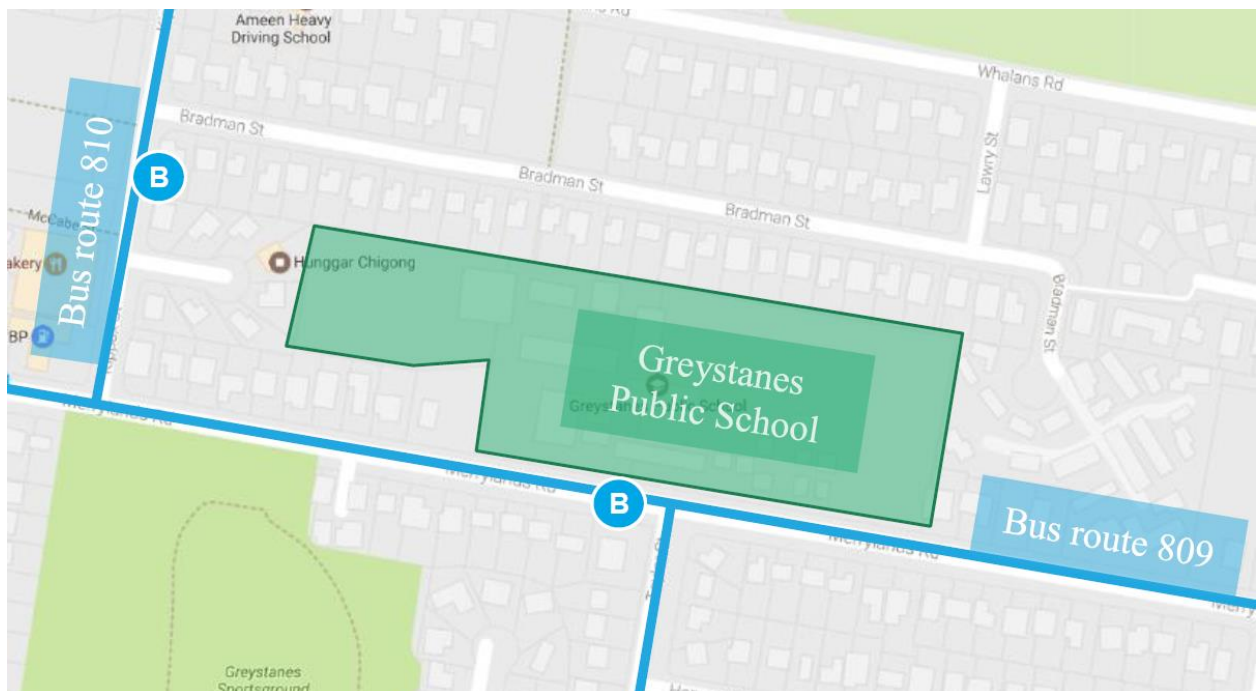


Figure 21 Bus service routes to and from Merrylands Road – Source ARUP Traffic and Transport Assessment

According to the *Traffic and Transport Assessment Report* by ARUP, public services 809, 810 and 810X operate school diversions on school days only. The 809 service was recorded and found most utilised by the school's students with no more than approximately 80% seat occupancy with no passengers standing.

There are a school buses (7001, 7010 and 7019) that is dedicated to service to Greystanes Public School directly from Merrylands Station. These school buses were observed to be at most 50% full indicating that greater utilisation of school buses can be encouraged.

Public facilities and local centres

Greystanes public school is surrounded by a variety of public facilities and local centres within walking distance of the site. These include

- **Greystanes Sportsground**
Including sports facilities for cricket, soccer and tennis, toilets, changerooms, kiosk, storage and playgrounds. 350m South-West, 4 minute walking distance.
- **Greystanes Branch Library**
Branch library of the Holroyd City Council Library service: 550m South-East, 7 minute walking distance
- **The Lower Prospect Canal Reserve**
Walking and cycling trails through Cumberland Plain Woodland stretching 7.7km. 350m South: 5 minute walking distance
- Local shops including Woolworths, Coles: 1100m South-East, 13 minute walking distance
- Central Gardens Nature Reserve: 2.3km South-East, 4 minute drive

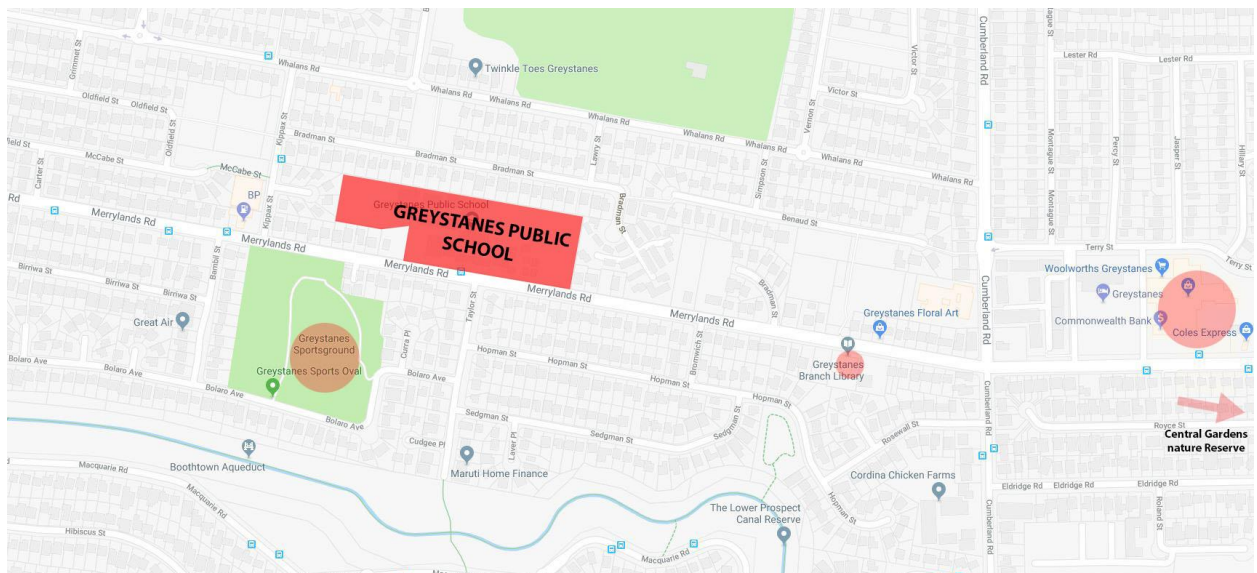


Figure 22 Local facilities within walking distance of the school

PRINCIPLE 2 – SUSTAINABLE, EFFICIENT AND DURABLE

The new learning building has been oriented to maximise access to northern and southern light to the learning areas, and shield from the east/ west. Combined with appropriate shading this provides an appropriate solution for designing learning walls that are not affected by low level morning or afternoon sunlight. Learning spaces including homebases and practical activities are designed to open to common balconies and open space to allow for external learning opportunities and to take advantage of natural ventilation through prevailing winds.

The building has been designed in accordance with the NSW Department of Education “Education Facilities Standards and Guidelines” to incorporate passive environmental design elements that reduce the need for mechanical heating and cooling, including building orientation, sun-shading, natural ventilation, solar energy and thermal mass. In addition, all materials selected are prefinished and durable and do not require ongoing maintenance. Solar panels will be installed to off-set the electrical load of the new works.

The project aims to incorporate the value Greystanes Public School places on natural vegetation and sheltered outdoor connections by providing covered access and connections to the playing field. This includes opportunities for classrooms to open out onto the landscape, tiered seating and play areas that encourage education enquiry, future focused learning, reflection and creative endeavour.

Be responsive to local climate including sun, wind and aspect

Solar orientation

The learning building is orientated north-south where possible and is shaded where homebases are located east-west. All homebases have openings that open to the outside to receive natural light and circulation. Learning walls and technology in the homebases and shared learning areas have been carefully located to minimize glare and reflection. All practical activities areas are orientated to open to outdoor learning areas and associated balconies is proposed to receive natural light and designed to a depth that will reduce direct sunlight and heat gain.



Figure 23 Part plan showing connection between Practical Activity Areas and Outdoor Learning Areas

Natural ventilation and wind

The location of the learning building has been designed and located to capture the prevailing winds coming from south-west of the site. Homebases that are facing north-south captures the cooling air and is transferred through the openings of the large internal doors to the most northern homebases. All homebases are designed to receive natural ventilation by way of operable louvred windows or large sliding doors. The homebase pairs are offset with entry or practical activities areas (PAA's) to ensure natural ventilation.

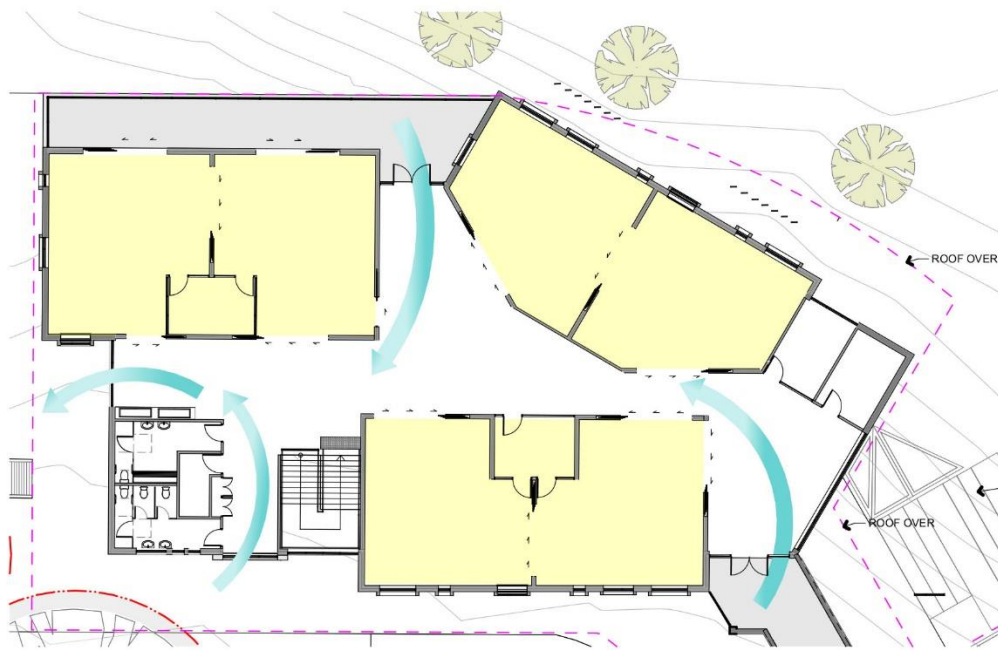


Figure 24 Part plan showing natural ventilation strategy

Select materials and approaches to detailing that are robust and durable

The design strategy for materiality is to select materials that are sustainable and durable and will not deteriorate or require excessive maintenance over time. The new administration and learning building is generally masonry construction for external walls. This provides a material that will not deteriorate or be damaged by being adjacent to play areas and sport courts.

Where the entry and practical activity areas are located, commercial aluminum glazing and light-weight pre-finished fibre cement panels are used. This help defines the entry and visually break the building into smaller parts for aesthetic appeal. All windows and doors are aluminum and powdercoated to provide a durable and long-lasting finish. Equitone is the preferred pre-finished panel which has been selected as a finish that is integral to the panel and does not require re-finishing or re-painting. It is a material that will give opportunities to introduce colour to assist wayfinding between spaces and buildings.

Integrate landscape, planting and Water Sensitive Urban Design (WSUD) principles to enhance amenity and building performance

Landscape planting has been integrated surrounding the building to provide shading and enhance building performance. The new soft landscaping reduces the existing hard landscaping to improve stormwater run-off.

An OSD system is proposed within the site as an underground storage facility to eliminate unnecessary water run-off to council stormwater systems. Where the site has level changes due to

the natural topography of the site, a separate OSD tank is provided for each catchment. The new learning building and surrounding landscape area is considered as one catchment (draining to OSD tank 1) and the new administration building and COLA is another catchment (draining to OSD tank 2).

Include deep soil zones for ground water recharge and planting

New trees are planted in deep soil zones as indicated on the landscape plan with the majority of the existing trees retained as deep soil. In addition the existing grassed play areas provide large deep soil zones across the site to assist with ground water recharge and minimisation of water run-off to adjacent sites.

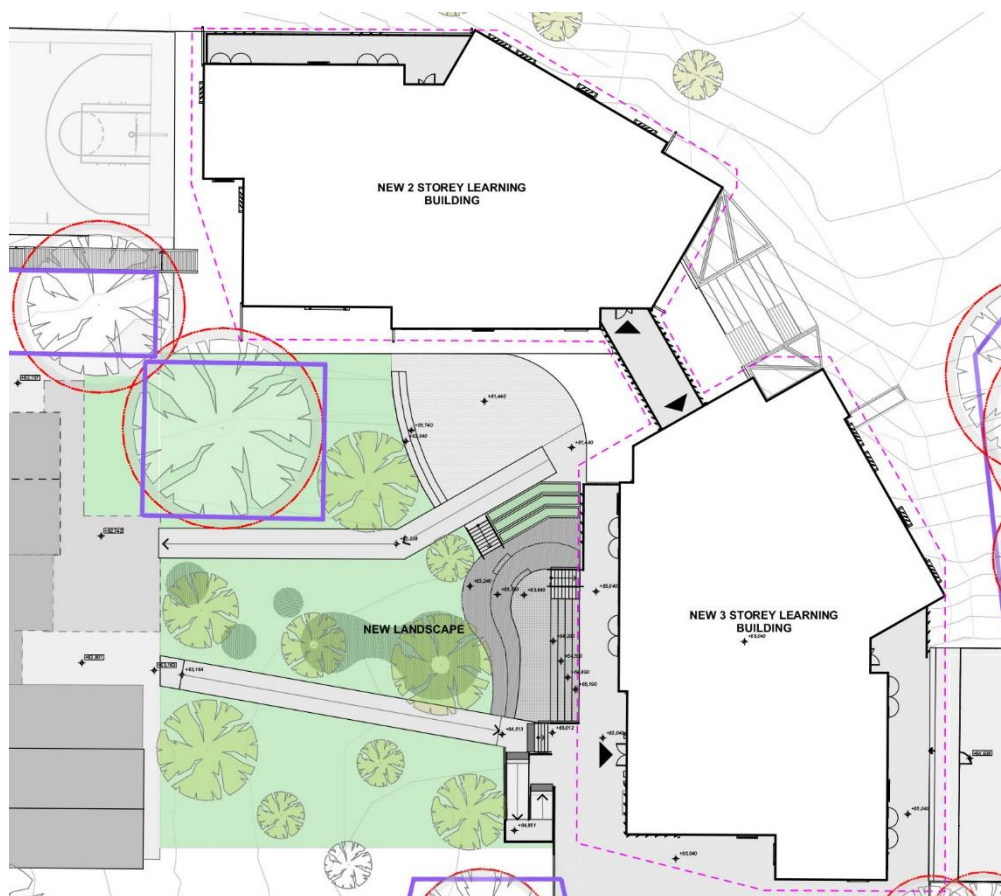


Figure 25 Part landscape plan – deep soil zones adjacent learning building

Minimise reliance on mechanical systems

The proposal aims to minimise the reliance on air conditioning and mechanical air handling systems by designing floor layouts to maximise opportunity for natural ventilation.

The design of the building facilitates natural ventilation drawn from doors and windows with louvre insets which are orientated to catch prevailing cool winds in summer and to facilitate ease of natural ventilation. Sliding doors are provided in the homebases connecting to balconies where appropriate

to maximise natural ventilation. Practical activity areas and building entries are offset, as these areas are more frequently open this encourages fresh air to be drawn through the building.

Air conditioning is not provided in learning spaces. Ceiling fans are provided to all homebases and practical activity areas to assist air flow. Assisted mechanical ventilation is proposed to all internal areas including homebases, withdrawal rooms, practical activity areas, movement and administration areas to assist with cross ventilation and to draw fresh air through the spaces. The assisted mechanical ventilation draws air into the building through external louvres and supplies this to learning areas which assists with the air flow and turnover to each space.

Comms Rooms are air conditioned as per the requirements of the Department of Education. Each comms rooms will be provided with a cooling only air inverter type and the condensers discharge horizontally and located externally on the ground floor.

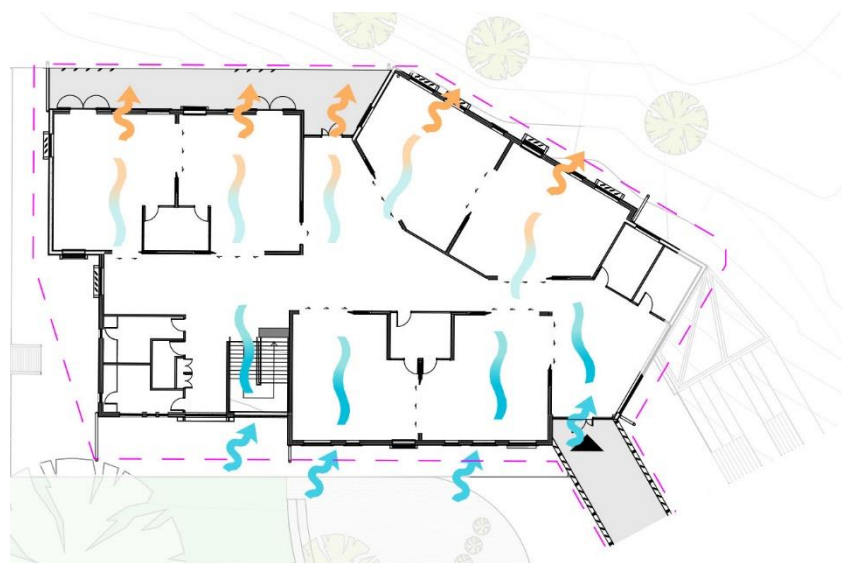


Figure 26 Part plan showing natural ventilation travelling through learning spaces

Include initiatives to reduce waste, embodied energy and emissions, through passive design principles and the use of advanced energy production systems where possible

Selected materials have been considered carefully and specified at standard panel sizes to reduce cutting and waste. The materials selected have low emissions such as low VOC paints or EO MDF to minimise offgassing and emissions.

Initiatives incorporated in regard to the site have been considered where all excavated materials will be reused, and no off-site disposal of site fill is proposed. Where possible, existing building stock has been retained or refurbished rather than demolished and replaced.

Energy use of the proposal has been considered including the limitation of air conditioning while mechanical assisted ventilation will provide the natural air flow at a much lower energy use. Lighting controlled by sensors and on timers are provided to reduce unwanted activated lights when not in use.

Maximise opportunities for safe walking, cycling and public transport access to and from the school

Staff opportunities for green travel plan include the encouragement of staff carpooling to reduce the level of single occupancy car trips, and encouragement of active transport such as cycling. An end of trip facilities for showering and changing is provided in the administration building for those who engage in active transport. Refer to the Traffic and Transport Assessment by ARUP for further details for the green travel plan.

Similar to staff green travel plan, student green travel plan may include active transport including walking, cycling and/or scooters. This will aim to reduce private vehicle usage during pick-up and drop-off periods, it will reduce traffic congestion and improve intersection performance in surrounding streets. It is noted that currently scooters are a more popular student transport method than bicycles which require fewer end of trip facilities and storage solutions.

PRINCIPLE 3 – ACCESSIBLE AND INCLUSIVE

Greystanes Public School recognises that a welcoming and accessible environment for students, parents, teachers and community of all different backgrounds is essential to promote a happy and safe school. However, due to the significant level changes throughout the site, some areas of the school do not adequately accommodate accessibility. There have been some accessibility upgrades across the site such as new ramps from Merrylands Road, however most of the buildings are not fully accessible. The design considers the existing and proposed points of access carefully, siting the building to enhance accessibility and to foster inclusion for people with varying needs and capabilities. Additionally, the proposal aims to further school safety and security by providing improved school entry and visibility through the site.

Greystanes Public School is committed to equity and provides student welfare programs built around Positive Behaviour for Learning. Two Opportunity Classes (OC) for gifted and talented students are also offered and based at the school. The project aims to strengthen community ties and school identity and develop the culture of welcome and inclusion. The new COLA adjacent to the new Administration building will provide a sheltered entry and multipurpose space.

Establish security requirements early to ensure any required secure lines can be designed and integrated with built form

The existing administration is located at the centre of the site which forces visitors to walk through the site prior to being signed in. As the administration is not easily visible from the boundary it can be difficult for visitors to locate this once arriving on site.



Figure 27 Existing entry is not visible or identifiable from the main entry

The proposed new administration building is located at the front of the site which provides a single point of entry for visitors prior to entering student occupied areas. The line of the new administration with new gates and fences create an entry precinct and a secure entry point to control access and reduce visitors wandering around the site.

During school hours the gates will be locked, and access is only through the main entry with the supervision of staff. There is no visitor parking on site creating a secure entry to staff carpark.

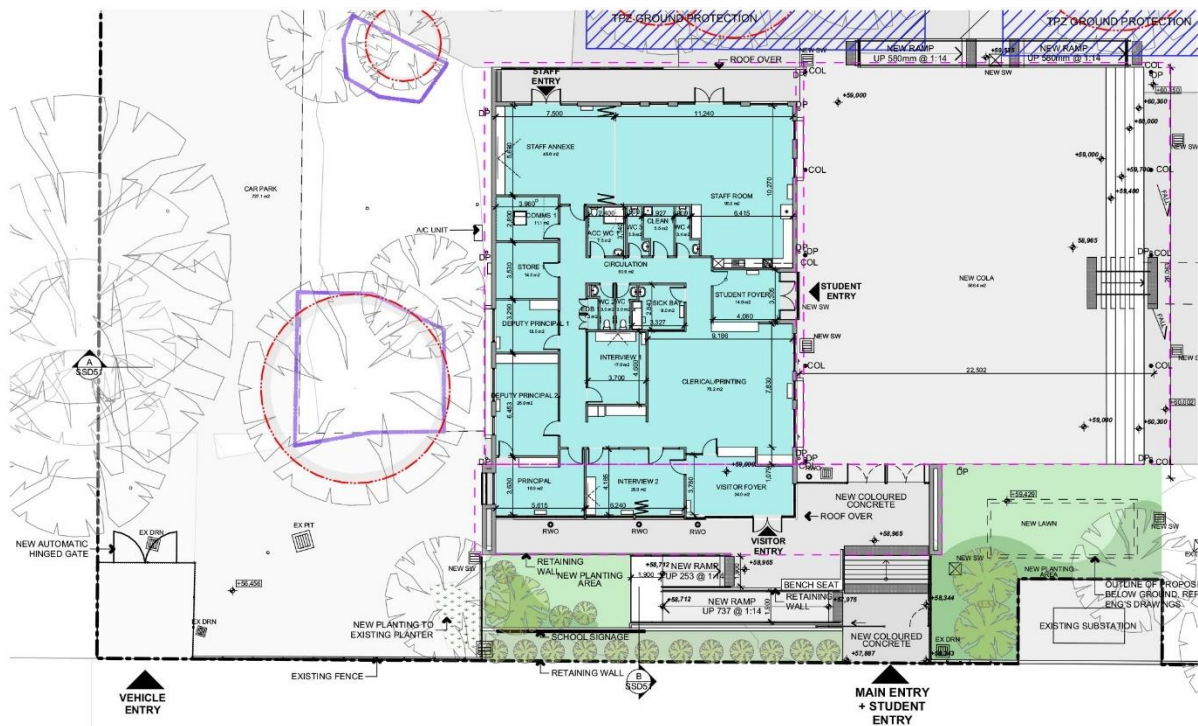


Figure 28 Part plan of entry and administration building

Balance security with accessibility and inclusiveness by minimizing the use of fencing particularly along street frontages

A compliant accessible entry is provided from the main entry to the new administration building and direct entry onto the site is through the gates adjacent the COLA which are open before and after school to facilitate student access.

The new location of the administration is welcoming to visitors, parents and the community while maintaining security. The existing school fencing is to remain.

Engage students, educators and the community in development of the vision and design brief for the school

Throughout the project stages, a variety of communication strategies have been utilized for the purpose of stakeholder and community consultation and engagement including:

- Fortnightly PRG meetings with the Public Schools Director, School Principle, Parent Representative, NSW Department of Education Program Manager, AMU Representative, Project Manager and Head Design Consultant to identify learning opportunities and site requirements
- Facilitated workshops with staff and our Educational Planner, Tom Barrett of Dialogic Learning to identify issues, needs, vision and pedagogy
- Online communication via the Department of Education project website
- Information booths with teachers and parents displaying a variety of display posts and opportunities for feedback
- Printed communication through community notices, school newsletters and letter box drops
- Consultation methods where meetings are targeted for maximum stakeholder engagement
- Authority and Regulatory consultation with council, local member, TfNSW

This process has enabled the engagement of the school community in the development of the proposal to ensure that the learning spaces are developed in accordance with the schools educational model and directions for future learning.

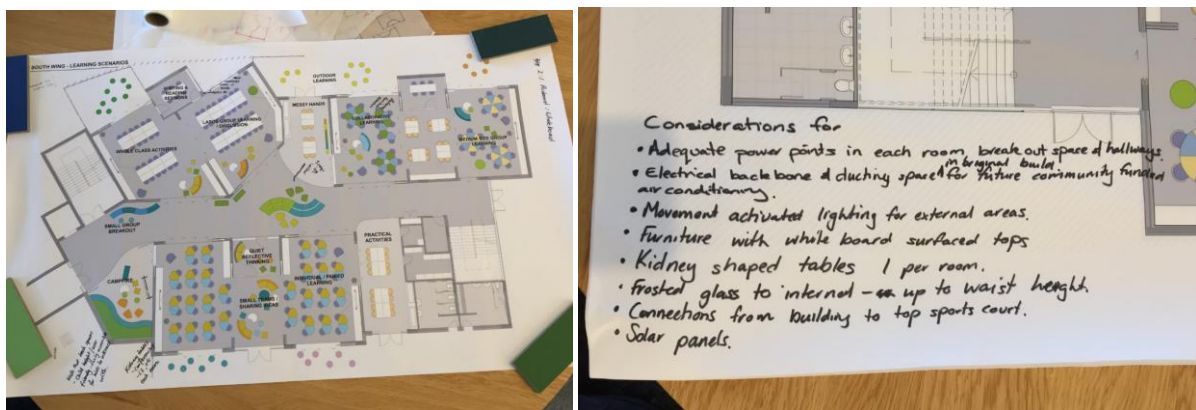


Figure 29 Workshop notes and staff feedback

A detailed community engagement report has been prepared by the project managers, Johnstaff Projects which provide full details of all engagement currently undertaken and proposed to continue to be undertaken through the remainder of the project. This report is included with the development application documents.

Provide diverse, attractive and accessible spaces to learn, play and socialise

The learning building incorporates a variety of interconnected spaces to support a variety of learning activities. These diverse spaces include:

- Homebases or general learning spaces that can operate in pairs, threes, sixes or individually to support a range of learning activities.
- Withdrawal or small group learning spaces for quiet activities or supported learning
- Practical activity areas for messy learning or play activities which are large enough to support class groups

- Tiered seating for group presentations or instruction that can be comfortable and adaptable
- The learning areas are designed to have the ability to all open to provide different stations for project-based learning and team teaching.

Each floor supports a year level group of 6 homebases allowing the entire stage group to collaborate. Homebases have access to outdoor areas or balconies provide and indoor-outdoor connection for opportunities for play and socialization.

Provide school frontages and entrances that are visible, engaging and welcoming

The new administration building introduces a glazed entry and landscaping that creates an engaging invitation drawing attention to a welcoming public entry for staff, visitors, parents and students. This creates a precinct on Merrylands Road to welcome visitors to the site and new signage is provided creating a clearing defined entry. This approach to the streetscape is to develop a strong identity to the school enhancing the culture of welcome and inclusion.



Figure 30 Elevation of entry precinct

Encourage access for members of the community to shared facilities after hours

While Greystanes Public School is an educational precinct, the community is able to use facilities after hours. The OOSH has already been provided in the hall, there is possibility to also run from the refurbished Block A where a kitchen and bathroom is provided to facilitate this. The COLA (covered outdoor learning area) can be used after hours or on weekends as a covered community space and the hall can also be used after hours or on weekends by community groups.

Ensure clear and logical wayfinding across the school site and between buildings for all users including after hours community users

The new administration building provides clear wayfinding to the front of the site creating a central space to congregate where necessary. The new COLA is an extension of the new administration which connects to existing learning buildings and where access is required between the existing and new developments, a series of pathways has been designed to connect different parts of the site. Landscape assists with defining the points of access throughout the site.

High rise schools should consider the impact of circulation times on timetables and pedagogical models, particularly when accessing core learning spaces. This may have design implications for spatial planning, lift and circulation requirements

The existing structures of the school is low rise to suit the surrounding neighbourhood context. The proposal of the two new buildings has accommodated the low rise generally at two levels to match existing buildings with a small three storey section as the building steps down from the site.

A lift is provided to all levels and the building wings of the learning building are connected via a bridge. Stairs are provided in all buildings with one open stair in each wing providing visible vertical circulation. The three storey section of the learning building has an enclosed stair connecting all three levels and the lower playing field.

The pedagogical model supports team teaching and project based learning where whole years or stages may work together with the support of several teaching staff. The school is expected to grow to six stream (or six classes of each year level). Each wing and level of the building has been designed to support six classes to support the pedagogical needs of the school.

PRINCIPLE 4 – HEALTH AND SAFETY

The project considers the health and safety of all potential users to ensure that everyone can enjoy the new facilities safely. Safety in design has been considered at all stages of the project and any identified safety concerns have been designed out early in the design process.

The building has been sited to enhance the general safety of the public domain. The buildings have been located adjacent the boundary on Merrylands Road which assist in providing passive surveillance to the public domain, while ensuring that school remains accessible, welcoming and considerate of its neighbours. The new learning building form also creates a new central courtyard, providing shared amenity for the adjacent buildings, as well as maintaining lines of sight to existing play areas. The staggered building design functions as additional covered play area during wet weather, while the split between the North and South wings provide a direct visual and physical connection to the existing playing field, ensuring passive surveillance throughout varying stages the day.

Locate buildings and design facades that optimize fresh air intake and access to daylight

Fresh air intake into the building has been maximised the external façade of the building and ensuring that all homebases have either sliding doors accessing balconies or louvred windows. This ensures that fresh air intake can be optimised and that all learning areas have access to natural light and ventilation.

The proposal aims to orient as many homebases as possible north-south to minimise low level light and glare while maximising access to daylight. Where this orientation cannot be achieved vertical louvre shading is provided to minimise glare on learning walls and screens.

Prioritise pedestrians and avoid conflicts between vehicles and people

The existing masterplan of the school site contained poor separation of vehicle and people spaces. The existing carpark does not have a defined boundary and cars were able to double park immediately adjacent to the COLA with no separation between parking areas and play areas.



Figure 31 Informal double parked cars adjacent the COLA and play areas, immediately adjacent the main entry

The design proposal seeks to improve this by reducing carparking in order to create a defined boundary which separates this from the administration entry. The new proposal allows the carpark to be securely accessed and vehicle access is separate from pedestrians and play areas..

Provide covered areas for protection from sun and rain

The existing school has a network of covered walkways that connect different buildings around the site. The administration building is located at the front and centre of the site and is immediately adjacent the proposed covered outdoor learning area (COLA). This provides a sheltered area for learning, play and school gatherings. The COLA is also located adjacent the existing covered walkways to maintain sheltered paths of travel around the school.

A new covered walkway is proposed between the existing library and the new learning building to provide an accessible and sheltered path of travel to the new works.

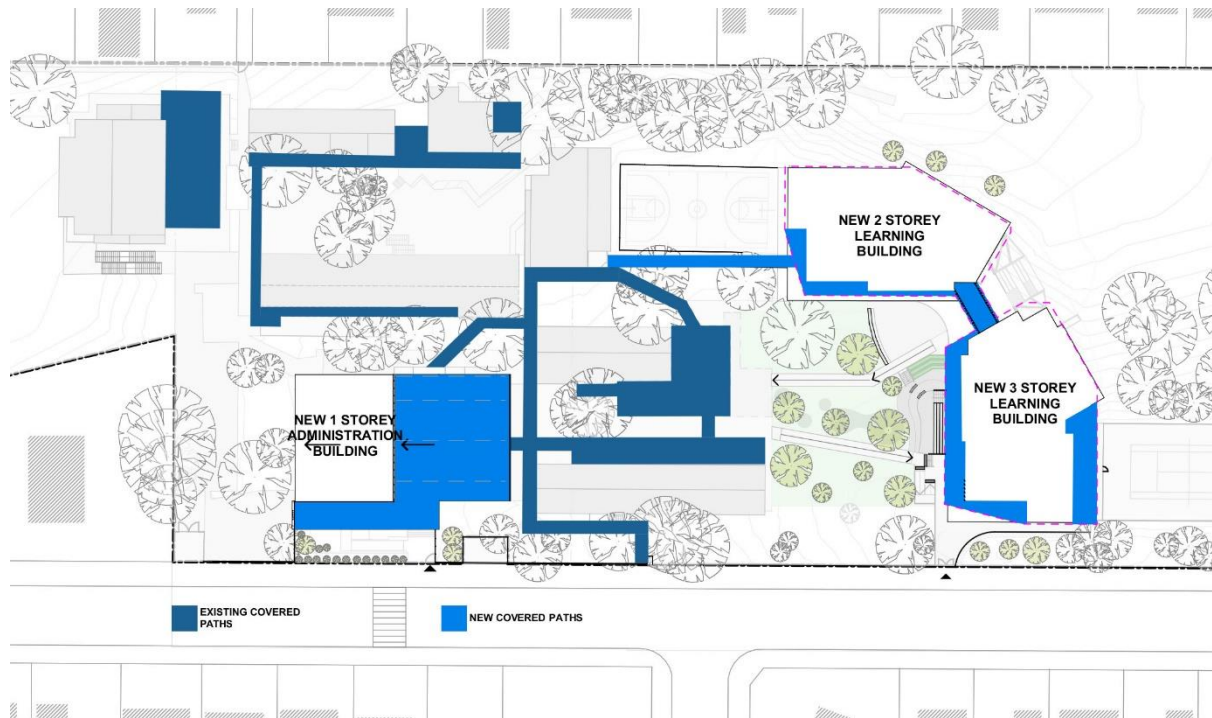


Figure 32 Site plan showing covered paths and covered learning areas within the site

External balconies and roof overhangs provided covered entries to all buildings to ensure that all points of entry and exit are protected from the weather. The link between the buildings is also covered by the roof and balcony over to ensure that students and staff can move between the wings of the building while protected from sun and rain.

Support safe walking and cycling to and from school through connections to local bike and foot paths and the provision of bike parking and end of journey facilities

Safe access routes for walking and cycling can be found surrounding the school site. The streets surrounding the school generally contain footpaths on both sides of the road that supports walking to school. There is also a pedestrian crossing at the main school entry to support students crossing into the school.



Figure 33 Google Street view showing pedestrian crossing

There are also designated shared and bicycle paths surrounding the school particularly along the Lower Prospect Canal Reserve. These paths and the low traffic identified on the surrounding residential roads can support school staff and students cycling to work.

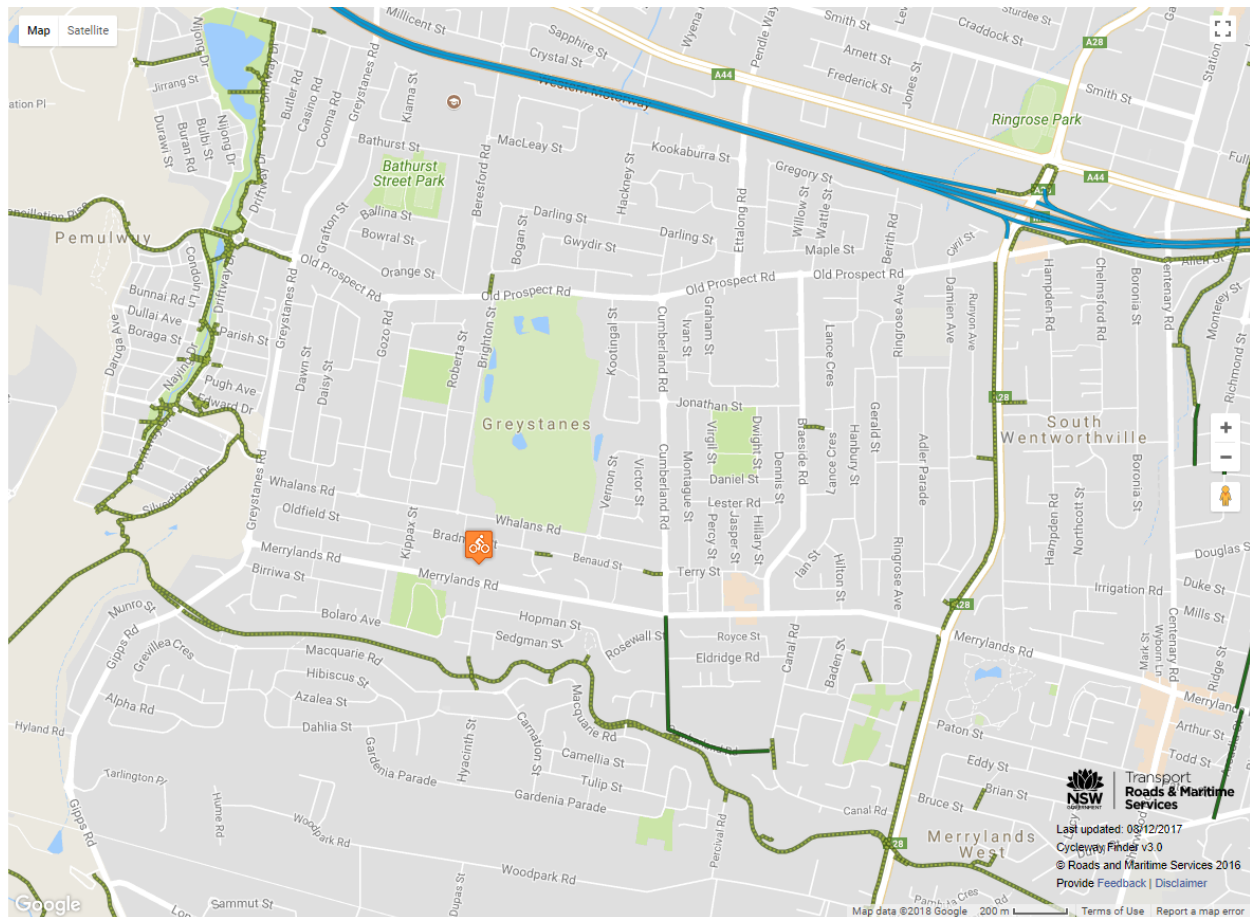


Figure 34 Designated cycle paths surrounding the site – source NSW Transport Roads & Maritime services

Support passive surveillance, including through the location of toilets and areas for communal use outside of school hours

The proposal supports passive surveillance of outdoor areas, covered play areas and amenities through the design of the building and location of learning spaces, and spaces where staff will be present at all times.

The homebases look out over the play areas and sports fields enabling staff to look out over the outdoor areas. Toilet facilities are accessed from common movement areas where there is a high level of people moving through to ensure that passive surveillance can be achieved. The external toilet facilities can be passively surveyed both by staff on duty during recess and lunch breaks and by staff in the homebases and practical activity areas opposite.

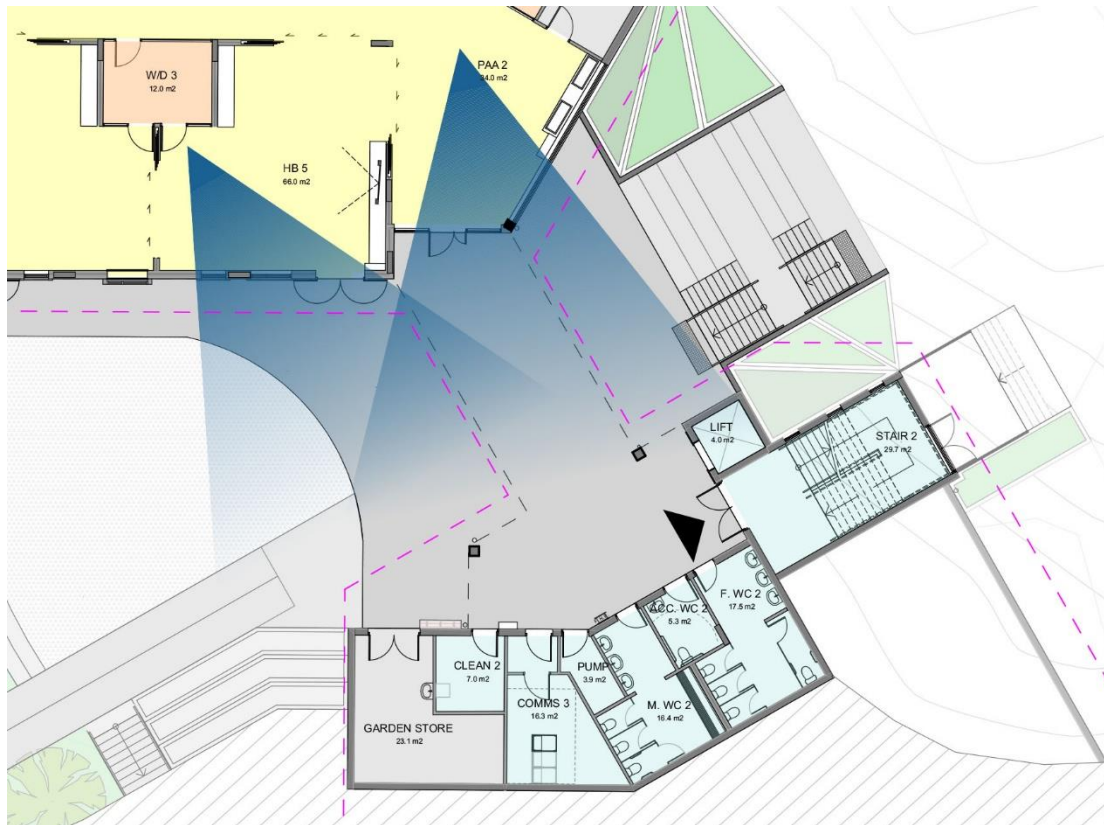


Figure 35 Passive surveillance opportunities to the external amenities

The administration and staff areas also look out across the COLA to ensure that any play can be supervised by staff.

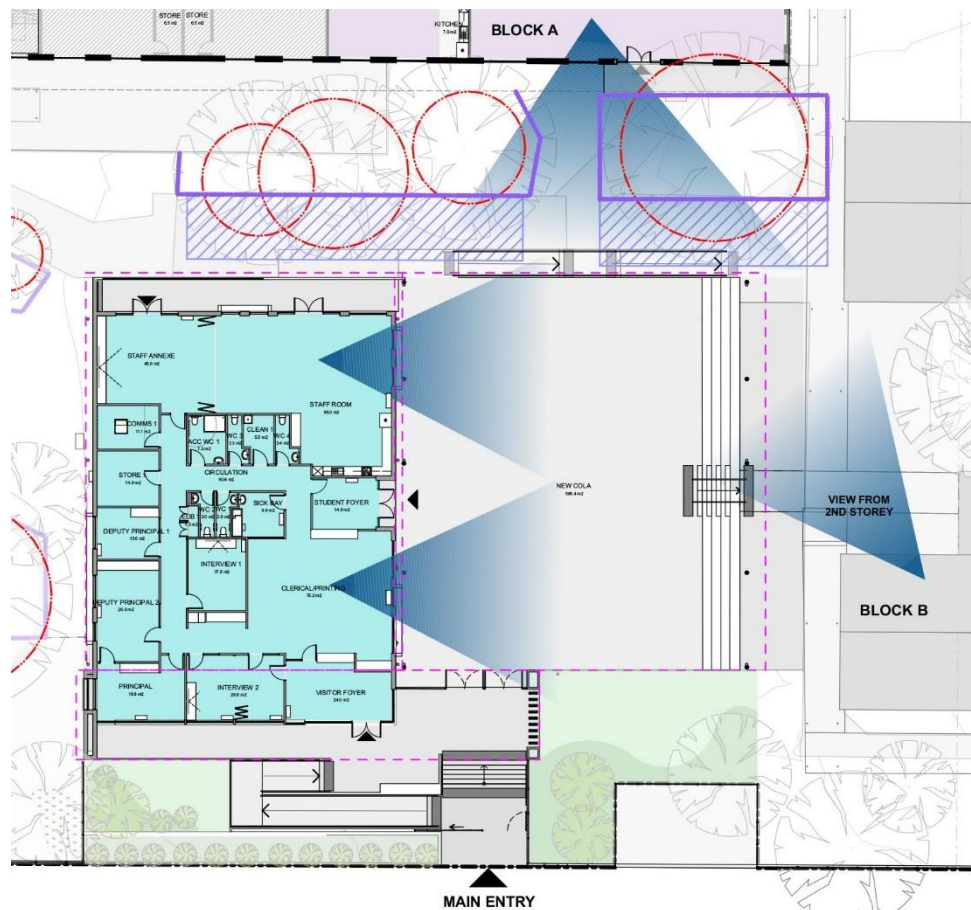


Figure 36 Passive surveillance opportunities across the COLA

Incorporate Crime Prevention Through Environmental Design (CPTED) principles

The 4 CPTED principles that are used in the assessment of development applications to minimize the opportunity for crime includes:

- Surveillance
- Access control
- Territorial reinforcement
- Space/Activity management

Surveillance: The site already benefits from a high level of natural surveillance from the public domain and from nearby residential development, as well as through the interior of the site from the continual presence of staff. The construction of the new administration building as well as the new learning building along the frontage of Merrylands Road will further add to the natural surveillance to and from the public domain and will ensure that the pedestrian crossing, bus stop and main entry has a high degree of natural surveillance before, during and after school hours.

Access control: The site currently utilises permeable physical barriers such as fences and gates to all access points and boundaries to provide access control without restricting surveillance opportunities. The proposed development will not result in any change to the existing access control

measures successfully utilised by the school. Given the success of the existing access controls, additional treatments are not warranted.

Territorial reinforcement: The site has considerable frontage to the public domain along Merrylands Road with two existing pedestrian accesses from Merrylands Road. The design of the proposed works will re-enforce the public roadways and the interior of the site, particularly focusing on the new main entry to the new administration building. Fencing, landscaping and a façade with signage will establish a civic domain encouraging communal responsibility and communicating to people where they should be and should not be.

The proposal will retain the existing pedestrian and vehicular access points on the site from both Merrylands Road and Bradman Street (rear of site), which are all fenced and gated to current operational requirements. The proposal includes an upgrade to the pedestrian laneway from Bradman Street which is currently closed off.

Space/Activity management: The proposed buildings adopts and maintains a natural community control through its design and orientation to the exterior of the site while promoting that the interior open spaces is not accessible or visible from the public domain. External lighting is provided to deter the carrying out of anti-social and criminal activities both within and along the boundaries of the site.

Clearly define access arrangements for after school hours

All access into the school will be controlled by a video intercom and keypad at the external gates to the public entry.

The primary use of the school outside of school hours are the OOSH facilities. The proposed works will include connection of the gate intercom to the OOSH facilities to enable access for parents to collect children outside of the school hours.

This keypad arrangement will also allow community groups to arrange access with the school to receive and allow access to facilities that can be shared with the community.

Consider location and number of toilet facilities to allow safe use by different age groups and genders

The proposed amenities and toilet facilities have been split into small groups at each wing and level of the learning building containing a small toilet block for males and females. Each wing contains different toilets for each age and/or stage. No more than three cubicles are provided in toilet facilities that are directly adjacent learning areas. These toilet facilities are accessed from open movement areas minimizing opportunity for the amenities to be used for bullying, or their use to disrupt learning activities.

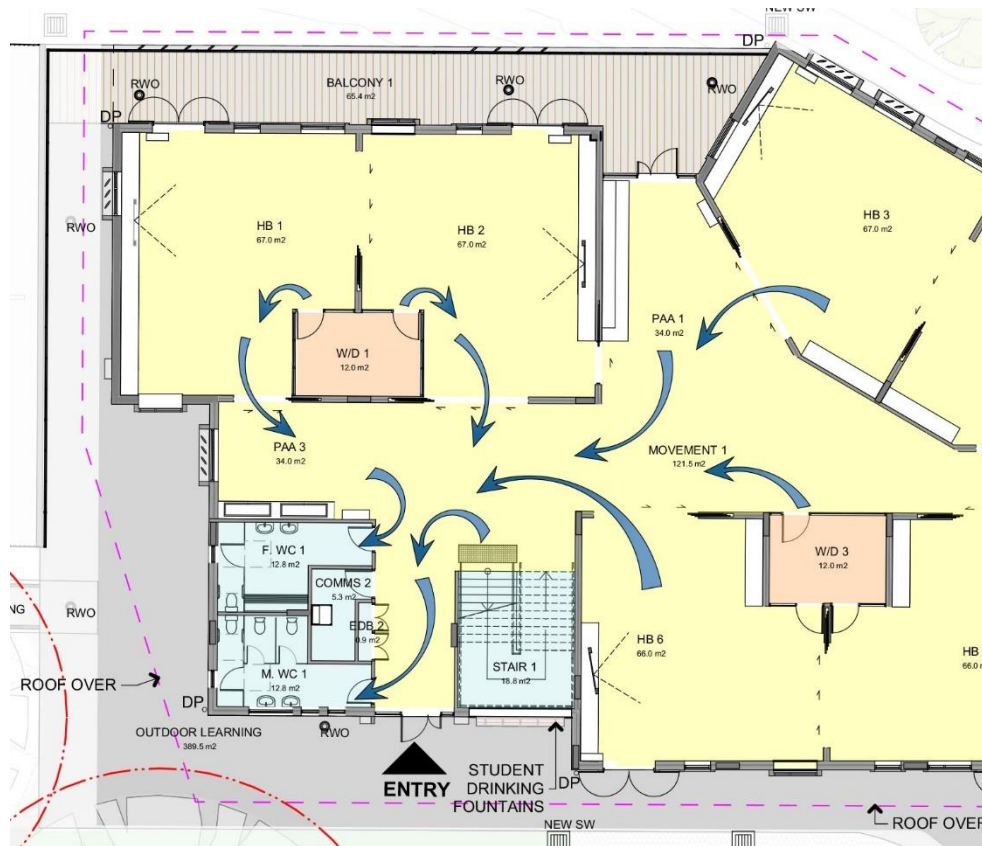


Figure 37 Small group of toilet facilities adjacent learning activities

New staff facilities and amenities are provided in the new administration building. These include individual male, female, accessible and ambulant cubicles to support staff with a range of abilities. The facilities also include shower facilities to support staff who may chose to walk or cycle to work.

PRINCIPLE 5 – AMENITY

The completed project Greystanes Public School will provide a range of pleasant and engaging spaces which can be enjoyed for educational, informal and community activities. There will be landscaped areas provided around the building which will enhance the amenity of the site and soften the appearance of the learning building. The project incorporates planting of additional trees to improve the appearance of the site.

The project increases the amenity for students and staff with varying mobility by improving access to play areas and cross site connection to the Administration and main entrance of the site. The design also provides a range of spaces that are welcoming and accessible for the parent and community groups that utilise the site.

Be integrated into, and maximise the use of the natural environment for learning and play

The design is integrated with the natural environment and carefully considers the site levels around the new learning building to maximise access from learning areas to the surrounding outdoor play areas. The design of the learning building has ensured that all homebases and general learning areas look out over play spaces and natural ventilation – either existing surrounding trees, green play spaces or the central landscaped courtyard. This ensures that all learning spaces can view the natural environment which provides a positive effect on mental health and learning outcomes. The learning spaces connect directly to the outdoor spaces and the natural environment wherever possible to support learning and play activities.

Ensure access to sunlight, natural ventilation and visual outlook wherever possible

The overall proposal of the new administration and learning buildings incorporates passive environmental design elements such as building orientation, sun-shading, natural ventilation, solar energy and thermal mass to reduce the need for mechanical heating and cooling.

While maintaining the visual outlook of the design, vertical shading devices and selected openings have been provided to reduce glare and direct light into learning spaces while facilitating natural ventilation. The orientation of the building will allow the interior spaces to achieve natural daylight and ventilation through the spaces.

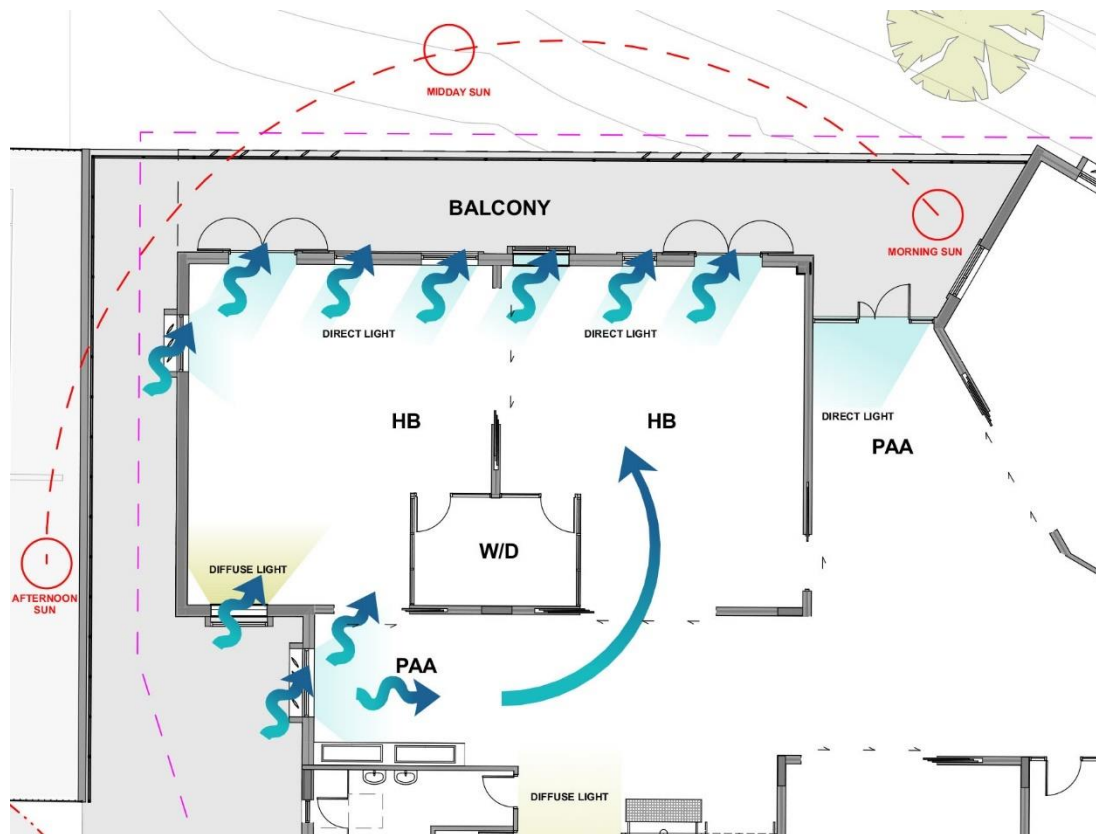


Figure 38 Typical homebase with access to natural light and ventilation

Seek opportunities for buildings and outdoor spaces to be learning tools in themselves

Outdoor activities are undertaken in the new landscape/courtyard area between the two wings of the new learning building, and on balconies or connecting to covered outdoor areas.

The new landscaped courtyard area consists of learning tools that are embedded in the landscape itself. Learning or activities included in this space area are supported by tiered seating for small or large group learning which is shaded by landscaping and tree planting to provide shade and shelter. The tiered seating area in the courtyard also seeks to include learning tools such as a human sundial to allow students to learn about the movement of the sun and earth.



Figure 39 Examples of interactive human sundials as learning opportunities.

Additional outdoor spaces that are a learning tool are the balconies provided with access from learning spaces. These spaces allow the indoor-outdoor learning of flexible layout arrangements and outcome.

Provide a diversity of indoor and outdoor spaces to facilitate informal and formal uses

The new learning building provides connection between indoor and outdoor spaces – both on ground level that connects to larger play and learning areas; and on balconies that connect to practical activity areas. The indoor-outdoor learning spaces will accommodate for the growing student population over the years to come and the design/layout is also provided as an educational operation of flexible learning where students are able to initiate individual or group learning as required.

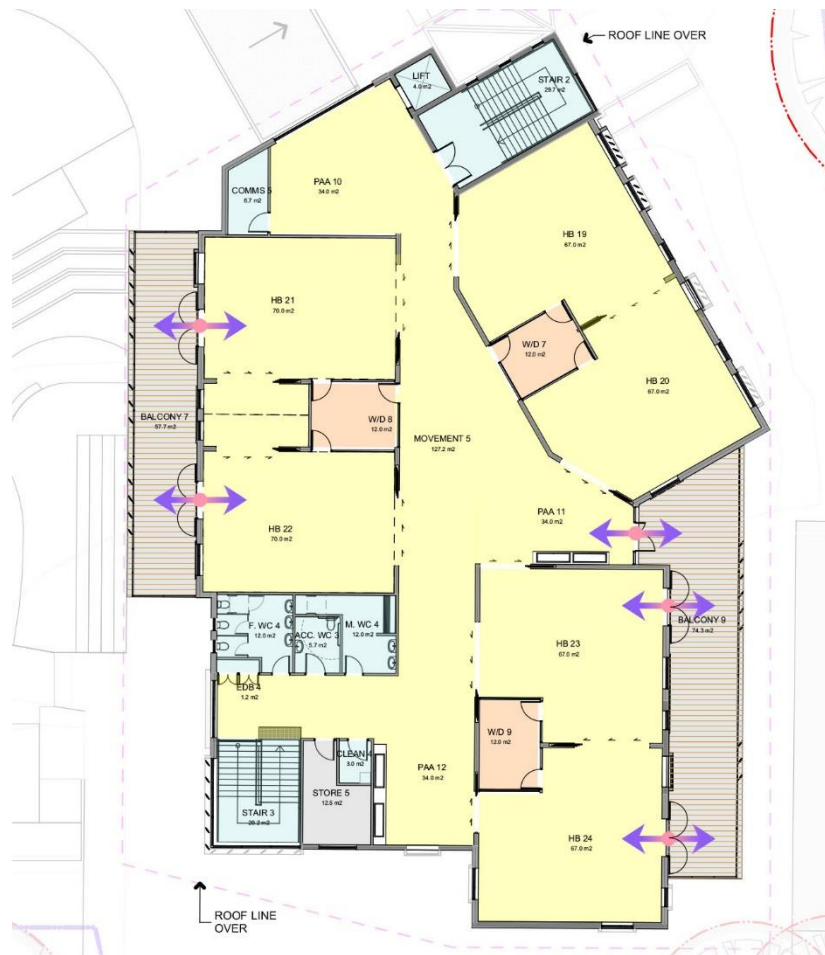


Figure 40 Example of connection between indoor and outdoor spaces

Design learning spaces to cater for a range of learning styles and group sizes

The new learning building comprises of learning spaces and associated facilities such as practical activity areas, withdrawal areas and outdoor learning areas. All these spaces are accessible and adaptable and can be easily modified through the opening of a sliding door. Small or large groups are able to be supported and learning furniture at different heights and sizes enable students to create their own learning environment. The flexible and adaptable nature of the space ensures that a range of group sizes and learning activities can be supported.

Consider providing areas for collaboration, group learning, presentations, specialized focus labs, project space and wet areas, display areas, student breakout, teacher meetings, and reflective / quiet spaces

Spaces such as the internal movement and practical activity areas are open for all forms of learning including collaboration, group learning, whole year group presentations, project space, wet areas and student breakouts. These spaces can be closed away from the homebases and withdrawal areas for a complete form of internal learning or able to open up and become part of the general learning areas. This supports a variety of different learning activities.

Homebases are paired and are able to be opened up to provide spaces to support larger group learning. In the event that a whole year group is required to gather in one space, all homebase doors can be opened up to the movement area and practical activities area. Private spaces for small meetings or student individual learning can be accompanied via the small withdrawal rooms which have been designed to facilitate passive surveillance.

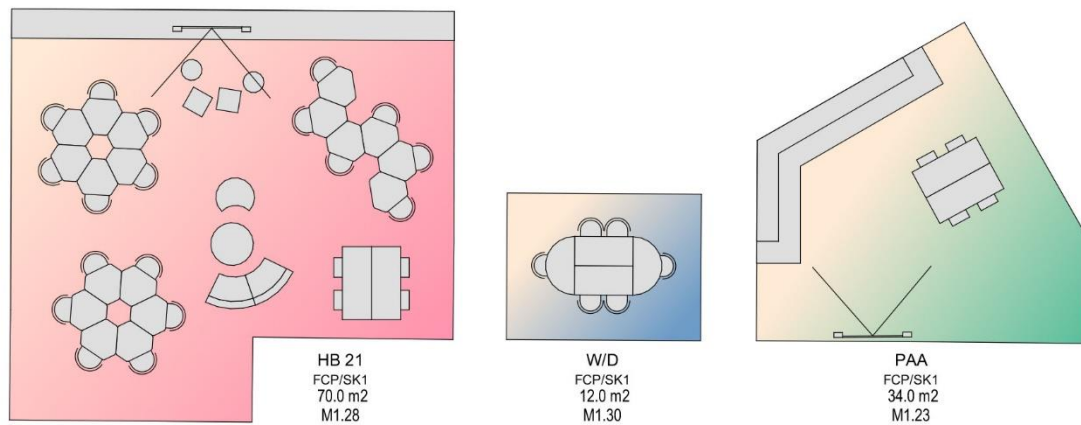


Figure 41 Diagram of different learning space options

Provide buffer planting in setbacks where appropriate to reduce the impact of new development

Landscaping is provided at sizes and heights suitable for the existing buildings and surrounding context. Proposed new trees, shrubs and ground covers have been carefully considered and located as buffer zones from the street, identifying a zone of a private and public realm. Throughout the site this new planting is incorporated as wayfinding that is mapped throughout the site. On balance it is considered that the proposal achieves an acceptable outcome of trees and vegetation across the site.

High rise schools should consider and seek to minimize the negative impacts of overshadowing and wind on surrounding built form and open space, and on school grounds

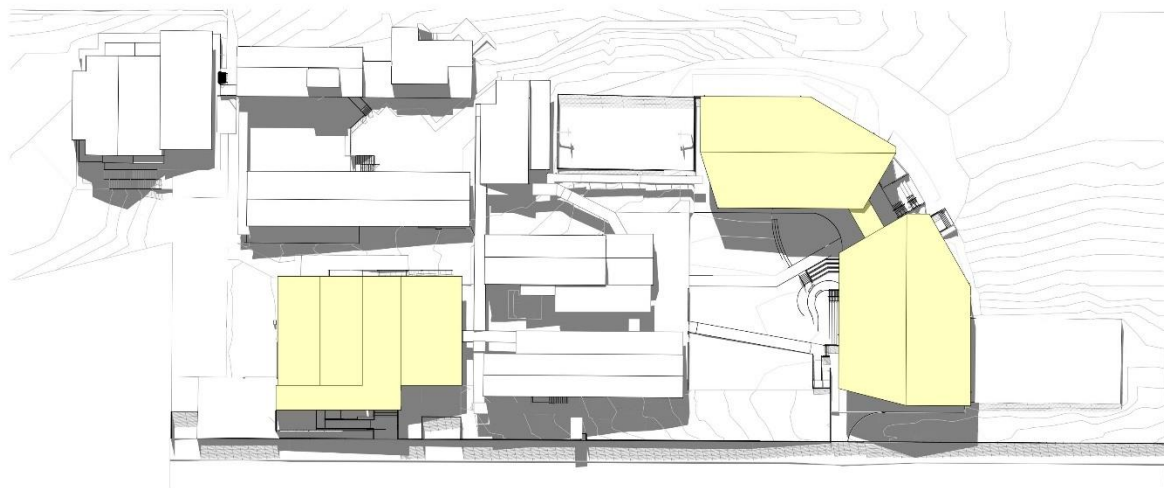
The existing structures of the school is low rise to suit the surrounding neighbourhood context. The proposal of the two new buildings has accommodated the low rise generally at two levels to match existing buildings with a small three storey section as the building steps down from the site to minimize any overshadowing to the neighbouring buildings.

The envelope of the buildings has carefully considered the impact of overshadowing and ensured that there is no overshadowing that will adversely impact any neighbours.



1

SHADOW DIAGRAM - 22 JUN 9 AM
1:1000



2

SHADOW DIAGRAM - 22 JUN 12 PM
1:1000



3

SHADOW DIAGRAM - 22 JUN 03 PM
1:1000

Figure 42 Shadow diagrams

Outdoor play ground space should be sufficient to accommodate the student population including future growth. It should also allow for passive and dynamic play of different age groups

The site has several different play areas which are utilised by different age groups. The existing playground for years K-Y2 is located at the north-east of the site and play area for Y3-Y6 is located north-west. These play areas in addition to the two sports courts have been maintained as part of the proposal.

In addition, the new learning building and removal of temporary accommodation creates a new courtyard for learning and play nestled between the wings of the new learning buildings. This can further support learning and play areas for different age group.



Figure 43 Play areas within the site

Consider height and scale of school development in relationship to neighbouring properties

The existing structures of the school is low rise to suit the surrounding neighbourhood context and is typically made up of single storey, double storey, and mixed one and two storey buildings. This matches the surrounding residential developments which are typically one and two storey detached dwellings.

The proposal of the two new buildings seeks to support the surrounding context and as such proposes a single storey administration building, and split two-three storey learning building. The learning building is mostly two storeys high with a small three storey section as the building steps down from the site to minimize any overshadowing to the neighbouring buildings.

The existing development controls on site limit the proposal to a maximum of 9m above the existing ground levels. Due to the topography of the site a small section of the proposal rises above the 9m limit as the ground falls away from South to North across the site. This area has been minimised as far as practicable and located towards the centre of the site to minimise impact for neighbours.

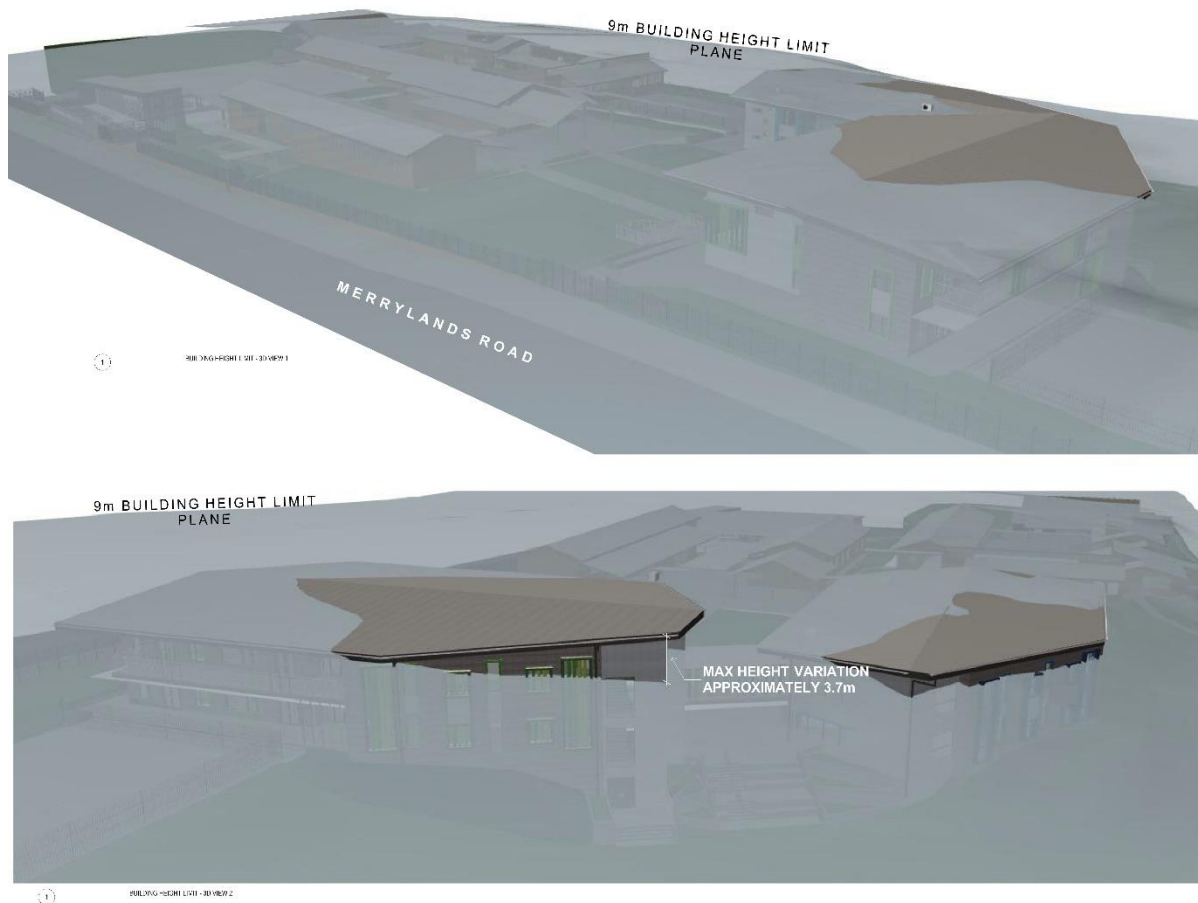


Figure 44 Extent of proposal above the 9m height limit

Wherever possible, seek to locate buildings away from noisy roads and other noise sources to ensure acoustic levels within teaching and learning spaces are acceptable

The subject site is adjacent Merrylands road which is identified as a regional road while the closest state roads are Greystanes Road and the Cumberland Highway.



Figure 45 Classified roads around Greystanes Public School – Source ARUP Traffic and Transport assessment

While Merrylands road is a regional road, the project has considered the minimization of any noise impacts. To facilitate this the new administration building is set 9 meters away from the footpath of Merrylands Road while the new learning building is set 9.5 meters away from the footpath of Merrylands Road. The southern end of these two new developments face the noise source however, the core facilities for these buildings are located where possible at the southern end of the building, facing the noise source and shielding the remainder of the development from this source.

The acoustic report by Cundall has identified that it is not considered that there will be any significant change in road traffic noise generation on the basis of the proposal.

Where teaching and learning spaces must be located alongside noise sources, arrange built form to ensure dual aspect that will allow for natural ventilation away from the noise source. In extreme cases, mechanical systems and other technologies may be necessary to ensure acoustic levels can be maintained along with cross flow ventilation and natural light

Noise impacts of additional noise sources have been considered and a design/layout have been developed to provide necessary measures in reducing the affected areas. Some additional noise sources include the following:

- Increase in student numbers
- Change in activities
- Relocation of the COLA
- School bell / announcement system
- Waste collection services

- Use of temporary demountable classrooms for the duration of the works
- Grounds maintenance
- Additional road traffic noise from student's parents and staff.

All openings for natural ventilation and light have been arranged to open into the site and away from potential noise sources. Where buildings open towards noise sources such as Merrylands road, these openings are located towards the centre of the site to minimise impact as far as practicable.

According to Cundall's Acoustic Report it has been considered that based upon the data analysis from the noise surveys around the site, acoustic design targets have been determined based on appropriate standards and guidelines to achieve acceptable noise levels which includes, the design of internal walls, defining properties or materials that sufficiently address the noise transfer such as acoustic pinboards.

While potential noise impacts have been considered and designed to be reduced, cross flow ventilation and natural light has not been affected from the overall amenity, health and wellbeing of the proposal. Where there are spaces that are centrally located within the proposal, mechanical systems have been introduced and designed to support the ventilation of the spaces with the assurance that acoustic levels suitable for learning activities are still maintained.

PRINCIPLE 6 – WHOLE OF LIFE, FLEXIBLE AND ADAPTIVE

When designing any educational facility, it is crucial to understand that the way we teach changes over time, and any teaching space must embed the potential to adapt to a variety of uses, be able to be re-configured easily and be suitable for future changing needs. The project connects collaborative learning spaces to both larger shared spaces and smaller group and withdrawal areas which enables different learning activities and combined class activities. Each space has been designed in conjunction with the school and an educational planner to ensure the new facilities accommodate current and future pedagogies, assisting both the teachers and learners.

The design also integrates technology to support the teaching methodology of the school and adapt as needs change and develop. The learning building provides flexible options for the size and layout of the classrooms to assist with reconfiguring spaces to adapt to changing and developing teaching styles. A key driver has been staged learning with home bases arranged in groups of 6 to enable stages to be co-located. Classrooms are clustered around ancillary spaces to ensure there is a connection between larger and smaller spaces. This provides a planning structure that supports collaborative learning, individual learning and combined class activities.

The project at Greystanes Public School will provide learning spaces that are suitable for the many different learning methodologies that it caters for in its very diverse school population. Not only will these flexible learning spaces focus on academic achievement but also allow the students to be emotionally and socially prepared for life beyond the school.

Allow for future adaptation to accommodate demographic changes, new teaching and learning approaches and the integration of new technologies

Future adaption that have been considered for Greystanes Public School to accommodate demographic changes include flexible learning spaces that are able to be opened internally to movement zones or externally to the balconies. The spaces are able to be re-configured to cater for various learning groups and teaching styles while ensuring that a cross connection between all homebases and ancillary spaces on the one level are still connected whether small or larger groups are operating.

Be based on a masterplan of the school site that includes the testing of options for future potential growth

The project has considered the projected future growth of the area and has accommodated additional learning areas over and above the current requirements. In addition to future growth and requirements for learning facilities, access and provision of suitable play areas are required to accommodate any future growth requirements. As the school has excellent existing play areas and facilities, the project sought to minimise the impact on these areas to ensure that they are maintained for future growth of the school.

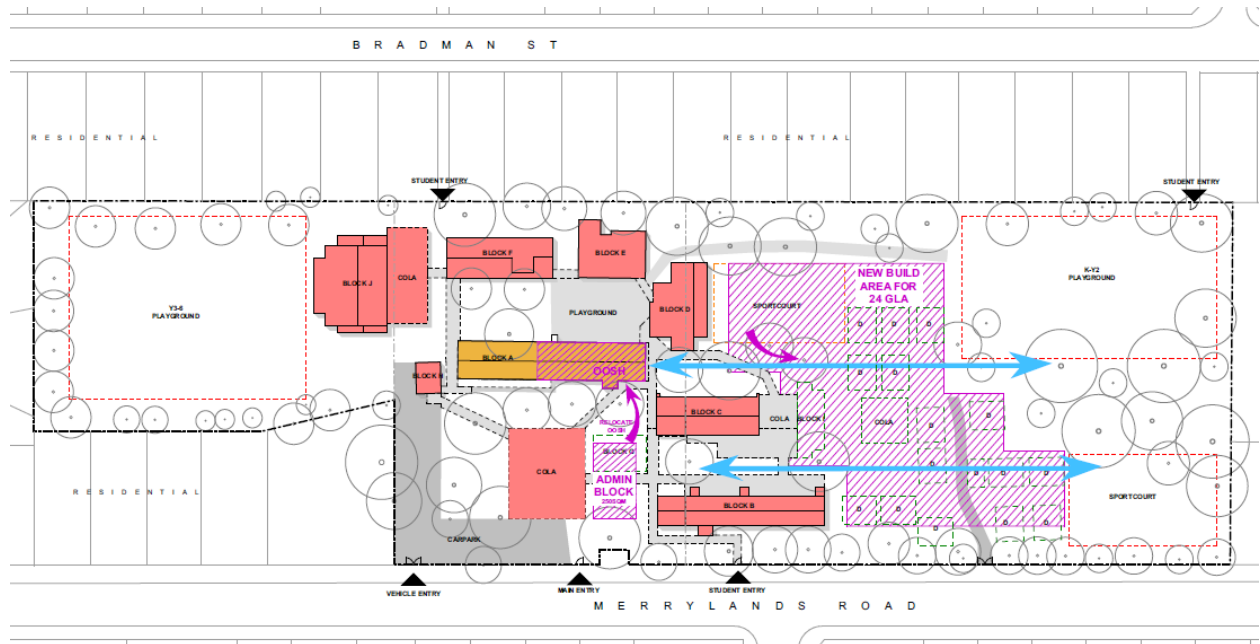


Figure 46 Early masterplanning identifying potential build areas

Early masterplanning identified that the most appropriate building locations maintained the existing green play areas and utilised the site area currently used by demountable buildings. These demountable buildings will be temporarily relocated during construction and all play areas re-instated at the completion of the works.

Take a whole-of-lifecycle approach when considering cost and consider wider public benefits over time

A whole-of-lifecycle approach has been adopted through the design and development of the proposal to ensure that the project remains suitable and flexible to adapt to future needs. Key considerations include:

- Accessibility – Building elements have been carefully considered to ensure usability and suitability for people with a range of accessibility, mobility and vision impairment.
- Community – The proposal considers that the site is a community asset that can be used after hours by the public.
- Cost-efficiency – Building elements and materiality have been selected on the basis of durability and life-cycle costs to reduce ongoing maintenance requirements.
- Functionality and operations – Spatial needs and requirements that are durable for the life of the development, and can be adaptable and flexible to suit future learning needs.
- Productivity – The well being of users of the spaces (physical and psychological comfort) relating to natural and supported ventilation, lighting and access to natural light, systems and technology.
- Security – Protection from man-made and natural hazards through design development.

Provide capacity for multiple uses, flexibility and change of use over time

The innovative design incorporates sliding doors that allow linked classrooms to work in common areas or in outdoor learning areas. Shared learning spaces such as practical activity areas, tiered seating, and individual / small group learning areas foster a sense of community as students work on different subjects or projects. The flexible spaces generate environments that encourage discovery and deeper learning as the flexibility nature of design is a contemporary developmental stage of learning.

Children have a developmental need for movement, and flexible school furniture allow students to shift position, rock, rotate and roll. Selected chairs and tables are with wheels and adjustable height desks offer the students the choice of sitting or standing during the school day and provide alternatives for various activities and learning activities.

Respond to the findings of a site appraisal including (but not limited to) in-ground conditions, contamination, flora and fauna, flooding, drainage and erosion, noise and traffic generation**Contamination and hazardous materials**

Phase 1 & 2 contamination testing has been undertaken has not identified any inground contamination at this site. Any contamination that it is discovered during construction is to be treated as an unexpected find and managed in accordance with the Department of Education's unexpected finds policy. Hazardous materials such as asbestos are identified in buildings to be demolished and refurbished, and any disruption to these materials will be undertaken in accordance with Department of Education policy.

Flooding

The subject site has been identified as containing land prone to flooding. Cumberland Council has identified this on the Flood Risk Precincts Map and it is noted that this is limited to the North-Easter corner of the site. The development area has been located away from this part of the site and the proposed ground floor level is approximately 4 metres above the 1% AEP flood level.

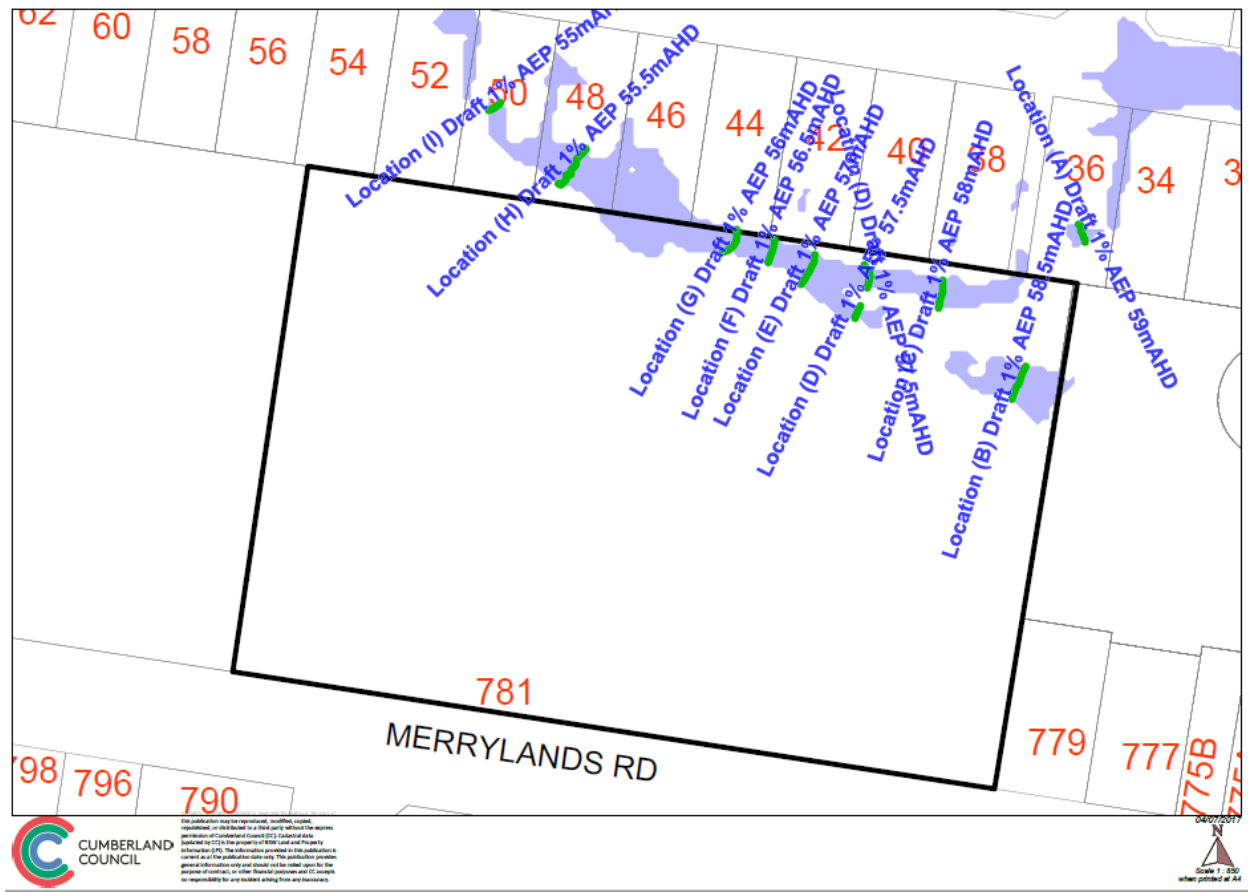


Figure 47 Cumberland Council AEP mapping of the subject site

Flora and fauna

The Biodiversity Offset Scheme has identified that land containing biodiversity values may be identified on site.

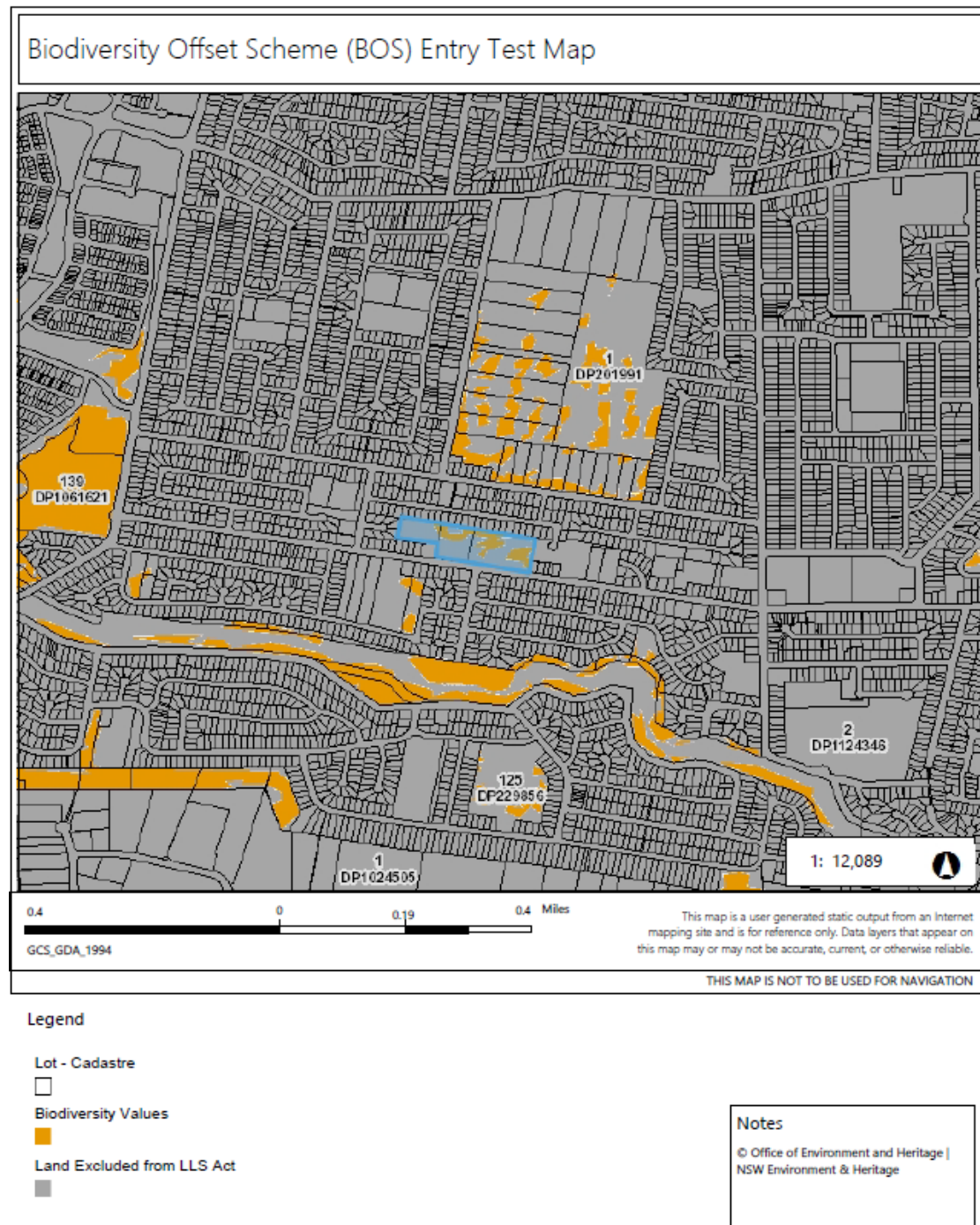


Figure 48 Subject site and biodiversity values area

SLR Ecology has been engaged to review the biodiversity values of the site and has prepared a Biodiversity Development Assessment Report (BDAR) for the proposal. This has identified that the proposed development will require the removal of some native trees, however understorey and mid-storey vegetation has already been largely removed or managed on the site which limits the opportunity for the site to be utilised by threatened fauna species.

The design and masterplanning of the site has minimized the removal of native vegetation wherever possible with the objective of reducing impacts to any species to the greatest extent practicable.

Traffic generation

The new development estimate 8 new teaching spaces to cater for an additional 184 student enrolments. The morning peak has been identified as the busiest period with the drop-off profile spread across a longer time period and also coinciding with the commuter peak. It has been identified that the staff car park is currently at capacity and with the forecasted additional 6 staff vehicles, however this can be accommodated by the abundance of unrestricted on-street parking surrounding the school.



Figure 49 Availability of unrestricted parking surrounding the site – Source ARUP Traffic and transport assessment

The forecasted addition of 70 vehicles for student drop off and pick up has resulted to an arrival frequency of 1 to 14 vehicles per 5 minute period. This additional amount of vehicles can be accommodated across the three main drop off areas of Merrylands Road, Taylor Street and Bradman Street.

Understand the potential impacts of future local projected growth and respond to demand for facilities after hours

The ABS estimates that the population growth of Greystanes as a sub-population will grow by approximately 2300 additional residents every 5 years. The figure provides the context for the size of the population and growth rate within the area and should be looked at in conjunction with other basic demographic information such as age structure.

Due to the natural growth of the population in the suburb of Greystanes, future occupancy that will accommodate for additional growth is through the design of sufficient learning spaces within the project. The number of existing demountables on site at the school attest to the ongoing growth in the suburb, and highlights the need for high quality permanent accommodation. The proposal

includes additional accommodation over and above the number of removed demountable classrooms to cater for the ongoing growth.

The school currently operates an OOSH facility which is located in the Hall (Block J) and Block G. As Block G is proposed to be demolished as part of the proposal as it has reached the end of its useful life, the refurbished area of Block A has been designed to accommodate OOSH facilities. This refurbishment will include retention of the former staff room kitchen and new amenities that provide space that can be utilised by OOSH after school hours.

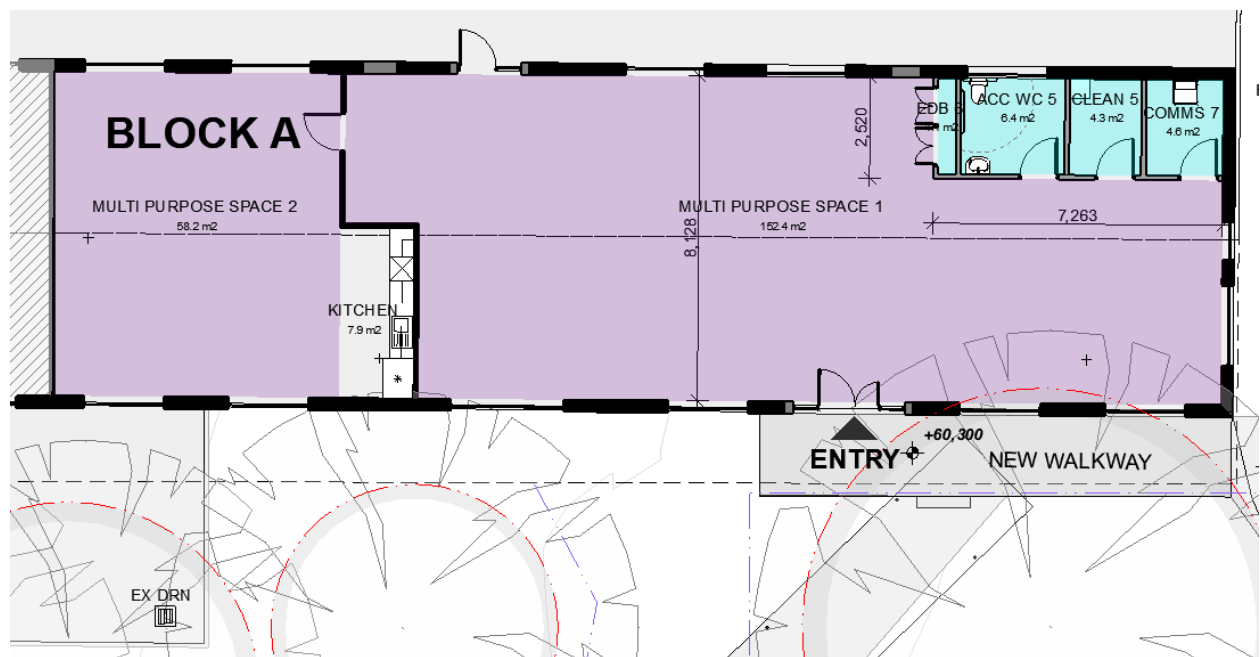


Figure 50 Proposed refurbishment of Block A

Ensure school buildings and grounds are designed to be resilient to change, enabling them to be used for multiple purposes and to evolve over time to meet future requirements

The school buildings and grounds have been designed to be adaptable, flexible and to operate in a variety of different ways. Through meetings with the Project Reference Group and workshops with staff and students and an educational planner, the project has identified that the school is moving towards a team teaching and project-based learning approach where stages or year level groups work together with multiple teaching staff. Each wing contains six homebases to facilitate whole year level learning with a variety of ancilliary or supporting spaces to support a variety of learning opportunities.

All homebases can be operated in pairs, threes, sixes or individually to cater for different group sizes or learning activities. Homebases can be opened to work with communal learning spaces such as practical activity areas which are large enough to facilitate use by whole classes. Practical activity areas are also located adjacent outdoor balconies or external learning areas to facilitate a seamless transition between indoor and outdoor learning.

By adopting this flexible approach with easily adaptable and flexible learning spaces the learning spaces are able to be used in an infinite variety of ways to support learning activities. As this varies over time, the building can adapt to these changing needs and requirements.

PRINCIPLE 7 – AESTHETICS

The master planning and location of the new buildings on site have been carefully considered to address the existing layout of the site, wayfinding, access, lines of site and maximise on the existing site levels, to achieve a suitable scale of the building that responds both to the users needs, as well as the residential community context. The buildings actively promote the connection of students to outside spaces and outdoor learning, as well as providing shelter and shade during play. Much attention has been given to maximising open space and reducing the visual impact and scale of the building.

The project aims to engage with the site context through the selection of complimentary materials and finishes, and by enhancing the street presence of the school with respect to the residential neighbouring blocks. The buildings provide a contemporary form to undertake a respectful dialogue between the “old” and the “new”. The proportions of the buildings have been carefully considered to add a new and innovative character to the school, without generating an overbearing bulky structure. The selection of materials and finishes has been developed to compliment the context, while providing a playful palette of finishes where the buildings open to the landscaped areas.

Reflect a commitment to and investment in design excellence

Design excellence is an essential part of every project from start to finish. Having a good design process help the designer understand the intrinsic qualities of a place and build on the opportunities it offers, making the most of the investment in the development and creating a strong place based vision for the area. The topography of Greystanes Public School creates a challenge for design quality and outcome which suggests critical considerations to be addressed to improve the social, economic and environmental outcomes. The proposal has carefully considered the challenges of the site and through a rigorous design process and ongoing consultation with user groups has proposed a design outcome that responds to and celebrates these constraints while providing an engaging and playful design.

Create engaging and attractive environments

The design proposal advocates for shared responsibility of the spaces created that are both attractive and engage with the public realm. The new administration building and piazza create a space that is welcoming, accessible and contemporary for visitors, parents, students and the community. The development is better for people as it has been designed for safe, comfortable and vibrant, supporting social interaction and enjoyable, healthy lifestyles.

There is a reflection of a better appearance and feel that is refined, aesthetically considered and built creating an engaging, rich and balanced experience for everyone using the site.

Achieve a purposeful composition of materials and elements through a rigorous design process

The influence on the performance of the development through design reviews of the built form and the use of design guidelines were to ensure a purposeful composition of high quality design outcome and a selection of materials that respond to the local climate and conditions. The design process has guided the project to improve the quality of design and sustainability through the engagement of internal and external professionals at key stages of planning and design to provide reviews to the proposed development against the project's vision and objectives.

The composition of materials aims to provide a balance between solid masonry and lighter more open materials and glazing. Glazing is used to define entry points and more open, practical activity and collaborative learning areas. Generally, the cores are clad in light weight, pre-finished fibre cement cladding and are located adjacent the entry points. This introduces colour and provides a lighter, more open and welcoming entry to assist with wayfinding and clearly identify points of entry. It also provides a contrast to the masonry finish of the homebases and general learning areas, while also assisting in minimizing the bulk and scale of the building.



Figure 51 Elevations identifying composition of materiality

Provide an engaging environment for pedestrians visually and materially along public street frontages

The new administration building along with its landscaped piazza, the new learning building and landscaping along the edge of the site boundary respond to the different usages. This is clearly defined by the materiality selection which is composed of sustainable and durable materials that will not deteriorate over time. The primary material that will be seen is generally masonry for the

external walls. Where there is external glazing, commercial aluminum glazing and light-weight pre-finished fibre cement panels are used. This will help define the entry and visually break the appearance of the new buildings from the street. Equitone is used as a feature cladding to highlight and define different spaces and an opportunity to introduce and assist with wayfinding within the site but as a feature wall from the street.



Figure 52 Street elevation showing materiality and interface with the public realm

Seek opportunities to enhance public facing areas with landscaping and ensure landscape and building design are integrated

New landscaping and trees are proposed along the street frontage to soften the site boundary and to create a natural definition between the different realms or usages and to promote the well-being of the community as they visit the site. Landscaping has been carefully designed and integrated to present opportunities for visitors or students to access to and move about freely between the public domain, open space and buildings, it is an integration of wayfinding to allow students to safely and smoothly navigate around the large site.

Integrate service elements with the building design

All service elements have been carefully integrated with the building design. Amenities and wet areas have been grouped to provide easily identifiable and accessible facilities. By grouping wet areas and locating sinks on external or core walls, the buildings provide the maximum opportunity for adaptable spaces.

In addition, for electrical design, all learning walls which include power and data connections have been carefully located and designed for the best outcome and usage of all spaces. These learning walls are located along an outer wall of a homebase to allow for future flexibility and adaptability.

Balance internal spatial requirements with an external mass and scale that responds to its environment

By splitting the spatial requirement into two connected pavilions, the project aims to reduce the overall mass of the project and respond to the site locality and street scape. By stepping the buildings down the site the proposal responds to the surrounding environment.

The learning areas that take up majority of the floor space are accompanied with external balconies that reduce the scale and bulk of the buildings. With the incorporation of the balconies protruding out away from the building line, the linear design of the balconies softens the building edge and the building is subtly integrated into the existing environment of the site.

Avoid long stretches of security fencing to public facing areas through arrangement of building edges, landscaping, gates and other openings

Existing fencing and gates have been maintained throughout the site. New fencing and gates are proposed behind the front façade of the new administration building to create and define a new building edge and street presence. This creates a courtyard that is welcoming to the public realm, and most clearly defined by the building edge and landscaping. The new fences and gates to the COLA have been set back away from the street, creating a safe a secure play area for students away from the public realm.

Look for opportunities to include public art

The new administration building being visible and located along Merrylands Road has incorporated a landscaped frontage that encompasses an active public realm with accessible landscaped zones and fixed furniture such as benches to allow visitors or parents to freely use the space. Accessible ramps and stairs are designed in a way to create a public feature that draws attention to the new administration building.

There are opportunities for the school to develop public art that can be included at the intersection between the private and public realms where the administration building meets the street. There is also further opportunity for public art in the courtyard surrounded by the learning buildings.

RESPONSE TO PRELODGE MENT CONSULTATION ADVICE

Key areas for consideration:

<i>GA NSW comments</i>	<i>JDH's comments</i>
Principle 1 - Context, built form and landscape	
The bulk, scale and location of proposed buildings should relate appropriately and contribute positively to surrounding context, particularly how the proposed form contributes to the perceived bulk and scale of the building from the street and surrounds (note overall building forms appear overbearing in their context)	The bulk and scale of the proposed buildings have been carefully considered to minimise the impact on surrounding neighbours. The site slopes steeply from the street to the North, and the buildings have been sited to step down and reflect the changes in levels. The brief for 24 homebases requires a large building to be considered. The project has investigated constructing two linked buildings that step down the site to reduce the bulk and scale from the street.
Site organisation as well as the design of the entry should provide a clear, generous and inviting sense of address to the school as well as optimising orientation	The entry design has been reviewed and updated to enhance wayfinding and access to the site. The entry has taken into account both the requirement to welcome visitors, and to direct visitors into the entry and not into student areas.
Opportunities for the COLA to integrate with the entry and provide a sense of identity	The design of the COLA has been reviewed and integrated with the administration building and design of the entry.
The siting of the buildings should allow for ease of connection and wayfinding to and through the site (especially at ground level – note that there is currently a lack of direct connection between ground level classrooms at different RLs)	The administration building has been located to welcome visitors into the site. The admin was previously located centrally in the site and it was difficult for visitors to navigate to this location. The learning building has been located to connect to existing learning buildings and retain the existing sports courts, green areas and play areas towards the boundaries of the site. The buildings have been carefully sited to respond to the significantly changing levels across the site and provide as much access as possible, to a variety of different outdoor activity areas.
Outdoor areas or 'balcony' spaces should be large enough to accommodate active play (or	The outdoor learning areas (balconies) and external paving, have been designed to be

otherwise demonstrate likely uses – more information is required to show how these upper level balcony spaces will operate)	accessed from practical activities areas (PAA). Both wings of the building have PAAs with sinks that directly access a large balcony or outdoor area. The design of the balconies have been reviewed to ensure the balconies are active spaces that can be shared and well utilised for outdoor learning needs.
Landscape strategy should integrate pathways, ramps, fences, handrails and stairs seamlessly and should demonstrably respond to likely movement patterns across the site, particularly in relation to the changes in levels across the site	The landscape strategy includes pathways, ramps, fences, handrails and stairs that respond to the movement patterns of students across the site. Changes in levels have been carefully designed to suit the steeply sloping site and to provide accessible paths of travel from shared site facilities & points of entry to the new buildings.
The location of the south east wing of building reduces the overall amenity of the site by removing current view and opportunities for passive surveillance to the open green space to the north. It is highly recommended this is reconsidered	By splitting the learning building into two connected buildings, the project aims to enhance the connection of the school to the playing areas. Currently this part of the site is occupied by demountable buildings and there is no direct access to the playing field. By creating two buildings with a covered outdoor connection, this enhances and improves the connection from the school to the playing fields. It also creates a central landscaped courtyard that can be utilised for outdoor learning and play. Both wings of the building look out over the courtyard and sports courts and play areas to assist with passive surveillance.
Principle 2 – Sustainable, efficient and durable	
The approach to façade treatment should reflect a considered approach to window shading as well as optimising natural ventilation (especially central areas of the zone B buildings)	The location of operable windows, and offsetting of more open building areas such as practical activity areas has been carefully considered to assist with natural ventilation. Offsetting these areas encourages natural ventilation to be drawn through the plan and through the building. Shading has been provided in the form of vertical louvred shading, balconies and overhanging roofs and has been

The planning and floorplate organisation of the buildings should optimise classroom orientation, natural ventilation and daylight penetration through the buildings, particularly areas such as the central spine of the new classroom buildings	The learning building has been designed to maximise natural daylight and ventilation into the building. Practical activity areas and building entry points have been staggered across the floor plate to assist encourage natural ventilation in the space.
Strategies to minimise heat gain through summer and allow for night purging should be considered (both in relation to architectural and landscape approaches)	Shading through balconies, roof overhangs and vertical louvres are proposed to all North, East and West facing learning areas to minimise heat gain. Louvred windows with security screens are proposed to assist with ventilation and night purging.
Principle 3 – Accessible and inclusive	
Clearly legible accessible connections across the school should be seamlessly integrated to support an inclusive experience (more information is required to demonstrate this, including connections to play areas)	Accessible connections are provided: - Between the street and the administration building - From the administration building to the COLA, refurbished multipurpose space and new buildings - From all homebases to balconies, the courtyard between the building wings and between buildings. - Due to the change in levels 75% of all homebases can be accessed from the ground level with the remainder accessed via a lift.
Principle 5 - Amenity	
Clear and accessible wayfinding should support and inclusive and positive student experience and relationship to the surrounding neighbourhood (see above notes regarding ground level building connections and accessibility)	The new administration building provides clear and positive wayfinding to direct staff, students and visitors into the site. All new works are fully accessible.
A diversity of sheltered and open play spaces should be provided and integrated to the landscape plan as well as site-wide wayfinding and connectivity	The new COLA is located centrally in the site and provides a central gathering space for the school. It is easily accessed from all existing learning facilities. New covered walkways from the existing library to the new building provides sheltered connections across the site and integrates with the existing covered walkways. Other shading includes a covered public entry to the administration building, covered links between the two pavilions of the learning

	building and covered entries to all access points to the new learning building.
Greater use of the topography of the site and integration of the built form and landscape design to facilitate improved connections between learning spaces and outdoor areas (whilst minimising stairs), and the creation of covered outdoor play and learning spaces	The topography of the site has been carefully considered, and the building design utilises the change in levels to step down the site and reduce the bulk and scale of the building. This creates a variety of play areas at different levels and accessed from different parts of the building.
Principle 6 – Whole of life, flexible and adaptive	
Indication of likely future adaptability and flexibility (further information is required, such as an overarching master plan approach)	All spaces have been designed to be future focused while supporting traditional teaching methods. The masterplan approach groups the learning facilities centrally within the site and maximise the accessibility to the existing play areas located at the edges of the site.
Principle 7 - Aesthetics	
Architectural and landscape approaches should be consistent and reflect a consideration of the school's presence within, and positive contribution to, the community (current approach does not suggest this)	The architectural and landscape approaches have been developed to maintain a consistent approach to development on the site, whilst maintaining the current school streetscape. The buildings have been designed to provide a positive contribution to the community while also being considerate of the streetscape and neighbourhood character and not overpowering the landscape or overshadowing neighbours.
The design of the COLA should be improved to be aesthetically pleasing from the street and integrated into the design of the entry experience	The new administration building roof and landscape have been revised to create a strong presence and identity to welcome visitors, parents and the community. The COLA roof has been integrated into the design of the entry precinct.
Currently the elevations do not reflect a strong design concept that is consistent across the two buildings. The aesthetics of the buildings should encourage occupants and visitors to experience variety and delight as they move around the school	The design has taken into account materials that are vibrant and reflective of modern trends in the school community. This is to create a welcoming environment to promote learning for students. The design of the elevations encourage visitors to move around the space and delight in the transitions between different spaces and learning areas.

	The change in levels across the site also provides opportunities for learning areas at different levels and locations and playful transitions between this encourage movement across and around the site.
The choice of materiality and design of the elevations should be reconsidered to reflect the importance of this building with regards to identifying the school as a place of learning	The mix between different materials has been reviewed and updated to provide a consistent language and improve wayfinding and accessibility across the site.
Colour graphics and signage should be integrated to the design of both buildings to give consistency and add to the legibility of the buildings and enhance wayfinding across the site. The signage in its current form does create a positive impression from the street and should be reconsidered holistically to align with overall concept for the school	Signage has been reconsidered and designed to be integrated into the administration building, improving the wayfinding to the public entry from the street.
Graphics and signage should be integrated to the overall design approach rather than applied	Signage has been removed from the learning building to enhance understanding and wayfinding for visitors. Signage to the administration building has been reviewed and integrated with the overall design approach.
