NBRSARCHITECTURE.

ARCHITECTURAL DESIGN REPORT

Pacific Brook Christian School
72-74 Maitland Street, Muswellbrook NSW
Development Application to Muswellbrook Council

For

PACIFIC BROOK CHRISTIAN SCHOOL LTD

31 JULY 2024

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

This Design Analysis Report has been prepared by NBRS Architecture for Pacific Brook Christian School Ltd (the Client). It accompanies an Environmental Impact Statement (EIS) in support of the Development Application for a new school at 72-74 Maitland Street, Muswellbrook in the Muswellbrook Shire local government area.

The purpose of the Design Analysis report is to identify and demonstrate the design process, consultation and development of the design principles considered to satisfy the brief and the State Environmental Planning Requirements.

1.2 PROJECT DESCRIPTION

The proposed development is for the establishment of a new K-12 school (Pacific Brook Christian School) on the subject site. The proposed development will comprise site preparation and remediation, tree removal, construction of new school buildings, covered outdoor learning area, covered walkways, car parking, landscaping and associated works. The school will accommodate 140 students and 16 staff.

The proposed School will support high-quality educational outcomes to meet the needs of students within the local community as follows:

- Administration building;
    - Administration & Staff Facilities
    - One (1) staff and student amenities block including One (1) end of trip facility;
- School facilities;
    - Five (5) General Learning Areas (GLAs);
    - One (1) Specialist classroom (science); and
    - Covered Outdoor Learning Area (COLA)
- Maximum student capacity of 140;
- Maximum 16 staff;
- Maintenance and store area;
- On-site Parking (15 spaces, inclusive of 1 accessible);
- Bike parking 6 racks for 12 bicycles;
- Internal pathways;
- Kiss and drop off areas;
- Bus stop;
- Waste Storage and collection area;
- Signage;
- Removal of 7 trees (total);
- Landscaping;
- Infrastructure works;
- Earthworks;
- Acoustic and safety fence; and
- Widening of existing vehicular access from Maitland Street
- Site remediation;

1.3 ARCHITECTURAL DESIGN STATEMENT

The vision of Pacific Brook Christian School (PBCS) is to "provide a Christian educational community as a centre of teaching, learning and serving excellence founded on biblically based beliefs, values and behaviour." (From the Principal 2021, Pacific Brook Christian School, accessed 10th August 2021, <https://www.pacificbrook.nsw.edu.au/pbcs/index.php/about/about/principal>)

The School desires that students will achieve their own potential, including for those with special needs, gifted and those from an indigenous, or overseas background. PBCS is from 2020 a Kindy to Year 12 school. The maximum enrolment for this school is envisaged to be 140 K-12 students.

the modular approach is highly favoured for this school as they require speed of building. Overall, PBCS expect the school to be an attractive place of learning with landscaping being a high priority. The school will offer hospitality and welcome, with a sense of belonging for students and the community. There are connections between the different parts of the school, Junior, Middle, Senior, and Administration.

The proposed school is centred around community, culture, and place. A place where students can gather and interact with the environment. The orientation of buildings and interaction with the landscape encourages spontaneous, voluntary, and joyful learning opportunities for students to explore and interact within a safe indoor and outdoor learning areas.

The relationships between the buildings, outdoor learning areas, and pedestrian pathways are significant parts of the design as it is crucial to have good connections between year groups and enhance its green vistas surrounds facing the Golf Course on the North East.

The scale of the buildings has been developed as single storey modular buildings linked within a gardenesque setting. Large eave overhangs will be used as covered walkways between the buildings and each learning space will have direct access to a landscaped area.

The building materiality used will complement with tones and textures from the surrounding bush environment and is inspired by local aboriginal motifs gathered through the Building on Country consultation.

The ecologically sustainable response of the building is further underpinned by its materiality. Thermal mass, shading mechanisms, and cross ventilation have been articulated in the design to ensure the comfort of occupants and a reduction of the environmental footprint.

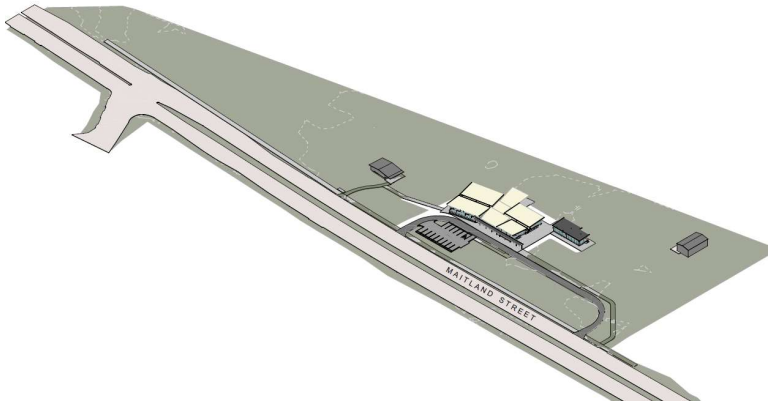


Figure 1 3D Axonometric view of the School

1.4 SITE CONTEXT AND ANALYSIS

The site is triangular in shape, with a northwest/southeast alignment and has an area of 2.432 ha. The site is bound by Muswellbrook Golf Course along the north eastern boundary, Maitland Street along the south western boundary and residential properties to the south eastern boundary (see Figure 1). The site address is 72-74 Maitland Street and is legally described as Lot 100 in Deposited Plan (DP) 1261496 (see Figure 2).

The site is generally level with a slight slope to a watercourse at the north west boundary. This watercourse flows northeast into the adjoining golf course and on to Muscle Creek via a series of dams on the golf course. Muscle Creek flows west into the Hunter River which at its closest is 1.3 km north-west of the site. Stormwater management currently on site is pit and pipe and overland flow.

72-74 Maitland Street was previously used for forestry plantation purposes and is mapped as Muswellbrook State Forest. The site is no longer used for this purpose and currently sits as an empty and underutilised site.

The Land is zoned R1 Low Density Residential Zone. PBCS previously lodged a Planning Proposal which sought to amend Muswellbrook Local Environmental Plan (MLEP) 2009 to modify the land zoning map, height of building map and floor space ratio map. This resulted in the amendment to MLEP Land zoning Map from the current RU3 Forestry zone, to R1 Low Density Residential zone (as requested by Council), amendment to the MLEP Height of building map to include a height of building of 8.5m and amendment to the floor space ratio map to include a floor space ratio of 0.5:1.

The intended use of the site post LEP amendments will be for an educational establishment, ie the purpose of this DA.

The main vehicular access to the site is from Maitland Street, as well as pedestrian access. Existing vehicular parking on site includes open air at grade parking spaces facing Maitland Street.

In terms of travel, Muswellbrook is approximately three (3) hours from Sydney, three hours (3) from Dubbo, two (2) hours from Tamworth and 90 minutes from Newcastle.

Figure 2 Aerial Image of site boundary

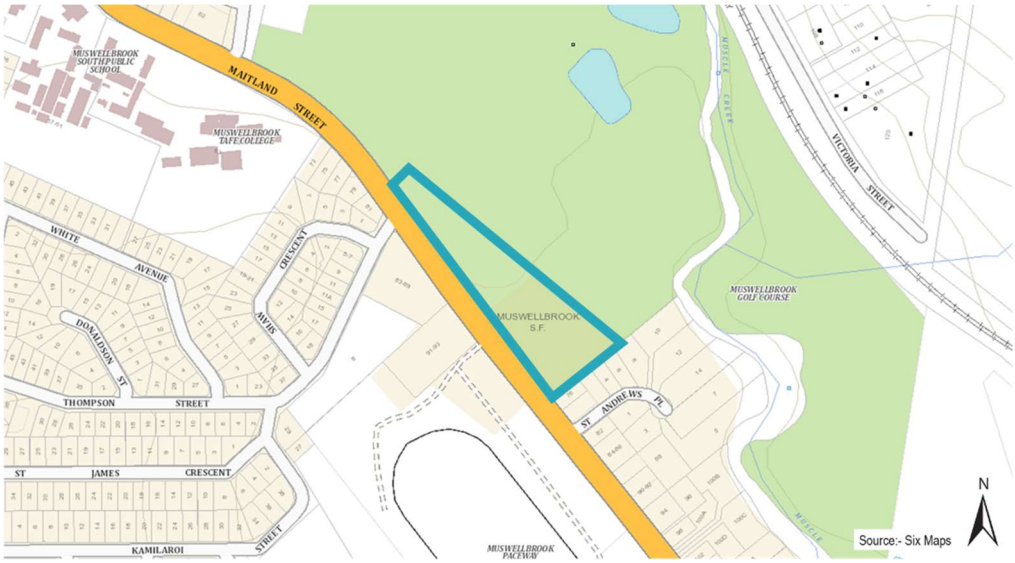


Figure 3 Site Context

1.5.1 CLIMATE

Muswellbrook is 149m above sea level. Being in Climate zone 6, the climate is mild, and generally warm and temperate. There is significant rainfall throughout the year in Muswellbrook. Even the driest month still has a lot of rainfall. This climate is considered to be Cfa according to the Köppen-Geiger climate classification.

In Muswellbrook, the average annual temperature is 17.2 °C. Precipitation here is about 630 mm per year.

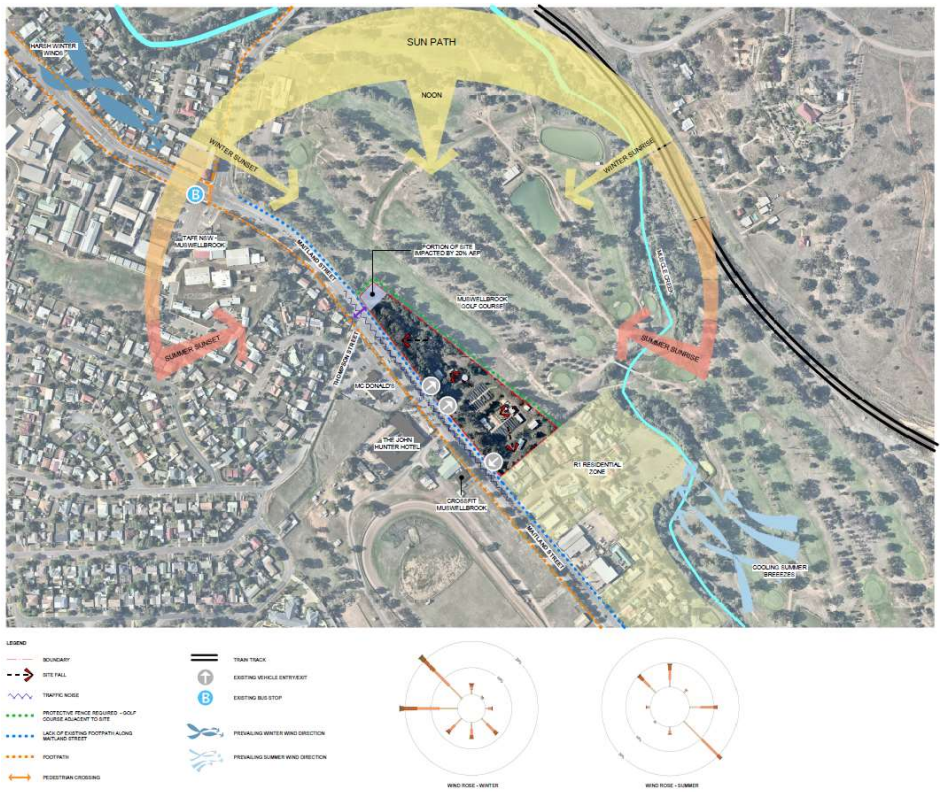


Figure 4 Site Analysis

1.5.2 TOPOGRAPHY

The site is generally level with a slight slope to a watercourse at the north west boundary. This watercourse flows northeast into the adjoining golf course and on to Muscle Creek via a series of dams on the golf course. Muscle Creek flows west into the Hunter River which at its closest is 1.3 km north-west of the site. Stormwater management on site is by overland flow. Refer to EIS appendix for Survey.

1.5.3 VIEWS

Pleasant views to the Muswellbrook Golf Course on the north eastern boundary. Adjacent low-rise residential area on the southern boundary. Busy Maitland Street along the south western boundary.

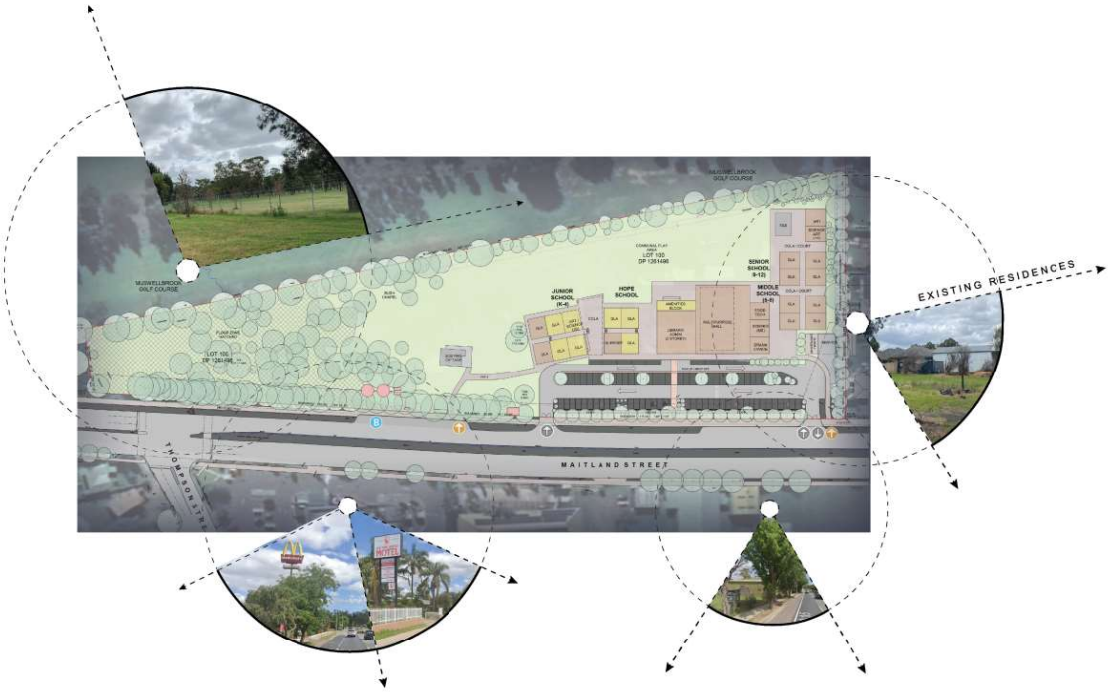


Figure 5 Site views

1.5.4 EXISTING BUILT FORM

The surrounding architecture consists of 3 single storey clad buildings, 2 sheds, and 1 greenhouse which will be demolished under a separate approved DA.

Nearby buildings along Maitland Street are generally single storey dwellings to the south towards St Andrews Places, small scale retail including local mechanic, petrol station, whitegoods, automotive and trade shops. Across the other side of Maitland Street is the showground, with single storey structures surrounding the large open fairgrounds, a two storey motel, and a fast food outlets.

1.5.5 TREES STUDIES

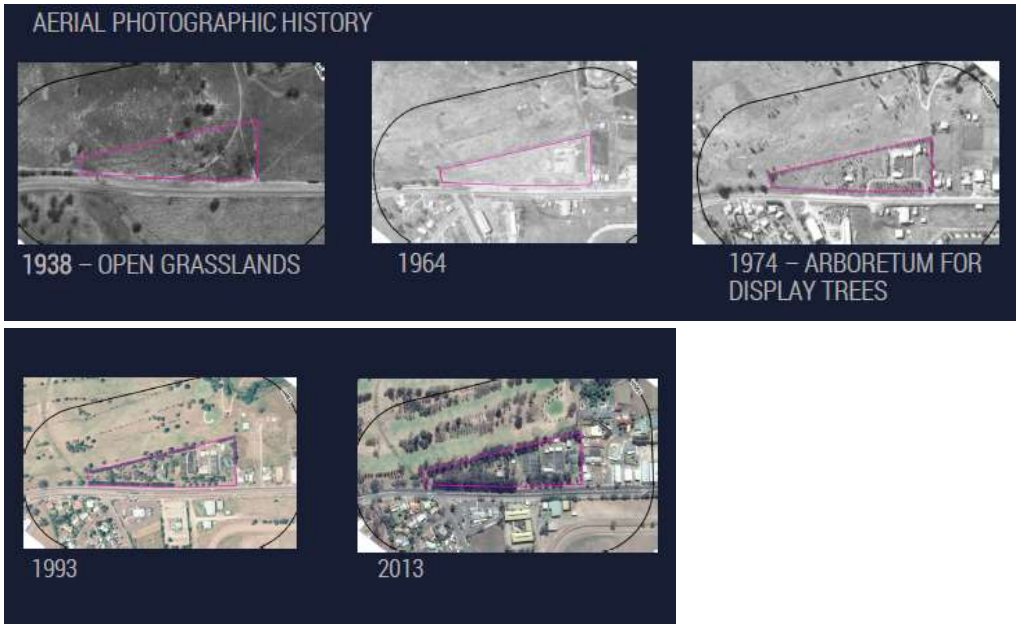


Figure 6 Aerial photos showing tree development on site over the years

After consultation with the Arborist, they undertook extensive assessment of the 240 trees on the site. The arborist has produced an arboriculture assessment report which includes recommendation on trees to be removed due to poor health or structurally unsound to stay on a site which will become a school.

The site being an arboretum planted to display a range of trees produced by the previous nursery, few of the trees are in conditions that match their natural habitat. Consequently, trees have grown with many defects of structure and low vitality. The great majority of the trees appear to have been planted in the 1960s and 1970s so those trees that have performed reasonably well are now dying or senescent. Refer to the Arboricultural Impact Assessment in the EIS Appendix for further recommendations to future tree protection and maintenance.

Figure 7 NBRS Markup of dead and dangerous trees

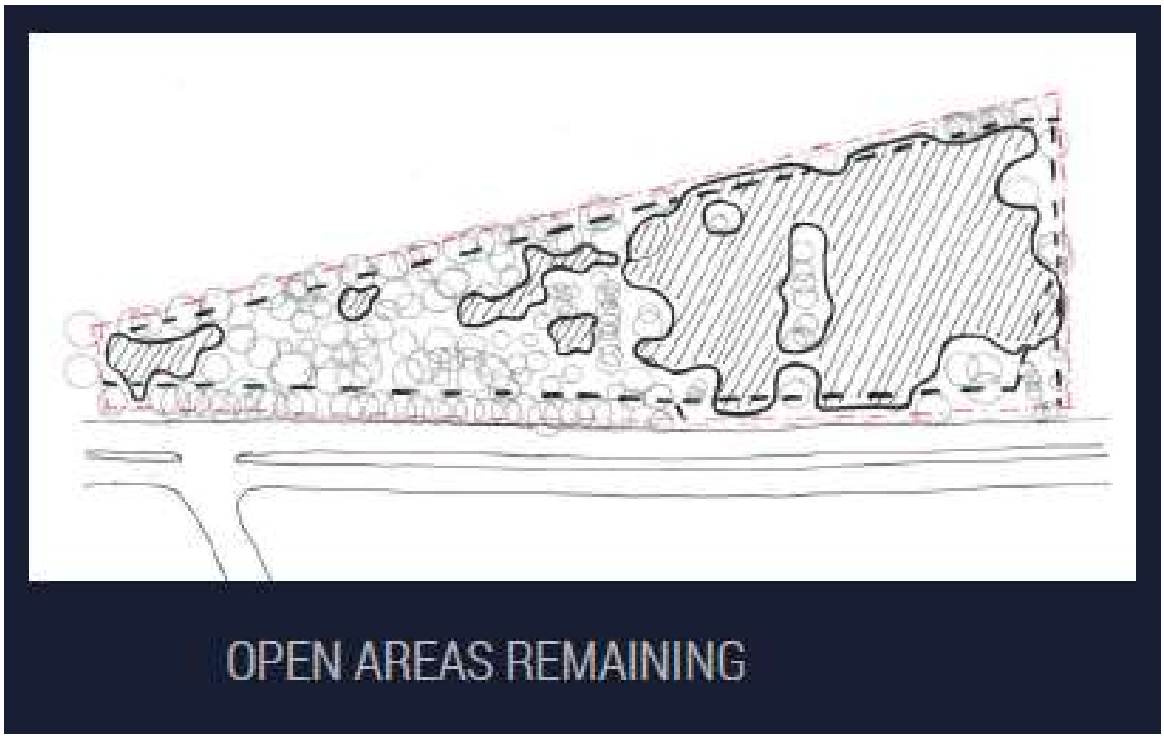


Figure 8 Diagram show what open areas are remaining when the recommended trees are removed.

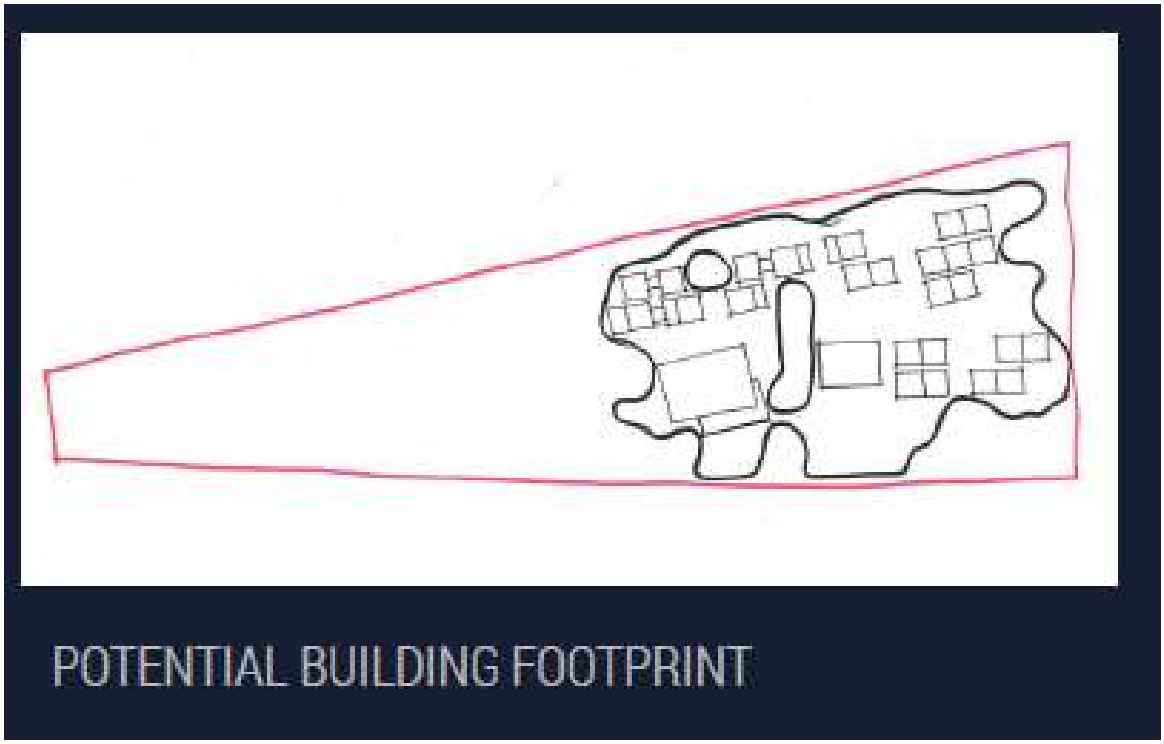


Figure 9 Diagram showing potential building footprint

1.5.6 ADJACENCIES

There are many zones around the site. An assessment has been done represented in following diagrams showing the adjacencies:

- Main roads
- Residential zones
- Town Centre zones
- Open Green zones

Figure 10 Context plan

Main road - Maitland street is a major road along the south-west of the site. It joins on from New England Highway on the south and intersects Sydney street on the north, a major thoroughfare to enter the town centre of Muswellbrook.

Figure 11 Residential Zones map

Residential zones- directly adjacent on the south side of the site are low rise residential houses.

Figure 12 Commercial zones map

Town Centre zones- the main town centre is on the north side of the site, near Muswellbrook station and main bus stops. On the west side of the site, are local shops and smaller eateries. McDonalds would be a landmark to the site across the Maitland street, being most known by local residents.

Figure 13 Open green zones map

Open Green zones – mostly on the north-east side of the site are open green zones. That being the Muswellbrook Golf course, where quality view vistas are incorporated as part of our design.

1.5.7 TRANSPORT

A Traffic Impact Assessment report produced by PTC reviews the transport conditions for the PBCS site and also provide recommendations to enhance the existing transport network to better fit the new school into the community. This report and letter can be found in the EIS Appendix.

A review of the available public transport services operating within the vicinity of the proposed school site indicates that public transport is currently not a viable option for the school, but discussions between TfNSW, Council and PBCS were started during over the previous years, to deliver the more convenient public transport connections to the school. As part of the project, it is planned that a future bus stop will be provided on Maitland Street along the school frontage close to the main school entry.

The transport concerns identified by NBRS include:

- Currently there is no footpaths to the site
- Cycle safety on road network
- School zone along Maitland Street
- Public buses to be re-routed in time for school commencement
- TfNSW acceptance of the carpark location

The following diagrams show the possible transportation modes available for the future school.

Figure 14 Walkable distance diagram

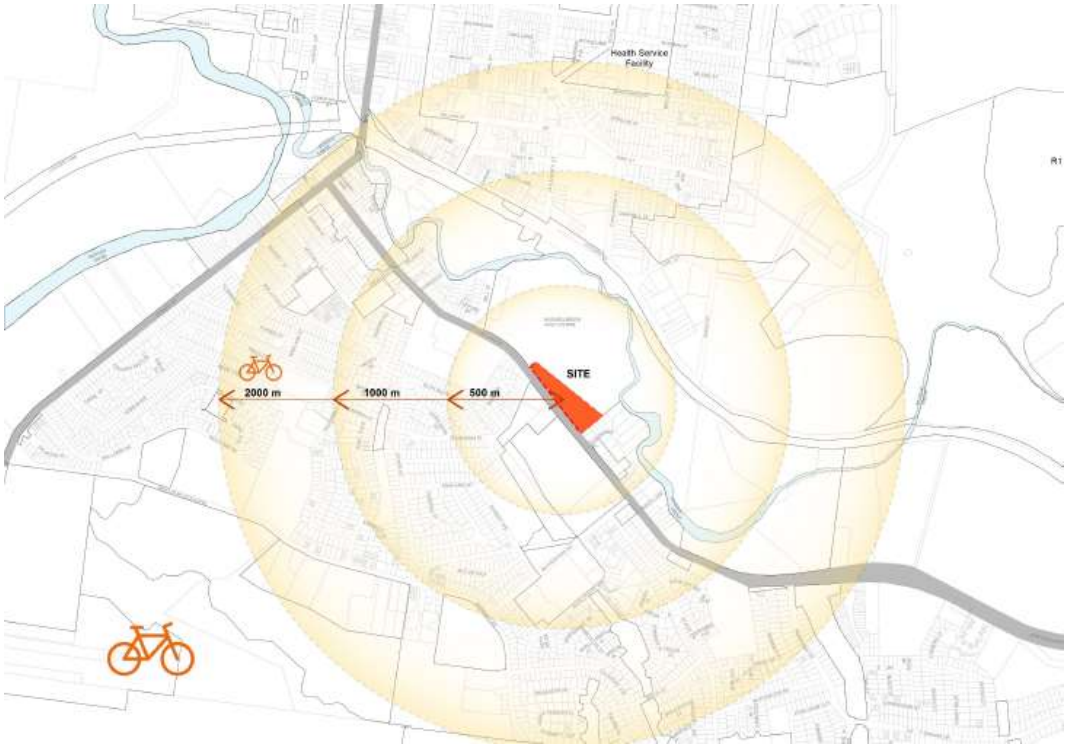


Figure 15 Cycling distance diagram

Figure 16 Private car route diagram

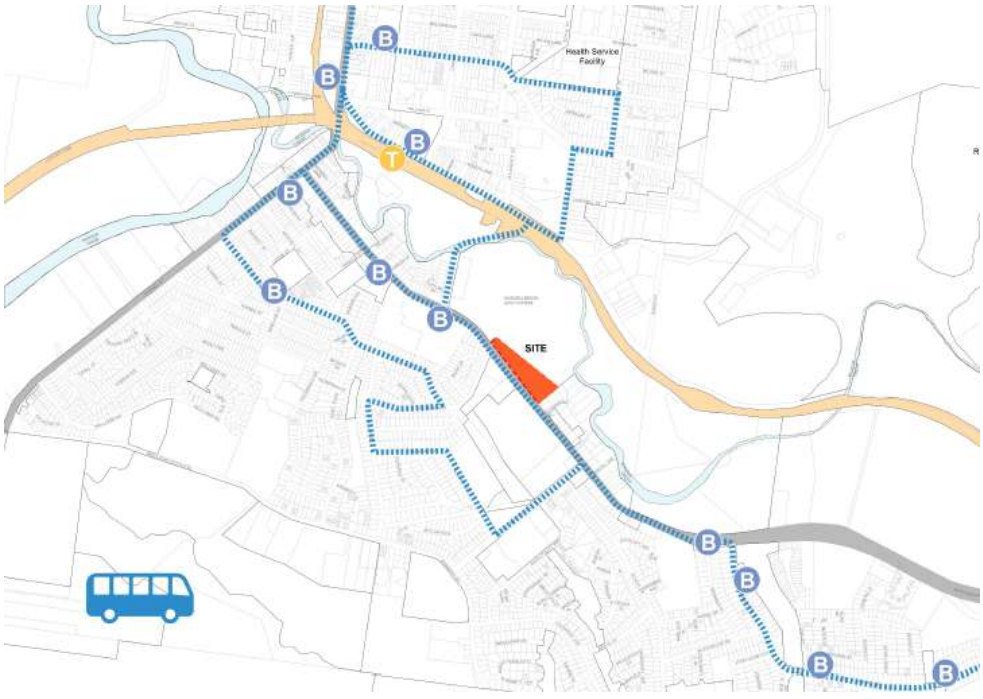


Figure 17 Bus route diagram

The existing, post-development and future scenarios for the surrounding road network have been modelled using the SIDRA 9 intersection software. Overall, the traffic modelling indicates that the proposed development will not have any significant impact on the performance on the surrounding road network.

A preliminary review of the proposed car park layout indicates that the design is capable of complying with the design requirements of AS2890.1:2004, AS2890.2:2018 and AS2890.6:2009. The concept carpark design submitted as part of this DA will be finalised in the detailed design stage to ensure full compliance with the Australian Standards.

1.5.8 SITE OPPORTUNITIES AND CONSTRAINTS

Opportunities identified which guided the design process include:

- Orientation of buildings to offer the best views towards the surrounding hills towards the north
- Orientation of buildings for optimal Environmentally Sustainable Design principals
- Views over the Golf course on the north-east
- Utilizing the buildings to protect the outdoor learning squares from the cold southerly winds
- Utilizing a large eaves overhang for covered walkways and protecting the facades from the hot summer sun

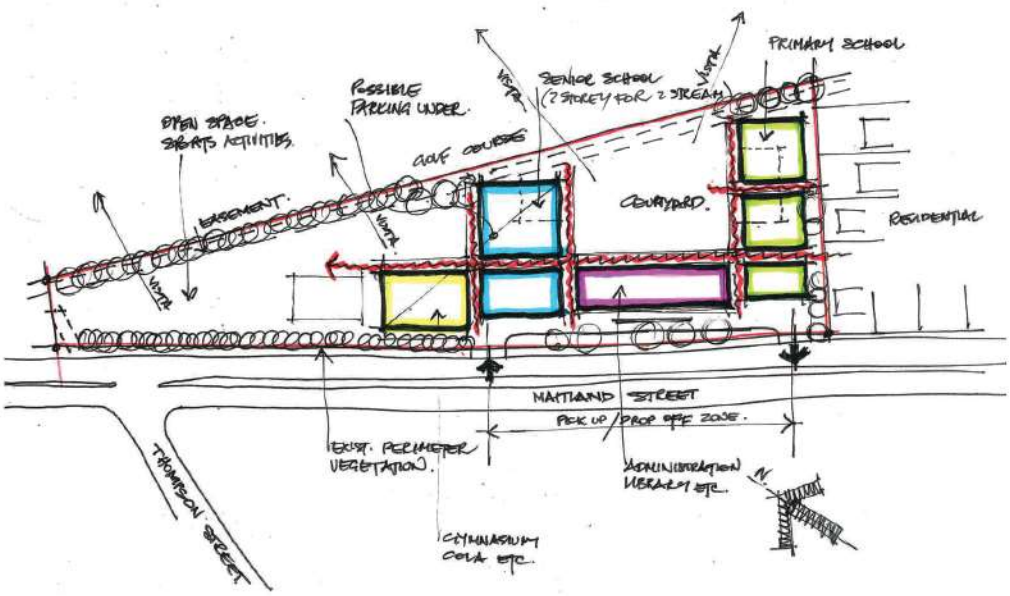


Figure 18 Initial site planning diagram

Early in the site analysis and planning review, a number of constraints were identified:

- Busy Maitland street on the south – west of the site. A major throughfare to Muswellbrook town centre
- Flood Prone Land and Overland Flow Path, design the buildings 500mm above the predicted flood level
- Sewer easements on the South – East of the site adjacent to the Golf Course boundary

1.5.9 MASTER PLAN OPTIONS

Master planning for the new Pacific Brook Christian School Muswellbrook site was undertaken by NBRS Architecture in August 2019. The process involved:

RELATIONSHIP DIAGRAMS: From Pacific Brook Christian School Pty Ltd client briefings a relationship diagram was produced, identifying the required spaces and their relationships to each other.

AREA ANALYSIS: A detailed area analysis for the relationship diagrams was then prepared.

SPATIAL DEFINITION: The relationship diagrams and area analysis were used to define a series of spatial blocks. This documentation cross referenced the relationships to neighbouring spaces, and spatial proportions.

SITE PLANNING: Key objectives that were stated by the PBCS were:

- Entries to the site via Maitland Street, with maintenance lane only suitable for service vehicle access
- Facilities that will contribute to the community.
- Architecture to express its purpose - a cultural enriched learning facility, where every space should relate to 'Connecting with Country' and uses surrounding the built form.
- Efficient and flexible spaces as the needs and uses will change over time
- Appropriate relationships between administration, learning, and meeting spaces
- A safe environment for all users at all times
- As with the strengths of the site, the layouts should be driven by function, but the buildings should also be part of the learning curriculum: expression of structure, orientation and sun paths, winds. Winter and Summer use, water and energy management, technology to monitor and share information throughout related to environment, buildings, and the enterprises.
- Securable lockdown zone for evenings and emergencies, where the buildings are understood generally not to be the lockdown line

NBRS were commissioned to commence concept design based on the above analysis, stakeholder consultation with the local council, local aboriginal groups and the community.

A graphic representation of the master plan options is displayed below:

Option 1 – Staff in West portion

- Proximity to intersection
- Inadequate queuing
- Difficult to resolve levels

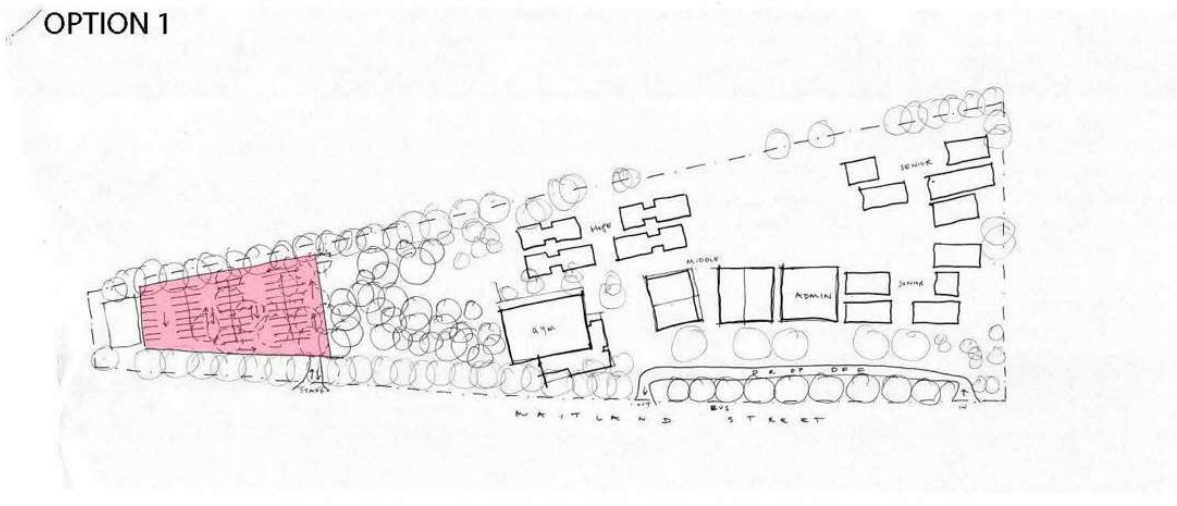


Figure 19 Alternative carpark option 1

Option 2 – Combined East carpark and Drop Off/ Pick up

- Traffic impact within site e.g., noise & fumes
- Occupies prime views & wide portion of site
- Drop off & disabled spaces are remote from west facilities

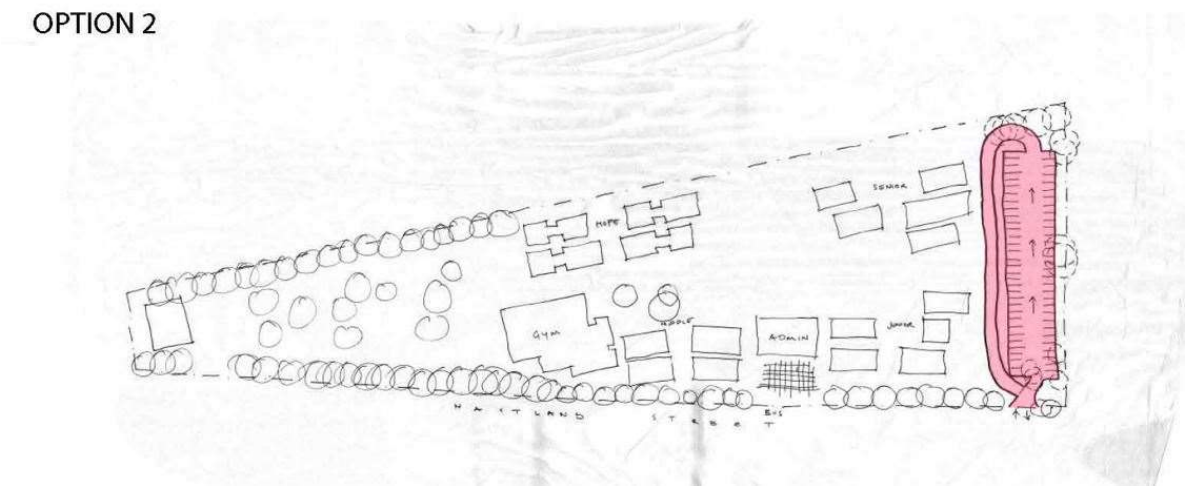


Figure 20 Alternative carpark option 2

Option 3 – Combined L shape

- Reduced queuing length
- Conflict at entry / exit
- Difficult with sight lines & manoeuvres

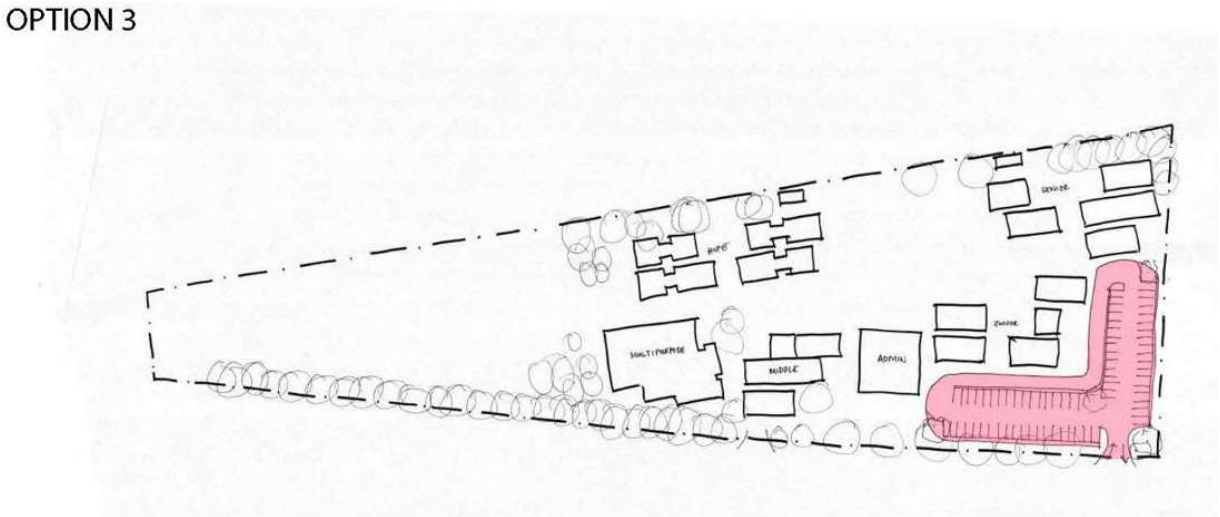


Figure 21 Alternative carpark option 3

Option 4 – Separate Staff to east and drop off loop

- Traffic impacts to residences to east
- Occupies prime play space
- Inadequate queuing
- Large footprint creates unusable island on Maitland street

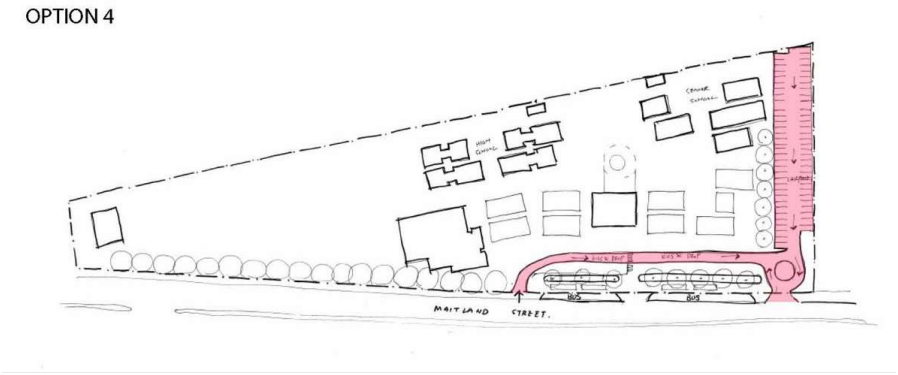


Figure 22 Alternative carpark option 4

1.5.10 SUMMARY OF OPTIONS

Figure 23 Developed alternative option 4

Option 4 was the most favourable, but due to a number of constraints, it was decided it was not achieveable due to constraints listed following.

Constraints include:

- Traffic impacts to residences to east
- Existing sewer line under proposed carpark location, civil engineers advise it is complex to build around it
- Occupies prime play space and reducing school's useable land
- Inadequate queuing as required by council DCP and TfNSW
- Large footprint creates unusable island on Maitland street

1.5.11 CONCEPT PLAN

Figure 24 Concept plan

Cons:

- Screen required to protect courtyard from unfavourable cold southerly winds
- Some foot traffic through the carpark

Pros:

- Good surveillance around the site for student supervision
- Hall is ideally located for all potential uses
- Clear distinction between carparking and service areas for school site
- Buildings have good solar access and blocking unfavourable cold westerly winds
- Creates intimate school cohort courtyards for student & whole school gathering spaces
- Carpark location and large trees and landscape acts as a noise buffer from Maitland Street
- Allows for a central axis from administration and library block to open central space
- Landscape creates opportunities for nature experiences such as bush chapel & cultural walks

1.5.12 REVISED MASTERPLAN CONCEPT

The project experienced significant delays with assessment of the SSDA. Due to these delays & complexities around flood constraints affecting the site, the SSDA was withdrawn and a new Concept was developed for the school for a reduced scope school. The revised concept based on previous design development, is for a single stream school for Kindergarten to Year 12, reduced from the previous 2 stream proposal. Consultation with SES and Council during this stage informed development of the final concept for the revised masterplan including building levels, emergency management procedures and upper floor accommodation and student numbers.
Further development of the concept plan has led to the decision to reduce the school to the current proposal for 140 students and 16 staff.

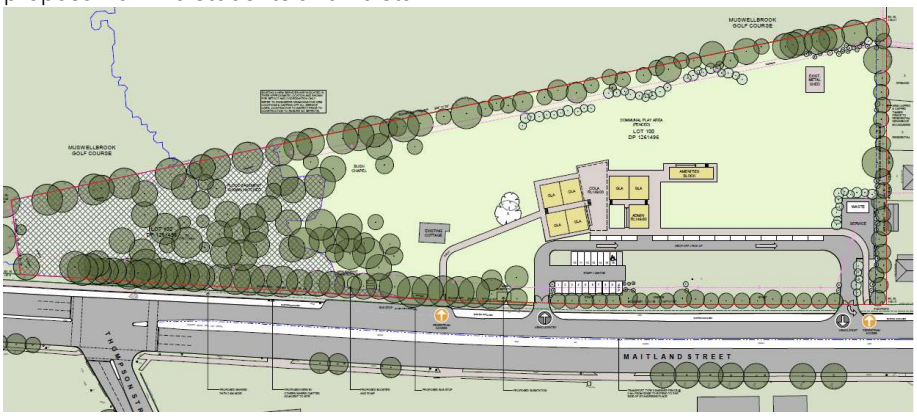


Figure 25 Concept plan

2.0 DESIGN INTENT

2.1 DESIGN CONCEPT

The Design Concept for the School was the product of research into the Site, it's context and Connecting with Country learnings from the Traditional owners of the lands, the Wanaruah and Kamilaroi. Based on the Dreaming stories of the Wanaruah tale of Baiami, the Creator Spirit, who awoke and created everything. Baiami created Kawal, whose Spirit form is an eagle. Kawal protects and watches over the Wanaruah people. Woven with the new purpose of the Site – to support and educate children of the local area, the concept was shaped around the stories of Country. With this imaging, the design is based on the eagle, which not only links back to the land's culture past, but also creates a sense of belonging, protection and passing on knowledge to future generations.

Figure 26 Wedgetail eagle

The Australian Wedgetail Eagle is a protected species, with wings span up to 2.3 m. Identified by long diamond shaped tail resembling a wedge, it is local to the Hunter Valley Region. Taking this as an important totem of the land, we further incorporated its form into the built structures, shape into the plan and roof forms, concept into the light weight cladding and structures, colour & patterning into the palette of materials for landscape, architecture and wayfinding, to our design.

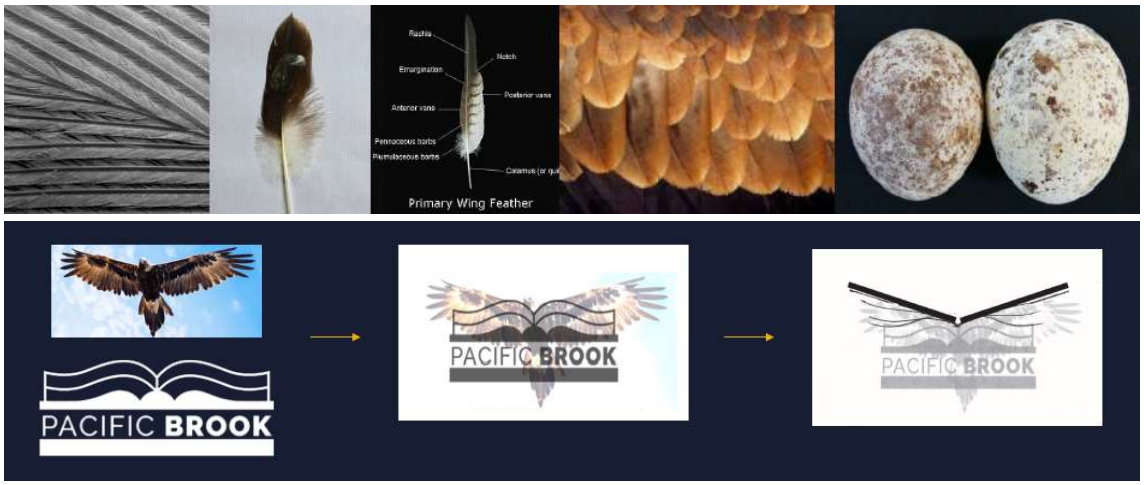


Figure 27 Concept images

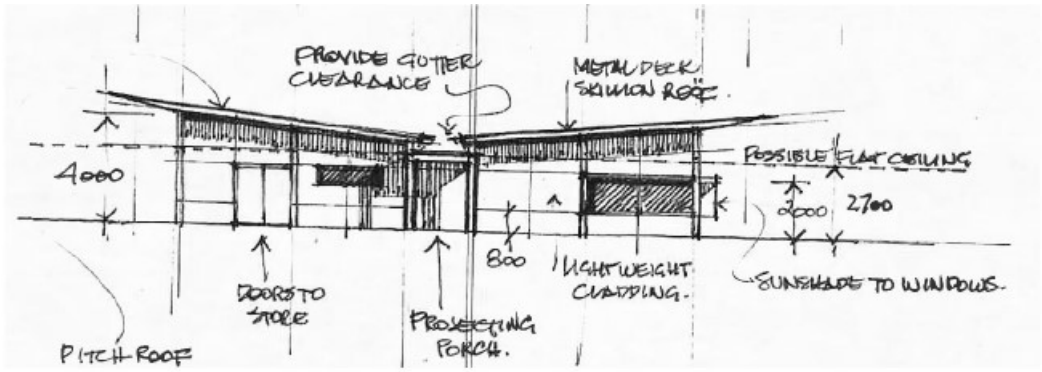


Figure 28 Early sketches of building design

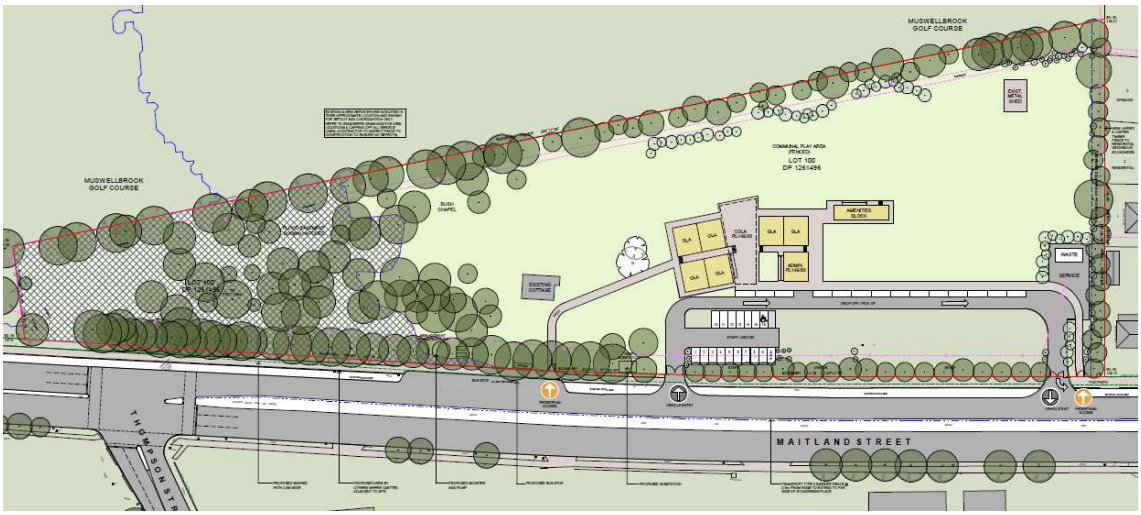


Figure 29 The Masterplan

The buildings have been designed and orientated to capture views of the landscape and to maximise the connection between internal and external cultural teaching spaces.

The School is designed around the central COLA area which embraces the central Meeting Place, the architectural form of the paired roofs protecting the teaching space below. The teaching and learning spaces are symbolically and literally places for sharing of knowledge and stories.

Radiating out from the central entry building are the various teaching & learning spaces, arranged around the shared courtyard. The COLA provides play and learning opportunities for all students, carefully designed for good supervision of shared outdoor spaces and to maximise learning opportunities both inside the homebases and in the adjoining outdoor areas.

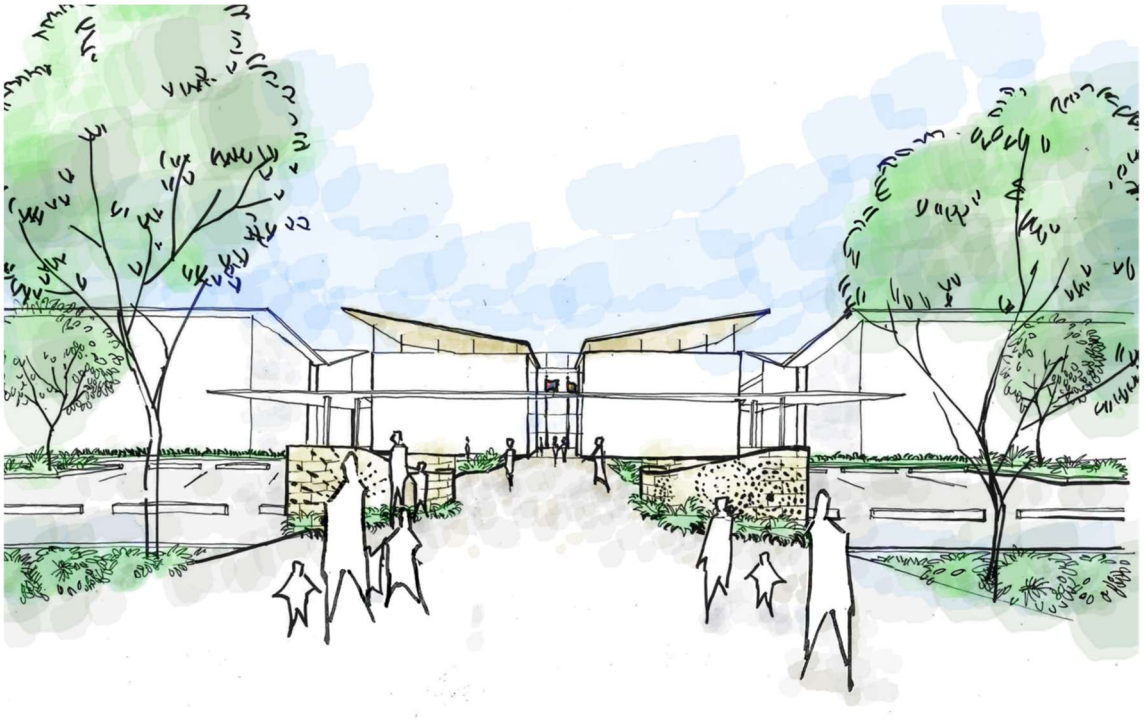


Figure 30 Sketches of the Main Arrival

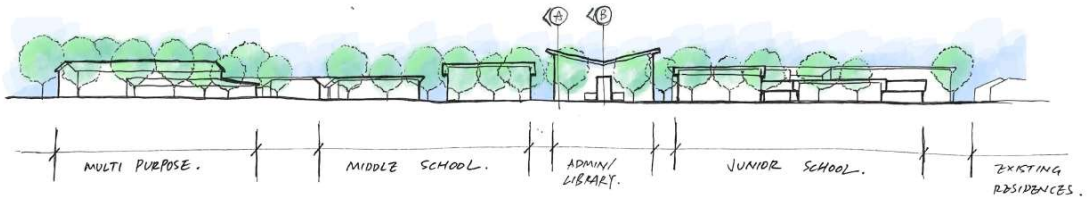


Figure 31 Sketch early site section

The concept design focuses on developing a strong axial link back to the central spine with a pedestrian plaza and promenade coming from the main road, Maitland Street.

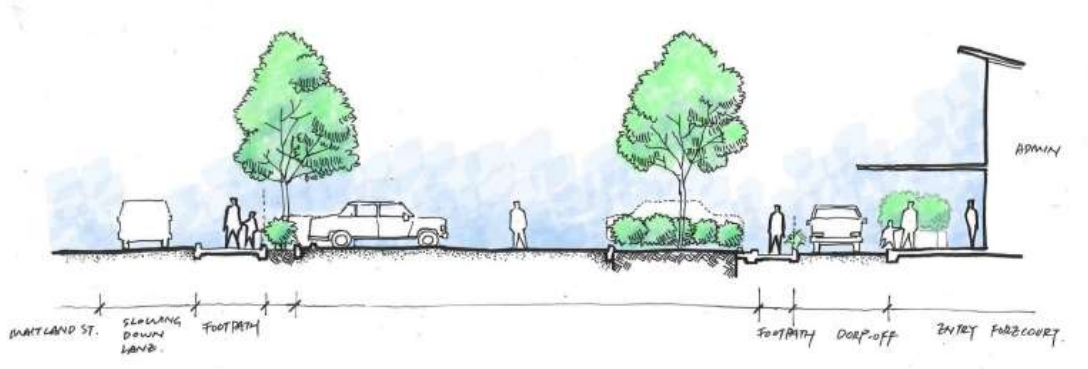


Figure 32 Sketch car arrival

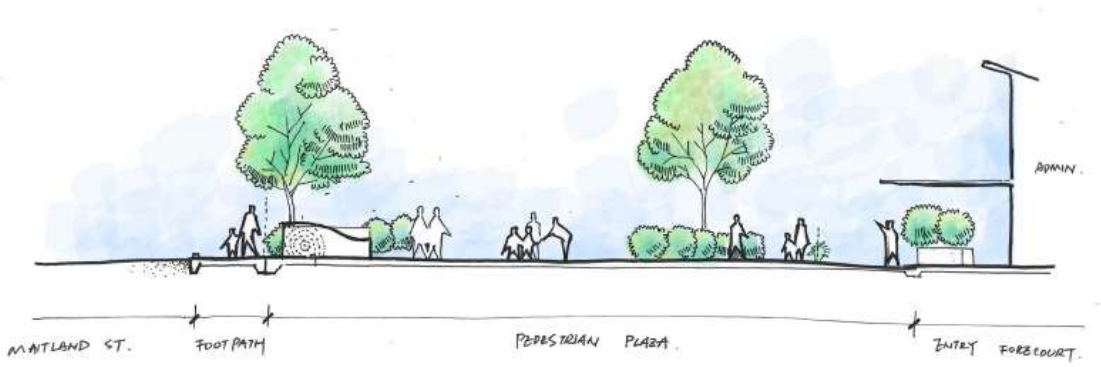


Figure 33 Sketch pedestrian plaza

Once a week, first thing in the morning, students and staff will gather at the Meeting Place to express their Christian faith, connect with Country and be thankful for nature, knowledge, and community. The meeting place is an outdoor environment to facilitate the connection with nature. The Meeting Place is sheltered from the southerly winds and with a northeasterly aspect that provides views of the distant hills. The eagle wings of the adjoining buildings and COLA provide weather protection and shelter, which re-enforces the totem protecting and watching over the school community and promotes the sharing of knowledge and culture.

Other key gathering space are created in the landscape areas, providing more intimate and secluded space that will allow for small groups of students to gather to celebrate nature and spirituality. These areas will be located in the existing landscape, surrounded by existing trees on the site and is away from the teaching spaces and the road.

The COLA areas is the public frontage of the school where parents, students and staff will gather during events such as ANZAC Day, NAIDOC, PBCS open day and end of year events. It provides sheltered gathering space with direct access to the general learning areas, and administration. This space welcomes the public and encourages connection with the broader township. It creates opportunities to gather and celebrate with both the immediate and wider community.

2.2 MOVEMENT AND ARRIVAL

The Entry to the School has been designed to address the public frontage of the Site, and provide a welcoming arrival for students, staff and visitors with green spaces, a variety of surface treatments, glimpses into the internal spaces of the campus and legible entries and circulation paths. From arrival via vehicle, walking, cycling or public transport, pedestrian circulation has been revised to remove any conflict between pedestrians and vehicles. Students, staff, and visitors can access the site without having to cross an internal vehicular road within the site. The major vehicular entry into the kiss and drop facility has been kept to the south edge of the site and pedestrians coming from the east or the west do not need to cross it to access the school.

This approach was considered to provide a buffer between the internal courtyards and gardens of the School and the public areas towards Maitland Street, whilst optimising the learning and teaching spaces opportunity for views across the open northern aspect of the Site.

The Early Masterplan was design to cater for 330 students and 40 full time staff. Later design iterations reduced the proposed scale of the school and current proposal is designed for 140 students and 16 full time staff.

In addition, before and after school activities will be provided:

- Before School Care – Starting at 7:30am
- After School Care – Finishing at 6:30

Management of parent drop off and pick up will allow for students to wait within the school grounds for parents to collect siblings at the same time, streamlining traffic flow at peak times. This practice has been implemented across other operations by the Client and has proven successful.

The proposed school includes end of trip facilities such as shower facilities for staff and students as well as adequate bicycle parking.

Currently the closest bus stop is 400m away and there is no footpath connecting the bus stop to the site. The proposed school includes a new bus zone immediately adjacent to the Site, and new footpaths to facilitate staff and students arriving by bus. The current design provides a footpath for students travelling by public transport that also connects the school with the new intersection at Thompson Street. This will improve access to public transport for both the school and the community.

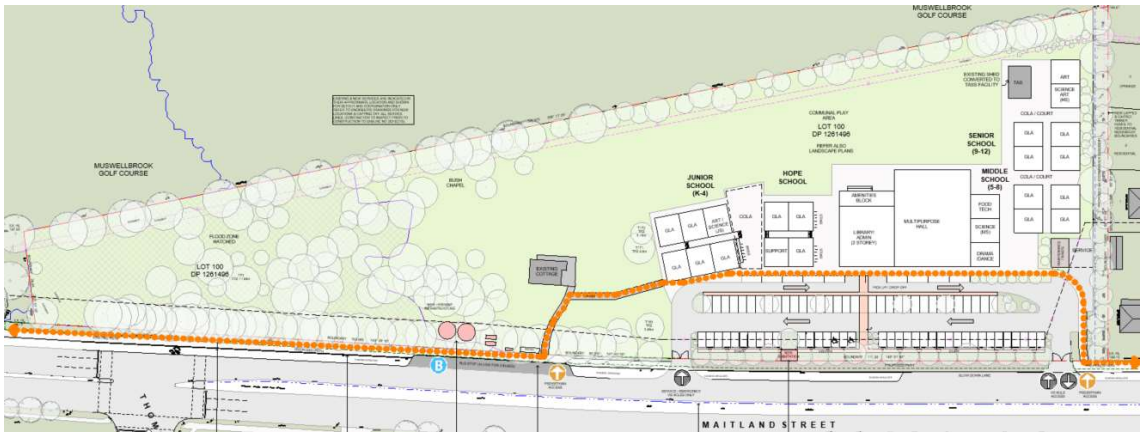


Figure 34 Early Early Pedestrian circulation diagram

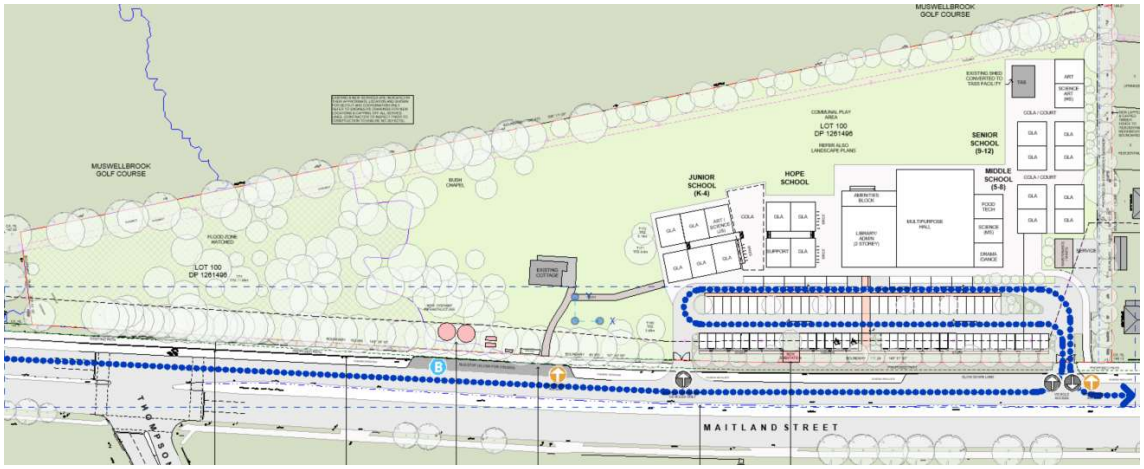


Figure 35 Early Private vehicles drop off and pick up diagram

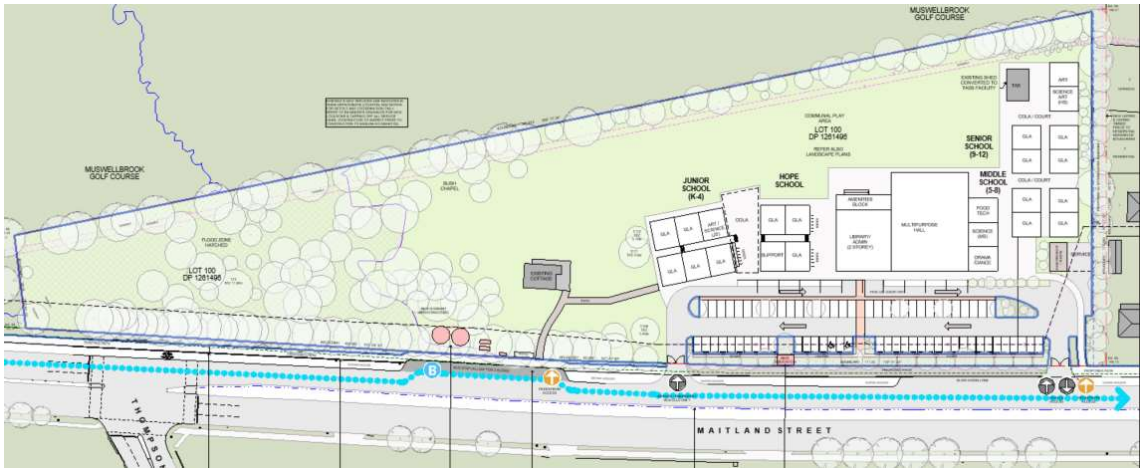


Figure 36 Early Diagram showing bus stop and pedestrian access

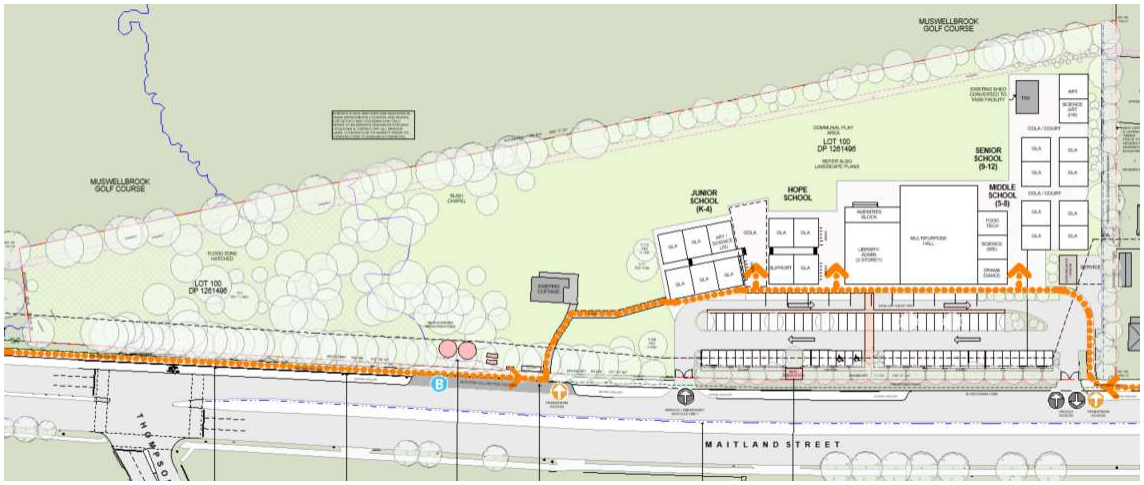


Figure 37Early Diagram showing Bike access

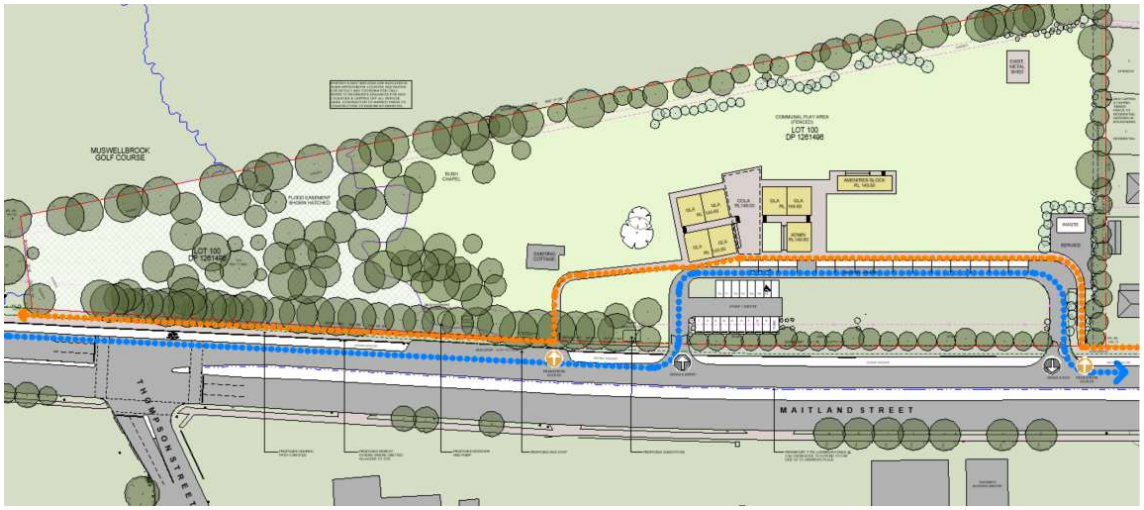


Figure 38 Revised Diagram proving the absence of conflict between pedestrians and vehicles in developed design

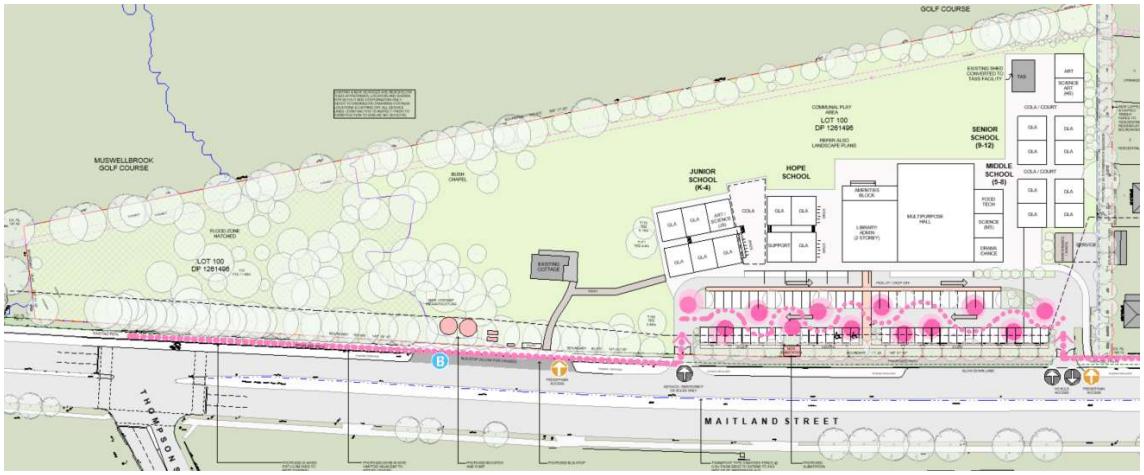


Figure 39 Early Diagram showing community activities movement

Out of school hours, the school can let the community utilise the carpark and multipurpose building spaces. Community events such as weekend plazas/ markets, hall hire, voting, community meetings, festive events. This will not only give back to the community but also establish a good place for gathering to enhance the close-knit community even more.

2.3 BUILDING ENVELOPE

Modular construction systems have been selected as one aspect of the proposed school This system of construction will allow for minimum noise, vibration & visual disruption to the community and will minimise the number of construction workers, materials and vehicles having to enter and carry out work within the Site.

With regard to the architectural design of the modules, best practice principals are universal to design of most physical environments for learning. Students with behavioural and physical special needs are particularly sensitive to many aspects of their day-to-day environment.

Over and above the minimised disruption through speed of installation of the modular classrooms and core facilities, there is the ability to control the quality and materials due to factory-controlled conditions of manufacture. The modular construction methodology allows for increased efficiency due to repeated modules such as classrooms, for repeated elements.

Other benefits of modular construction methods, include Sustainability through choice of materials and minimisation of construction waste and flexibility for future reuse options for modules to adapt to future pedagogical changes or specific group needs.

The main objectives for educational learning spaces are to improve attention, reduce anxiety, and support emotional and behavioural self regulation through the physical environment.

Modular construction systems allow for clear spanning spaces and flexible openings for doors and windows, considered finishes for robust and clean spaces, use of cladding etc. within the basic module. This is ideal for the considered design of learning environments to meet the following aspects of design, which need particularly considered approach:

Principles of good design for learning environments include:

Naturalness

- High performing acoustic spaces provide inclusive environments for sensory perception sensitive, hearing impaired and limiting overstimulation
- Temperature, well designed to maintain comfortable temperatures for optimised concentration and comfort.
- Well design lighting for visually impaired, lighting within particular colour range. This has also been shown to improve learning outcomes and inclusive design.
- Natural lighting, control of glare, enhanced learning outcomes with increased quality natural lighting to learning spaces; &
- access to external landscape views for better learning outcomes
- Ventilation for high air quality, fresh air, air movement.
- Connection to external learning spaces through design of openings / orientation and adjoining weather protection for rain / shading.

Individuality

- Flexibility for alternative furniture to provide choice of seating, spaces for learning to allow for all learning types
- Appropriate design for the user age group
- Ownership and pride in surroundings – identifiable to individuals, flexible to adapt to users' requirements, ownership flows to responsibility

Stimulation

- Limited visual clutter provides inclusive learning environments for all students including neuro diverse students. Spaces should be streamlined and well-designed for consistent materials palette, door and window head heights, patterns and rhythm in facades and internal elevations.
- Room organisation – logical with clear zones for different areas such as group learning, individual learning. Well organised resources and materials with labels. Support student's ability to maintain focus.
- Considered materials palette with considered use of colour – neutral wall colours, colour coordinated decorations which are used only to highlight important features (not ad hoc and competing)

Figure 40 Colours & Materials Architectural Palette

Figure 41 External finishes to building elevations

2.4 CONNECTING WITH COUNTRY

The buildings have been designed with the Connecting with Country guidelines in consideration. This is represented via the 4 stages:

1- Sensing: Start with country
2- Imagining: Listening to country
3- Shaping: Designing with country
4- Caring: for country

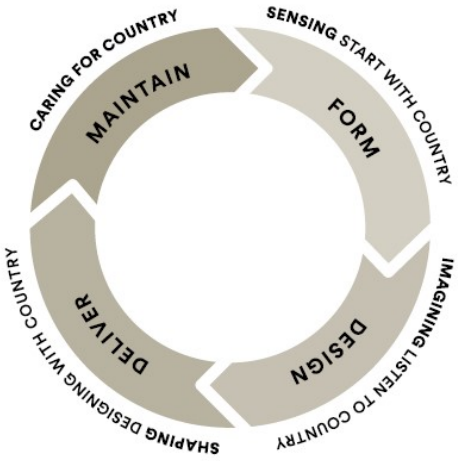


Figure 42 Connecting with Country 'Project Lifecycle' Source: NSW Government Architect Connecting with Country Framework

Concepts and ideas incorporated in the design includes:

Sensing

- Wanaruah Community: stories of the dreamtime i.e., Baime
- The Wanaruah, Awabakal & Kamilaroi are the traditional inhabitants of the lands of the Hunter Valley.
- The Site is located in low, gently rolling grasslands nearby Muscle Creek, a tributary to the Hunter River.
- The grasslands and rolling hills have expansive vistas to the sky and surrounding Mountains.

Imagining

- Language: Wanaruah means 'people of the hills and valleys'
- Map - scar trees, cave painting site telling the Creation stories of the Wanaruah; sacred sites

Shaping

Opportunities to design around traditional ideas of community and passing on of knowledge by incorporating

- Yarning circles, passing on of traditional learning,
- Bush tucker gardens; traditional knowledge of plants for food, medicine and tools,
- Weaving grasses, craft and traditional tools and skills and art,
- Traditional names, used throughout the site to continue the use of language,
- Images / motifs throughout site in paving, signage, palette and building form,
- Walking country (walkway through site allowing connection with Country – listening, feeling smelling, seeing)
- Provide animal habitats (native bees & insects, habitat trees, diversity of planting for food sources...)
- Materials palette (architecture & landscape) to reflect the stories and traditions of Country

Caring

- Bushfire / flood / water conservation opportunities incorporated into design of the landscape and architecture to conserve precious resources and withstand fire or weather;
- Guided by traditional custodians (information along the walk) gathered through Consultation and ongoing care and involvement in caring for the site,
- Ongoing lessons & involvement (weaving, bush tucker, stories) passing on traditional knowledge, language and culture.
- Remediation of the Site for future generations.

2.5 LANDSCAPE CONCEPT

Indigenous stories learnt through the Connecting with Country consultation inform the development of the landscape design and treatment of open spaces, meeting places and circulation zones. The expression of the story is not limited to the use of pattern and colour but is also fully expressed in form and arrangements.

Figure 43 Landscape framework plan

Through consultation with the local aboriginal maintenance team (Johnson's Contracting) that manages the site and the School Principal, NBRS Landscape have developed a landscape masterplan design that facilitates the connection between students, staff, natural ecosystems, and the elements (Summer breeze, eastern morning sun, rainwater catchment). The school has also been in touch with Wanaruah Elders to discuss the school design and the facilities it will provide to the local students.

Figure 44 Landscape concept: Nature trail and bush chapel

Features incorporated into the design encourage care of Country, relationship with the environment, passing on of traditional knowledge of food, medicine, environment.

The Northern portion of the Site provides the school community with a variety of opportunities to connect with the natural environment to learn, reflect, play and gather.

Figure 45 Early Landscape Concept: Meeting places

The landscape focuses on highlighting key existing trees on the site and complementing them with new tree canopy lines that connect different areas within the campus.

The school likes to provide each part of the school with their own sense of identity and belonging. Rather than a large single open space, the school functions as a collection of villages interconnected by sight lines and tree canopy.

Outdoor Learning spaces for students of different age groups that focus on activities that have a direct correlation to their needs and teaching curriculum and are conducive to Connection with Country.

a) Junior School - Bush explorative play that challenges physical skills such as climbing, jumping, and testing ideas with balances and water courses.

b) Middle School – Play becomes learning. Learning to understand where our food comes from and the ecosystems around us. Opportunities for worm farms, bush tucker garden, insectarium, native grass weaving.

c) Senior School - Art and science as way to connect to Country. Medicinal plants, spaces to test scientific knowledge like weather data gathering. Space for arts and craft.

Figure 46 landscape arrangement plan

In addition, the masterplan provides gathering spaces where students and staff go on Country to engage with each other and their elders.

Figure 47 Landscape Concept Materiality Palette

2.6 ECOLOGICAL SUSTAINABLE DEVELOPMENT (ESD)

The proposed development will be designed with the view to ensure sustainability is incorporated through a broad range of ESD goals in service design, building construction and operations. The development team will ensure that building minimises the impact on the environment.

The proposed building embraces sustainable design principles to maximise natural daylight and natural ventilation. The orientation and massing of built form allows optimal natural daylight into the teaching spaces. Roof material will be carefully selected, and the retaining of existing landscaping contributes to the cooling of the immediate environment. The design also introduces new trees and planting across the site to mitigate effects of urban heat island effect through evaporative cooling by trees and plant and providing canopy for well shaded outdoor areas. Hardstand areas are minimised & where possible shaded by light coloured COLAs. Building construction will be expected to be resource efficient, cost-effective and to deliver enhanced sustainability benefits with respect to impacts on the environment and health and well-being of students and staff for the best possible learning facilities.

Refer to the Ecological Sustainable Development report in Appendix of the EIS for details of the sustainable design initiatives suggested for the project.

2.7 INTERIOR DESIGN

NBRS had a series of Client engagement sessions to develop the design. The main aims and aspirations for the look and feel were:

- Provide engaging informal learning environments
- Bring the gardens into the building
- Ensure there are opportunities for small group discussions – meeting spaces

The result is a design concept that embraces natural materials, shapes, & textures. The colour pallet is mature & subtle, in keeping with the topics being discussed within the spaces. The Internal design intent for the spaces would be a cool calm Palette of Greens, Blues a reflection of water & plant growth.

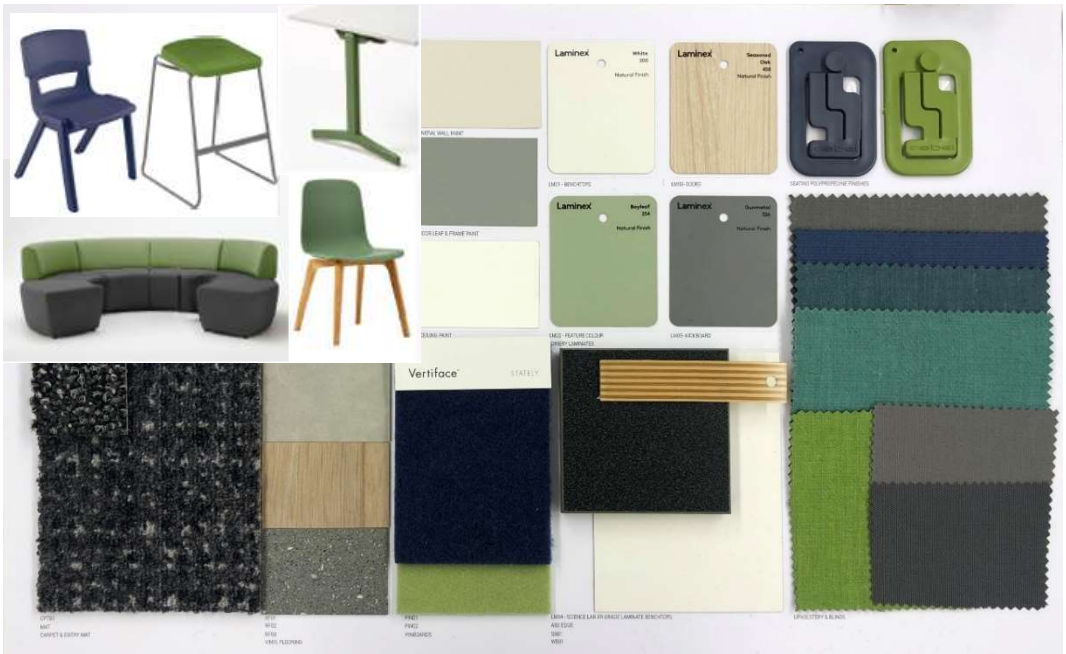


Figure 48 Example interiors palette

2.8 SIGNAGE

A signage is being developed for the project and the below signage items have been identified:

Figure 49 Signage concept

2.9 VISUAL IMPACT ASSESSMENT

A visual impact assessment of the proposal has been undertaken through site visits and 3D visualisation models to determine relevant factors such as existing place character of the primary visual catchment, sensitivity, magnitude, applicable planning instruments, the need for mitigation strategies and measures and consideration of residual impact. The VIA concludes that considering all relevant factors, in its current form the proposal has an acceptable visual impact.

2.10 WASTE MANAGEMENT

The Waste Management Plan indicate measures that encourage the management and minimisation of waste during construction.

The following measures may be considered, where possible or practical:

- Removal of contaminated waste in accordance with all applicable standards and legislation.
- Recycling and reuse of all materials.
- Separation of vegetation from general construction waste to be mulched for reuse.
- Disposing general waste that is not recyclable to an approved waste management facility.
- Ensuring that material transported to or from the site is secure.

All material disposals should be undertaken in accordance with the relevant regulatory requirements. Asbestos removal and disposal should only be undertaken by contractors with appropriate licences to do so for the materials encountered and disposed of correctly to licenced receiving disposal facilities with suitable transportation precautions implemented. Any soil to be disposed of must be assessed in accordance with the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste. Refer to Waste Management Plan prepared by Waste Audit in Appendix of the EIS.

2.11 GOVERNMENT ARCHITECTS NSW FEEDBACK

The project was presented to the Government Architect NSW (GANSW) on the 3rd March 2021(SDRP01) and on the 23rd June 2021(SDRP02). The aim of the design review session was to demonstrate the strategy for achieving design excellence, in accordance with Schedule 4 Schools design quality principles of State Environmental Planning Policy (Education and Child Care Facilities) 2017. Refer to SDRP 01 and 02 feedback, presentations and SDRP 02 response letter in Appendix of the EIS.

2.12 CONSULTATION

Throughout the design process, the project team undertook regular consultation with various groups including design workshops with Client, stakeholders, and planners to discuss such aspects of the design as Service Location, Built Form and Materiality, Access / Traffic, Planning Proposal, SDRP and SSDA.

Consultation was also held with Muswellbrook Council, School Principal, local indigenous contacts, through the school discussions with Wanaruah Elder, TfNSW, SDRP and Department of Planning and Industry throughout the Planning process. All of the discussions held with Authorities, Community, Stakeholders and Client have informed the design of the school to date.

2.13 COMMUNITY CONSULTATION

In preparation for the previous application, PBCS engaged Sarah George Consultancy, a community engagement consultant, and APEX Archelogy, to undertake an Aboriginal Cultural Heritage Assessment (ACHA). Additionally community consultation was carried out in the immediate vicinity of the subject site and comments were sought from groups representing the interests of local communities including; Wanaruah Local Aboriginal Land Council (letter returned to sender), • Hunter Valley Aboriginal Corporation, Hunter Youth Services, Muswellbrook Showgrounds.

The proposed development is unlikely to generate any long term negative social impacts. Short term negative impacts are likely to be associated with excavation and construction of the school, however these impacts are unlikely to be noticeable in the context of the Maitland Street and the traffic it carries and can be controlled through conditions of development consent.

The proposed school is unlikely to generate any material adverse social implications for the surrounding area and given the minimal feedback from the local community during the consultation process, it is reasonable to assume that the proposed school is generally supported by the local community. As such, there are no reasons from a Social Impact perspective, to refuse the application.

Continued engagement will take place with stakeholders and communities during the statutory exhibition of the DA, as well as during future stages of the planning and development process.

PBCS will continue to update the school's webpage and produce updates at key project stages for stakeholders and communities.

3.0 DESIGN PRINCIPLES

3.1 PRINCIPLE 1 – CONTEXT, BUILT FORM AND LANDSCAPE

Communication through architecture by being mindful of the existing site conditions, transport, demographic, and local schools. Respecting the areas sense of place within the existing site and streetscape. The building heights are generally single storey and are not higher than the surrounding buildings to blend in with the local topography.

Figure 50 Concept sections

The proposed buildings within the site are used as a main focal point, creating a sense of welcoming entry at arrival.

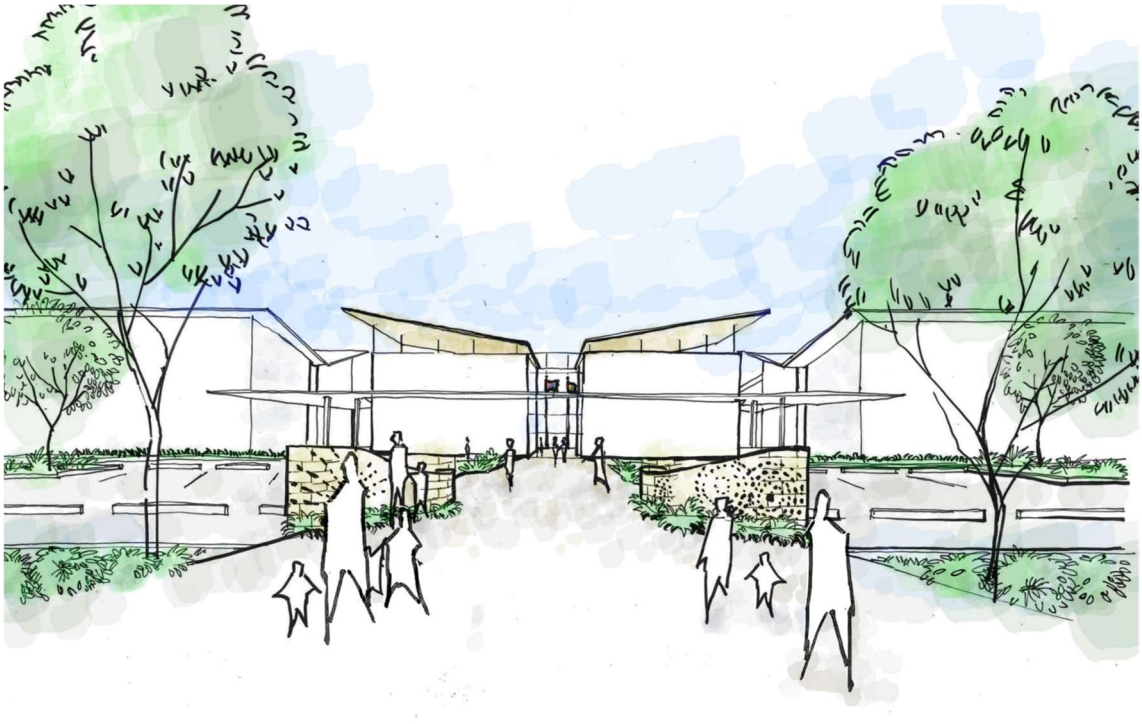
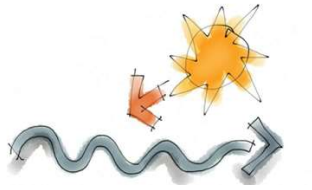


Figure 51 Early sketch concept showing butterfly roof forms and entry signage

3.2 PRINCIPLE 2 – SUSTAINABLE, EFFICIENT AND DURABLE



Environmental sustainability is vital in the design of schools, with natural lighting and ventilation to maximize learning opportunities. It is understood that natural light is critical in the circadian rhythm of the human body in adjusting to day and night conditions, this informing routine, which is vital in the structure of a child's day. There are highlight windows to capture sunlight during the best parts of the day and eaves to protect from the harsh noon summer sun.

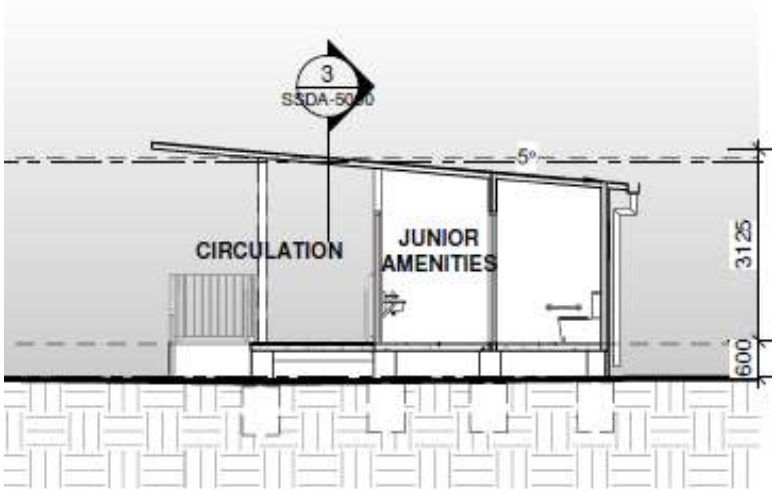


Figure 52 Stage 1 section

The materiality of the building is driven by locally sourced materials used reflect the natural surroundings of the site. For example, imaging the native kangaroo grass and the eagle against the open sky with neutral blends of bronze, greys and light blue tones as the colour palette.

The School will be constructed of durable, resilient, and adaptable materials which will preserve their look and feel over time and have timeless and durable qualities, to ensure they knit into the existing community. Long life, low embodied energy and high recycled content materials will be prioritised in the selection of materials during detailed design phase.

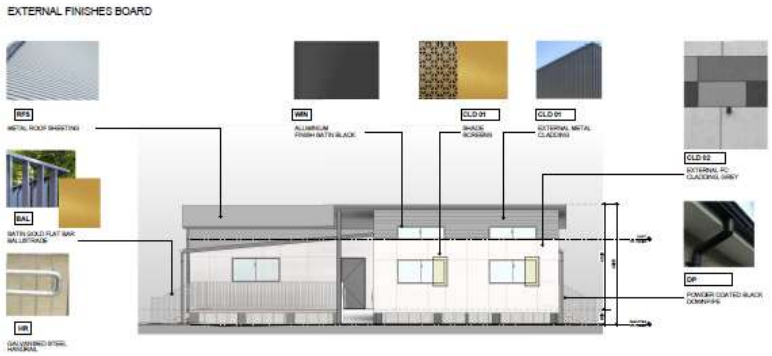


Figure 53 Stage 1 materiality

The Solar shading - created through metal framed eaves - will control solar gain, while the timber look panels will add warmth and texture. Integrated landscaping strategies soften the architectural composition, with planting enhancing the public facing areas. Natural light to learning spaces will be optimsed through orientation of windows and shading devices.

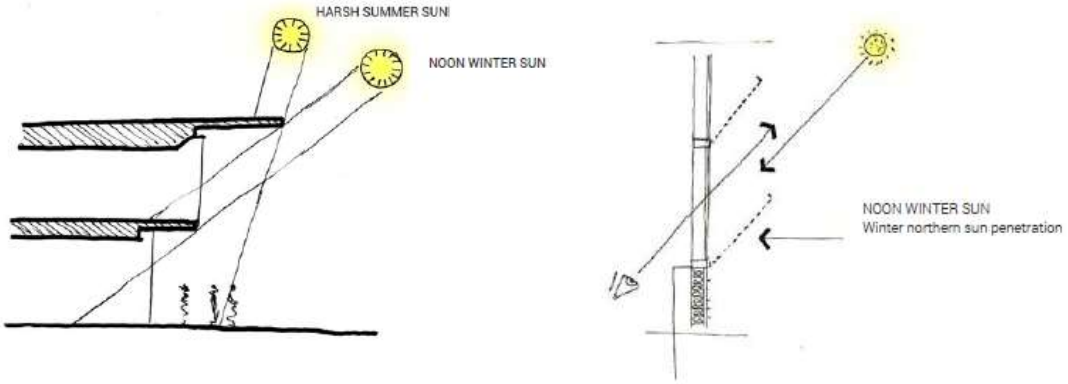


Figure 54 Sketch concept of sunshading strategy

3.3 PRINCIPLE 3 – ACCESS AND INCLUSIVE

Different environments accessed via ramps encourage spontaneous, voluntary, and joyful learning opportunities for children to explore and interact with their peers and the world around them. This provokes way finding between indoor learning areas, intimate courtyards, outdoor play areas, vegetable gardens and breakout spaces promoting learning activities for teamwork and hands on experiences.

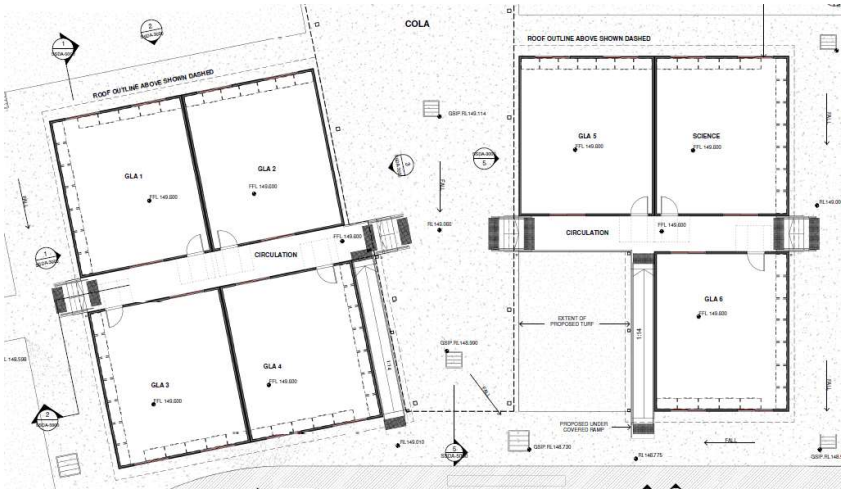


Figure 55 Stage 1

The proposed school buildings are designed with multiple access routes in order to avoid unnecessary congestion during peak times. Hallways or corridors are substantially sized for good circulation and clearances spaces for wheelchair access.

The design ensures that there is always an alternative ramped access into the building and that access routes to/from the outdoor environment are visible and welcoming, making the way finding strategy intuitive rather than prescriptive.

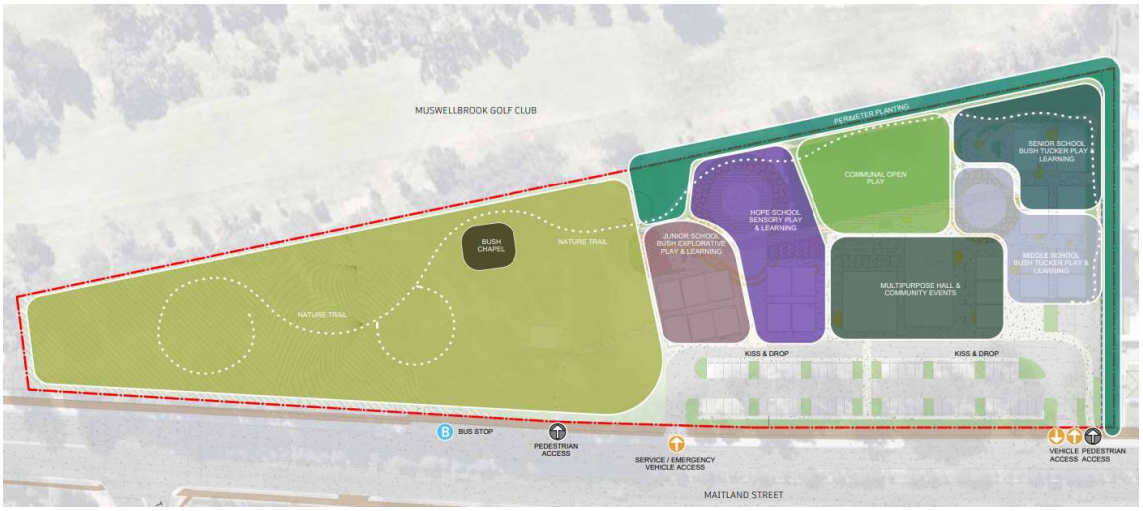


Figure 56 Landscape concept

Schools often have multiple entrances for different purposes. The main entrance to Pacific Brook Christian School will be at the heart of the site for day-to-day access. For large school community gatherings in the COLA has access from the carpark and pedestrian entries.

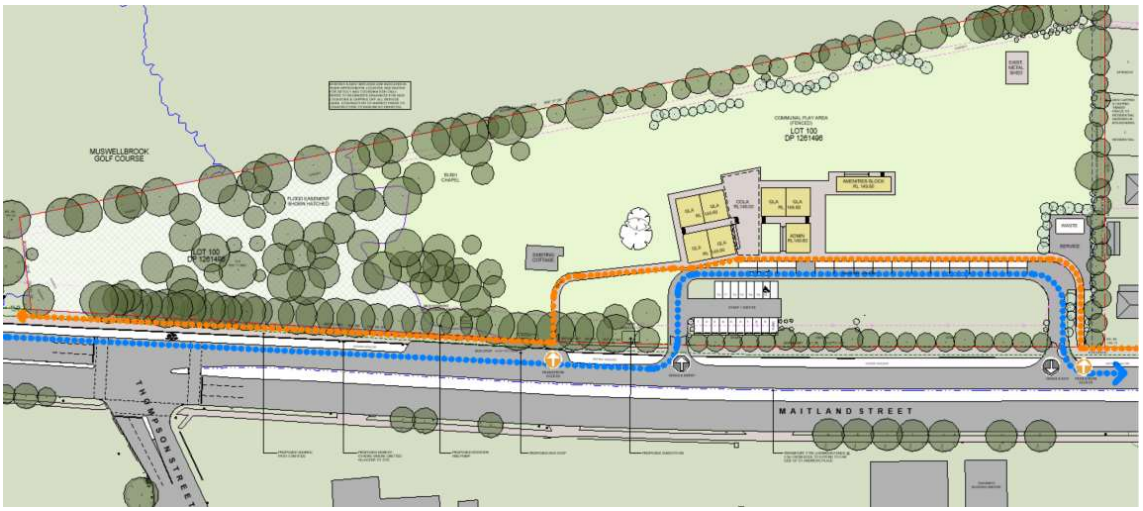
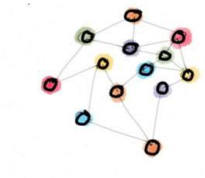


Figure 57 Site access diagram

There is dedicated pick up and drop off zones for ease of school access. The location of parking in proximity to the school entry also minimises difficulty for mobility impaired students and allows assistance by parents if required.

3.4 PRINCIPLE 4 – HEALTH AND SAFETY



Safety, access, and connection are critical in providing a welcoming and secure place for children.

Landscaped areas and materials have been considered to minimise safety risks, safety gates control access and open areas promote sight lines and passive surveillance.

The development has been designed following Crime Prevention through Environmental Design (CPTED) strategy principles. The design aspires to create a safe pedestrian route for students, staff, and members of the PBCS community along Maitland street with footpaths on one side of the road and frequent pedestrian crossings.

Safe design is achieved through clear, well lit, passively surveilled pathways through the Site and legible and accessible entries to and within the buildings.

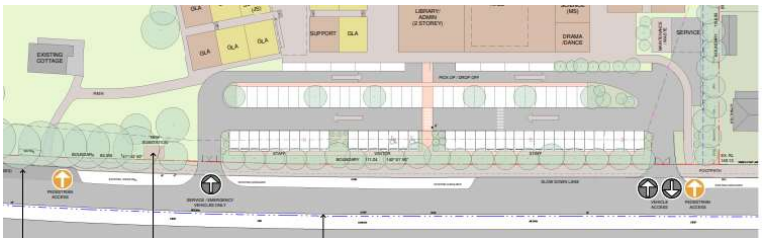


Figure 58 Early Masterplan carpark

Access via the difference modes of transport (car, bus, cycle, foot) from all directions of the site have been considered carefully to ensure safety for all is maintained.

The school buildings are all single storey with minimum 950mm sill height windows, design to prevent students climbing out or falling from too high up. The number of windows provided has been selected to provide adequate amounts of natural daylight which will minimise the need for artificial light and therefore save energy. Exposure to sun is another risk factor, so design allows for all windows to have enough eaves to protect the teaching spaces from the glare and heat gain produced by direct sun exposure.

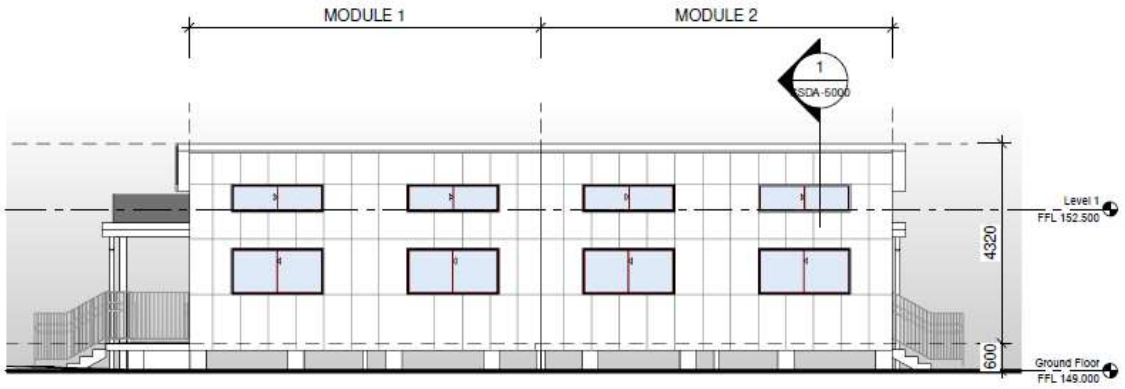
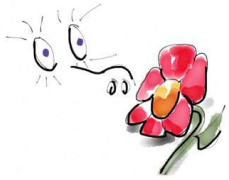


Figure 59 Elevation

3.5 PRINCIPLE 5 – AMENITY



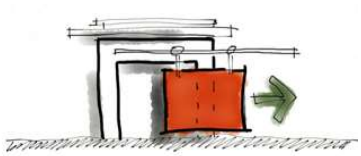
The most beneficial relationships between children are grounded in equality, learning, and gaining insight from each other. There is a need for a variety of learning styles, thus sensory indoor spaces and experiences should be encouraged. In this way many modes of learning are valued including verbal, visual, kinaesthetic, logical, tactile, and rhythmic.

Figure 60 Landscape concept images

The design will provide socially and environmentally responsive solutions creating a pleasant and engaging spaces internally and externally. The design provides opportunities for a variety of learning modes through flexibility of spatial arrangement, agile furniture, interactive indoor / outdoor environments that allow for individual, teamwork and gathering forms of learning.

Figure 61 Landscape concept sketches

3.6 PRINCIPLE 6 – WHOLE OF LIFE, FLEXIBILITY AND ADAPTION



Adaptability is a response to evolving learning outcomes. The children's needs can be supported by the manipulation of fixtures and furnishings. It addresses the ability for multi modal spaces to become efficient and personal environments. Catering for children to be free in their learning experience.

Modular design allows for wide span open spaces that are able to be adapted to future changes in pedagogy and learning needs or adapted for other uses should the needs of the community change over time.

The proposed general learning space share a central COLA, this allows for the school community to gather in the communal outdoor area. There is flexibility in the spaces to encourage combined teaching and healthy learning arrangements.

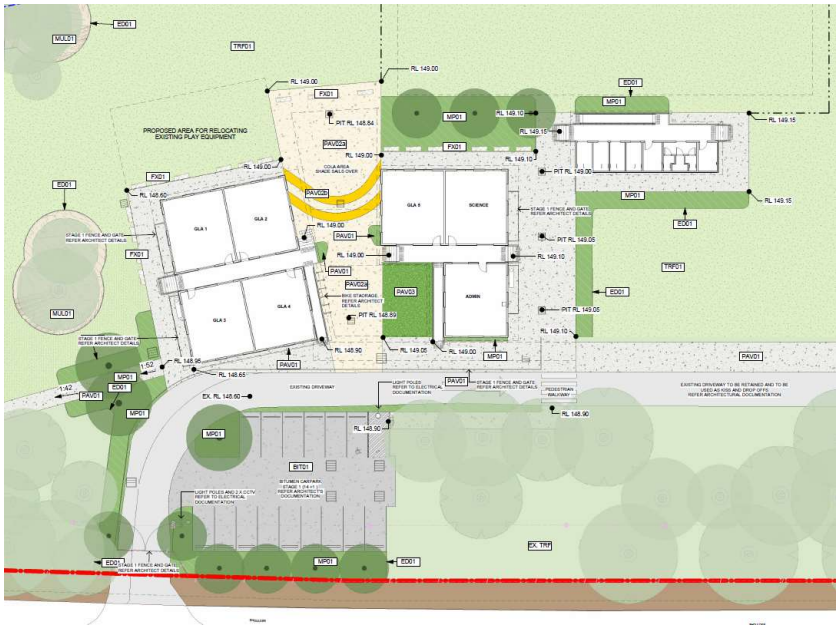
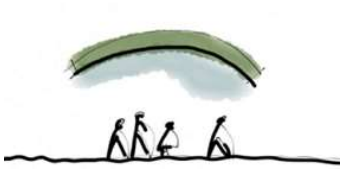


Figure 62 Early Landscape plan

Outdoor Learning and Play is strongly desired by the School and landscaping will encourage the use of outdoor areas for school activities beyond lunch & recess play. The landscape is designed to provide comfortable microclimates, educational material and encourage native fauna including birds and insects.

Figure 63 Landscape materiality

3.7 PRINCIPLE 7 – AESTHETICS



Scale and height of the proposed masterplan respects the neighbouring rural residential context. Materials are to be neutral and natural to reflect the surrounding context. Green and bluish tones represent the hills and valleys of the local Wanaruah Community, the surrounding bushland within the campus and the grey barestone cladding reflects the bark shedding from the native Eucalyptus.

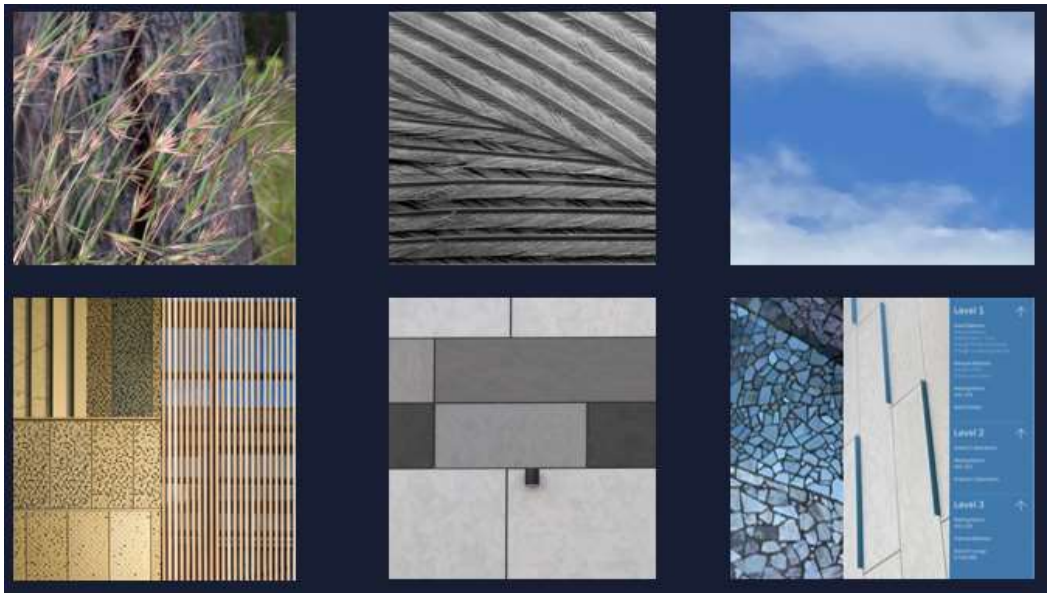


Figure 64 External building fabric materiality

The bulk and scale of the buildings overall respects the users experience focusing on the human scale and interface with the surrounding PBCS environment.

The site design and form of building creates usable outdoor learning and socialising spaces with a variety of climates for year-round use. The materiality and shading strategy appropriately controls the environment to maximise comfort and usability. It ensures a focusing/centred environment supporting union and a sense of belonging. The design supports the concept of arrival and circulation.

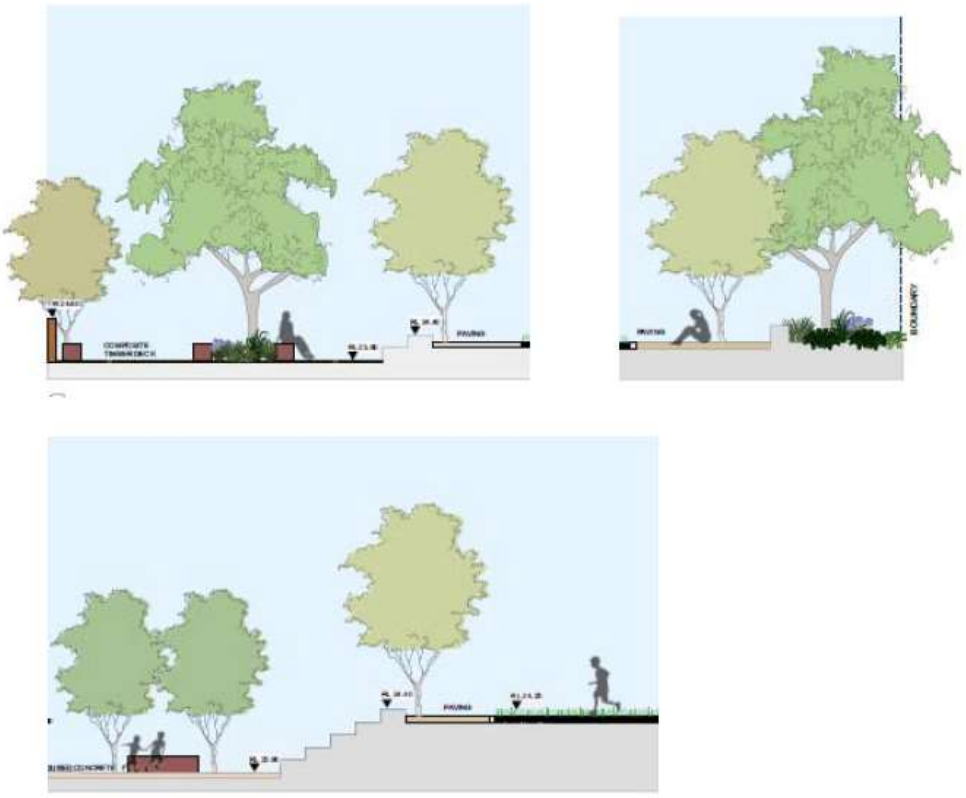


Figure 65 Landscape section diagrams

The simplicity of the central axis and the orientation of the buildings draws the attention of the user and facilitates the way finding strategy.

The interior design of the general learning spaces and science labs will be incorporate subtle colour in specific locations to add warmth and texture. Indicative interiors materials and furniture below.

Figure 66 Internal finishes and furniture concept