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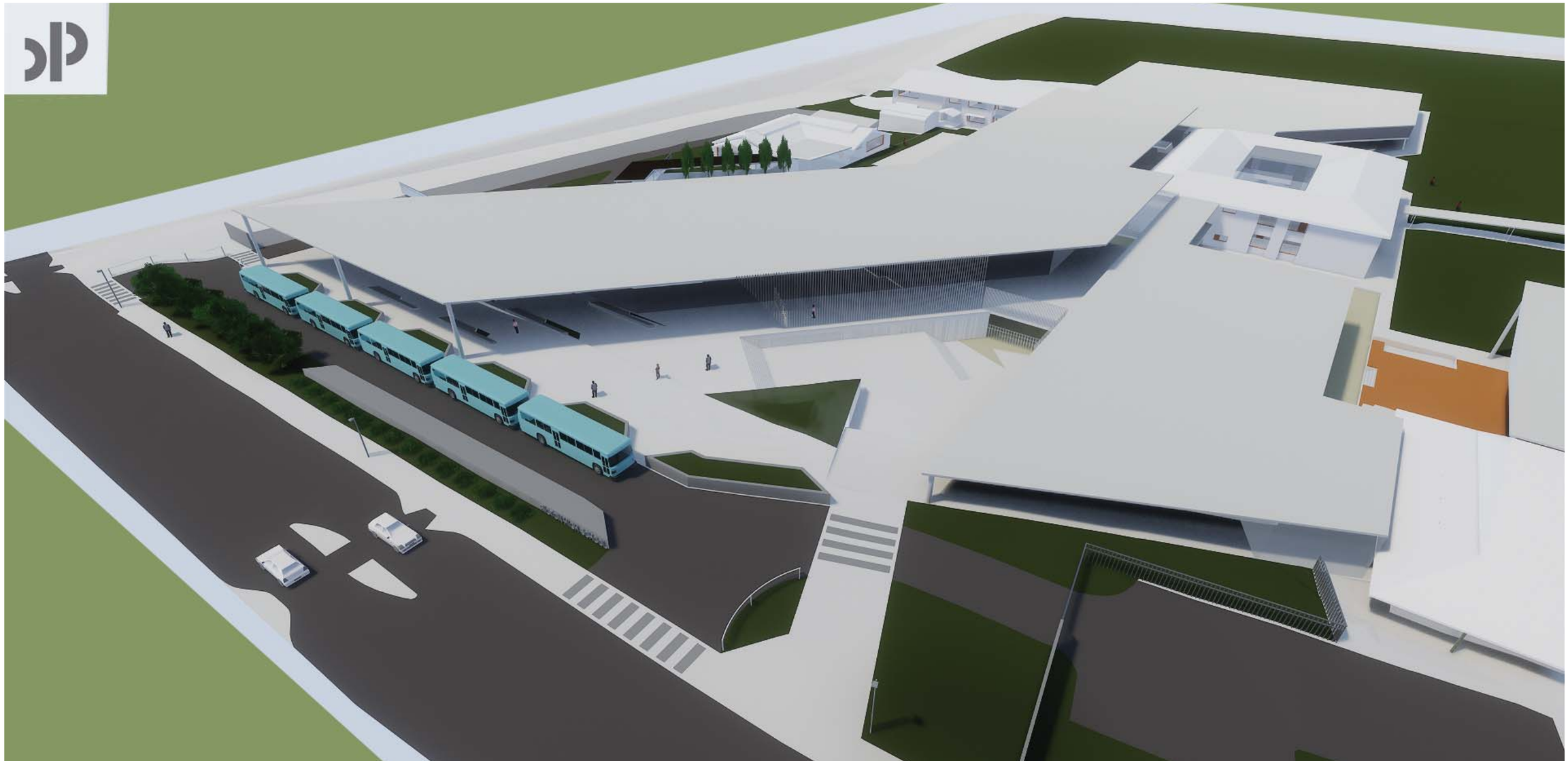
Picton High School Redevelopment
Concept Design Option Report SEARS Application

NEW LEARNING ENVIRONMENTS
RUBIDA RESEARCH

JULY 2017



Executive Summary

NSW Department of Education proposes to increase the capacity of Picton High School in order to meet the growing demand for public education in South West Sydney. Picton High School Redevelopment will see a major upgrade of the existing school to incorporate core facilities for 2,000 students and permanent teaching spaces to accommodate 1,500 students. Picton High School currently services a broad catchment across the entire Wollondilly Shire region.

The existing co-educational comprehensive high school was established in 1958, with further upgrades and additions added to the growing school in 1960's, 1980's and the latest Trade Training Centre in 2011. The sixteen individual buildings across the campus are a mix of single and double story teaching and learning facilities. The whole school campus lacks a welcoming atmosphere and pleasant school environment both internally and externally. Facilities are outdated and in very poor condition. The school campus does not meet the current requirements of the school and predicted future growth. There is disconnection across the campus contributed by poor building quality and orientation, connection between building and unusable outdoor spaces, poor wayfinding, and lack of sight lines for adequate supervision across the site. The school entrance, reception and administration does not provide a welcoming and inclusive entry to the school, is ill defined and is inhibited by high security fencing across the front boundary. The layout of the existing school is outdated and doesn't reflect a contemporary learning environment.

The planned redevelopment will see replacement of approximately 60% of the existing building stock and re-purposed and refurbishment of the remaining more recent buildings identified to be retained. The re-development will also incorporate the reconfiguration of a new public entry and arrival forecourt, major site infrastructure upgrades and improved outdoor amenity across two thirds of the site. The front entry onto campus has major issues as all vehicular traffic enter through the same point at the north-western corner of the site creating congestion during peak pick-up and drop-off periods. The main issue being a lack of prioritization to pedestrian movement. There is no safe pedestrian path link off Argyle street onto the campus forcing pedestrians to walk across sections of road where cars, buses and delivery trucks frequently move. A solution to these challenges is currently being investigated with relevant authority groups with a focus to separate vehicles and pedestrians and promote safe movement on and off campus for all students, staff and visitors.

The major redevelopment will focus on a significant shift in the pedagogical model of teaching and learning at Picton High School. The current traditional teacher centered classroom model will shift toward a student centered hub based model through the inclusion of dedicated stage related learning hubs and inter disciplinary activity focused learning communities. The existing disconnected and isolated array of individual buildings has resulted in a disengagement across learning disciplines. Whilst this configuration of individual buildings has supported the traditional classroom teacher focused learning model for many years it cannot support the proposed shift toward a holistically connected and engaged student centered activity based learning community.

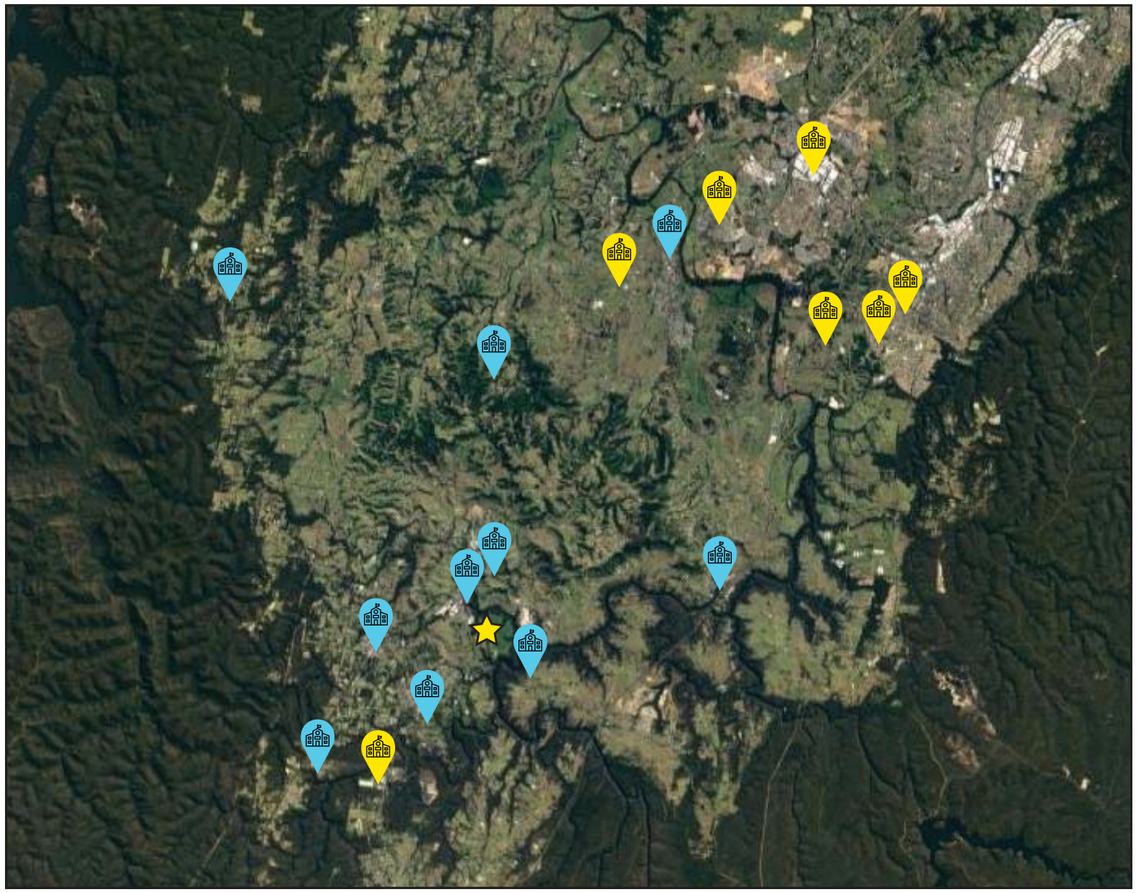
Three concept masterplan options were explored with the preferred option, a large two to three story building located along the central spine of the site, designed to connect with existing two story buildings proposed to be retained. The large connected learning community complex will accommodate all administration and student services facilities, all stage related learning hubs, specialist learning facilities, library and support facilities. This singular building approach will enable well connected and engaged learning opportunities for students working across disciplines in a more collaborative learning environment. It will enable teaching staff to work seamlessly across disciplines to deliver a more holistic activity based teaching and learning program. Vertical and horizontal connectivity will bring together a holistic learning community with direct and immediate access to all resources and general support. A refurbished Hall and new fitness and performance complex will create a movement precinct with improved connection to relevant disciplines and to open up shared community use opportunities at the front of the school.

In considering a proposed school across multiple levels, the stepped terrain of the site provides an opportunity for split level design and on grade access to upper levels from various points. Utilizing the natural gradient, equitable access to all areas of the site can be achieved with the incorporation of minimal ramps and a single central lift. Outdoor learning opportunities will be incorporated at all levels of the building with a main student quadrangle and partially covered undercroft at the lower level to create the central student 'hub' of the campus. The natural contours provide an opportunity for an environmental wetland area to address storm water detention and retention requirements for the site at the same time provide a natural ecosystem to be used as a learning opportunity for the school. The long north facing building will enable good sustainable design principles to be applied and support opportunities for cross flow ventilation and air movement between and through the buildings. Landscape design will promote the whole of campus as learning tool through the integration of cultural and agricultural gardens, a remembrance garden, formal northern courtyard as a social gathering place and a southern courtyard for recreation activities, connected to the sporting oval at the rear of the site.

The sustainable focus of the school redevelopment will be a holistic careful balance of economic prosperity, social responsibility and environmental sensitivity. This state significant Picton High School redevelopment, aims to focus on reimagining and transforming the school into a 21st century learning environment that supports and integrates with the growing community of the south west Sydney region.

Project Background and Strategic Context

Schools in the Wollondilly Area



Picton High School is located within the Sydney South West District. The Sydney South West District is identified in the NSW Department of Planning and Environment's metropolitan plan 'A Plan for Growing Sydney' as a significant area for intensive growth and infrastructure investment over the next 20 years.

The Picton area is expected to experience substantial student population growth due to new land releases as part of the Greater Macarthur Land Release, which will expand Sydney's metropolitan area.

Picton and its immediate surrounding area is expected to have additional new housing and projected population growth that is generating increased numbers students and demand for teaching space and facilities to at least 2031. The projected growth for the region is currently from approximately 3000 students to over 8000 students by 2031.

Picton High School currently services a broad catchment across the entire Wollondilly Shire region. Picton High School is central this catchment area with the closest alternate public High Schools being; Camden High School 24km to the north, Elderslie High School and Elizabeth Macarthur High School 26km to the north and Mount Annan High School 28km to the north.

Picton High School will capture a large proportion of the population growth within the region and this project will help to meet the long term projected increase in the demand for government secondary schooling by expanding the capacity of Picton High School.

Site Location

Surrounding Context

School Site

Site Analysis

Site Location

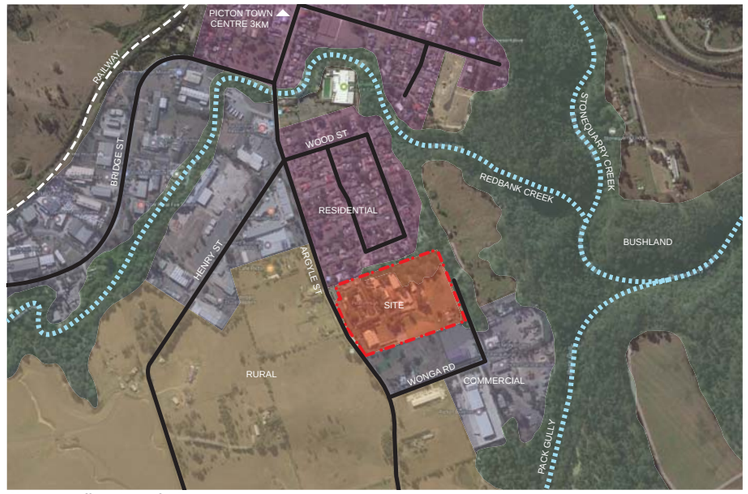
Picton High School is located 3km south of Picton town centre. Picton is a small town in the Macarthur Region of New South Wales, Australia, in the Wollondilly Shire, on the south-western edge of Sydney. The town is located 80 kilometres south-west of Sydney, close to Camden and Campbelltown. It is also the administrative centre of Wollondilly Shire.

Local Context

The surrounding land from the site include a rural sector to the east, a commercial/light industrial zone to the south and residential dwellings to the North. The northwest corner of the site is local council. Picton is historically a rural town however it is now transitioning into a semi-rural suburban township as the population of the Sydney South West District expands. The Sydney South West District is identified in the NSW Department of Planning and Environment's metropolitan plan 'A Plan for Growing Sydney' as a significant area for intensive growth and infrastructure investment over the next 20 years. Picton High School will play a significant role in the future of the growing community in providing educational facilities that accommodates future growth.

Landscape

Picton Valley is located on fertile land 68 km southwest of Sydney and 171 metres above sea level and is surrounded by spectacular, natural beauty and rural pastures. It was once a thriving township servicing the traffic between Sydney and Melbourne. With the re-routing of the Hume Highway the town has become a quiet centre of considerable historic interest, with a population of 3,500 people. Picton Town is located near Razorback Range, Burragong Valley and other similar towns Appin and Warragamba which are all located in the Wollondilly Shire.



Surrounding Land Uses

Picton Post Office

Picton Train Station

Picton Bank

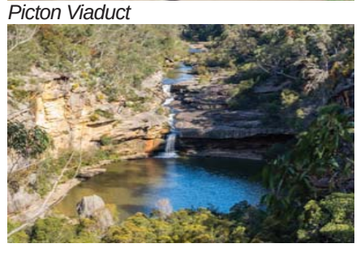
Picton Anglican Church and Cemetary

Picton Viaduct

Picton Botanic Gardens

Wollondilly Leisure Centre

Picton Bridge



Dharawal National Park

Site Analysis

Buildings

Picton has a rich with a number of heritage buildings with the township, disused railway tunnels and old bridges. There are numerous historic buildings throughout the town that were built during the 19th Century. The Architectural vernacular is primarily of the Victorian-Era with many buildings now existing as tourist attractions throughout the town.

Transport

The train station is located to the south of the town centre and 2.4km from the Picton school site. Picton railway station is on the Southern Highlands line with a relatively infrequent service with trains running every 30m (peak) – 2 hours (off peak). The public bus stop is located directly in front of the school site which operates the 911, 912, 913, 914 bus services.

Amenities

The school site is located 3km from the Picton town centre and main shopping district. Wollondilly Community Leisure Centre is located 700m from the school site. There are a variety of sports fields located in Picton including Victoria Park, Hume Oval Sports Ground, and Picton Sportsground.

Climate

Picton has a humid subtropical climate with hot summers and cool winters. Owing to its inland location and an elevated altitude, it has a relatively high diurnal range throughout the year. In recent history Picton has experienced major bushfires and flooding due to its extreme weather conditions.

Site Analysis

Picton High School Logo

'Our school creates opportunities for all students through an extensive choice of academic & vocational subjects. Our strong educational leadership team and dedicated staff nurture individual talents through innovative teaching and learning programs'

http://www.picton-h.schools.nsw.edu.au/

Picton High School Site with building

Picton High School modern day

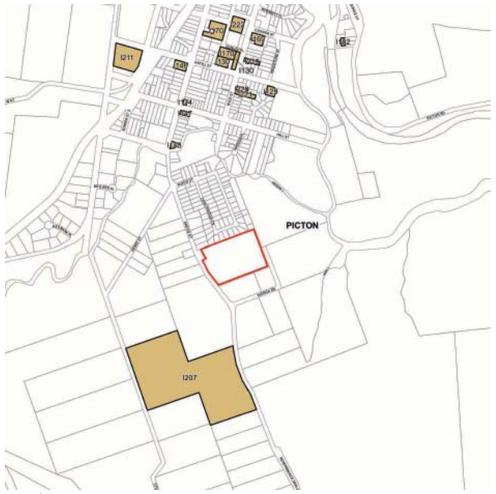
History and Identity of Picton High School

Picton High School was established in 1958 as co-education comprehensive school and services a semi-rural growing community. The school has strong links with the local community and feeder primary schools. The school has a tradition of sporting and academic achievement and is recognised within the district for its innovative approach to curriculum, extensive student welfare and learning support programs.

The school has a multi-purpose hall, modern science laboratories, kitchens and library. Facilities for photography, car care. Information technology, drama and creative arts are well established. Picton High School seeks to educate its students to achieve excellence in all areas of endeavour.

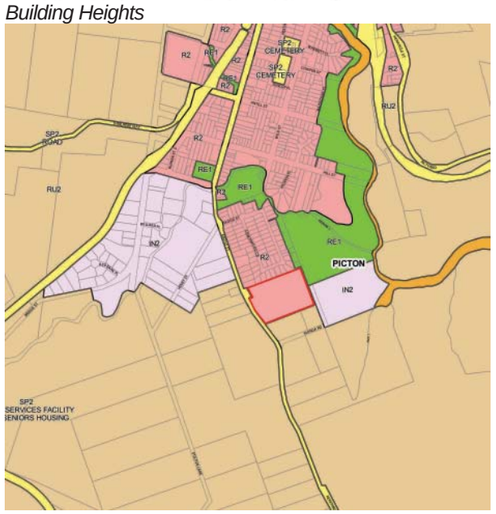
The school was opened in 1958, following the completion of Buildings A, B, C, D, E, F, G, H and R which were built in 1957. Building I was constructed in 1968, buildings M and N in 1984, buildings J and K in 1987 and building L in 1989. It is not known when buildings P and Q were built. Building O Trade School was completed in 2011. Building I Hospitality underwent upgrade in 2011 as did Building L Science Laboratory. Building A underwent a minor upgrade in 2011. Picton High School has a number of memorial and cultural gardens which celebrate the history of Picton High School as well as its cultural diversity.

Building Heights

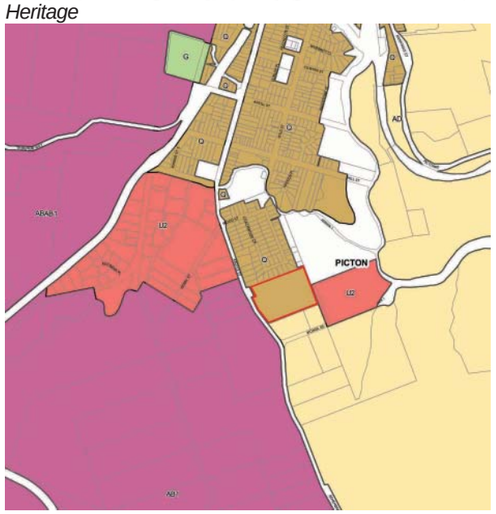


Heritage

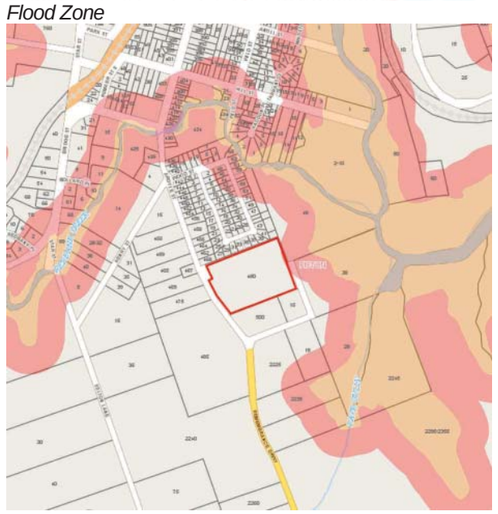
Flood Zone



Land Zoning



Lot Size



Bushfire Zone

Site Analysis

Local Environmental Plan - Wollondilly Shire Council

Land Zoning

Picton High School is zoned R2 Low Density Residential (R2) under the Wollondilly Local Environmental Plan 2011 (WLEP 2011).

Plot Number**:** 2

Plan Number**:** DP520158

Lot Size

The site is classed U2 with a minimum lot size of 1500sqm.

Authority Requirements

State Significant Development - Department of Education

Local Government Wollondilly Shire Council

Height of Buildings

The LEP states that Picton High School has a maximum building height of 9m.

Heritage

The site is not identified as a heritage item under Schedule 5 of WLEP 2011,

nor is it located within a heritage conservation area. The closest heritage item is

located 400m to the south (Koorana Homestead).

Flood Zone

The site does not lie in a flood sensitive area.

Bushfire Zone

A small segment of the site is part of a bushfire buffer zone. A buffer zone is identified as being 100m from Category 1 (e.g. forest, woodlands, health, wetlands etc) and 30m frm Category 2 (e.g. grassland) areas.

Site Analysis

Campus Building Audit and Analysis

The whole school campus lacks a welcoming atmosphere and pleasant school environment both internally and externally. Facilities are outdated and in very poor condition. The school campus does not meet the current requirements of the school and predicted future growth. There is disconnection across thecampus contributed by poor building quality, connection between buildings, unusable outdoor spaces, poor wayfinding and orientation, lack of sight lines and views across the site. The school entrance, reception and administration does not provi–de a welcoming and inclusive entry to the school. The entry is undefined and is inhibited by large secure fencing around the perimeter this minimises the schools street frontage and hinders wayfinding to reception. Additionally The change in levels across the site does not provide consistent disabled access. The layout of the existing school is outdated and doesn't reflect a contemporary learning environment.

Opportunities and Recommendations

It is recommended that buildings constructed pre 1960 are to be demolished. Buildings A-H are in poor condition and are generally highly inflexible. The 1958 buildings have poor natural light and ventilation and have not been well maintained.

To Retain Repurpose and or Refurbished

•It is recommended that Building I could be retained and repurposed

•Existing hospitality commercial kitchen facilities in Building I recently upgraded are in good condition and should be retained

•Building M can be retained but is in generally poor condition and should be considered for refurbishment.

•It is recommended that buildings constructed in the 1980s should considered being retained and refurbished. Buildings J, L, K and N are in generally good condition but require refurbishment and in doing so could be repurposed.

To be Retained in Existing Condition

•It is recommended that building O be retained. Building O is the newest building on the campus and does not require any upgrades.

•Recently refurbished Science Labs could conceivably be retained in existing conditions given they were refurbished some years ago. This will be dependent on whether or not they can be easily adapted into the overall redevelopment and new hub model of learning proposed

•Retain existing oval space

Other Opportunities

•Improve the integration of Agriculture into the immediate school learning environment

•Existing site maintenance and storage sheds could be retained and relocated. Some are in poor condition and should be discarded, others could be reused.

Site Analysis

Existing Traffic Conditions

Existing Traffic Conditions

The existing traffic conditions on site create major issues at the front end of the school. All bus and car traffic enters through the same point towards the north-western corner of the site creating congestion problems during the morning and afternoon during pick-up and drop-off times. All student and visitor parking is located along Argyle st creating safety concerns as it is a major road with heavy traffic.

Current bus pickup/drop off zone does not operate effectively or meet the requirements of the school. Bus pickup/drop off zone are located at the front entry of the school which inhibits access to the school campus. All traffic

including cars both staff and visitor enter from a single entry point at the school off the main road therefore causing cross contamination of traffic and creating severe congestion in the morning and afternoon periods. Additionally there is no adequate seating and shelter provided for the students waiting in these zones.

The main issue however, is this front arrival point onto campus that lacks prioritization pedestrian movement. Whilst a pedestrian pathway is provided along Argyle street frontage there is no pedestrian path link along the off street drop off pick up zone. In addition, there are no safe or prioritized pedestrian crossing zones across a number of driveway access points either. Therefore pedestrians are forced to walk across sections of road where cars, buses and delivery trucks are frequently moving in and out of the school creating a safety issue for students, staff and visitors. It is recommended this issue be addressed in the project redevelopment. The fence line along the boundary provides a physical barrier limiting access onto the campus through three separate gates that cannot be reached via any dedicated pedestrian pathways.

Opportunities and Recommendations

• Create a Public Interface with secure line set back onto campus

• Separate Pedestrian and vehicle access roads to movement

• Consolidate Parking and move vehicle access roads to perimeter of campus

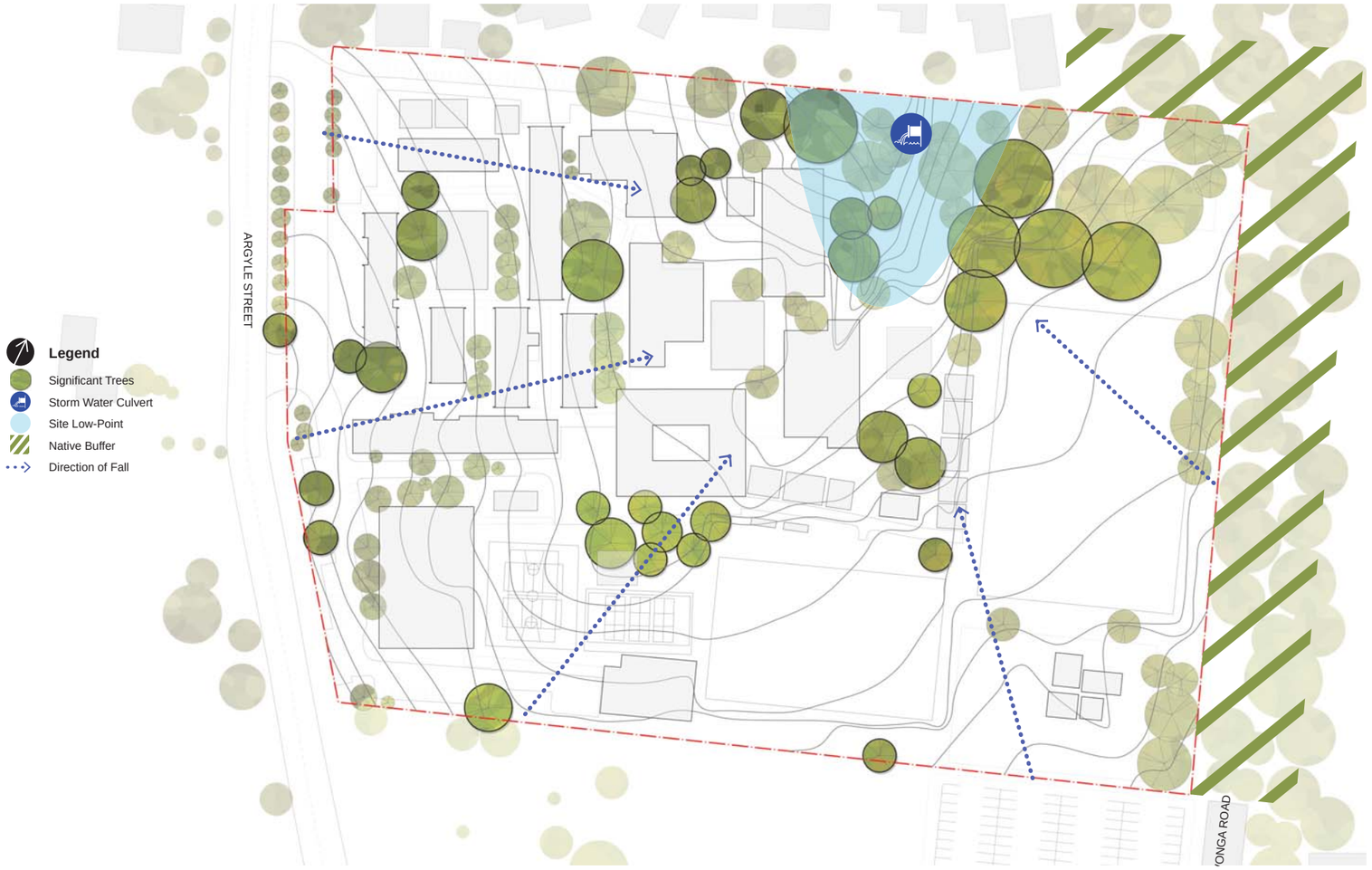
• Parking areas along the northern boundary should be formalised

• Wonga Road access onto site to relieve pressure off Argyle Street

• Separate Bus, Car and Delivery access to site

• Existing delivery access is limiting for size of trucks on site and inadequate for school VET material deliveries. Consider improved delivery access and unloading facilities on site

• Consider maintenance vehicle access across site



Site Analysis

Existing Site Topography

Existing Site Topography

The site slopes downwards from the eastern side of the site. Main water flows towards a stormwater culvert on the northern boundary of the site. Redbank Creek is the main water course in the area. The contours of the site fall toward a basin on the northern boundary. Stormwater collects at a culvert on the northern boundary and is piped underground off campus. The culvert is in poor state of repair and feedback from the school indicates the overland flow of stormwater is poor and localised flooding does occurs in central areas of campus. The stormwater system in general across the site particularly in proposed areas of new works need to be carefully addressed.

Opportunities and Recommendations

• The natural contours of the site provide an opportunity to consider an environmental wetland that will address the stormwater detention and retention requirements for the site and would establish a natural ecosystem for the site. This would ultimately be a tool for learning supporting the Agricultural focus that is already strong at the School.

• The project should consider retaining as many of the large well established trees across the site, especially in the low lying areas of the stormwater collection point.

• In considering a proposed school across multiple levels, the stepped terrain of the site provides an opportunity for split level design and ongrade access to upper levels from various points on th site. Equitable access to all parts of the site needs to be considered and the terrain should be considered an

opportunity rather than a constraint.

• Consider designing exposed overland stormwater pathways across the site to enhance the natural landscape as a learning tool for the school.

Site Analysis

Existing Landscape

Existing Landscape

Current outdoor spaces are inflexible and are disconnected from buildings and the whole school campus. Currently there is no connection between indoor and outdoor learning environments. Outdoor spaces consist of large hard surfaces, some covered however the majority of exposed to weather conditions creating exposed outdoor environments. The covered walkways are restrictive of movement and disorient users within the school campus. The school has large amounts of open spaces including courtyards, gardens, paved areas, undercover areas (COLAs) , these open and intermediate spaces often result in

dead-zones and unutilised space. Covered outdoor learning areas (COLAs) are inflexible and do not allow for large group congregations as well as restrictive seating that offers no flexibility and does not create a space that is desirable to use.

Sports ovals and courts are located to the rear and side of the site and are disconnected from the whole school campus. The school currently has lovely outdoors spaces such as the Remembrance Garden and Indigenous gardens however these are currently disconnected from the rest of the school. The existing mature trees within the school provide good natural amenity. The native buffer zone towards the northern/eastern borders of the site is a strong asset of the school.

Opportunities

• Create a hierarchy of pathways

• Consolidate and integrate soft and hard paved areas with functional purpose

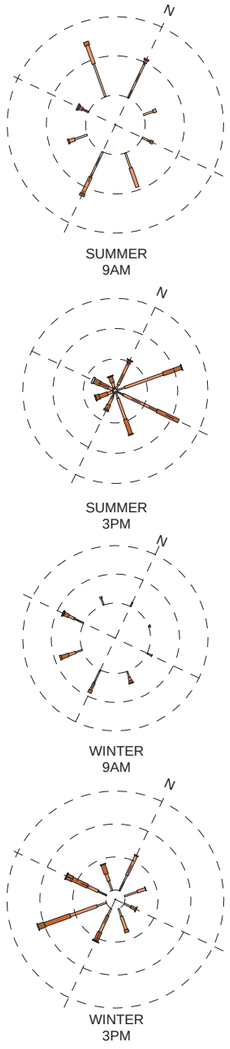
• Establish meaningful recreation space

• Blend internal and external environments with outdoor learning opportunities

• Retain and celebrate memorials

• Provide a variety of diverse outdoor settings for students to socialise, play, in passive and active areas

• Consider the entire campus as a learning space through passive and active measures



Wind Speed & Direction

Site Analysis

Microclimate

Solar Access

• Currently majority of buildings are oriented on a north south axis limiting the opportunity for solar access to internal space.

• Consider building orientation to maximise solar access

Views to green corridors

• Consider the green hills to the west and woodland corridor to the east as opportunities for calming views to natural landscapes from internal

environments

Promote natural air movement between and through buildings

• The campus design should promote opportunities for cross flow ventilation and air movement between and through buildings. Picton, located inland, is not subject to coastal breezes therefore the design should maximise opportunities to access north easterly and southerly breezes where possible.

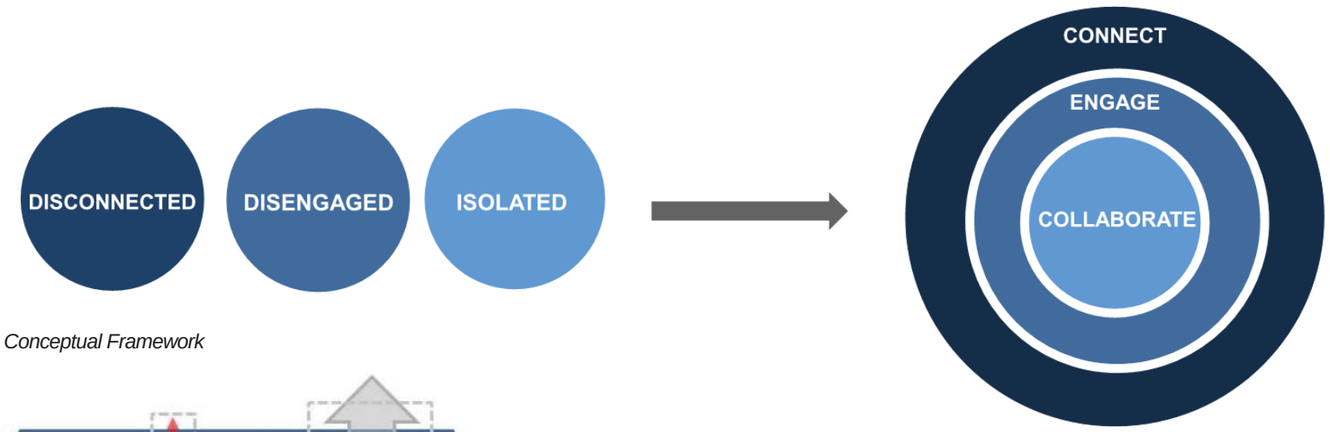
Economical, Social, Environmental and Sustainable campus

• The sustainable future of the school will be a balance of economic prosperity, social responsibility and environmental sensitivity.

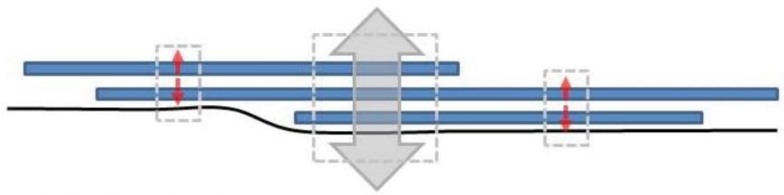
• Economic Prosperity - will rely on students and staff wanting to learning and teach at Picton HS because of the its offering and positive teaching and learning environment. The ongoing running and maintenance costs must be kept to a minimum through appropriate material and finishes selections and energy efficient systems.

• Social Responsibility - will rely on a positive active integration and participation with the local community. This will be possible though shared use of facilities. Positive and productive social interaction for students and staff will be made possible through well connected learning spaces across the campus.

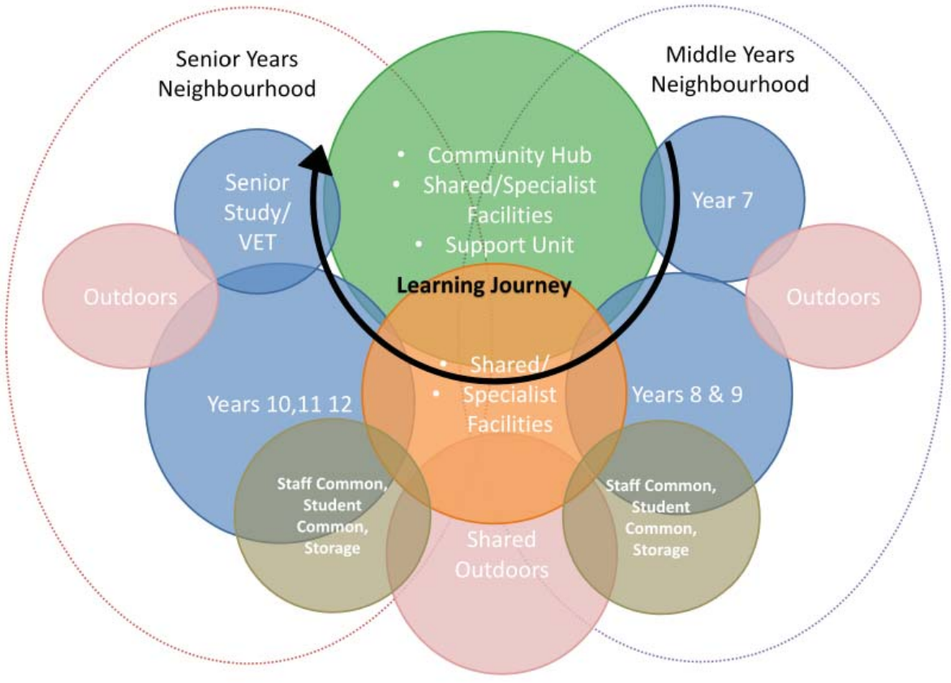
• Environmental sensitivity - will rely on good passive and active ecological sustainable design principles being adopted. Considering the natural environment of the site and the opportunity for it to be a positive learning tool for the school.



Conceptual Framework



Vertical/Horizontal Circulation



Stage-related Learning Hubs

Concept Masterplan Design

Masterplan Conceptual Analysis

Conceptual Framework

Following consultation with the school and a detailed analysis of the campus three key aspects became apparent. Isolation of physical buildings and learning facilities has created a disconnect between students and their sense of place and belonging, staff between discipline groups, the school and the wider community. Disengagement in learning and the learning environment has been the result of this disconnect and isolation. Whilst this configuration of individual buildings may have been acceptable for a traditional classroom and teacher focused learning model for many years it cannot support the proposed shift toward a holistically connected and engaged student centered activity based learning community.

Staged Related Learning Hubs

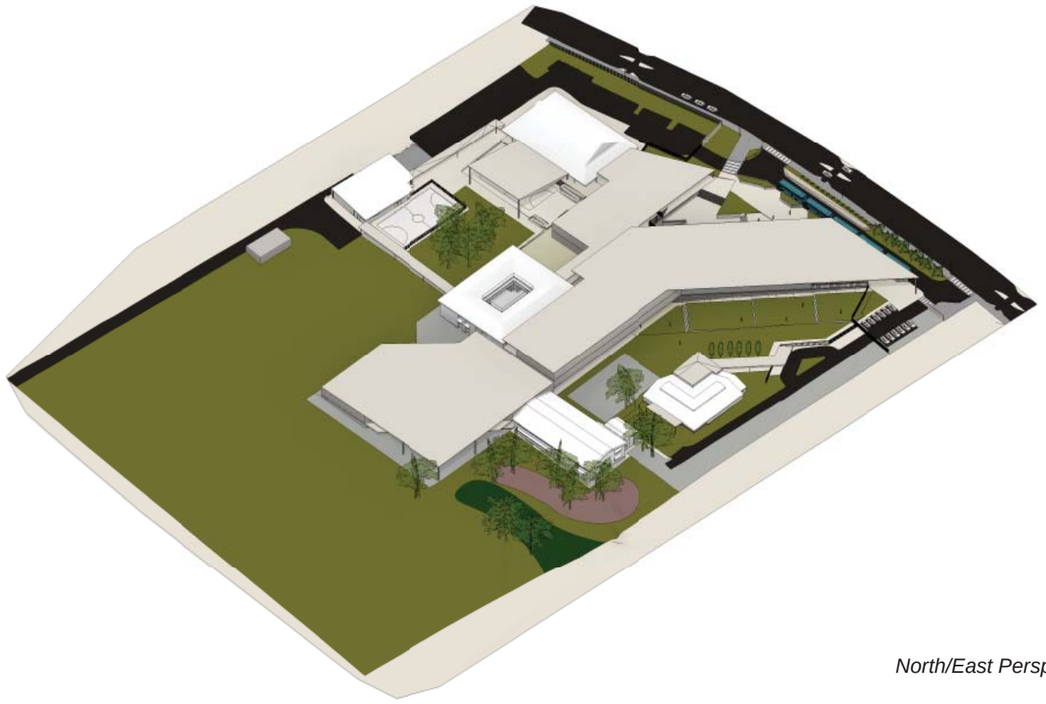
In considering a proposed school across multiple levels, the stepped terrain of the site provides an opportunity for split level design and on grade access to upper levels from various points. Utilizing the natural gradient, equitable access to all areas of the site can be achieved.

Vertical and horizontal connectivity both visually and physically will bring together a holistic learning community with direct and immediate access to all resources and general support.

*Establish a well **CONNECTED** learning community, through **ENGAGED** learning environments fostering **COLLBORATION** across the school and the wider community.*

Concept Masterplan Design

North/West Perspective



North/East Perspective

Concept Masterplan Design

Scale 1: 1000 @ A3

Lower Ground Floor Plan

- covered common area/outdoor learning
- year learning community
- discipline learning community
- admin/community/ support facilities
- common facilities

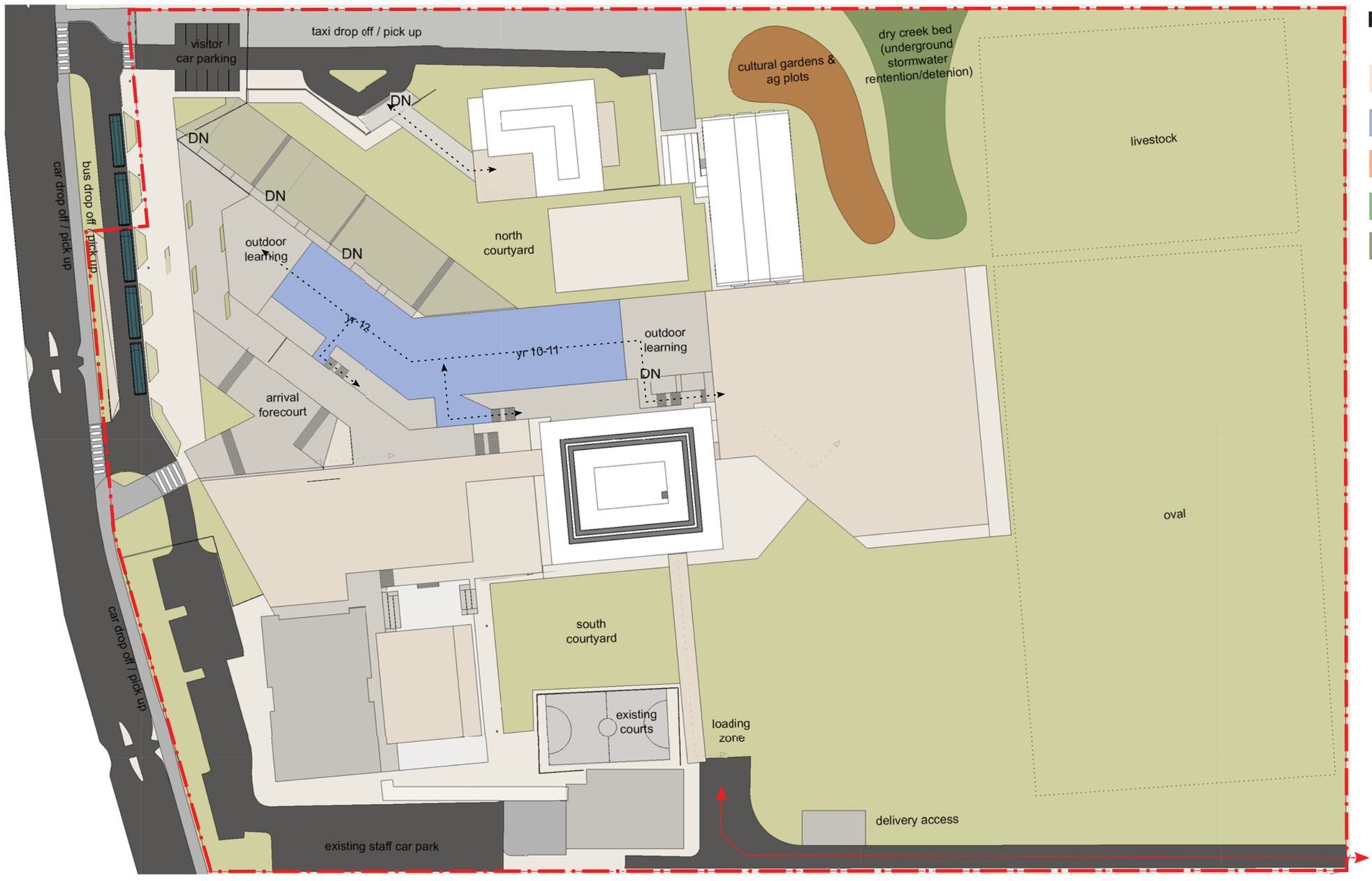
Concept Masterplan Design

Ground Floor Plan

- covered common area/outdoor learning
- year learning community
- discipline learning community
- admin/community/ support facilities
- common facilities

Scale 1: 1000 @ A3

Concept Masterplan Design



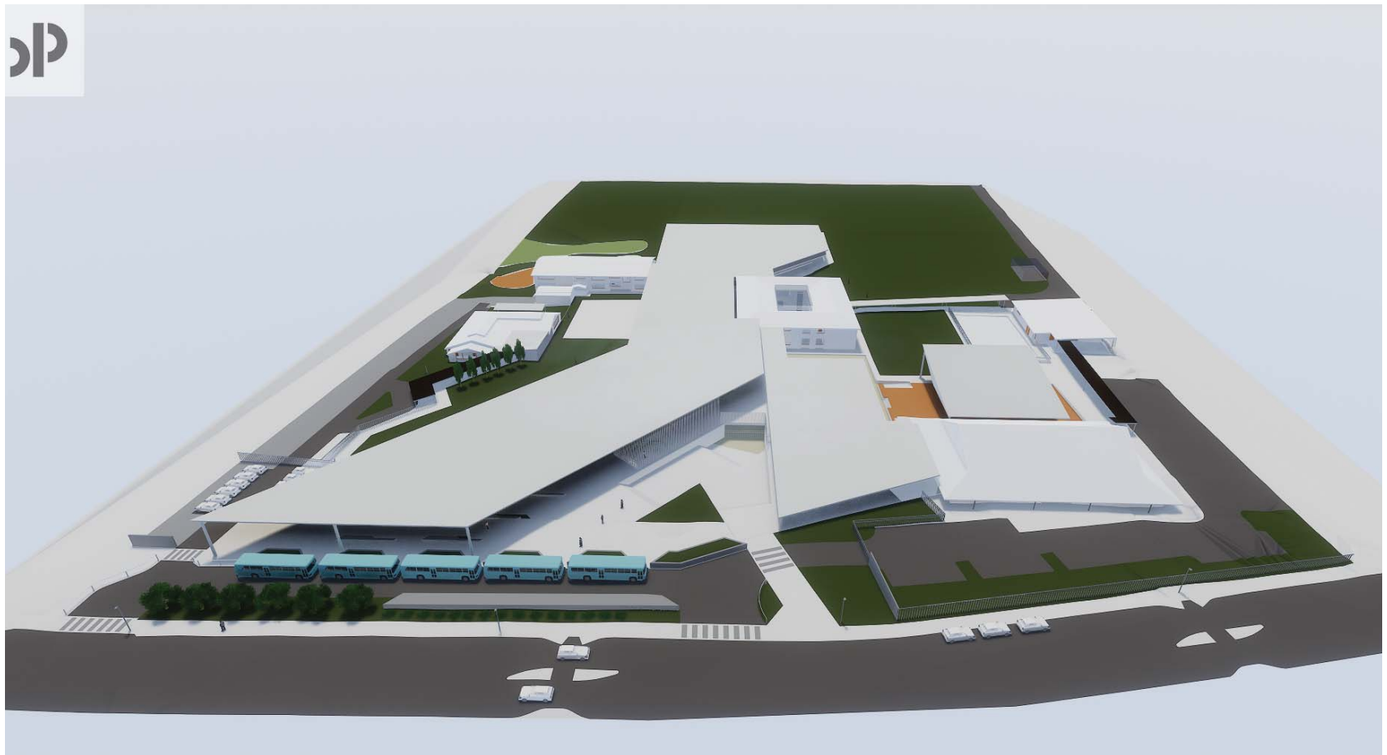
First Floor Plan

- covered common area/outdoor learning
- year learning community
- discipline learning community
- admin/community/ support facilities
- common facilities

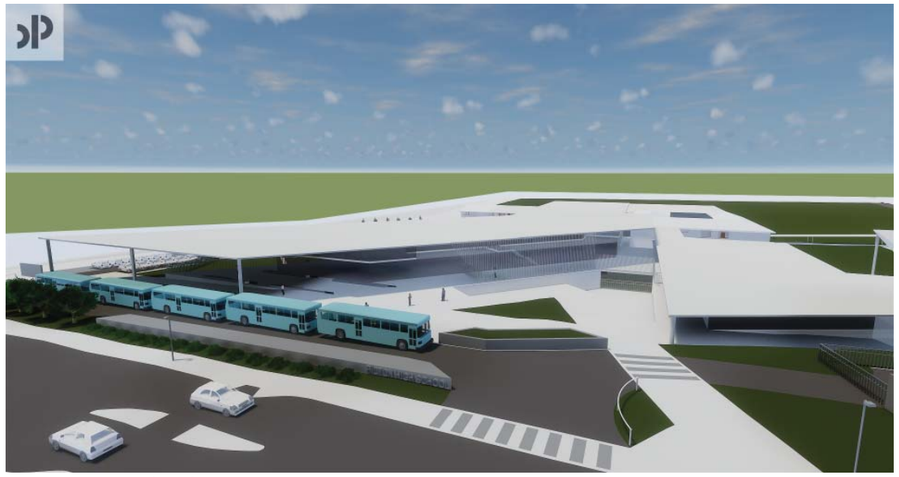
Scale 1: 1000 @ A3

Concept Masterplan Design

3D Visualisation



Site Perspective View

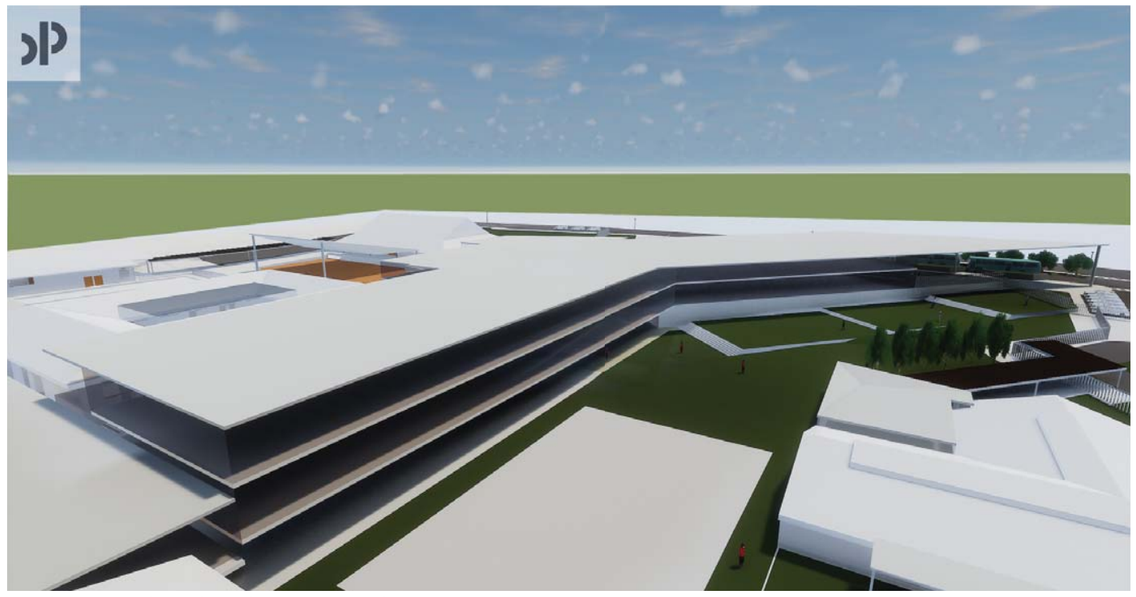


Front Entry, Pedestrian Entry

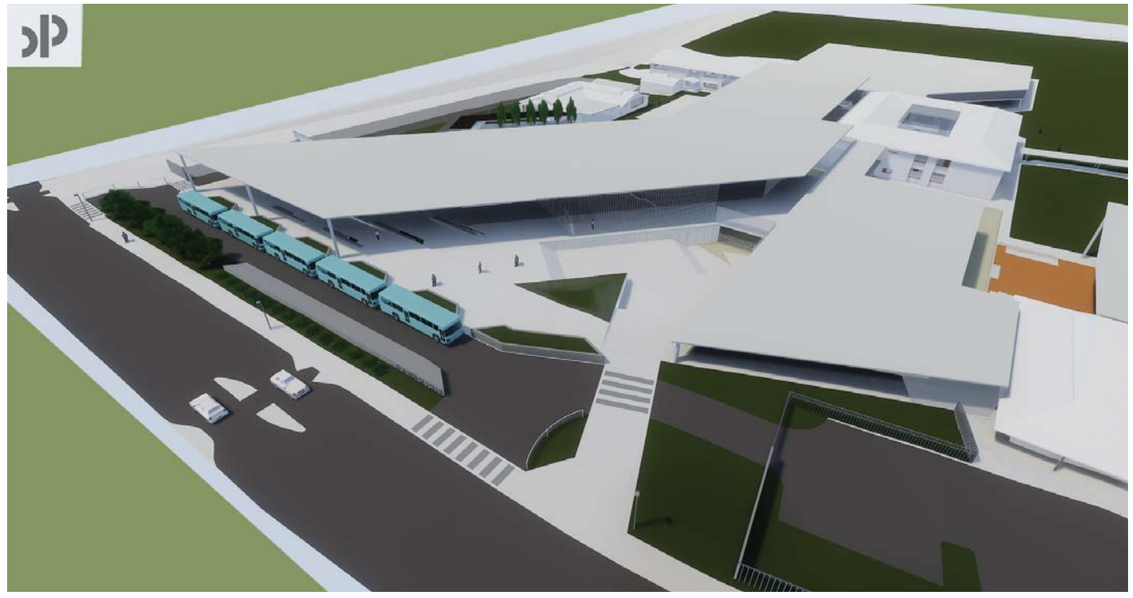
Front Entry,. Bus Drop Off / Pick Up and Visitor Entry

Concept Masterplan Design

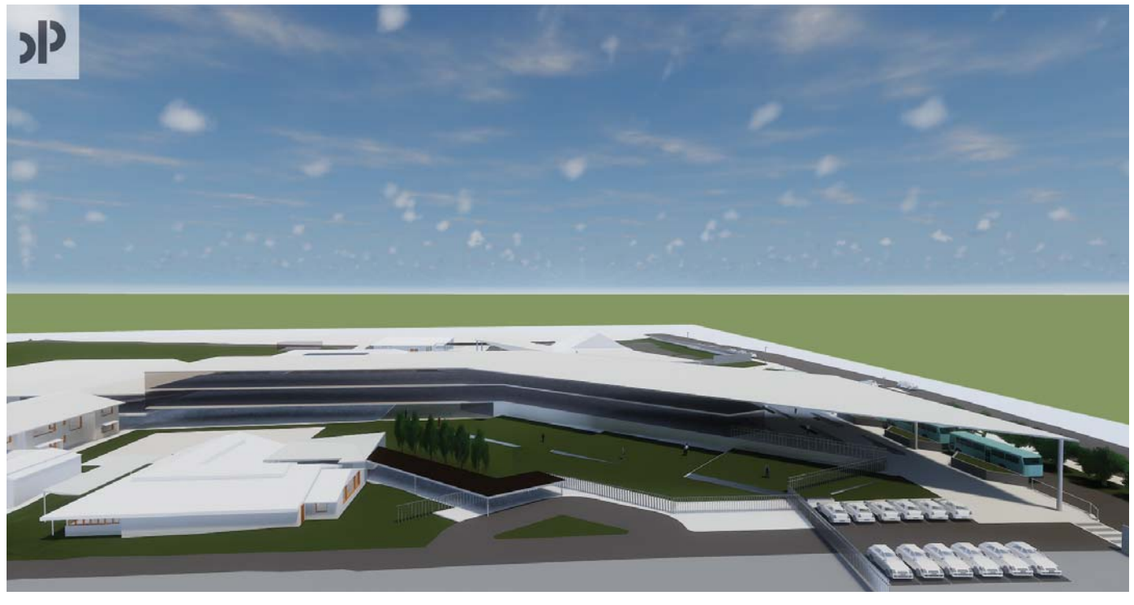
3D Visualisation



Northern Facade and Northern Courtyard



Front Entry, Bus Drop Off / Pick up and Car Drop Off /Pick Up



Northern Facade and Northern Courtyard

Bus Drop Off / Pick up and Car Drop Off /Pick Up