WEE WAA HIGH SCHOOL

Concept Design Report

MARCH 2022: REV T

02 4961 5888
www.SHAC.com.au

SCHOOL INFRASTRUCTURE NSW

SHAC

QUALITY ASSURANCE

Summary of Revisions

REVISION	BY	REVIEW	DATE	COMMENT
A	GM	JH		75%
B	GM	JH / HS	21.07.21	90%
C	GM	JH / HS	06.08.21	95% EIS Report
D	GM/HS	JH	07.10.21	Draft 100% EIS Report for Review
E	CD/HS	JH	08.10.21	Revised Concept Design Report
F	HS/CD	JH	12.10.21	Revised Concept Design Report
G	HS	JH	19.10.21	Revised Concept Design Report
H	HS	JH	28.10.21	Revised Concept Design Report
J	HS	JH	03.11.21	Final Draft Concept Design Report

REVISION	BY	REVIEW	DATE	COMMENT
K	CD	JH	05.11.21	Revised Concept Design Report
L	HS	JH	08.11.21	Revised Concept Design Report
M	HS	JH	08.11.21	Final Concept Design Report
N	HS	JH	29.11.21	Concept Design Validation
P	HS / GM	JH / EB	17.01.22	Response to Submissions
Q	GM	EB	28.01.22	Response to Submissions
R	HS	EB	22.02.22	Response to Submissions
S	HS	EB	22.03.22	Response to Submissions
T	HS	EB	24.03.22	Response to Submissions

Checked: JH/EB
Author: SHAC
Ref: 4474_SHAC_WeeWaaHighSchool_ConceptDesignReport_Revised Option A1_220324 RevT

Acknowledgment of Country

"This piece is part of my Formation series. A series inspired by the formation of the land. It depicts layers of sand, stone, rock and coal. Each layer of the earth telling its own story, witnessing its own past present and future. The dotted lines pay tribute to my great, great grandfather, a proud Wiradjuri man who worked as a tracker. The lines represent his tracks and those of the generations before us on the same land. This style of painting is featured throughout most of my work connecting my art to my family and people."

Lauren Freestone;

from ***freestone*** a contemporary Indigenous artist based in Newcastle.

SHAC acknowledges the Traditional Custodians of the land where this document was created, the Awabakal & Worimi people, as well as the land where this document now rests in your hands.

We acknowledge the Traditional Custodians of the land where this project is proposed, the Gamilaraay, Kamilaroi, Gamilaroi and Gomeroi people.

We pay respect to Elders past and present, and we honour Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place, and their rich contribution to our society.

To that end, all our work seeks to uphold the idea that if we care for Country, it will care for us.

Contents

1. EXECUTIVE SUMMARY

SHAPING OF PROJECT THUS FAR

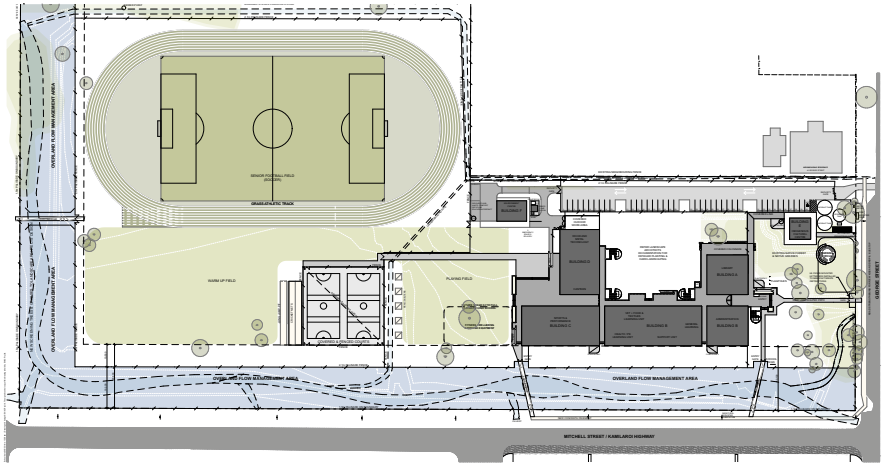
1. Executive Summary

1.1 PROJECT SCOPE

PROJECT:	Wee Waa High School
CLIENT:	School Infrastructure NSW (SINSW)
ADDRESS:	105-107 Mitchell Street, Wee Waa 2388
SITE AREA:	60,300 sqm (approx.)
CURRENT SCHOOL:	10 General Learning, 5 Specialist, 0 Support Unit, 1 Computer Learning
	159 Students - 2 Stream
	18 staff (22.3 entitled)
NEW SCHOOL:	10 General Learning, 5 Specialist, 2 Learning Support Unit
	200 students - 2 Stream w/ ability to grow to 300 students subject to funding & service need
	50 current staff w/ ability to grow

Students and staff were evacuated from the current Wee Waa High School site due to ongoing health issues in late 2020. Students are currently co-located within the town's primary school in an overcrowded site. A Ministerial announcement made on 3 June 2021 committed to the construction of a new High School at Wee Waa on existing Department of Education owned land, adjacent Crown land, as an urgent priority. The site is located on Mitchell Street/Kamliaroi Highway and is legally described as Lot 1 DP577294, Lot 2 DP550633 and Lots 124-125 DP757125.

This report accompanies a State Significant Development Application which seeks consent for the construction of a new high school with a capacity of up to approximately 200 students in a series of two-storey buildings, an Indigenous learning centre, sporting fields and associated civil and utilities works, with future capacity for 300 students subject to funding & service need. For a detailed project description refer to the EIS prepared by Ethos Urban.



- Two-stream High School catering for 200 students with the capacity to grow to 300 students subject to funding & service need.
- Two-storey built forms, fully accessible and equitable, including:
  - 10 General Learning spaces;
  - 5 Specialist spaces, including: Art, Science, TAS, Hospitality, Performance;
  - 1 Learning Support Units;
  - Agriculture and Environment;
  - Binaalbaa Indigenous Cultural Centre;
  - Sporting Fields, Athletics Track, Covered & Fenced Outdoor Sports Courts;
  - Integrated Landscape and Drainage Swale;
  - 40 Carparking spaces, Bus Bays, Kiss & Drop;
  - Fencing and Security;
  - Active and Passive Sustainable Development;
  - Waste Resource and Recovery Depot;
  - Wayfinding & Signage;
  - Public Art; and
  - Community Access.

Secretary's Environmental Assessment Requirements

Architectural Plans	Drawings
Provide:	
- a detailed **site and context analysis** to justify the proposed site planning and design approach including massing options and preferred strategy for future development.	See Appendix C of the EIS
- a **visual impact assessment** that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items.	See Appendix C of the EIS
- a **detailed constraints map** identifying the key environmental and other land use constraints that have informed the final design of the development.	See Appendix C of the EIS
- **plans, elevations and sections** of the proposed development.	See Appendix C of the EIS
- **cladding, window and floor details,** including external materials.	See Appendix C of the EIS
- a **site plan** showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process).	See Appendix C of the EIS
- **plans and details of any advertising/business** identification signs to be installed, including size, location and finishes.	See Design Report: Section Section 2.3.3 Site Plan, 2.8 Elevations, 2.9 Signage and Wayfinding
- **shadow diagrams.**	See Design Report: Section 2.5.1
- a **view analysis**, where relevant, of the site from key vantage points and streetscape locations and public domain including photomontages or perspectives showing the proposed and likely future development.	See Design Report: Section 2.5.2
- an **analysis of proposed lighting** that identifies lighting on-site that will impact surrounding sensitive receivers and includes mitigation management measures to manage any impacts.	TBC with Lighting & Electrical Consultant once engaged.
Design Report	
Address:	
- the **height, density, bulk and scale, setbacks and interface** of the development in relation to the surrounding development, topography, streetscape and any public open spaces.	Section 2.7
- **design quality and built form**, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colour palette.	Envelope Concept - Section 2.7, Elevations - Section 2.8, Material Study - Section 2.10, Perspectives - Section 2.11.
- how **Crime Prevention through Environmental Design** (CPTED) principles are to be integrated into development.	Section 2.6, Section 2.1.2
- how **good environmental amenity** would be provided, including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility	Section 2.1.2, Section 2.14, Section 2.15, Section 2.15.1. Refer to Section 2.3.4 and Section 2.1.2 for future flexibility of design the design floorplates.
- how **design quality will be achieved** in accordance with Schedule 4 Schools – design quality principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools (GANSW, 2018).	Section 2.1.2.
- how **services**, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Section 2.3.3 Site Plan, Section 2.3.8, Section 2.6 Access, Security & Circulation Strategy

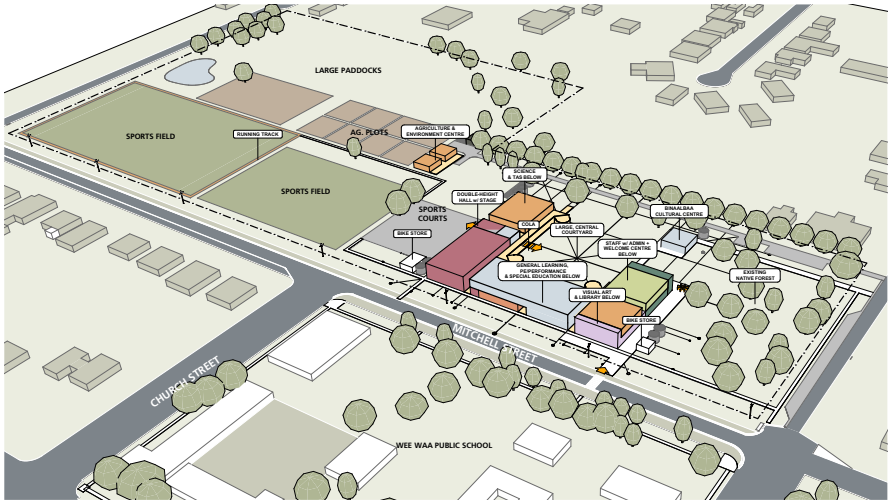
Design Report	
Provide:	
- a **detailed site and context analysis** to justify the proposed site planning and design approach including massing options and preferred strategy for future development.	See Appendix C of the EIS
- a **visual impact assessment** that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items	See Section 2.11 Key Perspectives
- a **detailed constraints map** identifying the key environmental and other land use constraints that have informed the final design of the development.	See Section 1.5
- **plans, elevations and sections** of the proposed development.	Section 2.3.3, 2.8
- **cladding, window and floor details,** including external materials.	Section 2.10.2
- a **site plan** showing **all infrastructure and facilities** (including any infrastructure that would be required for the development, but the subject of a separate approvals process).	Section 2.3.3, Refer to Consultants Issue - Marline/Barnson utilities plan.
- **plans and details** of any **advertising/business** identification signs to be installed, including size, location and finishes.	Section 2.3.3 Site Plan, 2.8 Elevations, 2.9 Signage and Wayfinding
- **shadow diagrams.**	Section 2.5.1
- a **view analysis**, where relevant, of the site from key vantage points and streetscape locations and public domain including photomontages or perspectives showing the proposed and likely future development.	Section 2.5.2
- an **analysis of proposed lighting** that identifies lighting on-site that will impact surrounding sensitive receivers and includes mitigation management measures to manage any impacts.	TBC with Lighting & Electrical Consultant once engaged.
- **Assess** amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 2.5.1, 2.5.2, 2.15.1
Design report to demonstrate how design quality would be achieved in accordance with the above Key Issues including:	
- architectural design statement.	Section 2.1.2, 2.2
- diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal.	Section 2.2, 2.2.1, 2.2.2, 2.2.3
- detailed site and context analysis.	Refer to drawing CD1002, CD1003, CD1004, CD1005
- analysis of options considered to justify the proposed site planning and design approach.	Section 1.4
- summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice.	Section 3.1 & 3.2 of this report
- summary report of consultation with the community and response to any feedback provided.	A Functional Design Brief (FDB) was developed.
- Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 2.5.1, 2.5.2, 2.15.1

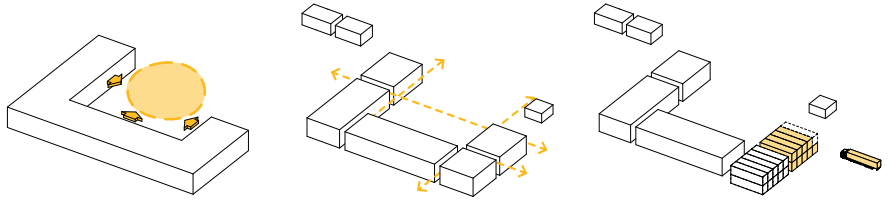
1.2 INITIAL PREFERRED MASTERPLAN PROCESS SUMMARY

1.2.1 OVERVIEW

The masterplan prepared by SHAC in May 2021, for 105-107 Mitchell Street, investigated the opportunities for overall site massing and building placement. The selected option (Option 3Ci) provides a rare opportunity to re-imagine the school, alongside the existing primary school as an important and integral educational precinct within the Wee Waa community. The proposed development is massed to the south-east boundary, adjacent to the existing Wee Waa Public School, ensuring a public presence along the Kamilaroi Highway/Mitchell Street and a strong and identifiable entrance to the school site. The south-eastern facade facing the boundary includes a customised screen that incorporate art representative of the unique characteristics of the school. Furthermore the screen balanced the need for presence and privacy, through both acting to define a new prominent presence in the community, while enveloping the school to ensure visual and acoustic privacy for its users.

Oriented away from the highway, the Wee Waa High School opens to the north. The two storey proposal minimises the overall footprint of the school consequently minimising its impact on established trees and school spread / travel distance for staff and students. The footprint of the built form wraps around a central landscaped communal core/courtyard, with outlook from every precinct onto the shared play space and Indigenous Cultural Centre.





PLEASE NOTE: IMAGES ABOVE INDICATE KEY DESIGN STRATEGIES AND PREFERRED OPTION IDENTIFIED DURING THE MASTERPLAN PHASE OF WORKS. THE PREFERRED MASTERPLAN OPTION WAS FURTHER DEVELOPED AND DOCUMENTED DURING THE CONCEPT DESIGN PHASE.

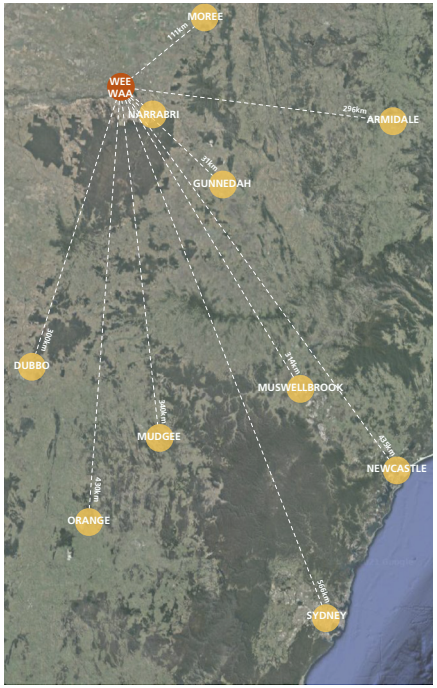
The Indigenous Cultural Centre; Binaalbaa, is an integral part of the school, yet maintains its own identity from the primary built form, anchored in the established native landscape. There is dialogue between the Library & Binaalbaa where the Library is a connection to the world, and Binaalbaa connects the community to Country.

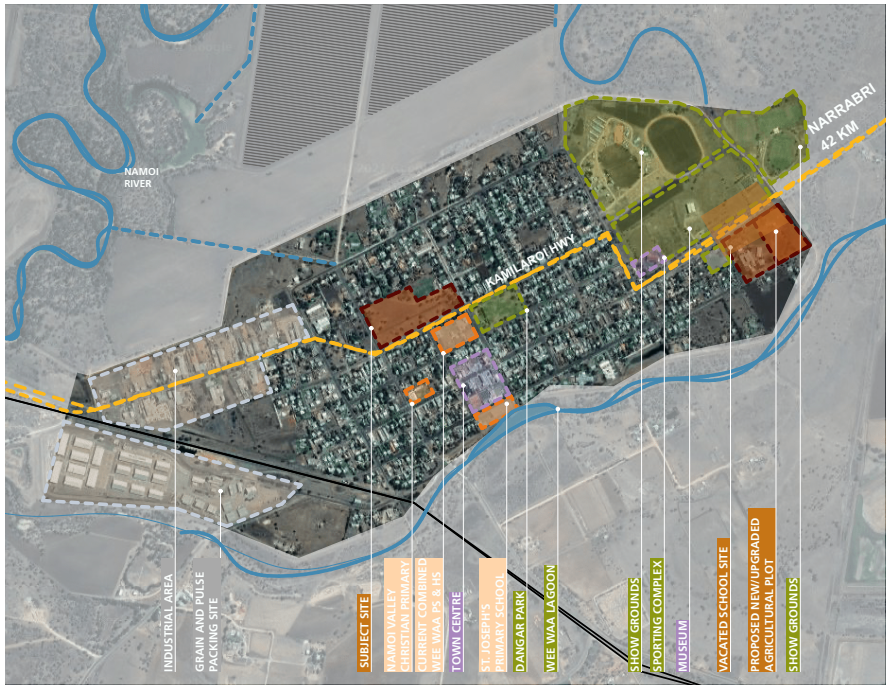
The preferred Option 3Ci divides the brief into 6 permeable learning precincts, all connected via central circulation spines. Such design choreographs meaningful interactions between consolidated learning and staffing precincts and curate both visual and physical relationships between the Agriculture plot, Science Learning Centre, sports fields and Wee Waa Primary School beyond. These circulation spines extend to the entry of the school, where a high quality and identifiable entry is proposed. The footprint of built form takes into consideration the general functional requirements of a high school, while ensuring the unique requests of the Wee Waa High School and community are heard and responded to.

Option 3Ci incorporates key Modern Methods of Construction (MMoC) design principles including standardised modules and structural grids which achieves a desirable size for manufacture and transportation. This system presents opportunities for design and construction efficiencies, whereby the assembly method allows for minimal time on site and consequently minimised staging requirements.

MASTERPLAN DESIGN VISION - FRONT ENTRY

1.2.2 LOCATION





Wee Waa is settled along the meandering Namoi River, bearing a history as unique and diverse as the area it encompasses.

In the 2016 Census, there were 2,080 people in Wee Waa and Aboriginal and/or Torres Strait Islander people made up 16.8% of the population. In Wee Waa 35.3% of people were attending an educational institution. The Index of Community Socio-Education Advantage valued Wee Waa High School at 870 compared to the state average of 1000, indicating there are issues of social disadvantage in Wee Waa.

The town currently has three primary schools, and one high school (subject high school currently co-located on Public School site). Dangar park is located close to the proposed site and to the town's commercial centre. Narrabri is the closest major town to Wee Waa (42km), accessible by car or public bus via the Kamilaroi Highway. Narrabri is the nearest option for the Wee Waa community for most health care and tertiary education facilities such as TAFE.

The Concept Design has been carefully considered within the school's demographic, urban and community contexts. It reflects the importance of being accessible to the broader community and the need to maximise the connection with the existing open landscape setting and Public School.

The proposed design takes delivers opportunities not currently within the community including an athletics/running track.

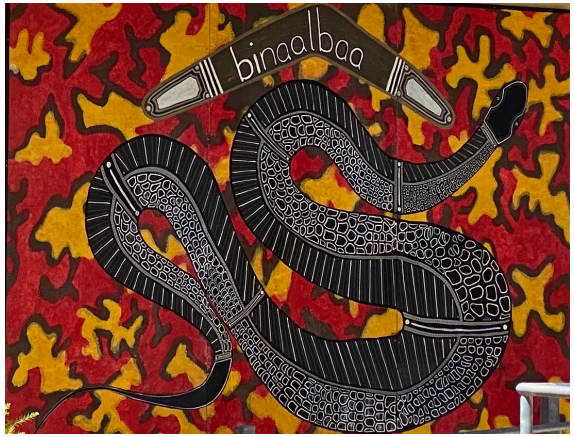
1.2.3 APPROACH TO INDIGENOUS CULTURE & HERITAGE

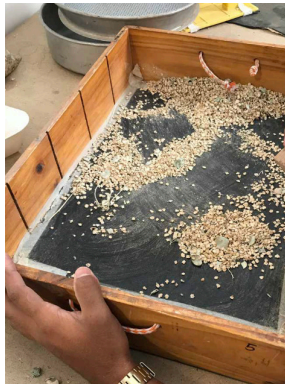
The Aboriginal meaning of Wee Waa is "Fire for Roasting" from the language of the Kamilaroi people. With the Kamilaroi peoples' enduring connection with the land and their deep understanding of the natural environment, they are known as one of Australia's largest Aboriginal First Nations.

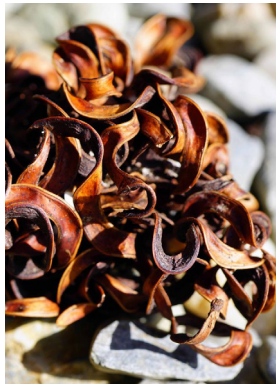
SHAC acknowledges the Gamilaraay and Kamilaroi people as the traditional custodians of this land. We pay respect to the Elders both past, present and emerging, and we honour Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society. To that end, all of our work seeks to uphold the idea that if we care for Country, it will care for us.

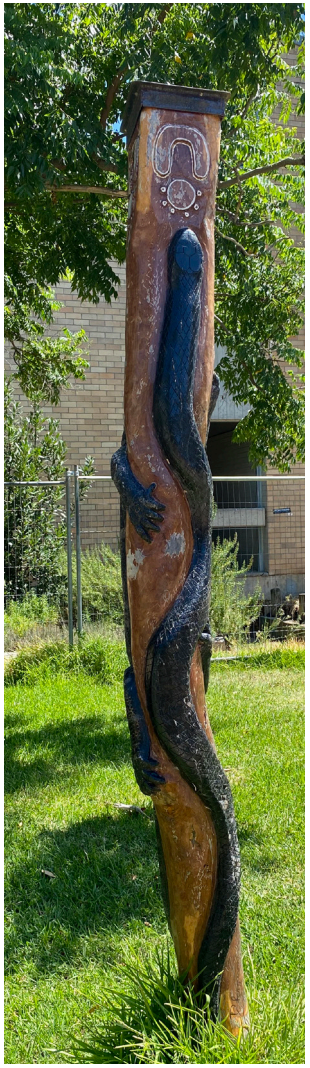
Connection with Country is emphasised throughout the design process. User Group workshops and meetings with Wee Waa High School's Aboriginal Education Officer (AEO), have discussed the following approaches:

- **Wayfinding and Signage:** 'Belong' is to be a key word ingrained into the culture of the school, facilitating close knit social clan engagement and visibility. The way-finding and welcome signs are to be in native language including "we are on Gamilaraay lands".
- **Totems and Murals:** Totems play an integral role in Indigenous identity within the Kamilaroi nation. Opportunities exist to utilise an existing funds Totem grant at the new school to incorporate totems and murals within or upon the buildings and surrounding landscape.
- **Teaching facilities:** The existing school has a stand alone centre; 'Binaalbaa room', meaning 'A learning place'. The new Indigenous Cultural Centre is to include a "community circle" / yarning circle for sharing stories.
- **Landscape:** Opportunities for cultural narrative through space for interpretive artwork, planting, materiality and functional spaces. The local native grasses are used as part of a pre-colonial indigenous agriculture study. Native grass fields onsite can assist further research and development of application. Future visions to create a "Food Park' will unite local people from all walks of life with an interest in investigating and using native plant food species.









1.2.4 APPROACH TO SITE INFLUENCING ARCHITECTURAL CONCEPT

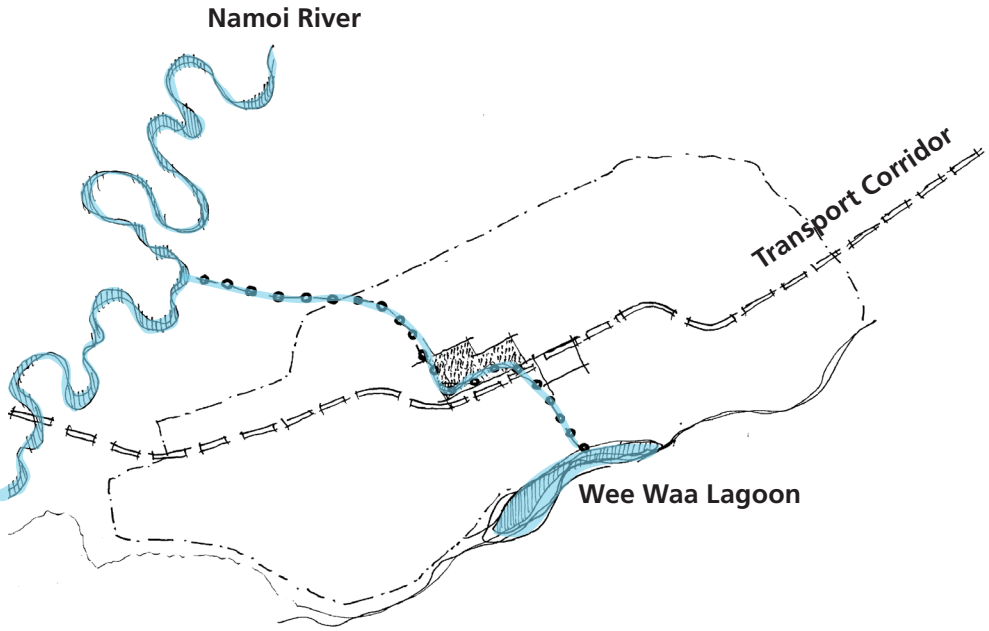
MASTERPLAN MOTIF: WATER

FUNDAMENTAL TO THE ANCIENT TOPOGRAPHY OF THE REGION, AND THE PREVAILING AGRICULTURAL INDUSTRIES.

MACRO

- The subject site is situated in the Namoi River Valley, a system which stretches westward from the Great Dividing Range to the extensive riverine floodplains of Wee Waa and beyond.
- It contains diverse and natural environments that support domestic water use, agriculture, tourism and recreation, mining and the cultural values and practice of local Aboriginal Traditional Owners.
- The lower Namoi River at Wee Waa is characterised by a primary channel with a network of anabranches, small tributaries, lagoons and wetlands defining the landscape.
- Periodic flooding inundates the floodplain, nourishing it's systems, until eventually filtering back into the Namoi.

MASTERPLAN MOTIF: WATER



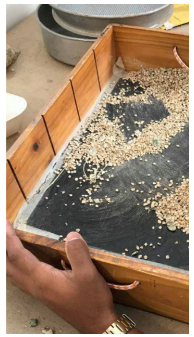
MICRO

- Within the township of Wee Waa, the site is located along the original overland flow path between the two key water sources of the area – Wee Waa Lagoon and the Namoi River.
- Urban development and engineering solutions have significantly altered the pathway, The school presents an opportunity to reinstate the natural flow across the site through considerate landscape strategies, cleansing the land seasonally as part of the greater riverine system.

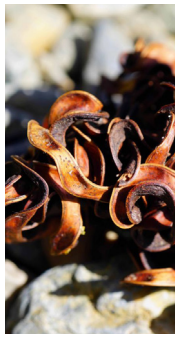
MASTERPLAN MOTIF: HARVEST



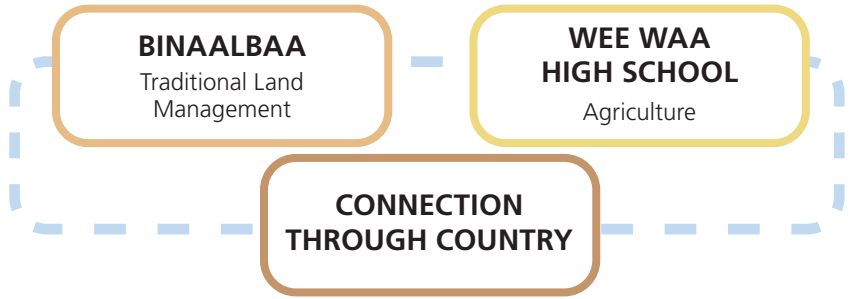





SUSTAINABLY CULTIVATING THE RIVER VALLEY HAS ENDURED AS A CULTURAL PRACTICE OF THE KAMILAROI FOR MILLENIA. THE REGION IS TODAY DEFINED BY MODERN AGRICULTURE PRODUCTION.



Together the schools harvest in the following ways:

Produce

- 'Dhunbarrbila' (lots of edible grain/seed in one place - native grasses) & Bush Tucker
- Aquaculture
- Commercial farming practices (Cotton, Beef, Lamb, Forestry/Agro-Forestry)

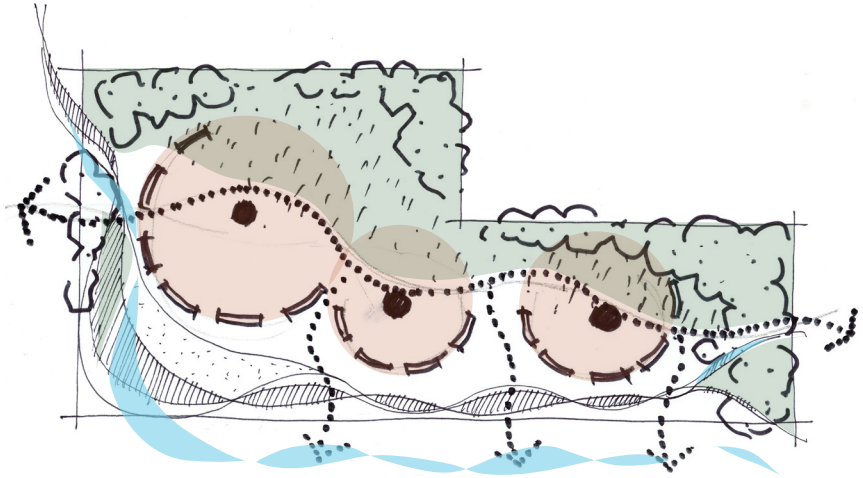
Education

- Knowledge Sharing

Sports

- Skills, Wellbeing/Health, nurturing fitness.

MASTERPLAN MOTIF: HARVEST



Produce	Sports	Education
Water swale	Open fields	Shade shelter
Irrigation	Sporting precinct	Enclosure protection
Aquaculture	Recreation	Accessibility, gathering
Propagation	Community participation	Proximity to amenity
	Wellbeing, fitness, health	

- Binaalbaa is a learning place within the school community, preserving the traditions of the Kamilaroi nation.
- Harvesting the vast plains for 'Dhunbarr' – grains and seeds, was prolific within the culture of the Kamilaroi, who have been referred to as Grass People.
- Exploring the qualities of the many native grasses and their applications, is one example of Binaalbaa's focus on the ancient, sustainable land practices.
- Wee Waa High School with a focus on Agriculture, covers all aspects of commercial farming

Both entities - **Binaalbaa and Wee Waa High** - have a connection through their relationship to the land, Country.

Together they create an integrated campus whose underlying focus is Harvest.

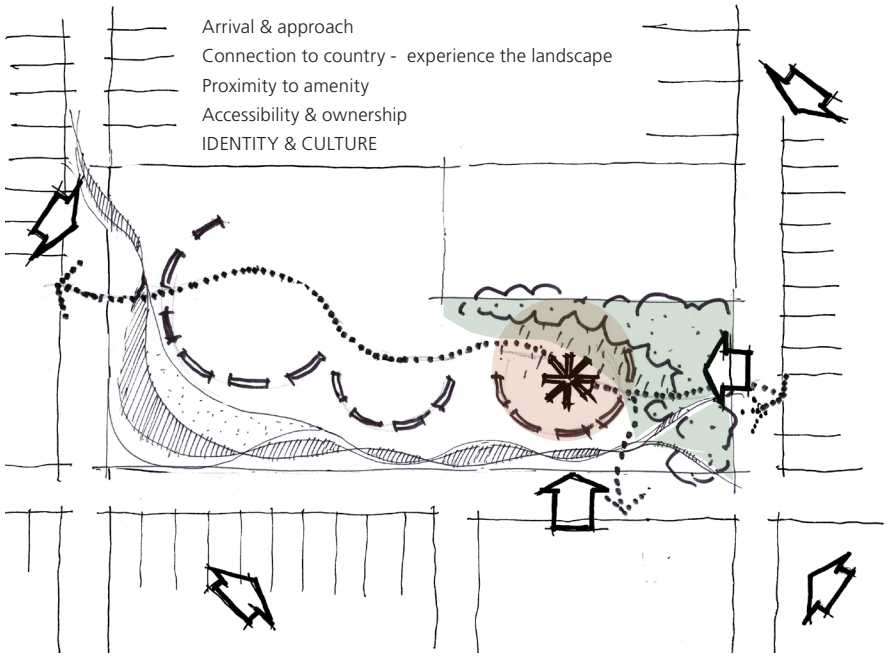
MASTERPLAN MOTIF: GATHERING

FROM WHAT HAS BEEN PASSED DOWN THROUGH THE AGES, BY DEFINITION WEE WAA IS "PLACE FOR FIRE", "FIRE FOR ROASTING" "FIRE STICK" REFERRING TO THE AREA AS A CAMP SITE FOR THE LOCAL KAMILAROI - A PLACE OF GATHERING.

MACRO

The proposed school site is in the absolute centre of town – making it innately geographically and culturally significant within the community. Opposite the Primary School and the Town Park, the High School will complete the precinct where children gather to learn and play.

MASTERPLAN MOTIF: GATHERING



MICRO

The inherent landscape features on the site have determined the precinct locations and building arrangement:

- The sheltered north-eastern corner, with its remnant bushland, proximity to the Primary School and two street frontages is considered conducive for the Learning Precinct.
- The large, open north facing area, is ideal for the Sports and Outdoor Active Play Space, with the Agriculture Plot located on an alternate site.
- The expansive area along the southern boundary would allow for the recreational fields to also be accessible to the wider community.

It is crucial the building arrangement responds to the environmental constraints of the site, while promoting the underlying ethos of the school. The Aboriginal motif of the arc represents, in many variations, a wind break around a site, campfire, or meeting place.

By arranging the buildings in an arc like formation, they physically manifest the Aboriginal symbol of GATHERING - quite literally creating a meeting place that is oriented to open up to the north-east, and provide a buffer from the busy roadway to the south.

1.3 DESCRIPTION OF OTHER SERVICES

SINSW have recognised existing opportunities for partnering with local agri-business and other stakeholders include the Narrabri Shire Council, CSIRO, Bayer, University of Sydney. It has been noted that the Gunnedah PCYC's Crime Prevention Committee has previously approached the school offering to run programs if a joint-use space was available. What's more, the school emphasises the importance in maintaining and building the relationship formed with Wee Waa Local Aboriginal Land Council and the town's Indigenous community.

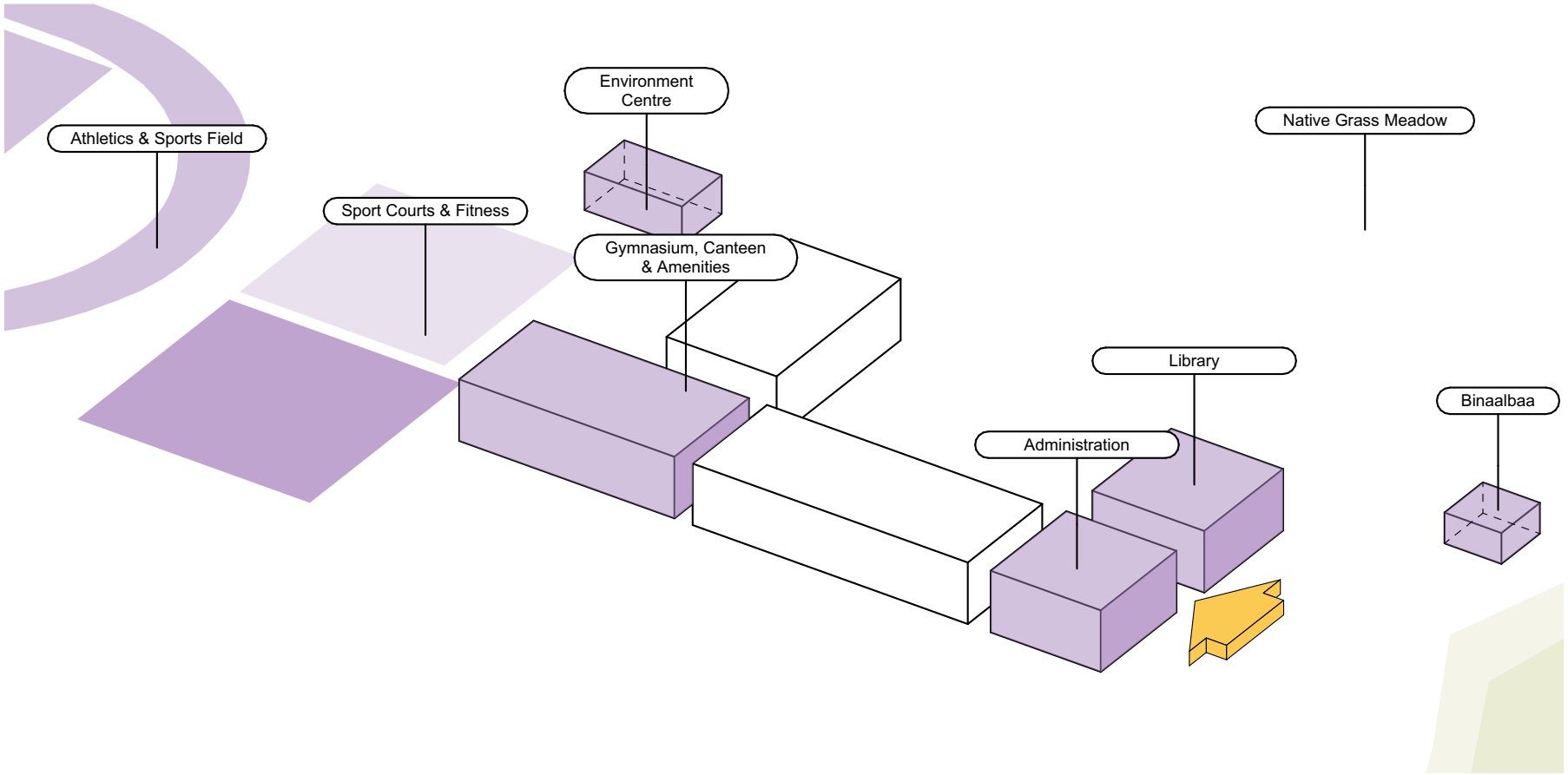
Services considered as part of the project scope could include:

- Partnership Opportunities
- Shared Use
- Joint Use

SHAC have ensured that the ongoing partnership with aforementioned external stakeholders and their educational outreach programs can be maintained. To that end, the Environment Centre and Indigenous Cultural Centre provides the facilities for delivering high-quality STEM education and cultural programs to all students, with the opportunity for community programs and use.

The proposed footprint has ensured that shared or joint-use opportunities for both the community and school remains achievable for Wee Waa through pragmatic design strategies. These strategies include aligning the more public facing components such as adaptable learning spaces, sports hall, courts and fields along Mitchell Street. This ensures the facilities create a prominent and accessible public address while ensuring the remainder of the school can be secured during after hours use.

SINSW identified that there is the potential for the gymnasium, as part of an emergency disaster response, to be used as a refuge facility and/or community evacuation facility. SINSW is in consultation with Emergency Services to assess the suitability of the facility for this purpose and the accompanying design requirements.

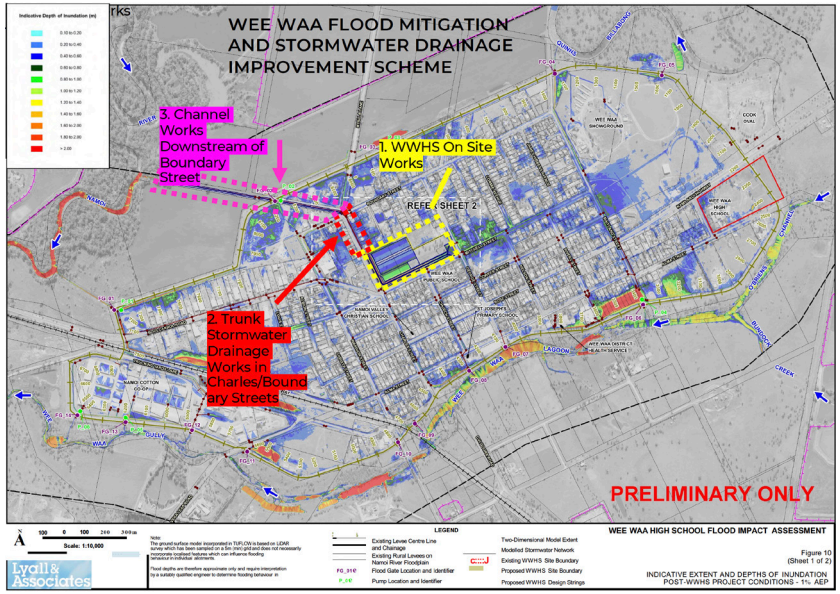

Athletics & Sports Field
Environment Centre
Native Grass Meadow
Sport Courts & Fitness
Gymnasium, Canteen & Amenities
Library
Binaalbaa
Administration

1.4 DEPARTURES FROM THE MASTERPLAN

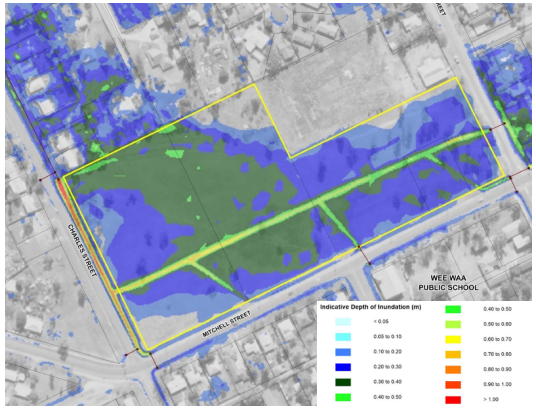
Throughout the concept design process the project has continued to evolve, with feedback from meetings including Project Reference Group (PRG), Project Community Group (PCG), Expert Review Group (ERG) and Technical Stakeholder Group (TSG), all playing a key role in shaping the new high school to Wee Waa's unique character. Departures when transitioning from masterplan to concept design stemmed from tying together the myriad of requirements identified within these meetings.

These departures included notable refinement to all spaces to better align with the EFSG area allocations of a 2-stream high school. SHAC have deliberately followed the confines set by the MMoC 7500x3000mm grid, to ensure staging of construction and delivery can stay consistent with estimates of the masterplan report. To that end, minor departures in area have resulted in prioritising the efficiencies of MMoC.

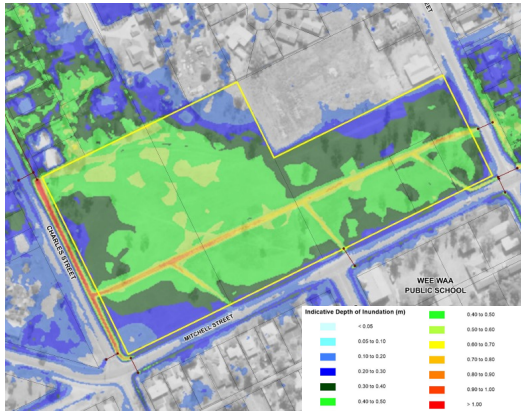
Through explorations of key site constraints, there have been controlled departures from the Masterplan in order to achieve a robust solution. Key drainage solutions introduced during this stage of works include a perimeter swale, forming a landscaped fringe to the school. Options of school layouts were further tested to meet the needs of both the unique site and school community. These options are outlined in Section 1.5 Masterplan Options Analysis, as well as entry location studies in response to the Flood Mitigation and Stormwater Drainage Improvement Scheme.



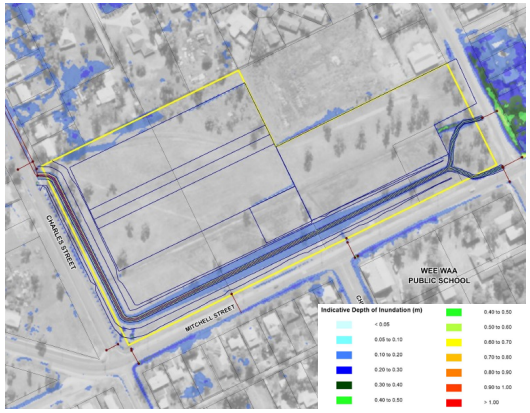
FOR INFORMATION PURPOSES ONLY. REFER TO THE EIS FOR REPORTS.



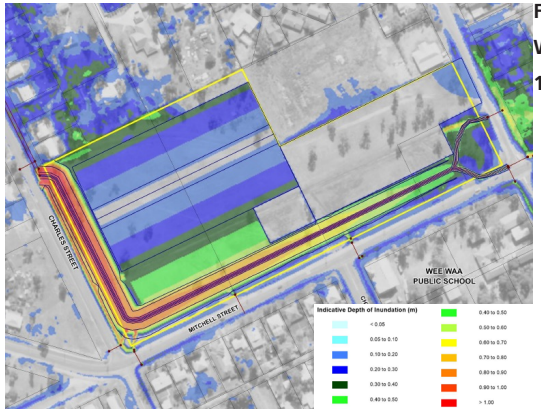
DETAILED FLOOD ANALYSIS –
EXISTING SITE
20% AEP (5 YEAR EVENT)



DETAILED FLOOD ANALYSIS –
EXISTING SITE
1% AEP (100 YEAR EVENT)



FLOOD INUNDATION LEVELS –
WITH RECOMMENDATIONS
20% AEP (5 YEAR EVENT)



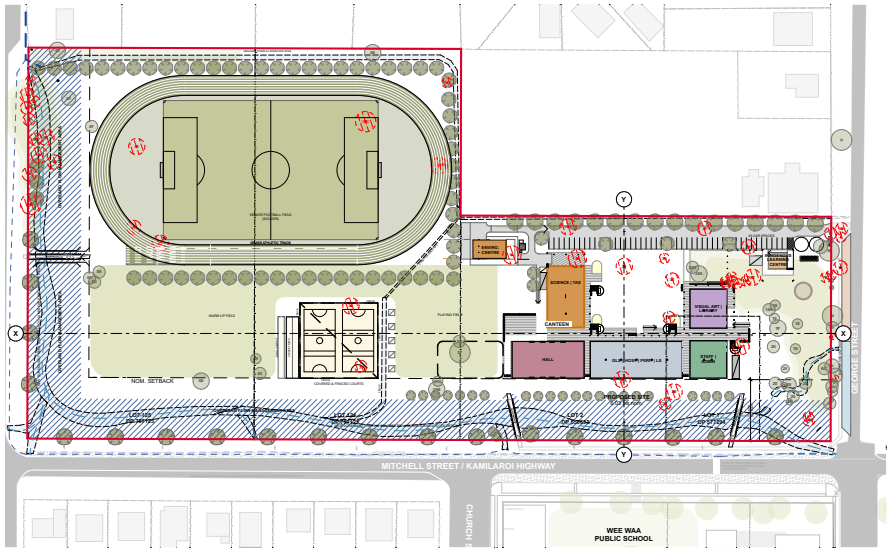
FLOOD INUNDATION LEVELS –
WITH RECOMMENDATIONS
1% AEP (100 YEAR EVENT)

1.5 MASTERPLAN OPTIONS ANALYSIS

OPTION A:
PROPOSED WEE WAA HIGH SCHOOL PRECINCT
Mitchell Street
+ AGRICULTURE AND ENVIRONMENT PRECINCT
Purcell Ave

Opportunities:
- School perceives alternative agriculture location as workable
- Retention and upgrade of existing agriculture fields. Resulting in more commercially viable agriculture facility with existing irrigation license
- After hours access and community use viable due to clear sporting precincts, access and additional parking
- Maintain school frontage on George Street with opportunity for landscaped forecourt / fringe to school

Constraints:
- Encroaches proposed swale system in existing orientation
- Playing field and running track have potential to be unsuitable due to water inundation during frequent 1-in-5-year flood events

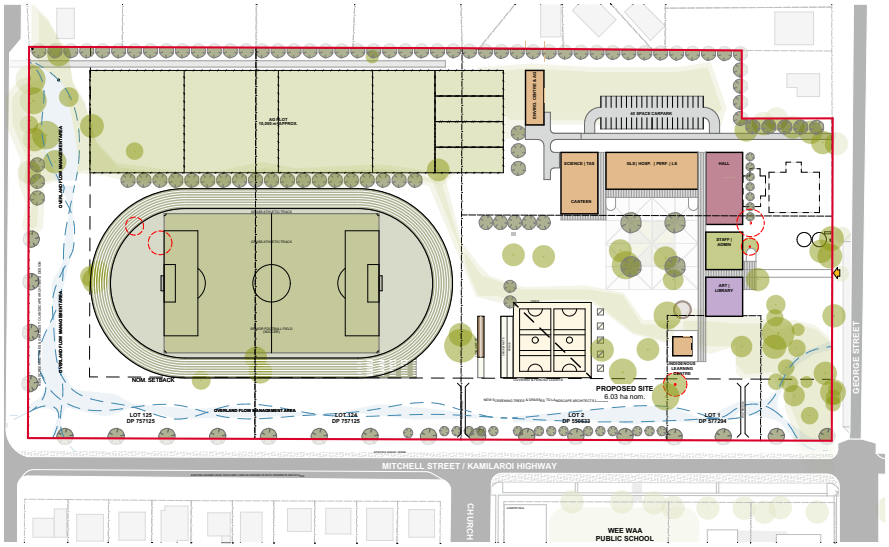


OPTION A1: PREFERRED
PROPOSED WEE WAA HIGH SCHOOL PRECINCT
Mitchell Street

+ AGRICULTURE AND ENVIRONMENT PRECINCT
Purcell Ave

Opportunities:
- Field and running track located on higher ground, therefore remaining dry and functional all year round
- After hours access and community use viable due to clear sporting precincts, access and additional parking
- Maintain school frontage on George Street with opportunity for landscaped forecourt / fringe to school

Constraints:
- Not all agriculture can be collocated onsite, resulting in additional travel, scheduling and staffing needs.



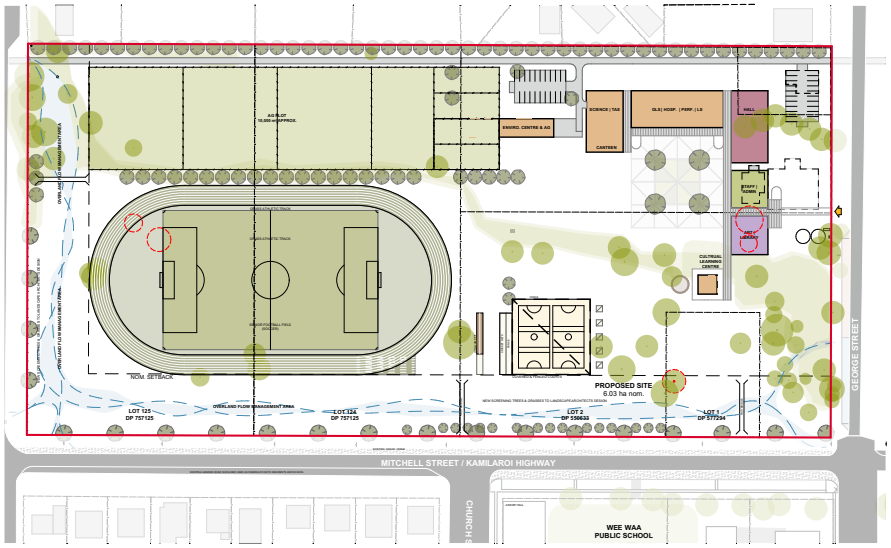
OPTION B: LAND ACQUISITION
PROPOSED WEE WAA HIGH SCHOOL PRECINCT
Mitchell Street

Opportunities:

- Majority of the school to be positioned on higher ground and protected from inundation during 1-in-5 year flooding events
- Longer pick up and drop off zone allows for better separation of cars and buses
- Mass planting around northern boundary to provide privacy to neighbours

Constraints:

- Limited Agriculture Plot size
- Playing field and running track have potential to be unsuitable due to water inundation during frequent 1-in-5-year flood events
- Additional cost incurred for the acquisition of neighbouring land
- New section of street frontages results in higher impact on neighbouring properties on adjacent street



OPTION B1: LAND ACQUISITION
PROPOSED WEE WAA HIGH SCHOOL PRECINCT
Mitchell Street

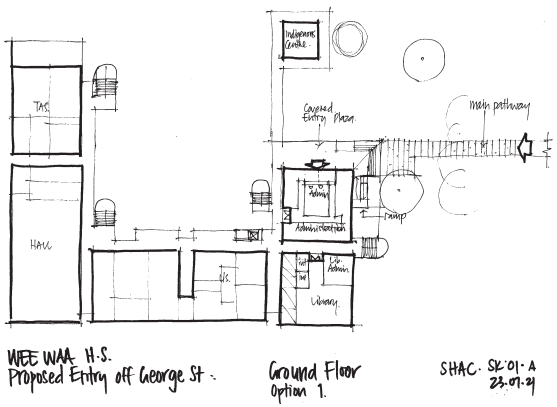
Opportunities:

- All of the school to be positioned on higher ground and protected from inundation during 1-in-5 year flooding events
- Longer pick up and drop off zone allows for better separation of cars and buses
- Mass planting around northern boundary to provide privacy to neighbours
- Field and running track located on higher ground, therefore remaining dry and functional all year round

Constraints:

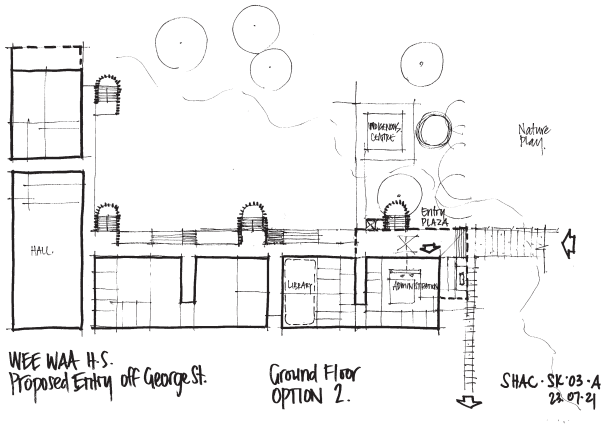
- Limited Agriculture Plot size
- Playing field and running track have potential to be unsuitable due to water inundation during frequent 1-in-5-year flood events
- Additional cost incurred for the acquisition of neighbouring land
- New section of street frontages results in higher impact on neighbouring properties on adjacent street
- Playing field and running track have potential to be unsuitable due to water

1.5.1 ENTRY APPROACH STUDY



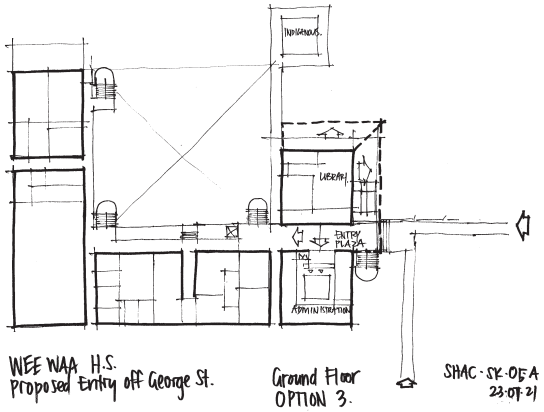
OPTION 1

- Centralised Administration
- Clear view from street
- Connected to landscape
- Library isolated
- Courtyard sense of enclosure



OPTION 2

- Linear journey
- Wayfinding clear to Administration
- Admin Connected to landscape
- Library has north aspect
- Loss of intimate enclosure
- 'L' protects from westerly winds



OPTION 3: PREFERRED/SELECTED

- Wayfinding clear to Administration
- Library accessible to all of school and after hours community
- Connected to landscape
- Courtyard sense of enclosure
- Activated frontage in safe location

2. Concept Design Development

THE CONSISTENT PURPOSE GUIDING THE PATH FORWARD.

2.1 GUIDING AND KEY DESIGN PRINCIPLES

2.1.1 EDUCATION RATIONALE

The Educational Rationale identified school-specific principles of learning and teaching attempting to describe the range of opportunities and desired pedagogical strategies of the school. These principles were addressed as followed:

1. LEARNING IS VALUED THROUGH EXCELLENCE IN TEACHING & LEARNING, INCLUDING HIGH EXPECTATIONS

- Spaces allow for flexible use of furniture
- Spectrum of public and private spaces for a range of DoE learning modules and practices to be activated
- Saturated use of wall space for ICT infrastructure and writable surfaces to facilitate a range of interactive learning activities
- Collaborative and independent working spaces for teachers

2. LEARNING IS AGILE & RESPONSIVE IN SUPPORTING STUDENTS TO SUCCEED IN A CONTINUALLY & RAPIDLY CHANGING WORLD.

- Furniture selections will be made to support flexibility in use of defined learning modes
- Connected range of learning spaces to allow seamless opportunity for physical interrogation of curriculum and acknowledge different learning modalities.
- Refined lightweight internal walls and regular structural grid ensures long term flexibility is achieved.

3. LEARNING IS COLLABORATIVE FOR BOTH TEACHERS & STUDENTS.

- Seamless transitions between seminar, shared learning, learning spaces and workshops allow students to chose the learning spaces based on their needs and intentions.
- Zones within the co-located Staff Precinct allows for teachers to work independently and collaboratively.
- Library, Support Unit and Specialist spaces allow for teachers able to maintain supervision of students in multiple areas.

4. LEARNING IS INCLUSIVE OF ALL CULTURES & VALUES, INCLUDING STUDENTS' PERSONAL EXPERIENCES

- Through applying considered entrance and techniques the school is open and welcoming to the community
- Indigenous perspectives such as yarn circles, outdoor learning spaces and way finding have been incorporated into the design
- Sufficient shading and landscaping to meet the severe heat environments at Wee Waa
- All learning facilities are easily accessible for students and staff with physical disabilities

5. LEARNING IS RELEVANT TO STUDENTS, VALUING BOTH THEIR ACADEMIC & SOCIAL/ EMOTIONAL SUCCESS

- Operable walls allow for greater groupings of students that are beyond the traditional class sizes
- Students with special needs are supported and integrated within the General Learning Spaces
- Existing programs valued within the school such as VET, agriculture, robotics and Indigenous programs are sustained
- Spaces facilitating sport and performance are designed and located to accommodate joint use of facilities
- Space and location requirements for emotional support, such as councellor are carefully considered.

6. LEARNING IS SUPPORTIVE OF STUDENTS MAKING AND VALUING CONNECTIONS BETWEEN SCHOOL-BASED LEARNING & POST SCHOOL VOCATIONS

- Career councellor has access for both individual and larger collaboration
- Storage, shedding and equipment meet the needs of the vocational education programs
- The hospitality room is a Trade Training Centre, with the potential to operate during performances and other joint use programs due to its proximity to the Gymnasium and sporting facilities

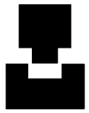
2.1.2 GUIDELINES: DESIGN EXCELLENCE PRINCIPLES BY GOVERNMENT ARCHITECT NSW

BETTER PLACED

EDUCATION SEPP DESIGN QUALITY PRINCIPLES:

The following section lists the Education SEPP Design Quality Principles to be used when designing new schools and school building upgrades. These principles are a set of values that enable a common understanding between school developers, design teams, school staff, students and the community when designing new school buildings or upgrades.

SHAC have continued to consider the Education SEPP Design Quality Principles as part of a holistic and integrated project design and review process to ensure the delivery of 'better' design.



BETTER FIT
CONTEXT, BUILT FORM AND LANDSCAPE

Schools should be designed to respond to and enhance the positive qualities of their setting, landscape and heritage, including Aboriginal cultural heritage

The design and spatial organisation of buildings and the spaces between them should be informed by site conditions such as topography, orientation and climate

Landscape should be integrated into the design of school developments to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites

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

BETTER PERFORMANCE
SUSTAINABLE, EFFICIENT AND DURABLE

Good design combines positive environmental, social and economic outcomes. Schools and school buildings should be designed to minimise the consumption of energy, water and natural resources and reduce waste and encourage recycling

Schools should be designed to be durable, resilient and adaptable, enabling them to evolve over time to meet future requirements.

BETTER FOR COMMUNITY
ACCESSIBLE AND INCLUSIVE

School buildings and their grounds should provide good wayfinding and be welcoming, accessible and inclusive to people with differing needs and capabilities

(Note: Wayfinding refers to information systems that guide people through a physical environment and enhance their understanding and experience of the space)

Schools should actively seek opportunities for their facilities to be shared with the community and cater for activities outside of school hours.

BETTER FOR PEOPLE
HEALTH AND SAFETY

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

BETTER WORKING
AMENITY

Schools should provide pleasant and engaging spaces that are accessible for a wide range of educational, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood

Schools located near busy roads or near rail corridors should incorporate appropriate noise mitigation measures to ensure a high level of amenity for occupants

Schools should include appropriate, efficient, stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas.

BETTER VALUE
WHOLE OF LIFE, FLEXIBLE AND ADAPTIVE

School design should consider future needs and take a whole-of- life-cycle approach underpinned by site wide strategic and spatial planning

Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

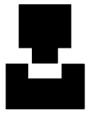
BETTER LOOK & FEEL
AESTHETICS

School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and a balanced composition of elements

Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood

The built form should respond to the existing or desired future context, particularly, positive elements from the site and surrounding neighbourhood, and have a positive impact on the quality and sense of identity of the neighbourhood.

DESIGN VERIFICATION



BETTER FIT
CONTEXT, BUILT FORM AND LANDSCAPE

	DESIGN RESPONSE	DOCUMENT REFERENCE
Respect and respond to its physical context, neighbourhood character, streetscape quality and heritage	The proposed buildings occupy the South East boundary, setback 40m from Mitchell Street / Kamilaroi Highway with Wee Waa Public School adjacent as an important and integral educational precinct within the Wee Waa community. Although disparate from the residential typology to the south-west of the site, it remains clear of built form, with open playing fields and an athletics track available for after hours and community use, enhancing the quality of the streetscape through activation.	Section 2.5.2, 2.7 & 2.15.1 of this report.
Consider interpretation of Aboriginal cultural heritage within the design of buildings and open spaces in consultation with local Aboriginal community	The project team, including representatives from the school, have and will continue to actively consult with local Indigenous parties that have registered their interest in the project. SHAC have engaged directly with the Aboriginal Education Officer (AEO) at the school to learn about the cultural heritage of Country the project site is part of, and Aboriginal placenames of Wee Waa and the surrounding landscape, being the Snake, Sand Goanna, and family totem of the Emu that is being incorporated in the design of buildings, public spaces & art.	Section 1.2.3, 1.2.4, 2.10.2, & 2.11 of this report.
Respond to its natural environment including scenic value, local landscape setting and orientation	The positioning of the proposed school rests adjacent the existing eucalypt forest and native grass meadow, to promote a strong connection to the surrounding landscape, and minimise the development's physical intervention on the site. The built form is also elevated 900mm on the flood prone site addressing flooding issues whilst creating a clear identifiable entry, circulation spines, and forming an external street-scape of shared informal learning areas. The north-facing central courtyard shelters the harsh westerly weather, elimates long travel distances / circulation, whilst promoting passive observation and active participation, creating a sense of community.	Section 1.2.4, 2.5.2, 2.10 & 2.15.1 of this report.
Retain existing built form and vegetation where significant	With no built form existing the two storey proposal minimises the overall footprint of the school, consequently minimising its impact on established trees including the eucalpt forest and native grass meadow that will be retained and enhanced.	Section 2.3.2, 2.3.3 of this report, and CD1102 Proposed Site Plan - Detailed
Include tree planting and other planting that enhances opportunities for play and learning	This is addressed in the Landscape Architecture Package by Moir Landscape Architecture. Opportunities for outdoor learning & places to sit, play and engage with the surrounding landscape is enhanced by increasing local native plantings and canopy communities.	Landscape Plans and Design Report by Moir Landscape.
Ensure landscaping improves the amenity within school grounds and for uses adjacent to the school	This is addressed in the Landscape Architecture Package by Moir Landscape Architecture. The proposed development considers the opportunity for the community to share the sport and recreation precinct outside of school hours and anhances the green corridor stretching from Dangar Park, through the existing and enhanced eucalypt forest, through the courtyard and out into the fields beyond.	Landscape Plans and Design Report by Moir Landscape & CD1101 Proposed Site Plan
Be informed by a current Conservation Management Plan (CMP) and consider local heritage items both on the school site and in the local neighbourhood	Although the site is not located within proxmity to a local heritage item or conservation area, the proposed development does share the objectives outlined by the Narrabri Shire Council Heritage Policy, particularly in relation to cultural heritage of the site and Country. An Aboriginal Cultural Heritage Assessment Report was undertaken through engagements & walking the site. The project will continually evolve with engagements with the local community.	
Take advantage of its context by optimising access to nearby transport, public facilities and local centres	The proposed development in the centre of the town reflects the importance of being accessible to the broader community and makes provides opportunities including an enhanced recreation precinct with athletics/running track. The Proposed High School site with the use of a formed path to the Primary School opposite and Dangar Park, will complete the precinct where children gather to learn and play.	Section 1.2.2 of this report.
Consider height and scale of school development in relationship to neighbouring properties.	The two storey built form occupys the south-east boundary and is setback approx. 400m from the Mitchell Street / Kamilaroi Highway, respecting the height of the existing 2 storey buildings adjacent on the Primary School site.	Section 2.5.2, 2.7, 2.8, 2.10 & 2.11 of this report.

DESIGN VERIFICATION

BETTER PERFORMANCE
SUSTAINABLE, EFFICIENT AND DURABLE

	DESIGN RESPONSE	DOCUMENT REFERENCE
Be responsive to local climate including sun, wind and aspect	The climate environment is typically hot, dry summers and cold, wet winters. However, the project is undergoing Climate Adaptation considerations as part of the Resilience elements during early Green Star consultation & engagement.	Section 2.15 & 2.15.1 of this report
Select materials and approaches to detailing that are robust and durable	Material selection will ensure durability, and will be addressed further during design development & documentation in close consultation & collaboration with SINSW, EFSG & the BCA.	Section 2.7 & 2.10 of this report
Integrate landscape, planting and Water Sensitive Urban Design (WSUD) principles to enhance amenity and building performance	The landscape design includes extensive planting to provide shade to the play spaces & enhance amenity, with particular consideration to local native plants & trees and to increasing canopy communities. WSUD principles are developed to the extensive design of onsite stormwater to mitigate the existing flat, waterlogged site and provide a solution for the surrounding locality.	Section 2.3.3 of this report, Landscape Plans & Design Report by Moir Landscape, Civil Engineering Design Report, Plans & Stormwater Management Plan by MDE, Flood Impact Assessment by Lyall & Associates
Include deep soil zones for ground water recharge and planting	The site has extensive areas for deep soil plantings and allowances and both groundwater & stormwater management systems onsite and for the surrounding context.	andscape Plans & Design Report by Moir Landscape, Civil Engineering Design Report & Plans by MDE
Minimise reliance on mechanical systems	Operable glazing allows for natural and cross ventilation alleviating year-round reliance on mechanical systems. Sunlight penetration into the floorplates during winter contribute to comfortable internal temperatures and minimises need for these systems during colder months. Training for the management and maintenance system for the operation of natural systems will be implemented upon completion to ensure the effectiveness of these allowances.	Section 2.15.1 of this report and ESD Report by Aurecon
Include initiatives to reduce waste, embodied energy and emissions, through passive design principles and the use of advanced energy production systems where possible	Refer to above. Additionally, a Green Star consultant has been engaged that not only assesses but contributes to the implementation of strategies to maximise positive Energy & Carbon, Water, Waste & Materials, Resilience and Place processes. The proposed design and curriculum includes an Environment Centre to create and nurture an Industry Partnership with the CSIRO and other associated partners due to the site's nearby location to the CSIRO Narrabri & Armidale locations.	Section 2.15 of this report and ESD Report by Aurecon
Maximise opportunities for safe walking, cycling and public transport access to and from the school	New pedestrian pathways, green corridors, a bus stop and dedicated kiss&drop at the school entrance has been accommodated to ensure safe arrival and pick up of students travelling to/from school, as well as during after hours use of the site and the use of site pathways around the school.	Section 2.3.3 of this report

DESIGN VERIFICATION

BETTER FOR COMMUNITY
ACCESSIBLE & INCLUSIVE

	DESIGN RESPONSE	DOCUMENT REFERENCE
Establish security requirements early to ensure any required secure lines can be designed and integrated with built form	Secure lines have been designed in coordination with Civil/Stormwater & Landscape, contribution to a robust, community-focused design solution. There is a hierarchy of fence heights to indicate precincts that can be shared with the community outside of school hours, and securing the school buildings during these times.	Section 2.6 of this report
Balance security with accessibility and inclusiveness by minimising the use of fencing particularly along street frontages	A balance has been developed between the security of the school campus and accessibility of pedestrians by ensuring all possible entrance pathways have been accommodated with pathways and gates to enter the school site leadin to entry stairs and ramps, bridges over the proposed swale and access to community facilities after hours. The boundary fence to the school is located 30m from the street frontage which softens and embeds this necessary element into the landscape features of the site.	Section 2.3.3, 2.6 & 2.11 of this report
Engage students, educators and the community in development of the vision and design brief for the school	Workshops with the school have been ongoing. A major workshop was undertaken onsite in Wee Waa to meet with each faculty individually to ensure specific voices and requirements were captured at the beginning of the design phase, including the Aboriginal Education Officer. Ongoing workshops with School representatives (Project Reference Group, Expert Review Panel) and educators have been integral to the design process and have allowed updates to the design for approval and to be communicated in an effective manner that can be communicated to the rest of the school community at their disgression.	Refer to consultant reports in the EIS
Allow for passive and dynamic play of different age groups	The landscape design includes a variety of outdoor spaces that account for passive and active play, including in the Native Grass Meadow in the entry forecourt, the paved inner courtyard space, the recreation and wellbeing precinct nearby the school hall, the sports courts and the Sports field & Athletics track for more formalised and active play opportunities.	Section 2.13 & Landscape Plans & Design Report by Moir Landscape.
Provide school frontages and entrances that are visible, engaging and welcoming	The entry forecourt off George Street is an immersive and engaging landscape that is distinctive as the main school entry by a large, inviting canopy that stretches out into this outdoor landscaped forecourt. Public art is accommodated here to strengthen the community's connection with the school campus through aboriginal totems of the people of Wee Waa & the Pilliga, as well as family totems and artworks from the existing school.	Section 2.11 of this report
Encourage access for members of the community to shared facilities after hours	Key learning spaces have been purposefully sited nearby the street frontages and main entry to the school grounds, such as the Binaalba Room (Indigenous Learning Centre), Community Circle (Yarning Circle), library and general learning spaces to accommodate access by the community after hours and on weekends by community groups, community information sessions, workshops, opportunities for learning and engagements, amongst many other opportunities. The flexible and adaptable nature of these facilities accommodates a range of needs to maximise their relevance to the community.	Section 1.3 & 2.5 of this report.
Ensure clear and logical wayfinding across the school site and between buildings for all users including after hours community users	All the building and paths on site lead to the main entry to the school or central courtyard space, making wayfinding clear. In future design phases, wayfinding methods and signage will form part of this in consultation with the school.	Section 2.5, 2.6 & 2.11 of this report
Ensure accessibility for all users of the site	Accessibility for all users have been accommodated with equal access to ramps and ramped landscape elements, elevated decks and walkways, and the inclusion of a central lift to access the first floor level from the central courtyard.	Section 2.3.3 & 2.6 of this report

DESIGN VERIFICATION

BETTER FOR PEOPLE
HEALTH & SAFETY

	DESIGN RESPONSE	DOCUMENT REFERENCE
Locate buildings and design facades that optimise fresh air intake and access to daylight	The classrooms are located on the external edges of the buildings maximising natural daylighting. Furthermore the buildings' fenestrations includes operable louvres allowing for natural ventilation.	Section 2.8 & 2.15.1 of this report
Prioritise pedestrians and avoid conflicts between vehicles and people	Service roads are located along the perimeter of the site (northern and western boundary) which separates pedestrian and vehicular movements. A dedicated bus bay and vehicle kiss+drop is located along the street frontage ensuring separation. Pedestrian pathways have been accommodated across the campus and along the street frontages, footbridges crossing the drainage swale at key points along the street lining up with adjoining pathways and street crossings.	Section 2.3.3 & 2.6 of this report and Traffic & Accessibility Impact Assessment by TTW
Provide covered areas for protection from sun and rain	Covered circulation ensures protected access to all areas of the school. Local native plantings and trees will be implemented to maximise natural shading devices in outdoor passive and active play spaces and courtyards. Covered outdoor learning opportunities are accommodated nearby the Library, the Hospitality kitchen, and within the landscape. Due to extreme heat and sun conditions, outdoor sports court are to be fully shaded due to site specific heat extremities rendering uncovered areas unusable during summer.	Section 2.3.3 & 2.8 of this report and Landscape Plans & Design Report by Moir Landscape
Support safe walking and cycling to and from school through connections to local bike and foot paths and the provision of bike parking and end of journey facilities	Pedestrian pathways are accommodated for the length of the site and within, and links to existing pathways in the surrounding neighbourhood. Bike parking has been accommodated in multiple locations onsite for staff and students.	Section 2.3.3 of this report
Support passive surveillance, including through the location of toilets and areas for communal use outside of school hours	Student amenities are located adjacent circulation pathways for the safety, surveillance and protection of students. Open play spaces and sporting fields for communal use outside of school hours are free from dead end pathways, open and are not visually impaired by large structures or landscape elements so allows for ease of passive surveillance.	Section 2.3.3 of this report
Incorporate Crime Prevention Through Environmental Design (CPTED) principles	Increased perception of risk to criminals by increasing the possibility of detection, challenge & capture by utilising passive surveillance principles, particularly by the open space surrounding the development. High palisade boundary fences and setbacks surround the campus buildings to increase the energy & resources required to enter the campus. Overall, by strengthening the community's relationship and connection to the school campus in turn provides a sense of ownership and therefore encouraging a sense of care, protection and surveillance over the actions of peoples utilising and surrounding the site.	Section 2.6 of this report
Clearly define access arrangements for after school hours	CPTED principles have be incorporated as outlined above. The main campus secure line is fenced with a palisade boundary fence, which lowers to surround the sporting and recreation fields and facilities to be shared with the community outside of school hours.	Section 1.3, 2.9 of this report
Consider location and number of toilet facilities to allow safe use by different age groups and genders	There are four toilet blocks across the campus for student use; two on the ground floor and two on the first floor. They are located adjacent key facilities or outdoor spaces, such as the gymnasium, the canteen, the Binaalbaa Room, and on the first floor at opposite sides of the floor plate to increase accessibility and amenity. The staff lounge and the admin have their own dedicated facilities for staff & visitors.	Section 2.3.8 of this report

DESIGN VERIFICATION

BETTER WORKING
AMENITY

	DESIGN RESPONSE	DOCUMENT REFERENCE
Be integrated into, and maximise the use of, the natural environment for learning and play	The landscape design proposes a variety of outdoor learning spaces. The architectural solution integrates the landscape and unique civil solution for this project site. Existing vegetation onsite will be enhanced through specification of local, native plantings and trees, improving access to natural shading devices and providing opportunities for student learning and play amongst an enriched landscape.	Section 2.13 of this report and Landscape Plans & Design Report by Moir Landscape.
Ensure access to sunlight, natural ventilation and visual outlook wherever possible.	Operable glazing allows for natural and cross ventilation, as well as ample daylighting to teaching spaces that is maximised by their location along the perimeter of the buildings adjacent external circulation pathways and views to the surrounding landscape. Key views across the site are captured from the library utilising a double-height glazing element, high ceilings in the Binaalbaa Room, maximised glazing in the administration, staff and learning spaces.	Section 2.15.1 of this report
Facilitate flexible learning by providing access to technology	An extensive building services strategy is captured throughout the design including main switch room, communications rooms, centralised building services stores & cupboards.	Section 2.3.7 & 2.3.8 of this report
Seek opportunities for buildings and outdoor spaces to be learning tools in themselves	The inclusion of native planting provides an opportunity to learn about bush tucker, bush medicine & how the natural environment can be used as educational tools and reference. In particular, by showcasing the ESG principles integrated into the school design and services, this can be a reference and learning tool for the Science and Mathematics curriculum, at a minimum.	Section 2.18 of this report, and Landscape Plans & Design Report by Moir Landscape
Provide a diversity of indoor and outdoor spaces to facilitate informal and formal uses	Outdoor learning spaces across the campus can also be utilised as passive play spaces, increasing their usability and amenity for students. Indoor learning spaces are flexible and adaptable to a range of learning modes and informal uses.	Section 2.3.3 & 2.13 of this report
Provide buffer planting in setbacks where appropriate to reduce the impact of new development	Buffer planting is provided along property boundaries, particularly to the northern neighbour to act as both visual and noise barrier for privacy and to minimise development impacts.	Section 2.3.3 & 2.13 of this report
High rise schools should... minimise the negative impacts... on surrounding built form, open space and school grounds.	N/A. The proposed buildings do not significantly overshadow the site & surrounding buildings as it is not a high rise school.	N/A
Ensure outdoor play ground space is sufficient to accommodate the student population including future growth.	The large rural site provides sufficient area outdoor recreation and sporting amenity, including the provision of future growth of the school.	Section 2.3.3 & 2.4 of this report
Locate buildings away from noisy roads and other noise sources to ensure acoustic levels within teaching and learning spaces are acceptable	The project site is adjacent the busy Wine Country Drive. An approximate 40m setback to buildings from the roadway has been accommodated, with plantings and berms to act as noise buffers as well as minimising glazing and apertures along the western facade fronting this roadway.	Section 2.3.3 and 2.15.1 of this report
Where teaching and learning spaces must be located alongside noise sources, arrange built form to ensure dual aspect that will allow for natural ventilation away from the noise source. In extreme cases, mechanical systems and other technologies may be necessary to ensure acoustic levels can be maintained along with cross flow ventilation and natural light.	Majority of learning spaces have cross ventilation without the reliance on the southern facade fronting the highway. Additionally, all learning spaces have operable walls and the ability to access both natural and cross ventilation opportunities throughout other spaces, when appropriate. Operable glazing to the northern, eastern and western facades away from the highway have been maximised where appropriate.	Section 2.15.1 of this report

DESIGN VERIFICATION

BETTER VALUE
WHOLE OF LIFE, FLEXIBLE AND ADAPTIVE

	DESIGN RESPONSE	DOCUMENT REFERENCE
Allow for future adaptation to accommodate demographic changes, new teaching and learning approaches and the integration of new technologies	The regular structural grid allows for flexibility & future adaption of the floor plate. Learning spaces are unimpeded by columns, and have operable glazing and wall systems between learning spaces to increase open space accommodating small, medium and large learning modes.	Section 2.3.3 & 2.3.4 of this report
Be based on a masterplan of the school site that includes the testing of options for future potential growth	The masterplan accounts for potential future growth to a full 2 stream high school. A multitude of masterplan options have been explored for the site, as well as an interrogation of options on surrounding sites, Dangar Park, land aquisition exercises and extensive urban planning exercises. The proposed project site is deemed the most appropriate, is owned by the Department of Education, and enhances and positively contributes to the town centre of Wee Waa adjacent the Public School on a previously underutilised, waterlogged site.	Section 1.5 & 1.5.1 of this report
Take a whole-of-lifecycle approach when considering cost and consider wider public benefits over time	The proposed design is the result of a rigorous masterplan and concept design process with a town planning perspective, finding a solution to the civil/stormwater issues the neighbourhood experiences. A Green Star consultant is engaged which considers and suggests modifications to a project's resilience and climate adaptation capacilities to ensure its relevance to the existing and future community, technologies, environmental factors and place. The resulting design will be as low maintenance as possible as a school facility, contains elements that are able to be shared by the community, act as a town hub & heart abd contribute to the community sporting and recreation amenity.	Section 1.3 & 2.3.3
Provide capacity for multiple uses, flexibility and change of use over time	By providing unimpeded learning spaces with operable glazing walls, they can be flexible and adaptable to a range of teaching and learning modes, community uses and change of use over time.	Section 2.3 - 2.3.7 of this report
Respond to the findings of a site appraisal including in-ground conditions, contamination, flora and fauna, flooding, drainage and erosion, noise and traffic generation	The resulting site layout and design encapsulates all consultant findings and responds to the unique site conditions including flooding/ drainage/civil, existing tree communities and native grasses, onsite contamination, noise/acoustics, traffic/access/circulation & security.	Refer to the EIS for full consultant reports.
Understand the potential impacts of future local projected growth	The school is located in a rural area. The school is designed as a reduced 2 Stream facility with future growth to 300 students accommodated as Stage 02, included for discussion purposes but is unlikely.	Section 2.3.3 of this report
Design learning spaces to cater for a range of learning styles and group sizes	The flexibility of the teaching spaces provides the opportunity to cater to a range of learning styles & group sizes, including small, medium, large, one-on-one, life skills areas and outdoor learning opportunities.	Section 2.3.6 of this report
Consider providing areas for collaboration, group learning, presentations, specialised focus labs, project space and wet areas, display areas, student breakout, teacher meetings, and reflective / quiet spaces.	The design includes general and specialist learning spaces, seminar rooms, meeting and presentation spaces, practical activity and life skills areas, labs & workshops, outdoor learning, and quiet study spaces including a library space able to be accessed by the community.	Section 2.3.4, 2.3.6, 2.3.7 of this report

DESIGN VERIFICATION

BETTER LOOK & FEEL
AESTHETICS

	DESIGN RESPONSE	DOCUMENT REFERENCE
Reflect a commitment to and investment in design excellence	Commitment to the best outcome for the community and students of Wee Waa is demonstrated in the amount of Masterplan options, rigorous research and engagement to understand their needs, heritage, environmental factors and consultation.	Section 1.5, 2.1, 2.3.4, 2.3.6, 2.3.7 of this report
Create engaging and attractive environments	The material palette has been carefully chosen to achieve the desired aesthetic while optimising the building's thermal performance.	Section 2.7.1, 2.7.2, 2.9, 2.10
Achieve a purposeful composition of materials and elements through a rigorous design process	The chosen colour palette reflects the nearby Piliga forest, greys and glimpses of yellow wattle, the flight of the cockatoo and the native grasses in the sunlight. It creates a rhythm of colour and texture across the street facade to the Kamilaroi Highway, creating pride of place and street presence within the community.	Section 2.7, 2.7.1, 2.7.2, 2.9, 2.10 of this report
Provide an engaging environment for pedestrians visually and materially along public street frontages	Engaging drainage swale contains natural elements including rocks, grasses and adjacent sandstone seating and elements along pedestrian pathways along the site boundary and within the school campus. Natural landscape is enhanced through local native plantings and grasses along the school entrance on George Street, with special consideration to increasing canopy communities and natural shading devises.	Section 2.11 of this report
Seek opportunities to enhance public facing areas with landscaping and ensure landscape and building design are integrated	A landscape masterplan and design has been coordinated with the overall design intent of the built forms, with particular mention to the rhythm of the facade and materiality being reflected in the chosen patterns and paving surrounding the built forms, and including local native plantings to embed the campus with the landscape.	Section 2.2.2, 2.11 & 2.13 of this report and refer to Moir Landscape plans & reports
Integrate service elements with the building design	Services input came early on in the design process and therefore could be integrated to decrease visual impacts to the built form and within the landscape.	Section 2.3.8 of this report
Balance internal spatial requirements with an external mass and scale that responds to its environment	Surrounding Context studies have been undertaken that identify bulk, scale and materiality within the locality and industrial typologies. the proposed design responds to these studies and the colours of the surrounding landscape to create a cohesive and embedded built form of its place.	Section 2.2.1, 2.7, 2.8 of this report
Avoid long stretches of security fencing to public facing areas through arrangement of building edges, landscaping, gates and other openings	The security fence is setback 30m from the Highway, and all fencelines are softened by landscaping, local native plantings and the landscaped drainage swale along the perimeter of the site.	Section 2.6, 2.11, 2.13 of this report & Moir Landscape plans & reports
Look for opportunities to include public art.	The Aboriginal Education Officer explained in detail the community and family totems of the area. The Kamilaroi totem is a 'snake' with neighbouring totem for the Pilliga Region being the Sand Goanna. School currently has a grant of 20k to do totem works, but on hold until this project comes to fruition. An appreciation of these is to be expressed and visually represented in art and public spaces, which is currently explored across the campus, particularly the main entry to contribute to strengthening the identity of the school within the community & showing pride in their totems.	Section 2.3.3, 2.11, 2.18 of this report

2.1.3 UNIQUE CONTEXT DRIVERS

- **Indigenous + Rural:** The development of the design must acknowledge the importance of a rural NSW environment that has an enduring connection and ancient indigenous history.
- **Community Asset:** The project is an opportunity to enhance the town centre and be an integral community asset for Wee Waa.
- **Sense of Place:** It is important for the project to encompass a sense of place for the Wee Waa community, in turn nurturing an enduring sense of ownership and pride.
- **Equity:** Ongoing operational closure of the local high school buildings, and no further government intervention, has the potential to widen inequity in this community and across the region. The continued casual occupancy of the Wee Waa Primary School site is also affecting the local public school community.
- **Site Constraints:** Include traffic, flooding and low lying lands with existing table drains, extreme weather conditions and indications of highly reactive soils.
- **Post-School Vocation:** New facilities to provide access to quality education for young people and support post school employment in local emerging industries.
- **Population Growth:** While significant population growth is not forecast, retaining core community assets such as Wee Waa High School, is critical to supporting a resilient stable population that can react appropriately to change.
- **Asset Suitability:** Without intervention, the current and future students and staff of Wee Waa High School are at risk of having no safe, long term high school facilities in their community.

2.2 ARCHITECTURAL CONCEPT

Refer Section 'Preferred Masterplan Option Summary' for Architectural Concept & Masterplan Motifs that continue to guide the architectural language and decision making.

KEY APPROACHES

The architectural concept was driven by the schools physical, operational context and uniqueness as well as addressing key functional requirements identified during the masterplan process. The areas identified included:

Site: The positioning of the proposed school rests adjacent the existing eucalypt forest and native grass meadow, to promote a strong connection to the surrounding landscape. The overall site consists of 4 lots, one site adjacent the Public School owned by the Department of Education, with the remainder being Crown lands. The chosen project site both opportunistically and functionally is located on the DoE site, which not only safeguards the project, but strengthens the design solution. The overall site planning is an efficient use of the site that creates precincts that spatially arrange functions; Learning, Recreation & Wellbeing, and Active Sports Precincts.

Relationship: The adjacent Public School strengthens the town's core, creating a centralised location for education, student drop-off & pick-up, and addresses safety concerns along the Kamilaroi Highway by relocating the informal kiss & drop along this road with a dedicated zone along George Street, including bus bay, and upgrading pedestrian links. A direct link to Dangar Park creates an active green centre for recreation, sports & learning.

Climate: The built form shelters from harsh westerly weather, provides access to favoured northerly sun in winter, and affords shade in the heat of summer at the peripheries and under large, covered play and circulation spaces.

The north-facing central courtyard supports a sense of community, and allows for passive observation and active participation in activities across the playground/campus, and connects the campus by minimising distances between learning spaces.

Palette: The chosen colour palette reflects the nearby Piliga forest, greys and glimpses of yellow wattle, the flight of the cockatoo and the native grasses in the sunlight. It creates a rhythm of colour and texture across the street facade to the Kamilaroi Highway, creating pride of place and street presence within the community.

Entry: The main school entry and administration is located along the residential George street, away the Kamilaroi Highway. This solution harmonises the need for an accessible and approachable entry forecourt for users, while mitigating the risks associated with sharing the road with large road trains and other heavy vehicles.

Circulation: Adopting the Australian vernacular of the veranda, the proposal utilises its performative and spatial qualities. Clear identifiable entry, circulation spines and an external street-scape of shared informal learning areas are formed, with multiple entry points from playground to reduce load.

Learning: The learning spaces able to be shared with the community, such as the gymnasium and library, are located on the periphery of the built form for ease of access and adjacent sports fields and play spaces, to harness and strengthen connection of these functions with the surrounding landscape and native vegetation, and highlight their shared use to the community. This creates a sense of ownership and pride of the school, in turn aiding supervision/surveillance of the school after hours.

Highly serviced learning units are located to the north of the built form, which is nearest the service road for deliveries and servicing, e.g. gas for science or materials for TAS.

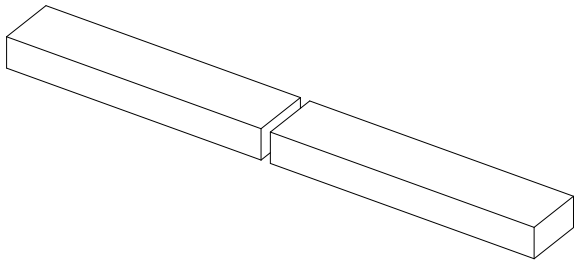
Indigenous Cultural Centre: The Indigenous Cultural Centre; ***Binaalbaa***, is a separately built form embedded in the landscape, proposed atop an earth mound to remain above the flood level but connected to the landscape, adjacent the Native Grass Meadow and a Community Circle. The Centre is accessible from the on site car park or past the library from the main entry, accommodating a multitude of approaches to suit the end user.

Agriculture & Environment: The Environment Centre is located on the proposed new school site with the Agriculture Plot location on the existing school site on Purcell Avenue to enrich the vacated site with a new purpose. The School cohort believe this will be a beneficial separation with an overall larger agriculture plot area than if colocated, allowing students to be active, agricultural students offsite, and focused, calm students on the main learning site. A new minibus for the school will accommodate access between these learning spaces.

Culmination of investigations / identified opportunities / constraints: Given the need and desire for MMoC, the buildings are designed on a 3,750mm x 3,000mm grid to accommodate and maximise the size of the building portions that can fit on the specified truck, minimising the amount of truck movements required to deliver to site. This resulted in the depth of the floor plates whilst still maintaining opportunities for cross ventilation and access to natural daylighting, as well as delivering the required areas within the EFSG for a 2 Stream High School.

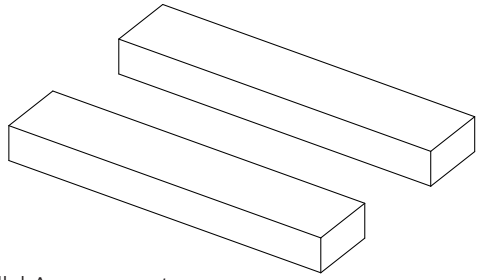
2.2.1 KEY DIAGRAMS - EXPLORATION OF FORM

The following diagrams illustrate the reasoned evolution of the Masterplan form, contingent in the educational design principles and urban design strategy, creating a school that is specific to its site and community.



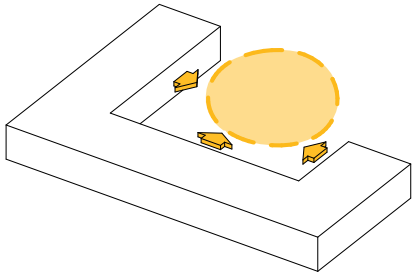
Single Line Arrangement;

- Long travel distances / circulation
- Open to harsh westerly sun and winds
- Reduces utilisation of buildings for shade



Parallel Arrangement;

- Reduces courtyard access to northern sunlight
- Open to harsh westerly sun & wind



Courtyard Arrangement;

- Promotes passive observation & active participation
- Creates a sense of community

2.2.2 KEY DIAGRAMS - MACRO SITE OPPORTUNITIES AND CONSTRAINTS

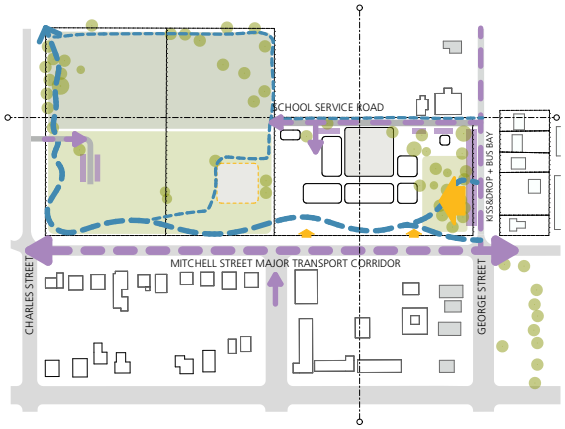
OPPORTUNITIES

1. Department of Education-owned land
2. Established stand of mature Eucalyptus trees ideal for retention for shade and to establish a connection to the landscape of staff, students and visitors.
3. Close proximity to the existing Public School site (and temporary High School site). Maintains connection both physically and educationally, establishing an educational hub for the community of Wee Waa.
4. Open, unimpeded land provides an opportunity for playing/ sporting fields, agricultural and environmental learning, and other community benefits.
5. Opportunity to establish a connection to the landscape and community value of Dangar Park, and extend the 'Green Belt / pocket' for the community of Wee Waa. This is further supported by both the park's and proposed site's central location for accessibility to the community.

CONSTRAINTS

6.Existing stormwater drainage channel across the site needs to be considered.
7. Mitchell Street / Kamilaroi Highway frontage needs traffic, transport and road safety appropriately managed.
8. Two lots are Crown Land.
9.Neighbouring residences need to be considered during the development, including noise management and privacy.
10. Neighbouring / closest redicence to the proposed school needs to be considered, including noise management, privacy, development along the shared boundary, and ensuring this neighbour is able to maintain access to back sheds or an alternate solution.
11 & 12.Visual and acoustic privacy needs to be maintained for neighbours.
13. Although excisting Eucalypt stand of trees is an opportunity to provide a strong connection to the existing landscape, it is a a physical development constraint that minimises developable land.

2.2.3 KEY DIAGRAMS - MACRO SITE DESIGN EXPLORATION

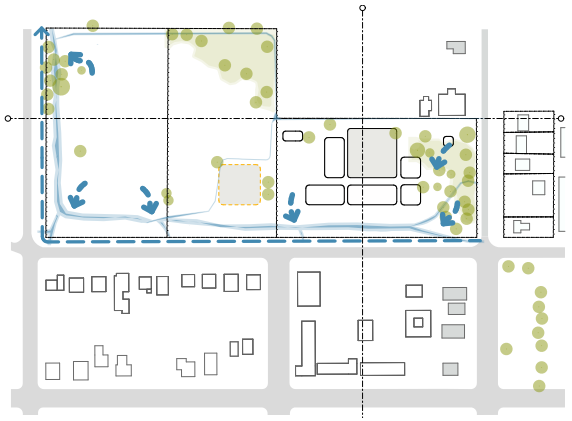


TRAFFIC / BUSES / KISS + DROP

- Limited access off Kamilaroi Hwy/Mitchell Street
- Create school entry/approach off George Street
- Northern boundary service roads
- Generous existing street frontages for car parking
- Clear separation of traffic + cycle + pedestrian networks

CIVIC CONNECTIVITY

- Opposite Wee Waa Public School
- Opportunities for shared Public facilities including:
  - Library
  - Indigenous Centre
  - Sports Hall
  - Sports Fields + Courts
  - Environmental Centre
  - Green Spaces
- Close to public park - Dangar Park and Town Centre

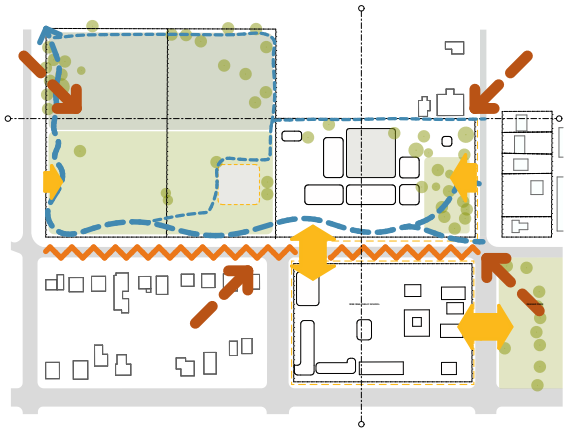


NATURAL DRAINAGE

- Recognise and celebrate site water patterns
- Existing drainage swale pattern acknowledged and proposed to be contoured
- Street swales augmented
- Roof water tank detention for reuse

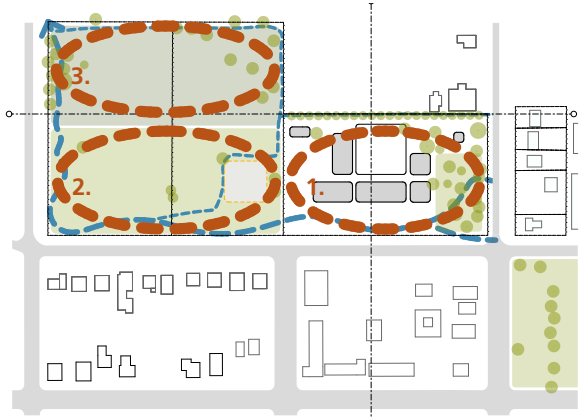
SPINE AND NODES

- Linear east-west axis follows water course and transport corridor
- A. Learning Education Province
  B. Recreation and Wellbeing Province
  C. Sports / Active Play Province



ARRIVAL AND APPROACH

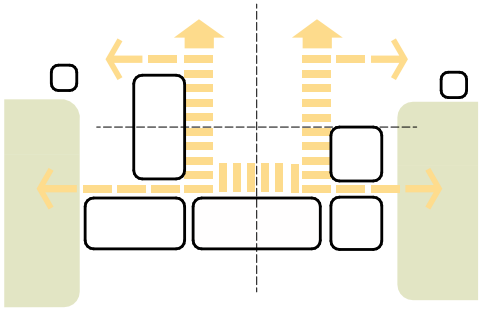
- Main Entrance off George Street
- Limited access and safety concerns along busy Kamilaroi Hwy/Mitchell Street
- Experience the site through the stand of trees and grasslands
- Students arrive by multi-modal form - walk, bus, cycle, drop off



PRECINCTS

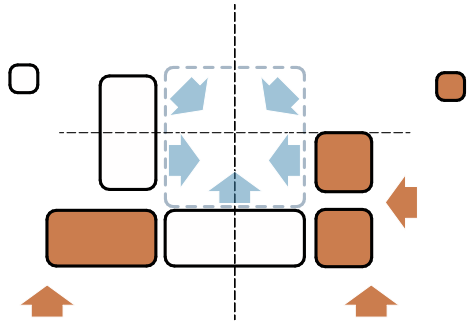
1. Education indoor and outdoor Province with shade, gathering, accessibility and connection to site
2. Recreation and wellbeing Province including a warm up field, covered and fenced courts, shade and link to indoor Hall
3. Sports / Active Play Province including fields, and an athletics track to the north of the site

2.2.4 KEY DIAGRAMS - MICRO DESIGN PRINCIPLES



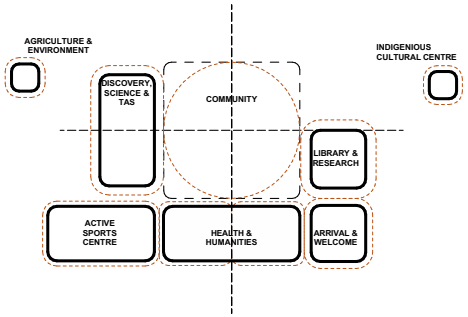
CONNECTIVITY

- Visual links to landscape
- External movement allow natural light & ventilation
- Activation of circulation corners



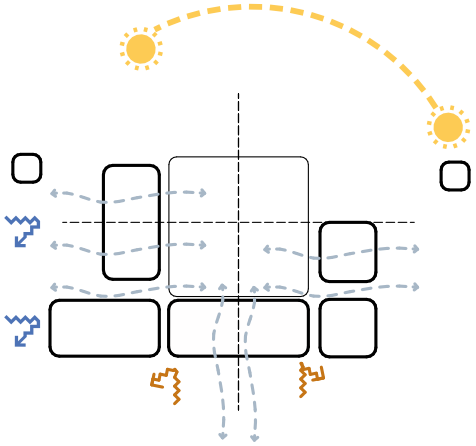
CONNECTED COMMUNITY

- Central shared space
- Communal green link to park
- Shared community use spaces



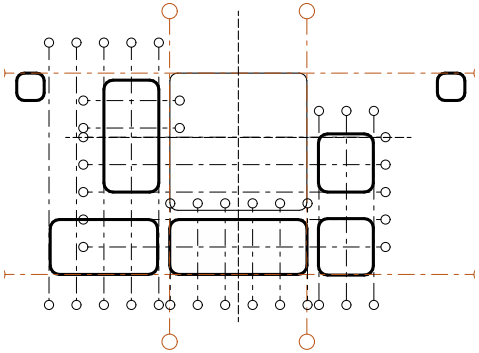
EDUCATION PRECINCTS

- Clear school precincts
- Sense of place and purpose



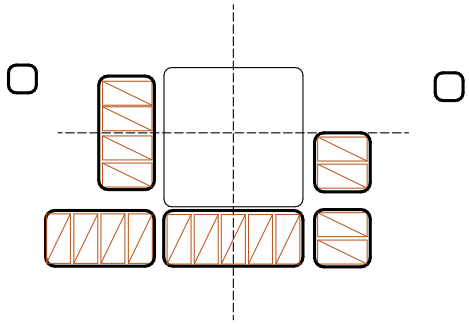
ENVIRONMENT

- Narrow linear forms allow good light and air penetration
- Northern Courtyard
- Protect from westerly winds



GRID AND STRUCTURE

- Repetition & economy of scale
- Simplified and efficient structure
- Kit of parts
- Order and symmetry = economy of scale



MODULARISATION

- Prefabrication
- Efficient & minimal time on-site
- Affordable
- Logical repetition of parts

2.3 PLANNING

2.3.1 ASSET UTILISATION AND CAPACITY

Utilisation of existing assets of Wee Waa High school are limited due to the hazardous conditions of the vacated school site. Mould has rendered numerous buildings and their equipment as hazardous.

Demountable buildings being used as a temporary solution do not meet core strategic requirements or EFSG standards for learning spaces.

Existing teaching equipment is to be assessed against both safety and contemporary education standards. If deemed fit, such equipment could be transferred over.

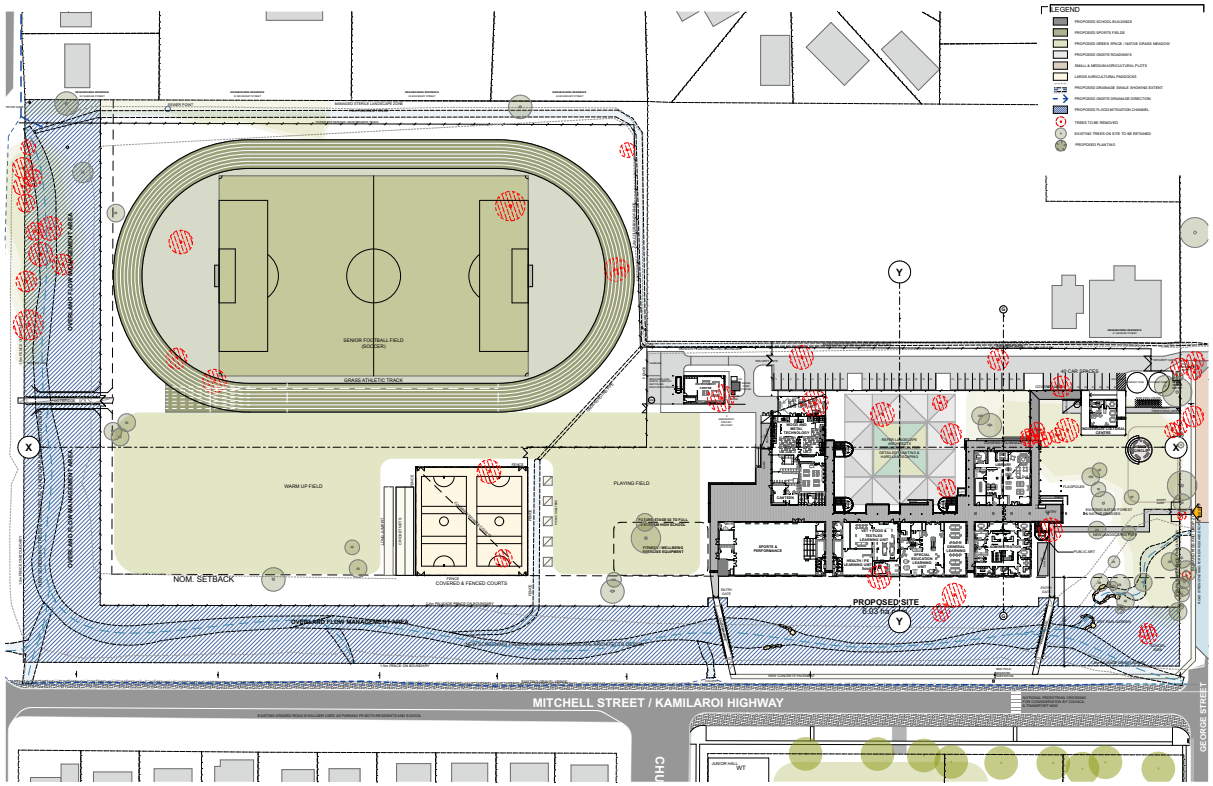
2.3.2 DEMOLITION

Demolition of existing buildings is not part of this project, as there are no buildings located on the new site and the vacated site is not part of the project scope.

The proposed location of the built form was partly chosen to help minimise the physical intervention onsite and protect the stand of eucalypts. However, eight trees have been identified as proposed to be removed, with additional trees to be confirmed onsite in the sports precinct. Where possible, new trees will be supplemented to ensure the project contributes to the landscape in positive ways for longevity.

2.3.3 FLOOR LAYOUTS

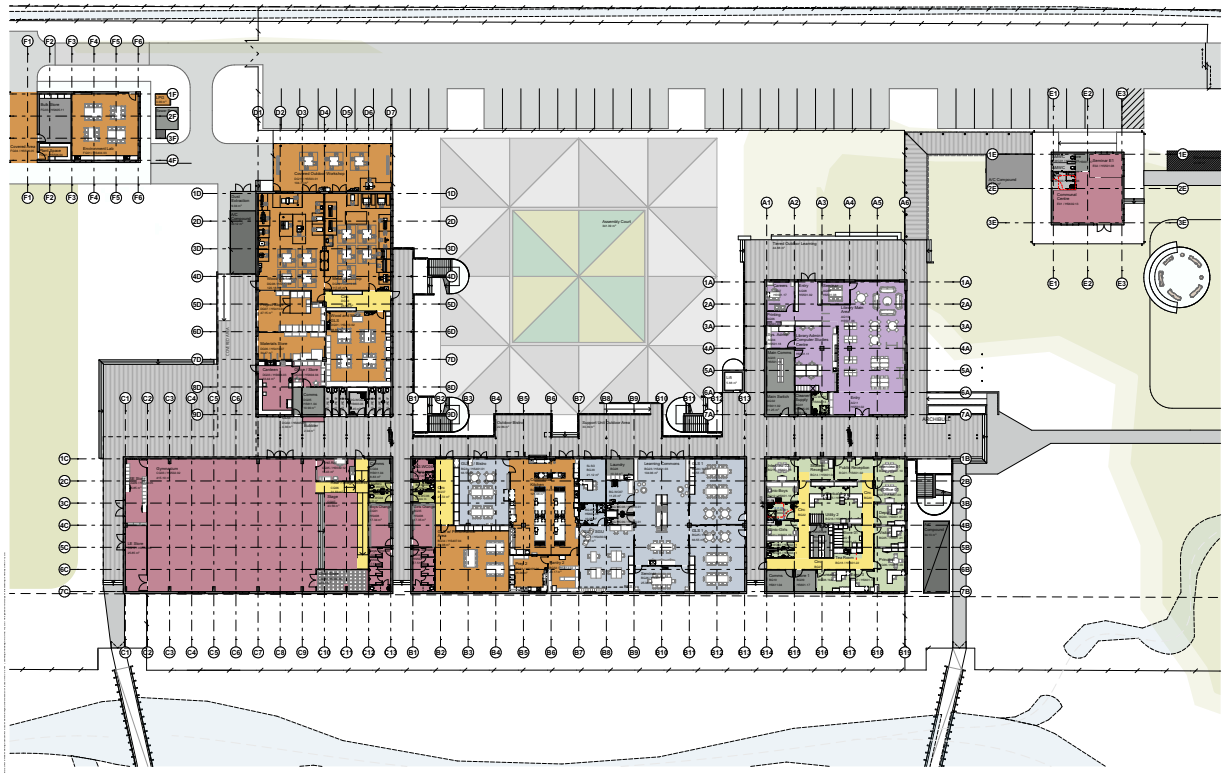
SITE PLAN



NOTE: Vegetation shown is existing vegetation only. For proposed landscape and vegetation, refer to provided landscape architects documentation.

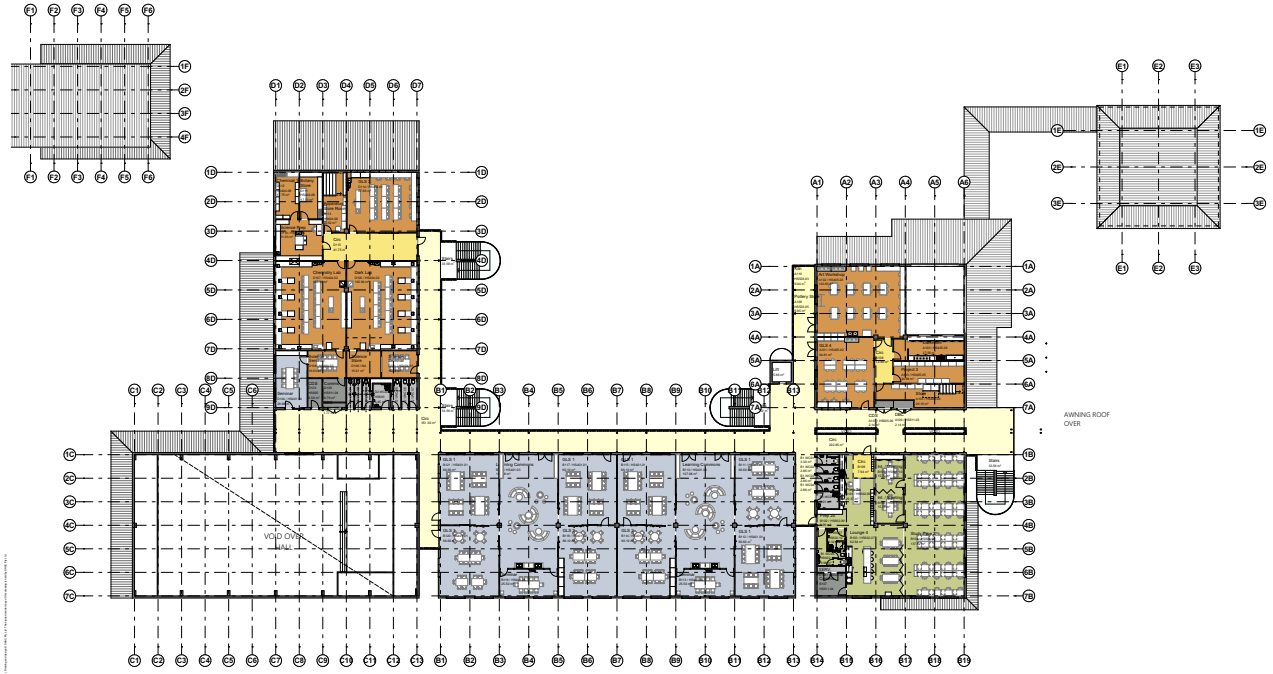
SOURCE: SHAC. INDICATIVE ONLY.

GROUND FLOOR PLAN - PART 01



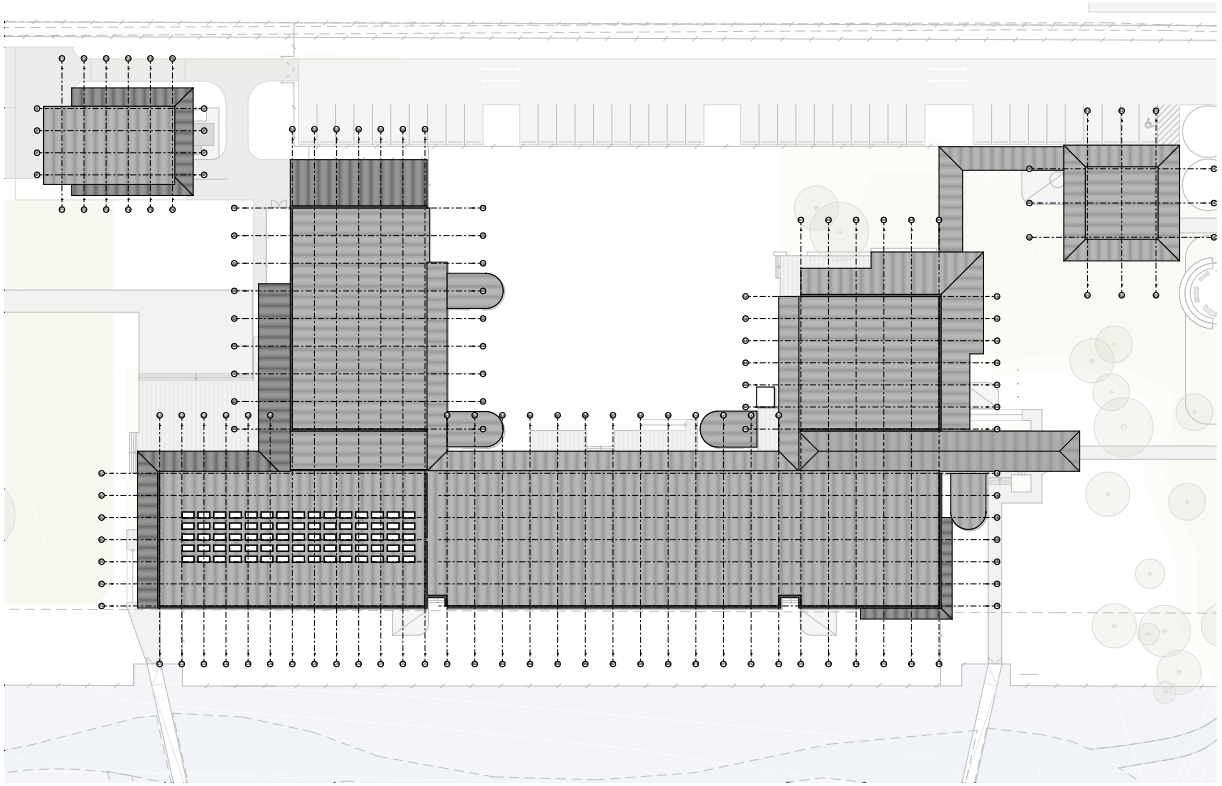
SOURCE: SHAC. INDICATIVE ONLY.

FIRST FLOOR PLAN



SOURCE: SHAC. INDICATIVE ONLY.

ROOF PLAN



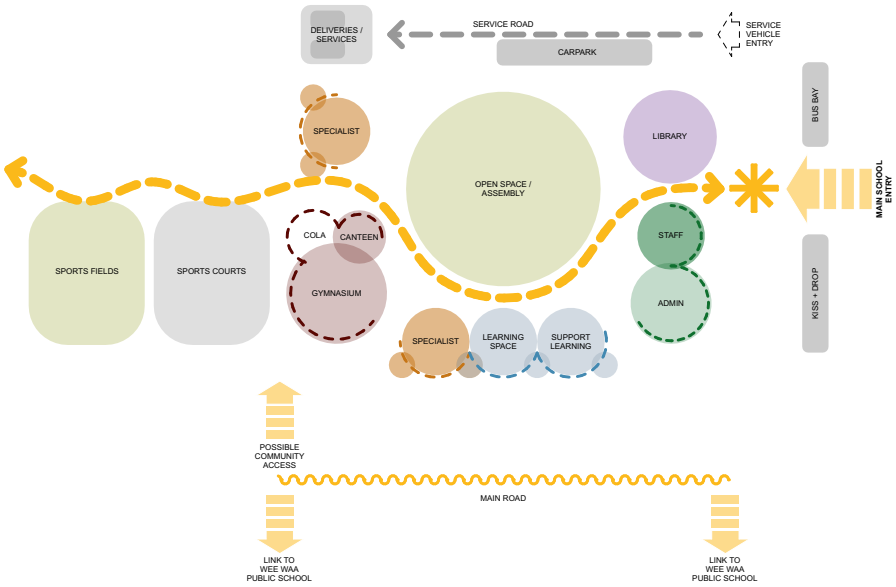
SOURCE: SHAC. INDICATIVE ONLY.

2.3.4 EFSG PLANNING

The EFSG requirements must be considered on both a macro and micro scale throughout all stages of design. On a macro scale, the proposed solution for Wee Waa High School aligns with the EFSG Site Relationship Requirements by:

- Activating street frontage for drop off, bus stop, pedestrian access and connection to adjacent Public School.
- Consolidating administrative/staff within close proximity to entrance.
- Controlled community use of gymnasium, canteen and library through passive security design and close proximity to boundary.
- Library at ground floor with opportunity for adjacent outdoor learning area
- Considering what functions need to be readily/easily accessed from ground floor, including learning support, deliveries and heavy materials
- Consolidation and connection between indoor and outdoor precincts

This diagram is a product of EFSG Secondary Site Relationship and SHAC's acquired knowledge of the project thus far. It is therefore indicative only and is to be used as a guide when determining the layout and site relationships for the new school.



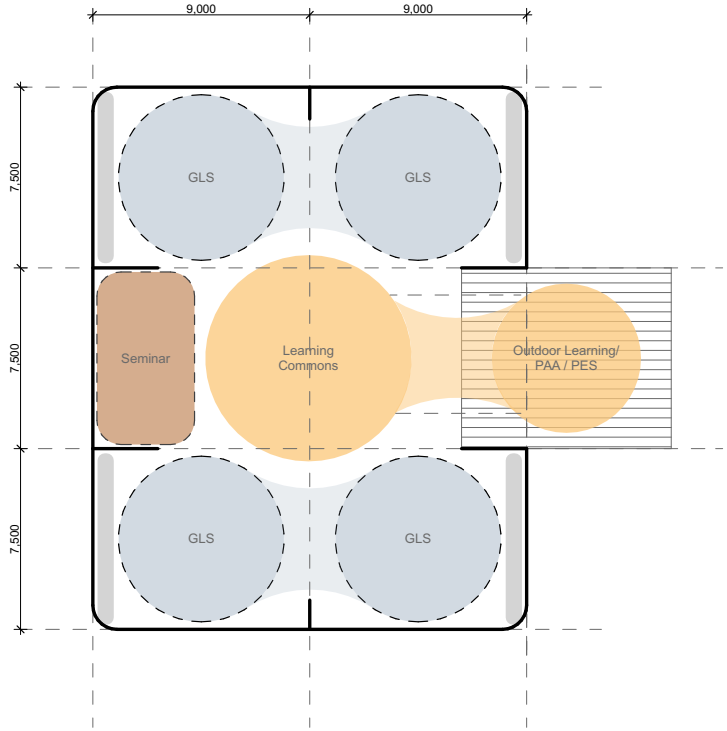
SOURCE: SHAC. INDICATIVE ONLY.

On a micro scale, the relationships within each key facility or learning area also need to be considered. Planning for each room and space have considered the ***EFSG Room Relationships & Design Intent guidelines*** and ***Room and Space sample plans.***

General Learning Space / Unit:

Wee Waa High School's educational rationale specified that General Learning Spaces (GLS) are to operate as Type D - Open plan with the ability for separate classrooms (Dovey-fisher, learning space typologies, 2014). Within this learning hub typology, the following EFSG guidelines are achieved:

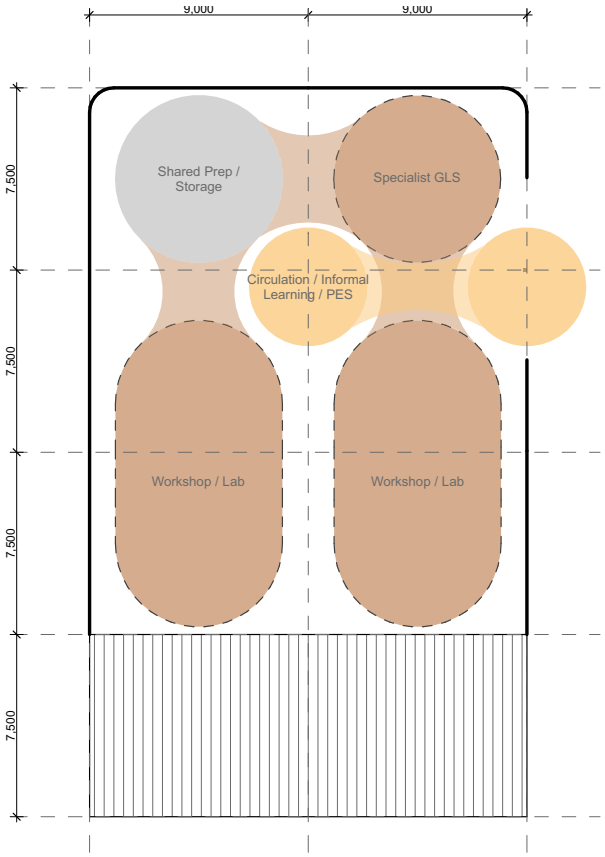
- Direct access to Shared Learning Space / Learning Commons from all 4 GLS.
- Flexibility of the Learning Commons allows space to be divided into zones i.e. quiet, group.
- GLS storage is integrated within the GLS cabinetry space
- Seminar space located in close proximity
- Direct access to adjacent GLS' via operable walls.



Specialist Learning Unit:

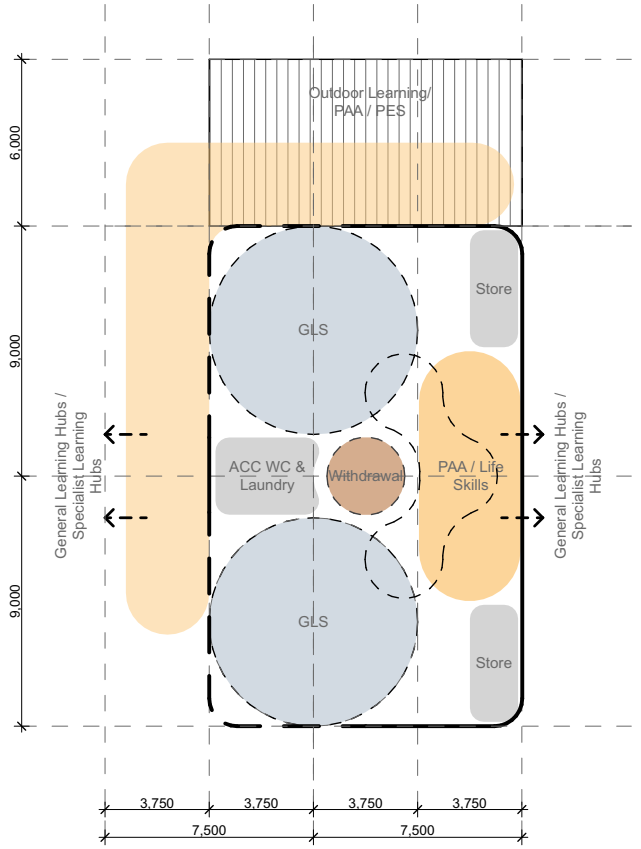
The following is the general arrangement for Specialist Learning Spaces, achieving the following EFSG guidelines:

- GLS space intended to be used as a theory space, adjacent to workshops / lab.
- Supervision between GLS and workshops.
- Suitable storage/prep with direct access between Labs / workshops.
- Circulation zone provides opportunity for display of students works.



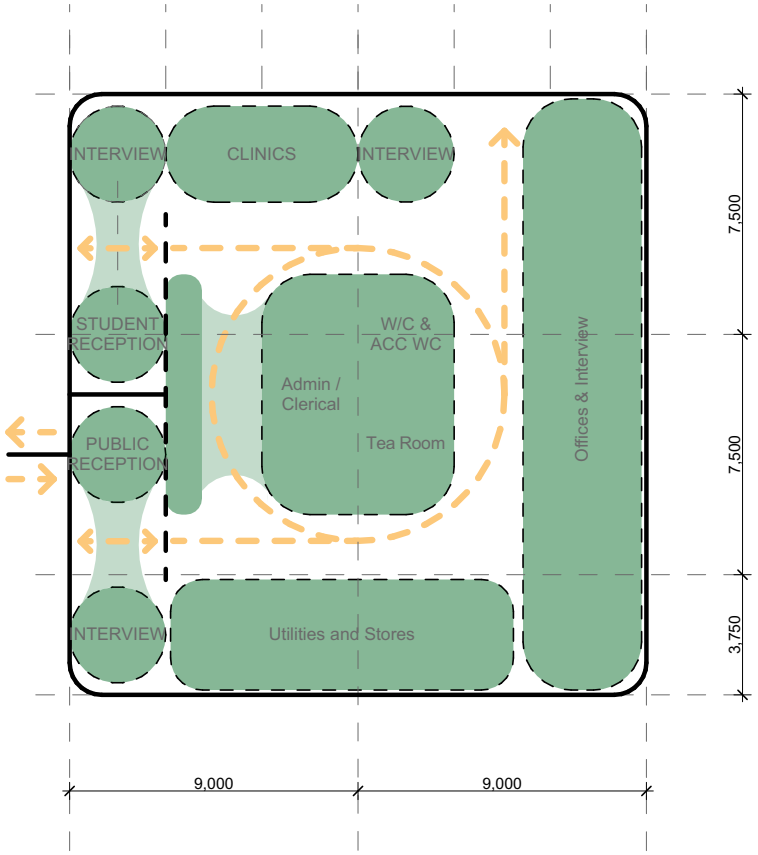
Support Learning Hub

- Learning Common divisible for different activities. School has requested kitchen/life skills space to be included.
- Support GLS's has access to Outdoor Learning Common.
- Generous storage provided throughout.
- Operable walls and glazing allows passive surveillance from staff throughout.

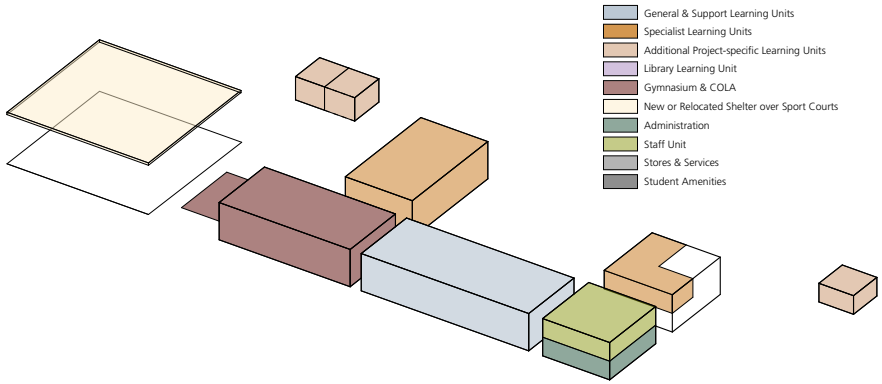


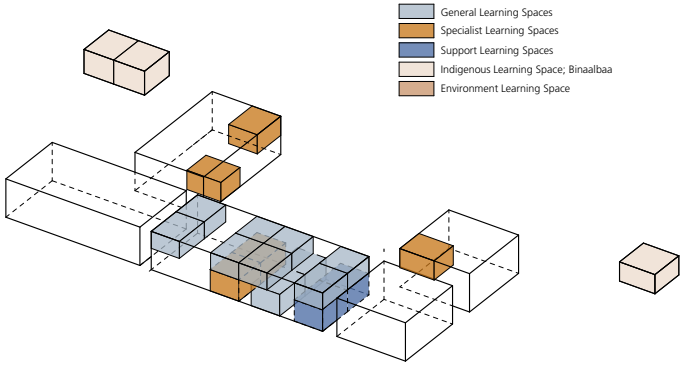
ADMINISTRATION BLOCK

- Public reception space is accessible by general public, with direct access from the main school entry.
- Secure zones for staff and students
- Student reception and waiting area directly accessible from the inside of the secure line of school
- The clinic is located adjacent to student reception and in close proximity to bathroom amenities (WC on plan).
- Dual access to interview room between public transform and reception.
- Principal, Deputy Principal and Counsellor to have secondary entry for discreet use.



2.3.5 BLOCK AND STACK - AXONOMETRICS



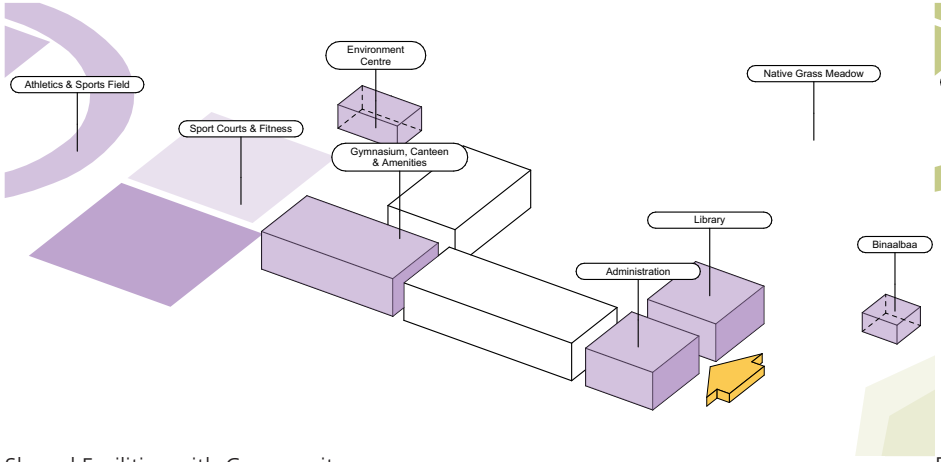


Learning Unit / Facilities

- Administration and Staff Co-located
- Library and Administration co-located for Community Access
- Gymnasium located adjacent to sports fields
- Technical and Science (TAS) co-located for peripheries of noise control and access to service and deliveries

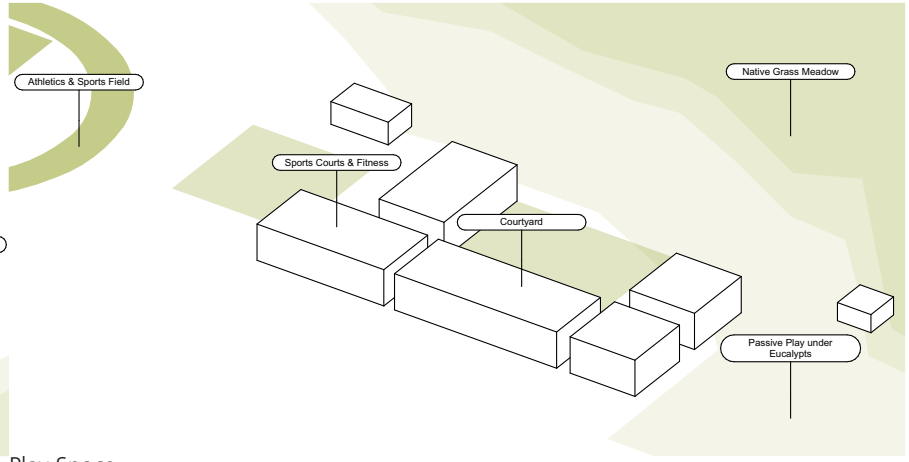
Proposed Learning Spaces:

- 10x General Learning Spaces (GLS)
- 5x Specialist Learning Spaces (SLS)
- 1x Support Learning Space
- 1x Indigenous Learning Space
- 1x Environment Learning Space



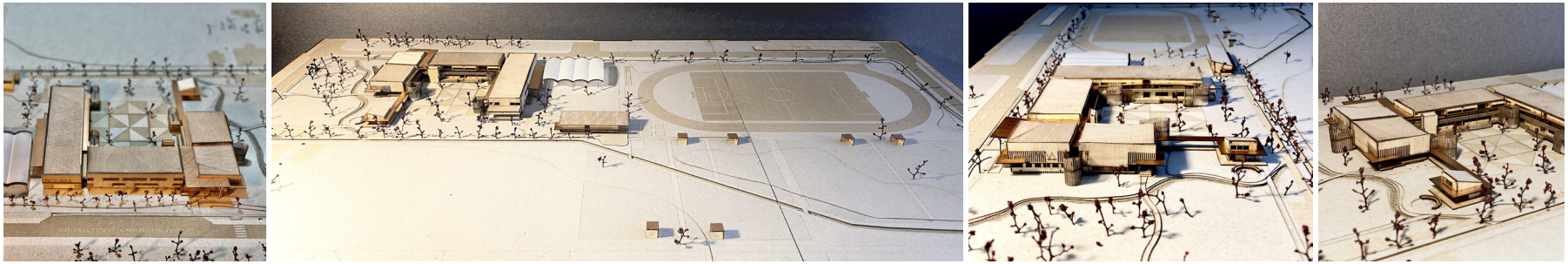
Shared Facilities with Community

- Before/After hours use, extra curricular activities
- Community groups, organisations, professionals
- Weekend sport, markets, gardens



Play Space

- Passive play spaces and courtyards
- Active play spaces, sports courts & fields
- Grass Athletics track
- Native Grass Meadow for connection to the landscape & educational purposes



PHYSICAL MODEL EXPLORING MASS ON SITE

2.3.6 BRIEF DEVELOPMENT: PEDAGOGY AND SPACE

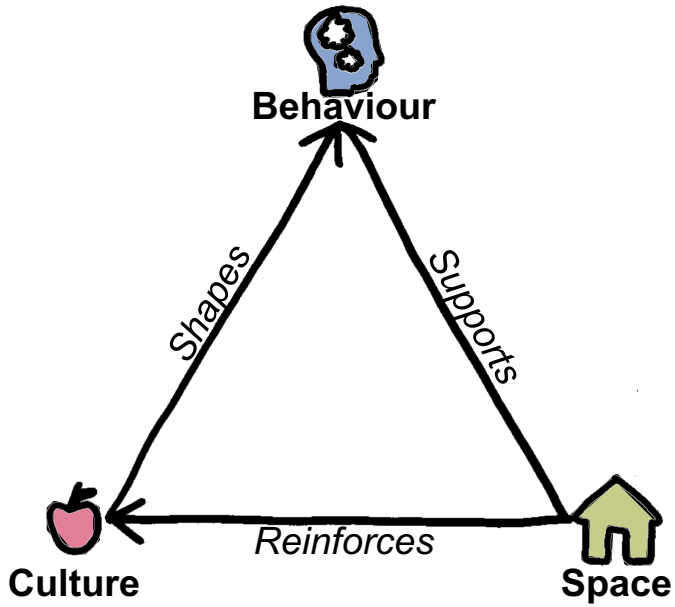
CULTURE, SPACE & LEARNING

It is evident that the school's culture and approach to wellbeing, positive education and the focus on developing learners' character strengths and growth mindset determines their educational model. Their model includes using explicit and inquiry modes of teaching that are differentiated in various ways to ensure all students can succeed.

Therefore the physical spaces of the school needs to reinforce the school's culture by:

- Inspiring curiosity and creativity
- Acting as a third teacher that is owned by all learners rather than just the teachers and staff
- Allowing for easy and safe investigation
- Requiring self management & inviting self direction
- Reflecting diversity in needs, cultures, personalities, and strengths

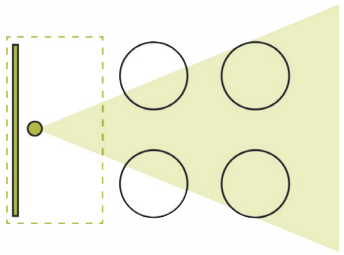
The physical space should also support the school's educational model by providing appropriate environments for the activities involved in explicit teaching and the inquiry cycle.



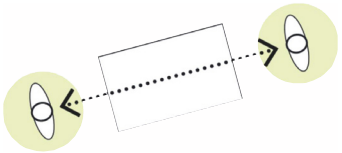
2.3.7 TYPICAL FURNITURE LAYOUT

SHAC have developed typical furniture layouts that support the following contemporary learning settings:

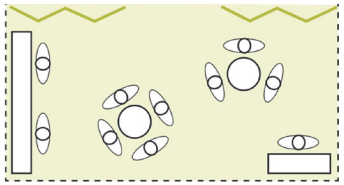
LEARNING SETTINGS



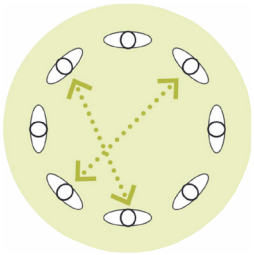
- Deliver Explicit Instruction
- Deliver Demonstrations
- Group Discussions
- Share Information
- Present Student Projects



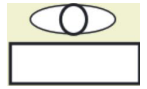
- One-on-one / few demonstrations & discussions
- Skills Practice & Assessment
- Reflection
- Remediation / Acceleration



- Research
- Collaboration & Group Work
- Making & Experimenting
- Applying Knowledge & Skills

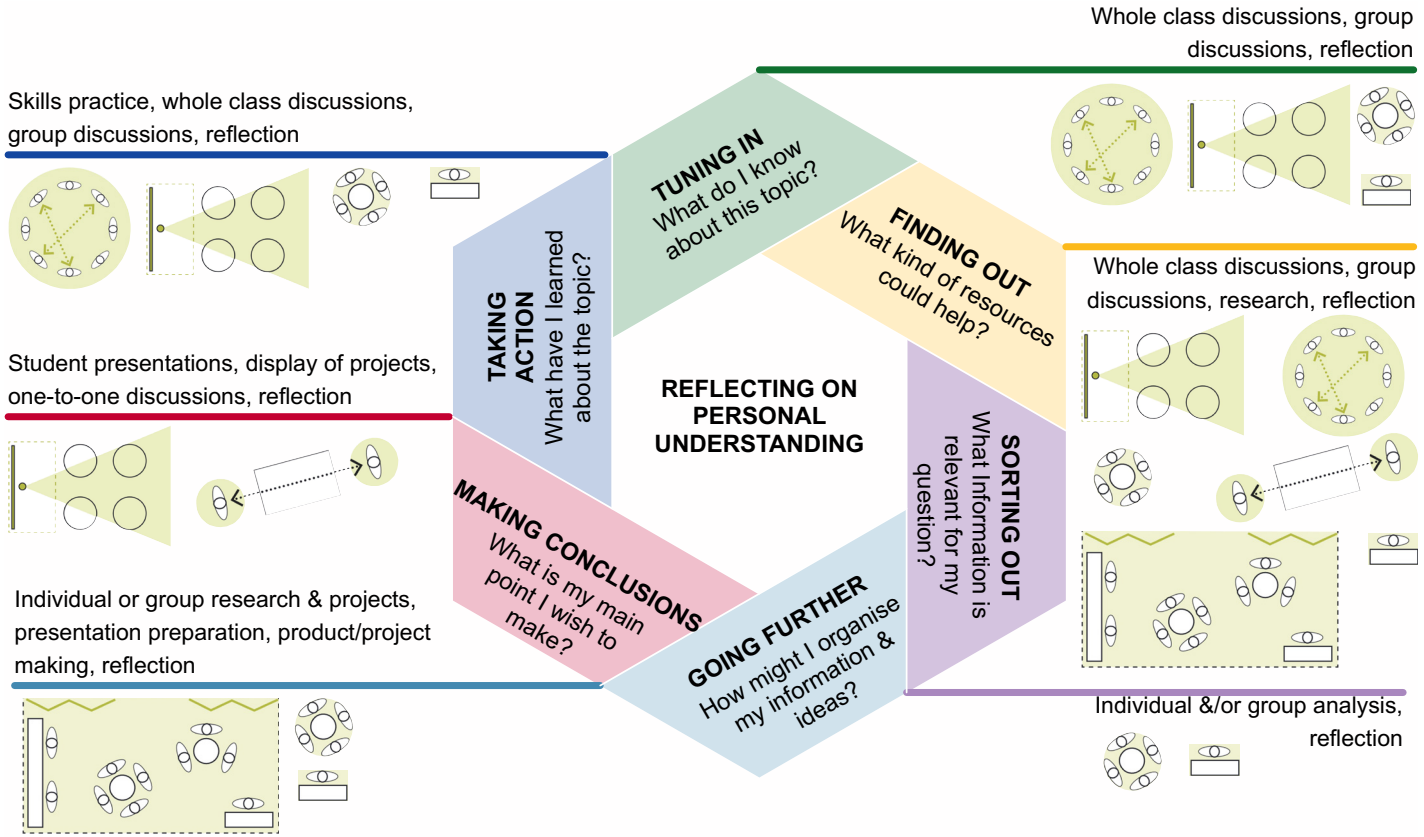


- Group Discussions & Debates
- Decision Making
- Sharing Information

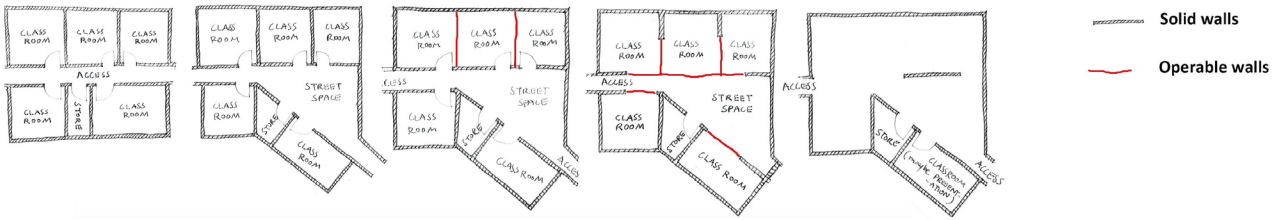


- Research
- Analysis
- Small Group Discussions
- Collaboration & Group Work
- Reflection

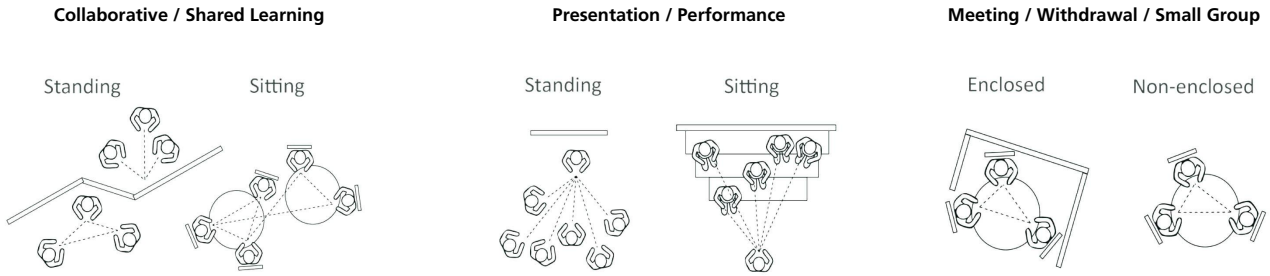
LEARNING BEHAVIOUR & LEARNING SETTINGS



As evident from the diagram above a variety of learning settings is required for the various processes involved in the inquiry cycle.



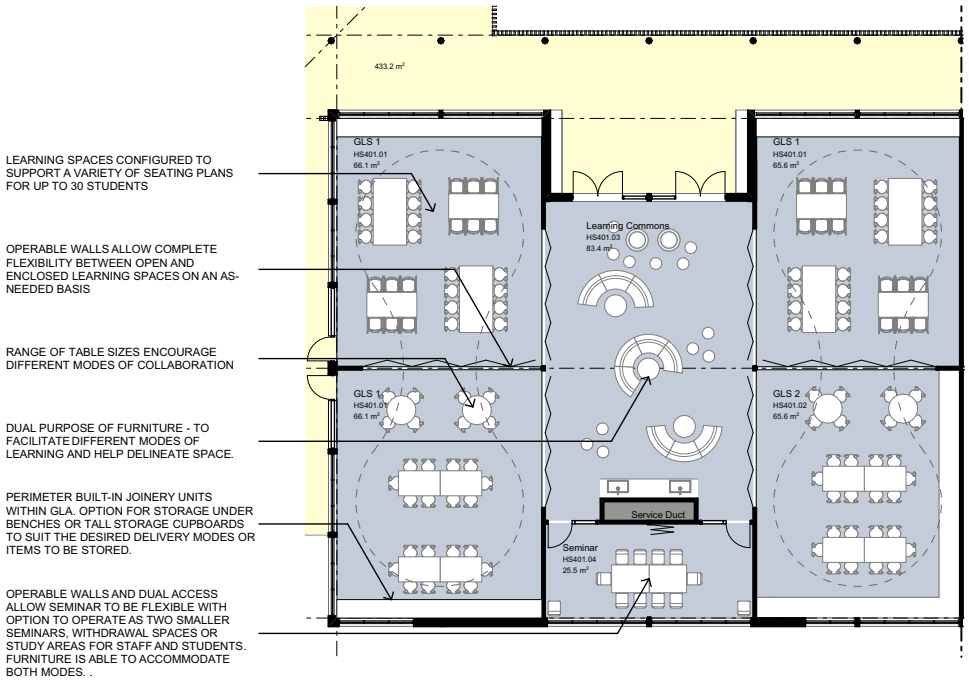
FUNDAMENTAL SPATIAL SETTINGS FOR LEARNING



SOURCES
Dovey, K., & Fisher, K. 2014. Designing for adaption: The school as socio-spatial assemblage. The Journal of Architecture 19(1), 43-63
Cleveland, B. **Aspirations for new learning spaces: Making the 'complex' possible.** Presentation 2018, page 34.

In response to the agreed pedagogical framework, SHAC have developed a coherent Concept Design strategy. Discussions with the principal and other teachers have confirmed that the learning spaces should support a contemporary, future focused model. The education rationale, as per the functional design brief prepared, outlines that Wee Waa High School should adopt a type 'D' spatial setting. By employing techniques such as operable walls, the facility stays flexible and can adapt on a 'per needs' basis. Students are provided with flexible and efficient use of space, fostering the independence, autonomy and choice of the students throughout the learning process of explanation, demonstration and practice by ensuring access to a range of modes including small nooks, study spaces, larger spaces and breakout zones.

In Wee Waa's rural setting, outdoor learning and alfresco areas are a valued teaching setting. By allowing students to maintain connection to the surrounding landscape, students foster psychosocial and environmental benefits, demonstrate active engagement in learning as well as partake in informed learning opportunities.



Typical Furniture layouts have been provided as part of the detailed floor plans for each of the buildings. Refer to the architectural drawings set provided by SHAC as part of the EIS. These potential furniture layouts are provided for pricing purposes and to prompt further discussion amongst key stakeholders. Further detailed consultation and workshops are required during future design phases in order to more accurately ascertain the school specific furniture requirements within each space, as part of the works.

General Learning Spaces (GLS) are directly adjacent to Shared Learning Space with Practical Activities Area, as per EFSG Learning and Support Unit Relationship recommendations. The sample furniture layout in each GLS is able to accommodate a broad range of teaching & learning methodologies, by offering small, medium and large group arrangements. Due to the large, open plan space proposed, it is flexible and adaptable to any future teaching & learning methodologies, contributing to the Whole of Life; being a sustainable, value-for-money and efficient asset that will remain fit-for-purpose in a wealth of different arrangements.

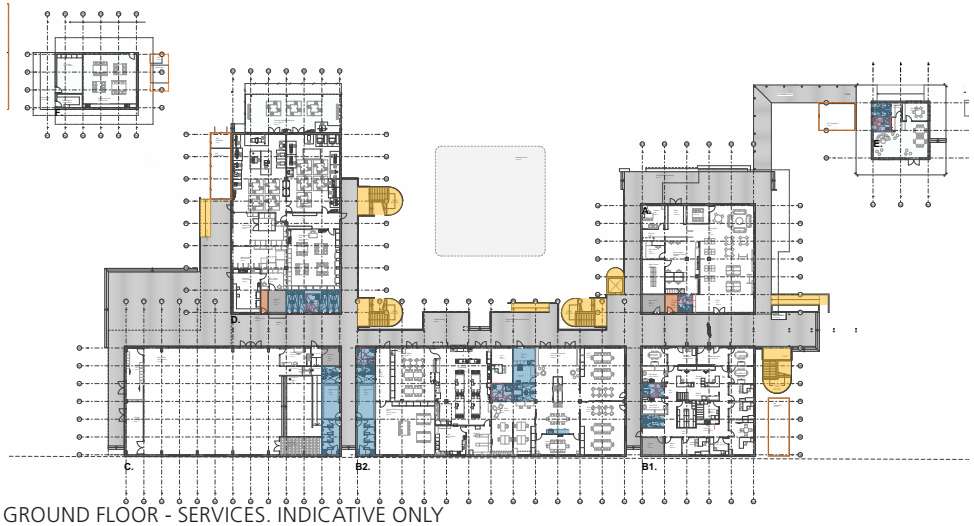
Each GLS is large enough to accommodate a full size GLS Store Room integrated within the space itself, as either full height cupboards or under bench storage, which can have a multi-purpose use as additional work and bench space, storage or display space.

2.3.8 SERVICE REQUIREMENTS

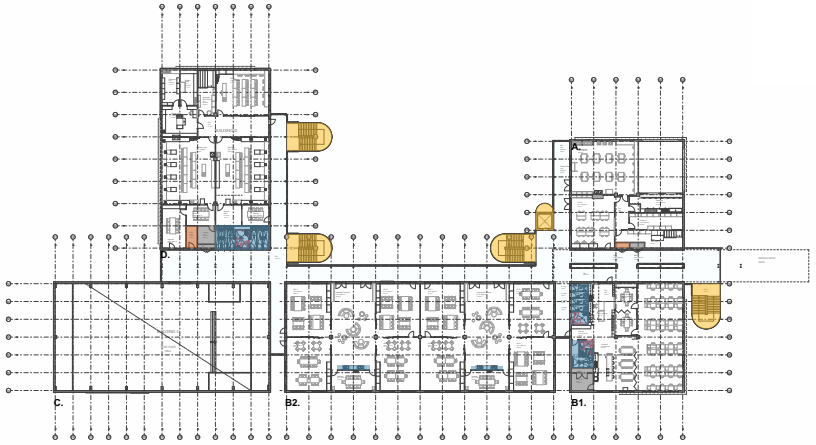
Services have been strategically placed and collocated on the external walls of proposed buildings to ensure ease of accessibility for tradespeople.

Wet areas, including showers, toilets and laundries, are consolidated into blocks across both floors for efficiency both in construction and future maintenance.

PROPOSED BUILDING
CLEANER'S STORE
STAIRS, RAMPS AND LIFTS
COMMS AND SWITCH ROOMS
TOILETS AND WET AREAS
EXTERNAL SERVICE COMPOUNDS

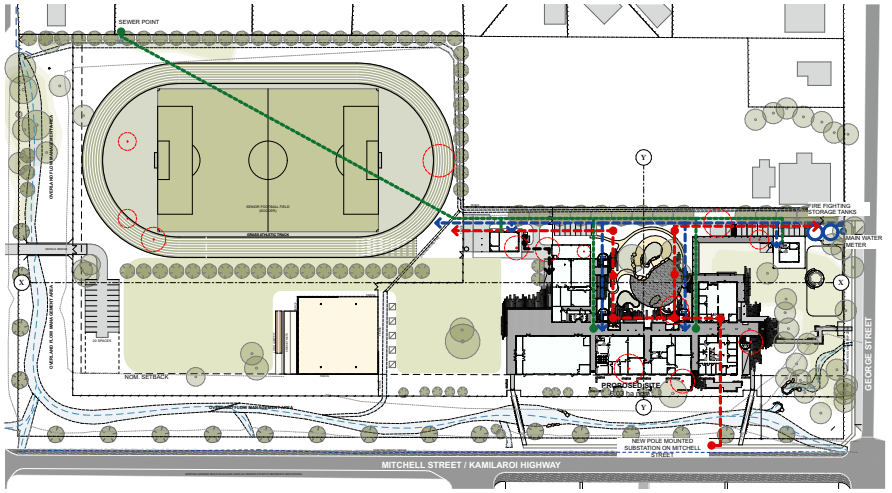


GROUND FLOOR - SERVICES. INDICATIVE ONLY



FIRST FLOOR - SERVICES. INDICATIVE ONLY

Marline Newcastle Pty Ltd Consulting Engineers have been engaged as the electrical, mechanical, hydraulic, and fire consultants to provide professional advice and concept design input on the proposed Wee Waa High School. The EIS provides a high level assessment of the available infrastructure to service the proposed development and any augmentation required.



2.4 SCHEDULE OF ACCOMMODATION

Below is a summary schedule of Accommodation, in accordance with EFSG 2-stream allocation.

4474 WEE WAA HIGH SCHOOL — **REV E**

OPTION 3Ci - ACCOMODATION SUMMARY — 11.10.21

WORKS SUMMARY

GENERAL LEARNING SPEACES INCLUDED

HS401.01	GLS - Type 01	6
HS401.02	GLS - Type 02	2
		10

NOTE:
ORIGINAL BRIEF WAS FOR 10 GLS AND 5 SPECIALTY GLS, THEREFORE REMOVING 7 ENTITLED GLS FROM THE PROJECT.
2x LS more than EFSG 2 stream allocationn as requested.

SPECIALIST LEARNING SPACES

HS404	SCIENCE LS	1
HS405	VISUAL ARTS LS	1
HS407	HEALTH / PE & PERFORMANCE LS	1
HS409	FOOD TECHNOLOGY LS	1
HS410	WOOD & METAL LS	1
	TOTAL	**5**

SPECIALIST LEARNING SPACES NOT INCLUDED

HS404	SCIENCE LS	1
HS405	VISUAL ARTS LS	1
HS407	HEALTH / PE & PERFORMANCE LS	2
HS409	FOOD TECHNOLOGY LS	1
HS410	WOOD & METAL LS	1
HSS01	COMPUTER LEARNING UNIT	1
	TOTAL	**7**

PLAY SPACE CALCULATIONS (300 STUDENTS)

Sports Field	7,150
Athletics Track	4,150
Courtyard	1,800
Sports Courts	1,800
Warm Up Field	4,100
Playing Field	3,250
TOTAL	22,250sqm
	= 74sqm per student

LEARNING AND SUPPORT UNIT

SPECIALIST EDUCATION LEARNING UNITS	**2**
TOTAL LEARNING SPACES	**17**

NOTE:
AREAS ARE IN ACCORDANCE TO 2-STREAM EFSG GUIDELINES DATED 16.06.21. ADDITIONAL RESOURCES INCLUDED DfMA GUIDELINES AND THE DRAFT 'REVISED SoA SSECONDARY SCHOOLS EFSG SCHEDULE' DATED JUNE 2021

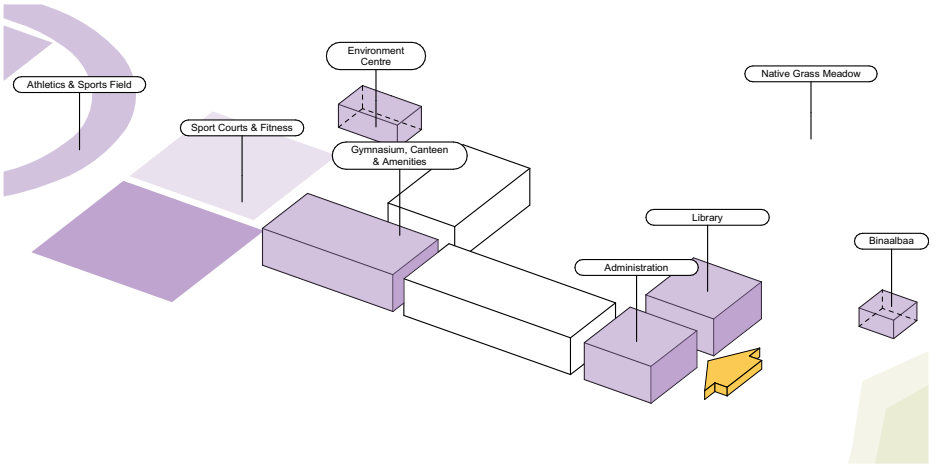
	EFSG Area (m2)	**Option 3Ci (m2)**	**Departures from EFSG (m2)**	
EFSG Entitlements				
Administration	212	229.2	17.2	
Agriculture	102	99.7	-2.3	
Assembly Court	342	344.1	2.1	
Canteen	47	71	24	
Covered Outdoor Space	100	100.5	0.5	
Food & Textile Technology	279	247.2	-31.8	
Games Unit	1292	1292.1	0.1	
General Learning Unit	694	907.7	213.7	10 GLS allocation
Health / PE and performance LU	208	76.2	-131.8	5 Specialty LS allocation
Library Unit	357.5	282.7	-74.8	
Outdoor Covered Workshop	120	124.3	4.3	
Outdoor Learning Unit	165	165.4	0.4	
Science Learning Unit	303	385.8	82.8	Existing Highschool exceeds
Special Education Learning Unit	239	216.8	-22.2	
Sports & Performance Unit	649	706.7	57.7	Existing Highschool exceeds
Staff Unit	278	276.8	-1.2	
Stores / Services	87.8	137.3	49.5	Refer to detailed schedule
Student Amenities	90	103	13	Refer to detailed schedule
Visual Arts Learning Unit	293	241.8	-51.2	5 Specialty LS allocation
Wood & Metal Technology	440	383.2	-56.8	5 Specialty LS allocation
	6298.3	**6391.5**	**93.2**	
Circulation				
Indoor Circulation		170	approx.	
Ramps / Stairs		10.9	approx.	
Outdoor Covered Circulation		2,020	approx.	
		2,201		
Additional Areas outside EFSG entitlement				
Indigenous Learning Centre		81		Refer to detailed schedule
Environment Centre		109.3		Refer to detailed schedule
Additional spaces		236.4		Refer to detailed schedule
		426.7		

2.5 PUBLIC DOMAIN AND COMMUNITY

Community programs and public needs identified during the Functional Design Brief and Masterplan process included:

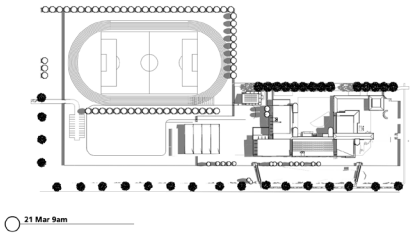
- Access to sporting fields including courts and running tracks
- Community access to Indigenous Cultural Centre
- Environment Centre
- General Learning Spaces accessible for out-of-hours program
- Library as a community resource

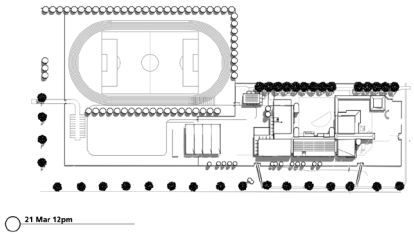
The proposal by SHAC creates a clear delineation between publicly accessible civic buildings and school specific facilities. The gymnasium/ hall, car parking and covered courts form a primary interface along Mitchell Street. A clear hierarchy in entrances is created, to guide the public towards the primary entrance. The proposed layout and security fence line allows these components to operate independent of the remainder of the school and outside school operating hours.

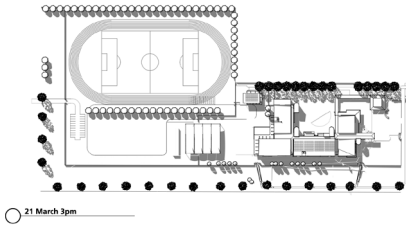


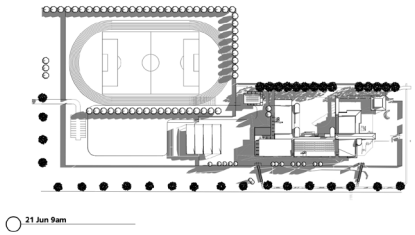
2.5.1 SHADOW DIAGRAMS

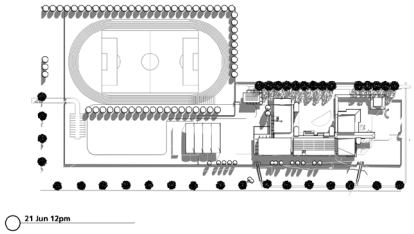
Below is a shadow study of the Concept Design Option, where overshadowing to neighbouring buildings does not occur due to the positioning of the school to the south of all surrounding residences, with no impacts to surrounding landscape.

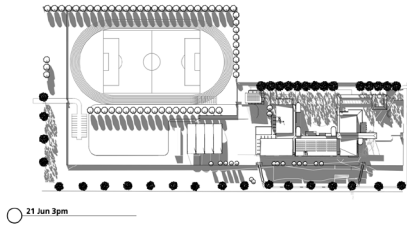


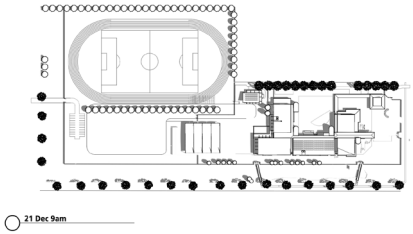


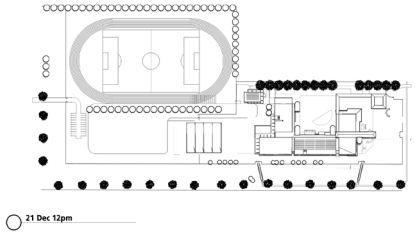


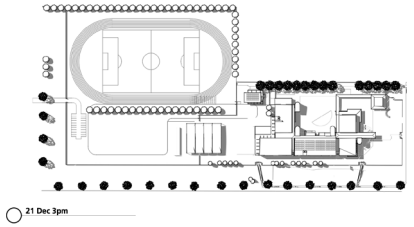






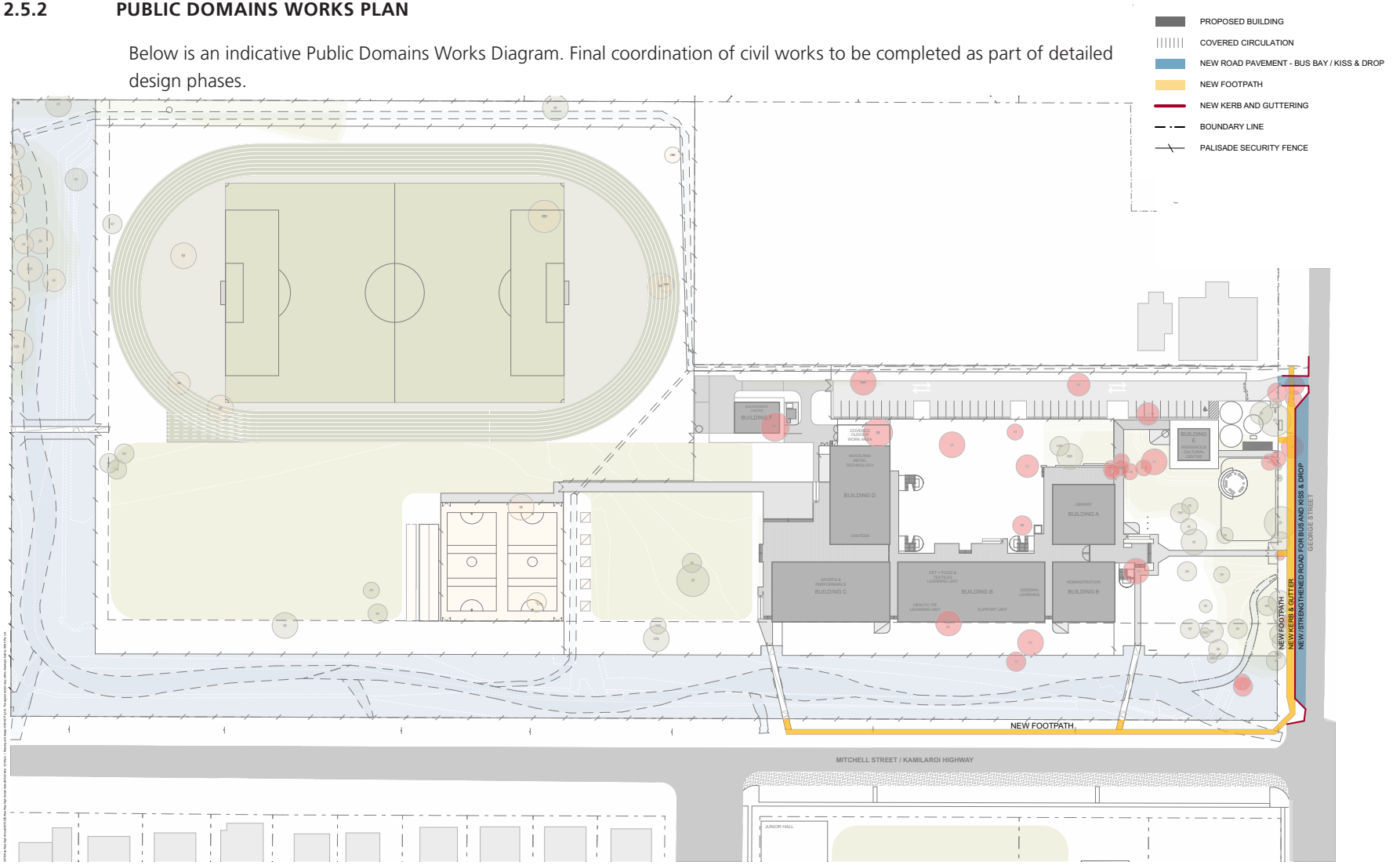






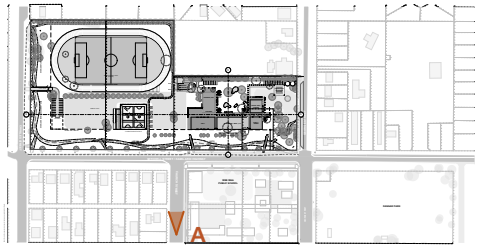
2.5.2 PUBLIC DOMAINS WORKS PLAN

Below is an indicative Public Domains Works Diagram. Final coordination of civil works to be completed as part of detailed design phases.



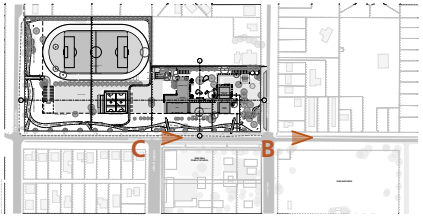
2.5.3 VIEW ANALYSIS - PHOTO MONTAGES

A. Looking down Church Street North towards proposed concept design. Wee Waa Public School is on the right, Wee Waa Anglican Church on the left. The proposed high school does not breech the existing horizon tree canpoy or create any conflicting forms with the surrounding streetscape.

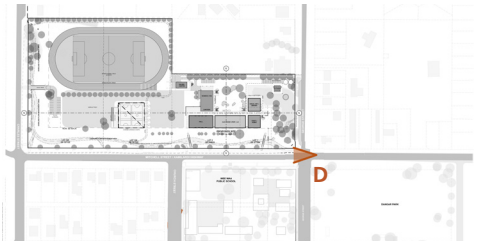


B. Looking down Mitchell Street / Kamilaroi Highway towards proposed concept design.

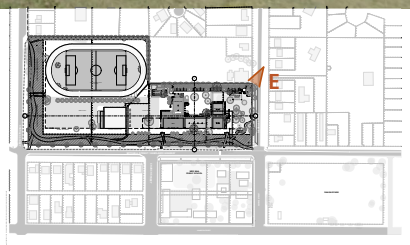
C. View West along Kamilaroi Highway at Church Street intersection with train silos in the distance, and Sports Fields to the right.



D. Looking down Mitchell Street / Kamilaroi Highway at the 4-way intersection with George Street with the proposed concept design on the right.

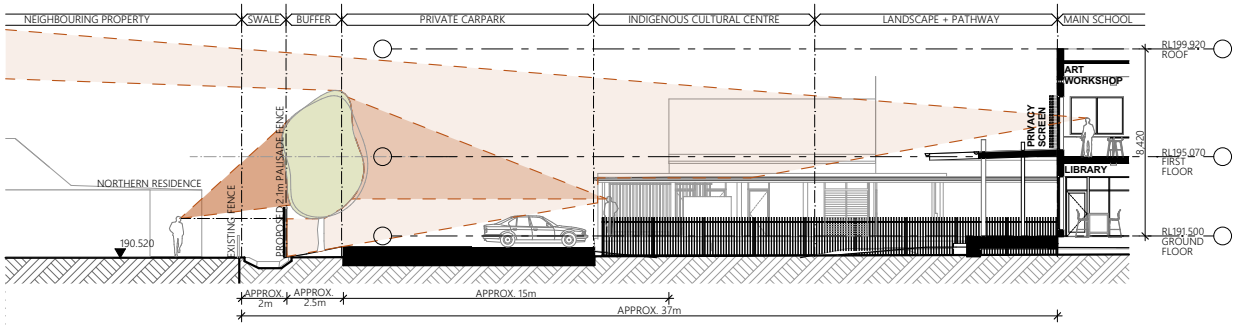


E. The view from the neighbour's front yard is focused on the proposed secure driveway entry and services compound. These structures, along with existing vegetation and proposed fence lines, provides both an acoustic and visual barrier to the school playground and buildings beyond.

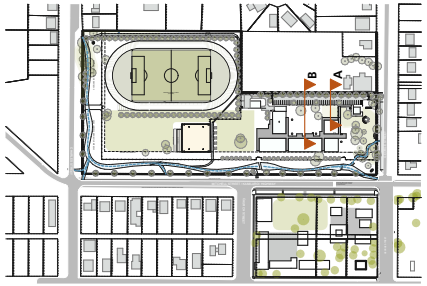


2.5.3 PRIVACY ANALYSIS - SITE SECTION

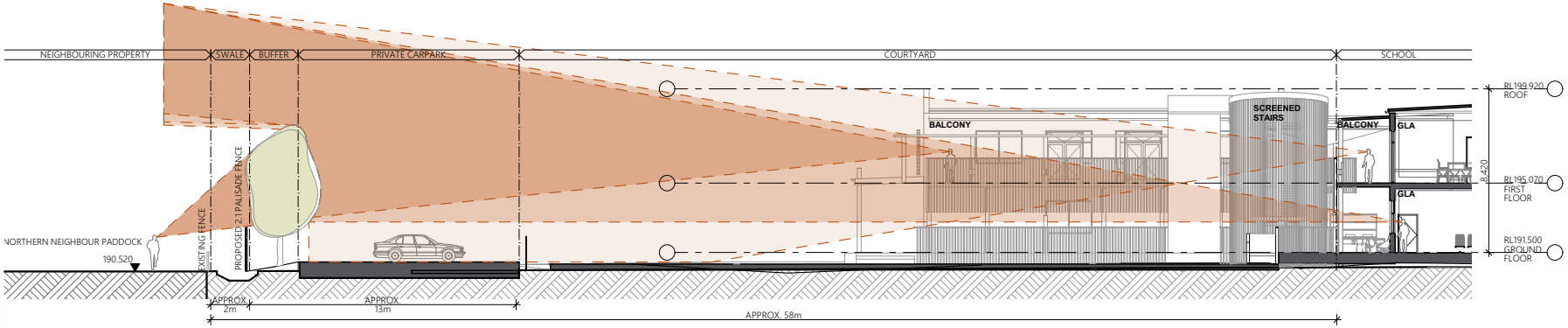
The following site sections diagrammatically communicate sight lines from both the perspective of campus users and from the neighbouring property. Both sectional diagrams demonstrate sight distances, proposed vegetation and proposed fencelines help protect the privacy of neighbouring properties and the students within the campus.



Section A: Sightlines Analysis



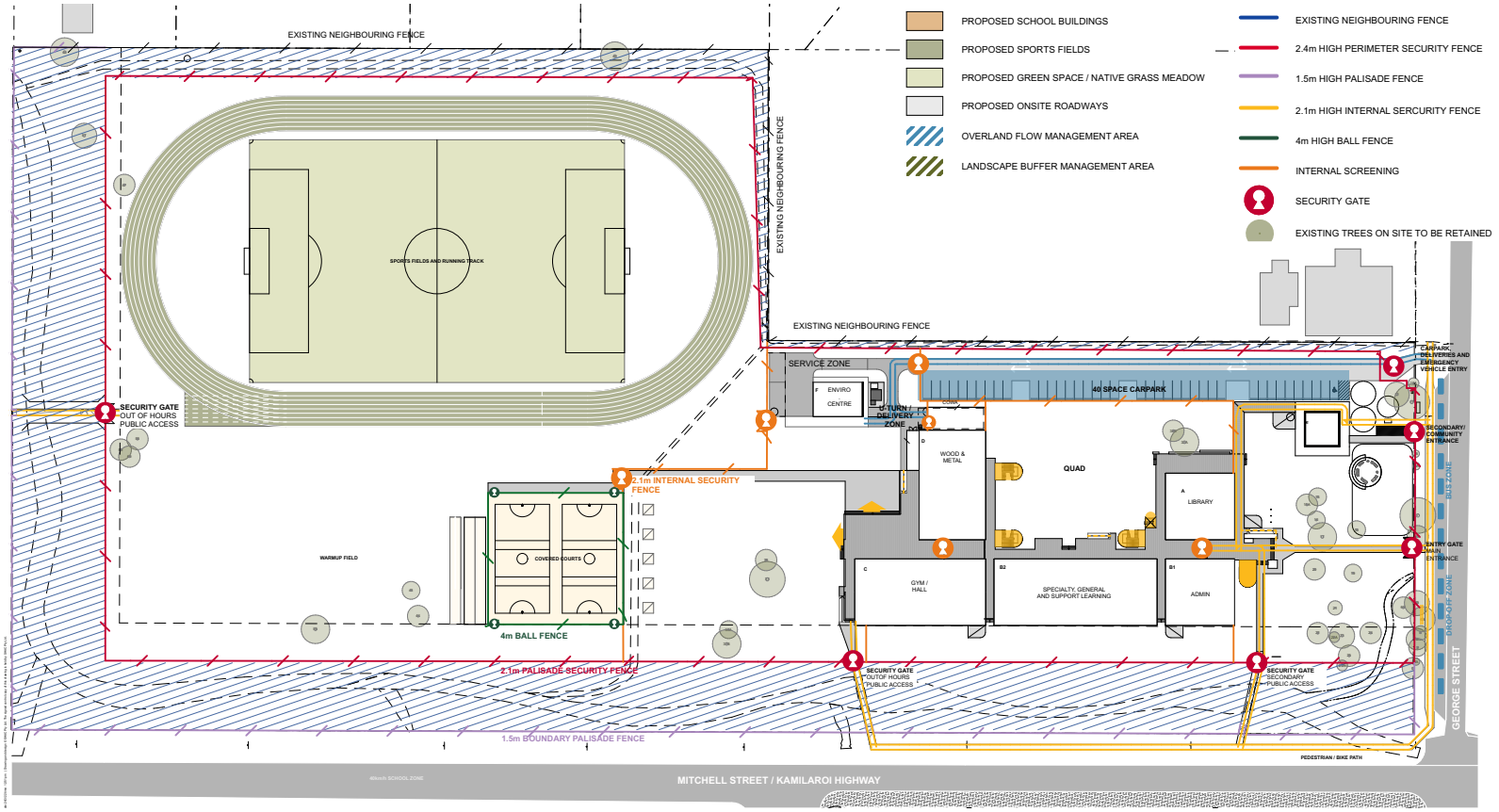
KEY SITE PLAN
NTS



Section B: Sightlines Analysis

2.6 ACCESS, SECURITY AND CIRCULATION STRATEGY

After hours community access to Hall / Canteen, Library. Sports Fields to be available and operational requirements created.



ACCESS

There is one primary access spine on the site running east from George Street parking/kiss and drop, past the Administration block and into the heart of the school. This main spine's presence is reinforced with a heightened entrance to ensure clear way finding. Past the Administration block, this spine forms part of the U-shaped external circulation system joining each block.

Secondary public access points into the site are located on the western boundary near sports courts, and Southern boundary to further connect in a controlled way with Wee Waa public school and greater Wee Waa community.

Secondary vehicle access into the site runs along the northern service road, separated from students, teachers and general public access. This road is to provide vehicle access for parking, agriculture, general deliveries, rubbish collection, and emergency services.

SECURITY

According to the EFSG, "major problems affecting schools, with enormous cost, are arson, theft and vandalism. The impact of these activities is not only measured in financial terms but also in the effect on student learning outcomes, interruptions to operations and emotional trauma experienced by student, teachers and parents."

The security risk for all projects must be minimised. Preventative measures in the project design have been delivered. For example, security fencing; a high palisade steel fence designed to prevent climbing, is provided along road frontages and other site boundaries which face public areas or walkways, and returns in the fenceline are accommodated around obstacles such as the bridges across the drainage swale. This security fence includes site boundary along the Kamilaroi Highway and George Street to accommodate the landscape drainage swale and to enhance the school aesthetically.

To minimise the likelihood of break-ins and their effects, Safety in Design and Crime Prevention Through Environmental Design principles are implemented in the planning.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime Prevention Through Environmental Design (CPTED) guidelines have been outlined by the Crime Prevention & the Assessment of Development Application report published in 2001 by the former Department of Urban Affairs & Planning, (now the Department of Planning, Industry and Environment).

CPTED seeks to influence the design of buildings & places to:

- increase the perception of risk to criminals by increasing the possibility of detection, challenge & capture
- increase the effort required to commit crime by increasing the time, energy, or resources which need to be expended
- reduce the potential rewards of crime by minimising, removing or concealing 'crime benefits'
- remove conditions that create confusion about required norms of behaviour

CPTED is a strategy that focuses on the built environment to reduce or prevent the incidents of crimes. CPTED for Wee Waa High School aims to create the reality (or perception) that the cost of committing crimes are greater than the likely benefits by implementing the following strategies:

- **Territorial Re-Enforcement:** Swale fringe, zoning and fencing act as actual and symbolic boundary markers, helping to delineate space from shared public space to private school land. Meanwhile art displays such as Archibull, totems and facade treatment, express ownership and pride, consequently putting others on alert that they are coming into an area that is owned and cared for.

- **Natural Surveillance:** Window outlook to every direction of the site, outdoor and centralised circulation spines and optically permeable fencing/facade design increases the perception of human presence and/or maximised visibility.

- **Access Control:** Natural access control is achieved through the swale feature lining the boundary of the site. Other design measures including pathway configuration, bridges locations and lockable gates assist by providing controlled access points. Signage, colour and lighting further help with orientation and direction.

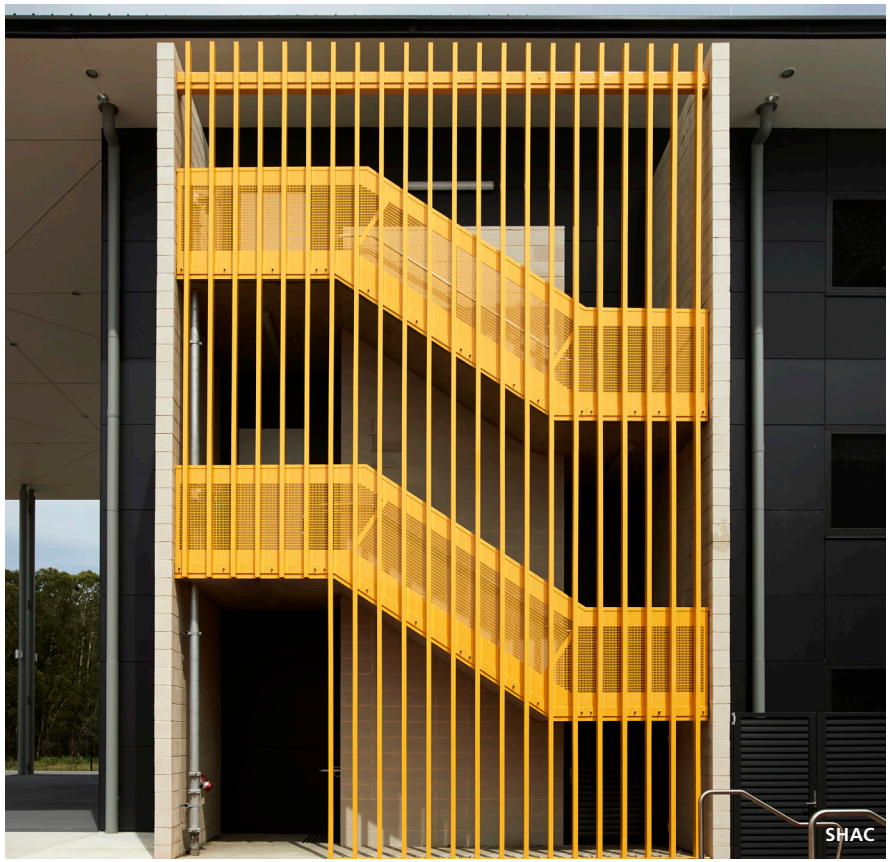
- **Space/Activity management:** The judicial placement of Administration and Library offices ensures casual supervision throughout the school during school operating hours. Additionally, the U-shaped orientation of the building ensures interior open spaces are promoted with activities more contained.

CIRCULATION

For cost efficiencies and desired connections to nature, the school consists of predominantly external covered circulation. Coherent circulation axes, clear sight lines and numerous vertical circulation nodes ensure efficient, safe and non-congested circulation is facilitated throughout the school day.

The lift between floors is located adjacent the Learning Support and Administration, centrally located within the campus, facilitating equitable access for all.

A BCA/DDA consultant and Fire Consultant were engaged to assess and endorse circulation strategies.



2.7 ENVELOPE CONCEPT - FORM, SCALE & MATERIAL

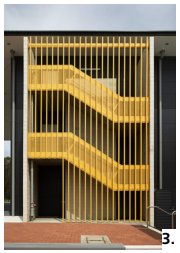
The below images depict Wee Waa existing built form and scale. There is a predominant multi-level typology used in the town for civic buildings including the Wee Waa Primary School (adjacent the site), the original High School, the Police Station, the main Pub and the oversized / mega Agricultural elements in the landscape. Wee Waa High School has been designed in two storey modules to reflect the local civic and agricultural vernacular and to ensure efficient circulation distance between learning areas.

HIERARCHY OF FORM | TALL | VERTICAL | CLUSTERS | GROUPINGS | LONG ELEMENTS | WALL | REPETITION | METAL FINISHES | PRAGMATIC | ROBUST | REFLECTIVE | INSULATED

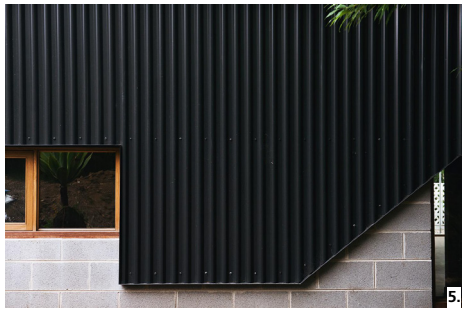
2.7.1 REFERENCE PRECEDENTS

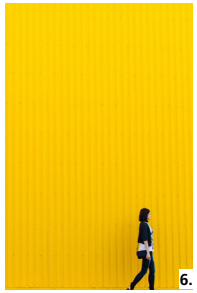

1.

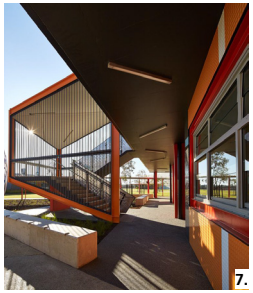

2.


3.

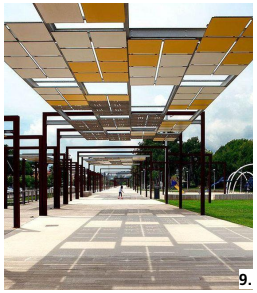

4.


5.


6.


7.


8.


9.


10.

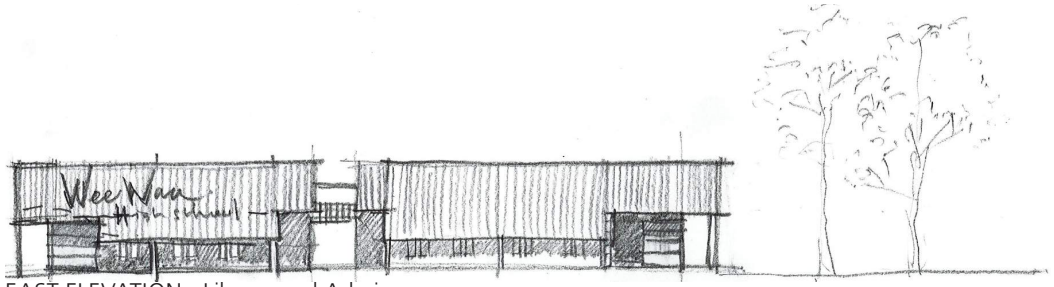

11.


12.

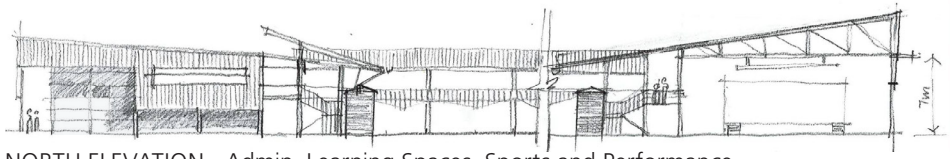
1. EAST PILBARA ARTS CENTRE - Officer Woods Architects | 2 & 3. SPCC SENIOR BUILDING - SHAC Architects | 4. SPCC Active Centre - SHAC Architects | 5. ROSANNA HOUSE - Nest Architects | 6. Yellow Cladding - Readily Available Online | 7. BALDIVIS SECONDARY COLLEGE - JCY Architects & Urban Design | 8. LORETO COLLEGE - ThomsonAdsett | 9. PARC CORREDERA - Martirià Figueras | 10. ST PIUS X LIBRARY - SHAC Architects | 11. SAWN ROCKS - Available Online | 12. ST PIUS X LIBRARY - SHAC

2.7.2 CONCEPTUAL FORM AND FACADE IDEAS

SOUTH ELEVATION - Front of School - Colour Tones of the Pilliga Forrest



EAST ELEVATION - Library and Admin



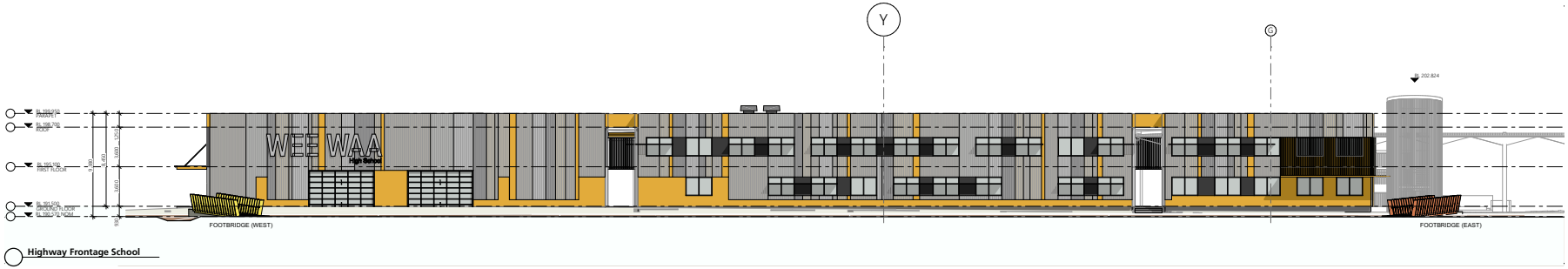
NORTH ELEVATION - Admin, Learning Spaces, Sports and Performance

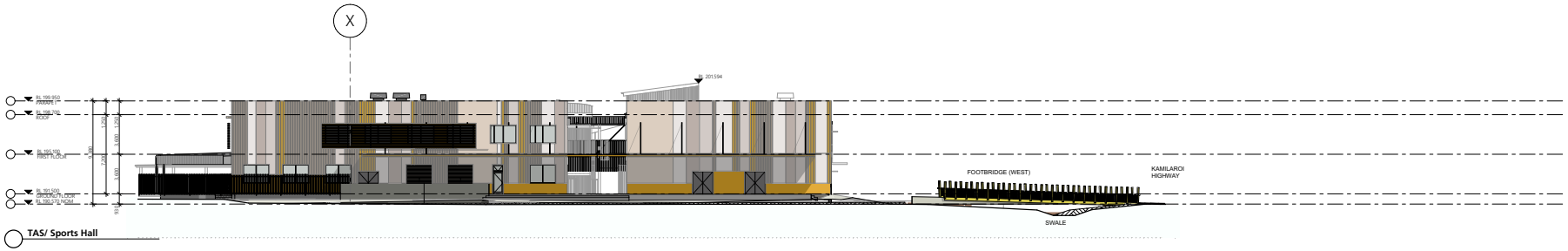
PILLIGA FOREST & SAWN ROCKS (REGIONAL LANDMARKS)
SOURCE: READILY AVAILABLE ONLINE

The site is predominantly flat, which has been reflected in the proposed forms. Aramax, a strong profile roofing material, adds texture and character to the long street frontage, as well allows for large spans and cantilevers that create undercover circulation with minimal columns. The repetition of forms facing the highway produce a strong character that grounds the proposed buildings as part of the new Wee Waa High School vocabulary.

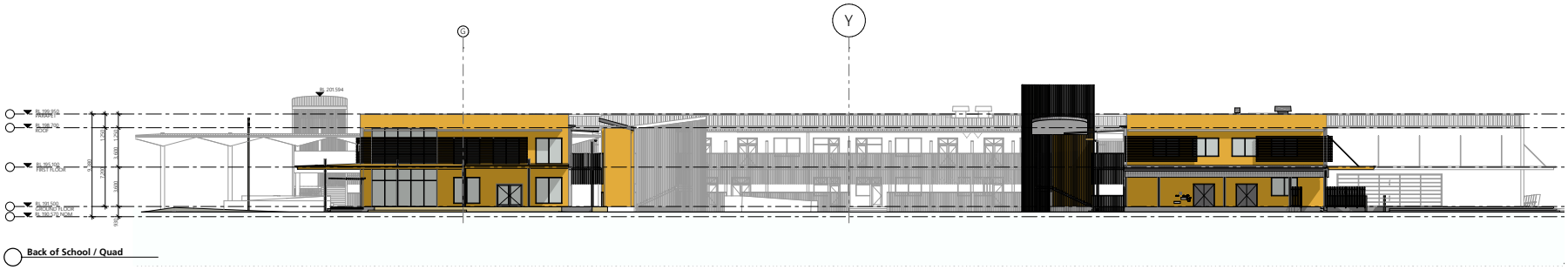
2.8 INDICATIVE ELEVATIONS

Indicative elevations illustrate overall form, mass and materiality. Colour variation across the facade is representative only, and will be developed in future project phases, such as documentation.





SOURCE: SHAC. INDICATIVE ONLY.



SOURCE: SHAC. INDICATIVE ONLY.

Enviro Ag Centre - NORTH

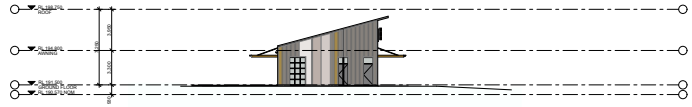
Binaalbaa Centre - NORTH

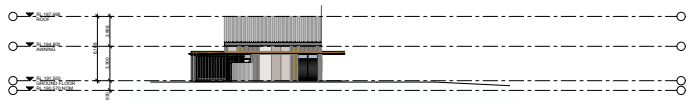
Enviro Ag - EAST

Binaalbaa Centre - EAST

Enviro Ag Centre - SOUTH

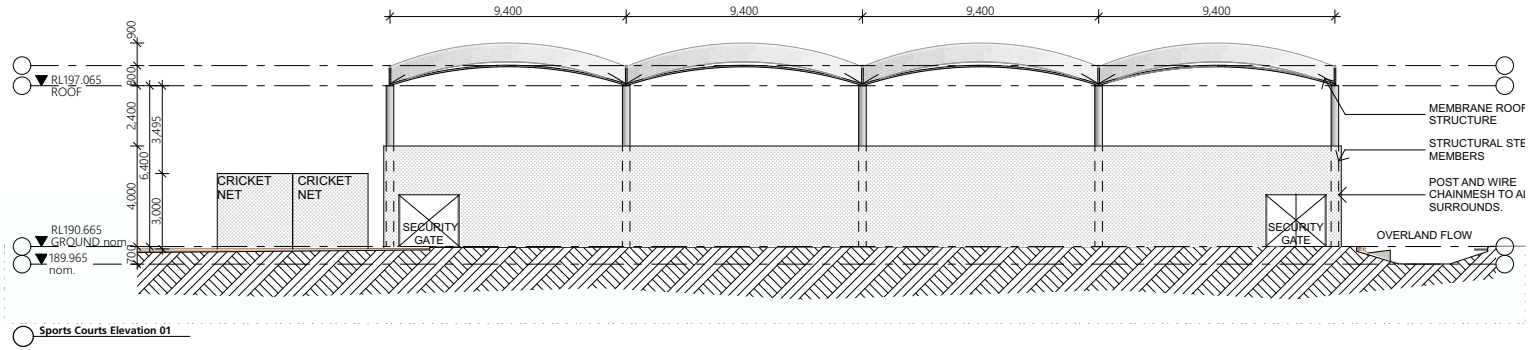
Binaalbaa Centre - SOUTH



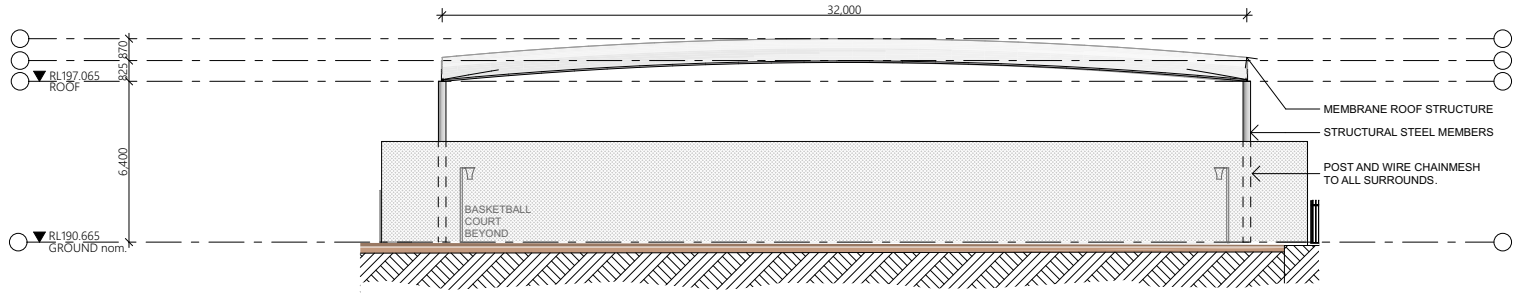


Binaalbaa Centre - WEST

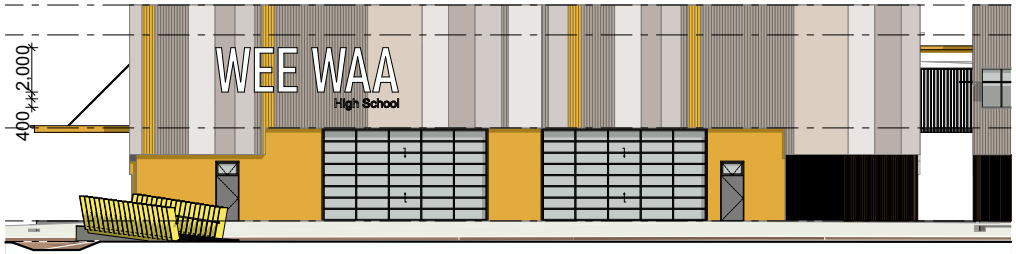
SOURCE: SHAC. INDICATIVE ONLY.



Sports Courts Elevation 01

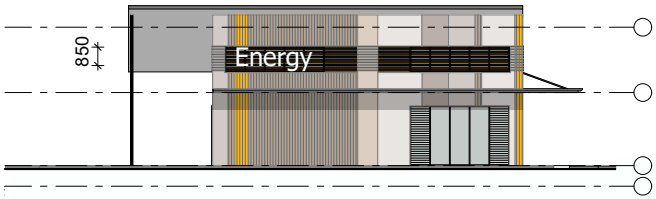


Sports Courts Elevation 02

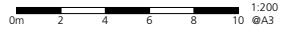


Highway School Frontage

East Elevation Main Entry

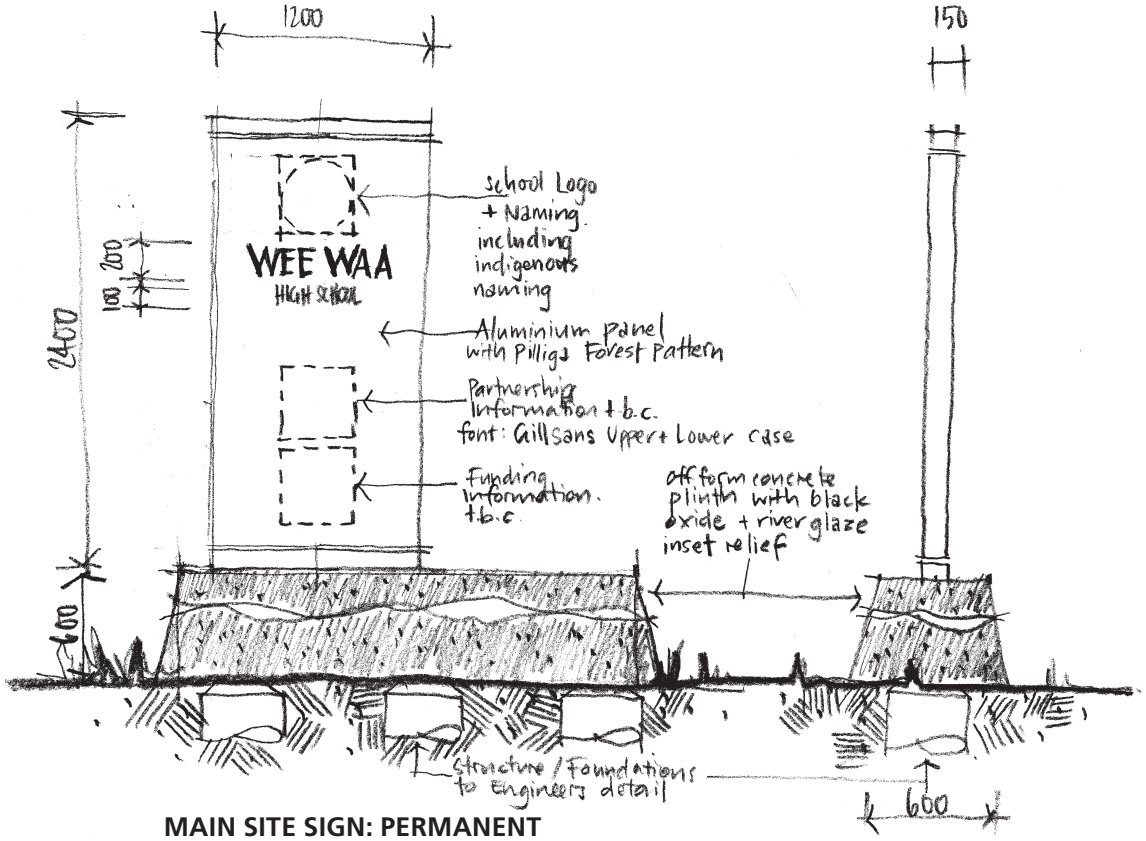


South Elevation Enviro Ag Centre

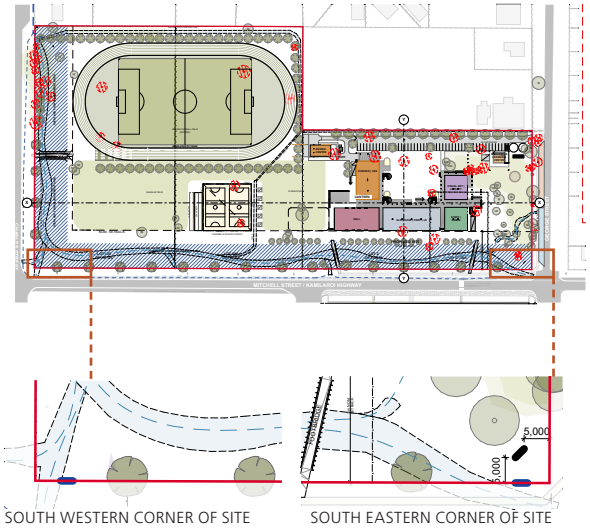


Refer to EFSG for all signage standards.
Refer to EFSG + BCA for all individual room and statutory signage.

2.9 SIGNAGE AND WAYFINDING



MAIN SITE SIGN: PERMANENT



MAIN SITE SIGN: PERMANENT

SITE SIGN: TEMPORARY DURING CONSTRUCTION
2400(H) x 1200(W) x 150 ALUMINIUM ON TEMPORARY STRUCTURAL SUPPORT

Refer to EFSG for all signage standards.

Refer to EFSG + BCA for all individual room and statutory signage.

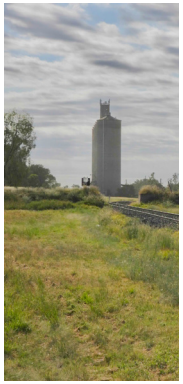
2.10 MATERIAL STUDY

2.10.1 EXISTING CONTEXT

Wee Waa's rich yet testing history is reflected in the town's architecture, whereby buildings have erected out of local necessity, climate, industry and environment. The proposed Wee Waa High School adopts elements of Australia's vernacular architecture found in the town including encasing verandas and overhangs, utilising both their spatial and performative qualities.

The rich history extends to the original custodians of the land, the Kamilaroi and Gamilaraay people. Colour pallets, totems, murals, artworks and native landscaping techniques will communicate the ingrained indigenous culture within both the town and school community thoughtful consultation and engagement.

Within the towns rural setting, the vast and encompassing farmlands render a seasonal colour palette. This seasonal spectrum of colour will be scattered throughout the school facades and circulation spaces, reflecting the context's cyclical nature.

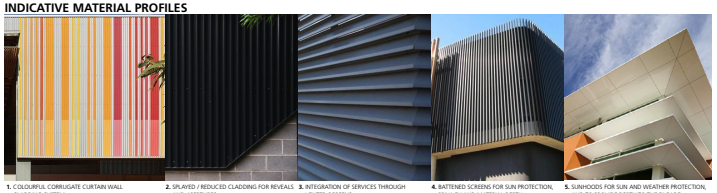


WEE WAA & SURROUNDING CONTEXT IMAGES

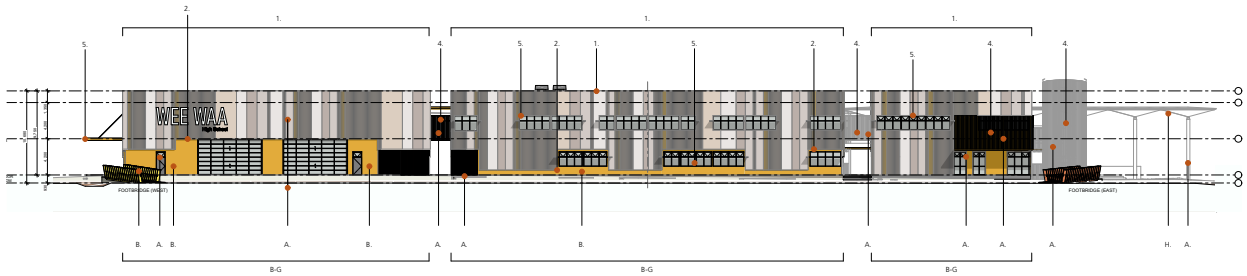
2.10.2 PROPOSED MATERIAL TONES AND PALETTE

The following materials align with the proposed concept design principles, while ensuring a robust, low maintenance solution. The themes unite the natural environment and indigenous history, informing the landscape design, way finding approach and material palette. The palette is deliberately neutral, with scattered accents of colour to ensure that the landscape, entrance, way finding and works generated by the students become the main focus, such as the Archibull; an art and multimedia project winning a state award that encourages students and teachers to have courageous conversations about the greatest challenges to Australian agriculture and their communities. Replacing a school site that has been deemed uninhabitable, it is important for the new Wee Waa High School to re-brand itself within the Wee Waa community as a facility that is state-of-the-art, durable and safe. Further investigation of façade and wall systems to comply with BCA will occur once the ECI Contractor is appointed, therefore definitive materiality is yet to be confirmed.

INDICATIVE MATERIAL PROFILES

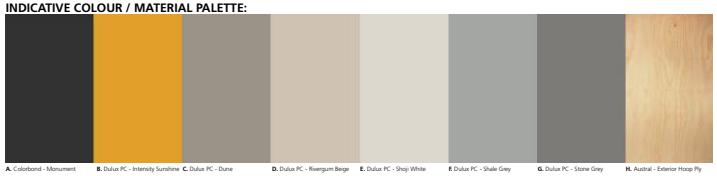


1. COLOURFUL CORRUGATE CURTAIN WALL CLADDING SYSTEM
2. SPLAYED / REDUCED CLADDING FOR REVEALS AND APERTURES
3. INTEGRATION OF SERVICES THROUGH VENTED SCREENS
4. BATTENED SCREENS FOR SUN PROTECTION, PRIVACY AND MATERIAL DEPTH
5. SUNHOODS FOR SUN AND WEATHER PROTECTION, AND TO PROVIDE DEPTH TO THE FACADE



NOTES
Further investigation of façade and wall systems to comply with BCA will occur once the ECI Contractor is appointed. The intended facade system is a curtain wall solution.

INDICATIVE COLOUR / MATERIAL PALETTE:



A. Colorbond - Monument
B. Dulux PC - Intensity Sunshine
C. Dulux PC - Dune
D. Dulux PC - Rivergum Beige
E. Dulux PC - Shoji White
F. Dulux PC - Shale Grey
G. Dulux PC - Stone Grey
H. Austral - Exterior Hoop Ply

FACADE COLOUR ARRAY

2.10.3 PUBLIC ART STRATEGY

A high level public art strategy is envisaged for Wee Waa High School and its community. It is noted that Narrabri Shire Council do not have a published Public Art Strategy, however the project provides the opportunity to include public art as part of the Wee Waa High School project that raises awareness, shares knowledge, and instills pride in local histories, cultural diversities and talents through art conversation.

Public Art has been considered throughout the proposed campus, including stationary, engaging artworks and sculptures, as well as dynamic, performative arts, dance, song and community gatherings and events.

To ensure the chosen artworks are enduring and relevant to Wee Waa High School, artists and artworks for consideration should demonstrate all, or a combination of, the following;

- Persons or Communities capable to create public artworks, or be provided with a contractor who can manufacture the artwork,
- Demonstrate relevance, innovation and originality connected to the locality, community and/or design motifs
- Significance and consideration of consultation with local indigenous community and receive approval of the artworks
- Be manufactured for timelessness and durability with a lifespan suitable for its application (for example 25 years for permanent works)

Public Art for Wee Waa High School must be chosen in consultation with Wee Waa High School students, staff, the community, and with deep consideration with to site, climate, history, landscape, patterns, layers, colours and uphold the endeavours to connect the site's inhabitants to Country.

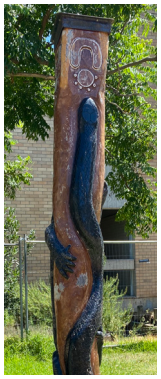
COMMUNITY INVOLVEMENT

Students, staff, community members, local artists, Wee Waa Community Arts & Cultural Centre, Gamilaraay, Kamilaroi, Gamilaroi & Gomeroi community and artists; those representative of equity, diversity and inclusion and who are engaged with and collaborate on the artistic vision for the school & campus.

RELEVANCE

The Public art collection across the site should appeal to a diverse range of audiences including age groups, interests, ethnicities, backgrounds, and be relevant to the school and Wee Waa locality/landscape to create and enhance a sense of place and community.

LEFT TO RIGHT:
ARTIST/HERITAGE CONSERVATION OFFICER FROM THE OFFICE OF ENVIRONMENT & HERITAGE, STEPHEN BOOBY, & ABORIGINAL EDUCATION OFFICER & STUDENTS AT WEE WAA HS.
WEE WAA COMMUNITY ARTS & CULTURAL CENTRE OPENING NIGHT FLYER; AND ARTISTS BELOW;
SHAC INDICATIVE ARTWORK ON SCREEN OF ENDANGERED HONEY EATER.




NATIVE PLANTING

The current landscape design includes the retention of existing stand of eucalupts in the forecourt, enhancement of native plantings across the site, and proposed maintenance of the native grass meadow. It is intended that these plants and grasses are a source of food, resource for learning opportunity for staff, students and the community that would be complimented by informative signage, native language, and inclusion within the school curriculum

INFORMATIVE SIGNAGE

Explanatory signage should accompany these design elements. It is intended that the signage will also incorporate Gamilaraay, Kamilaroi, Gamilaroi and Gomeroi language.

TtotemS, MURALS & MOTIFS

Landscape and architectural elements that illustrate the importance of totems to the community, through murals, signage, motif designs in screens, carvings, journeys. The previous High School site had a number of artworks that reflected the local indigenous community and family totems and the style of the Local Aboriginal Land Council and wildlife, which would be replicated on the new site.

LEFT TO RIGHT:
UNKNOWN; WEE WAA HIGH SCHOOL TOTEM; UNKNOWN; LUCY SIMPSON; WEE WAA HIGH SCHOOL MURAL; UNKNOWN; WEE WAA HIGH SCHOOL MURAL





SUSTAINABILITY

Artworks will address environmental, cultural, economic and social sustainability. Artworks will consider composition, resource usage, processes and their underlying messages used as a learning tool for students.

STORYTELLING THROUGH ART

Mural and motif designs will be used to depict local histories and stories and celebrate culture through murals and motifs. mapping of important sites, history of the local area. It was suggested during consultation with the school's Aboriginal Education Officer that Tulladunna mapping, an Aboriginal reserve, is a distinctive and important motif that should be implemented.

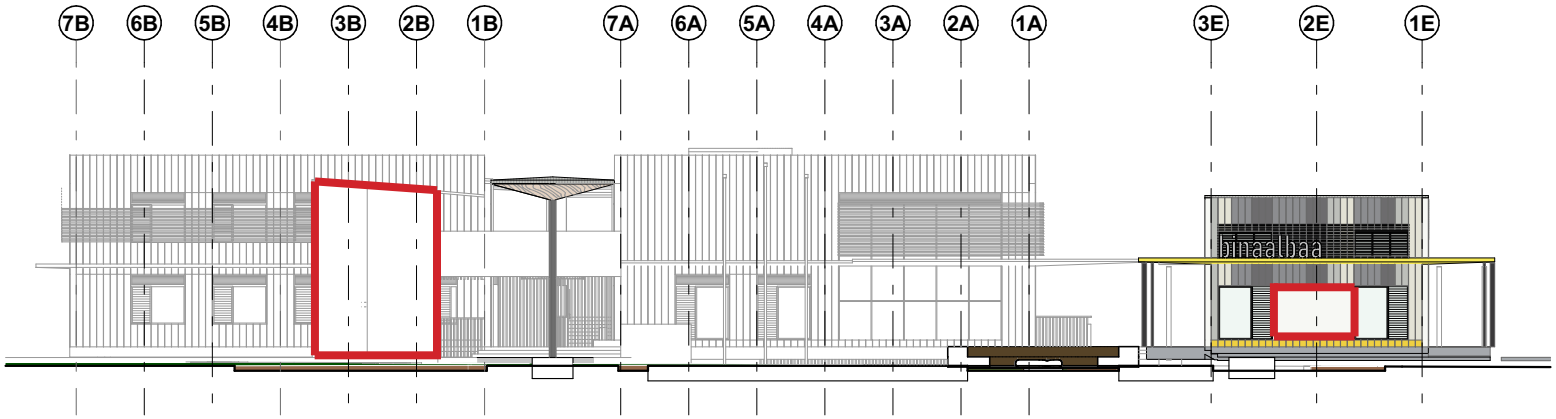
LEFT TO RIGHT:
LOCAL DANCE GROUP PROMOTING KAMILAROI CULTURAL IDENTITY THROUGH SONG & DANCE; PUTNEY HIGH SCHOOL DRAMA GROUP; WEE WAA SHOW; WEE WAA SHOW; WEE WAA HIGH SCHOOL STUDENTS AT WEE WAA SHOW WITH THEIR SHOW COW.

STORYTELLING THROUGH DANCE AND PERFORMANCE

It is important to allow for and identify opportunities to celebrate artistic cultural performance, encouraging all ages to participate in the transfer of cultural practices and knowledge, embedded stories and narratives through language, song, movement, and enabling these performative art practices to be shared with the broader Wee Waa community. Teaching cultural skills to youths through Country.

PERFORMATIVE ARTS, SONG & DANCE

The proposed school includes outdoor play, learning and tiered learning areas, areas for outdoor stage and a central courtyards for further opportunities for outdoor workshops, performances and outdoor drama modules, which are dynamic, interactive, and adaptive to current interests and teachings.



2 - Site Elevation - East
Scale 1:200

ARCHITECTURAL SCREENING

There is allocation for public art on external screening to the forecourt. This is currently depicted as an Endangered Honeyeater, which is endemic to the area of Wee Waa and is emblazoned with the colours of the Pilliga, the yellows of the farmland landscape and the deep colours of the black soil. Whilst this is indicative only of the possibilities of public art, relevant to the local fauna and flora, this can be developed further in consultation with the school community.

During consultation with the school staff and students, and info sessions with the community, it has been communicated that it has become a favoured, familiar and much-loved symbol of the new Wee Waa High School campus.

PUBLIC ART / MURAL

A space for artwork or a mural has been identified on the eastern facade of the Indigenous Cultural Centre, which addresses the entry forecourt and George Street. This placement provides great opportunity for students, staff and the community to engage and curate a piece that strengthens the school's identity and connects this welcoming centre for learning with the community of Wee Waa.

PUBLIC ART STRATEGY SITE PLAN

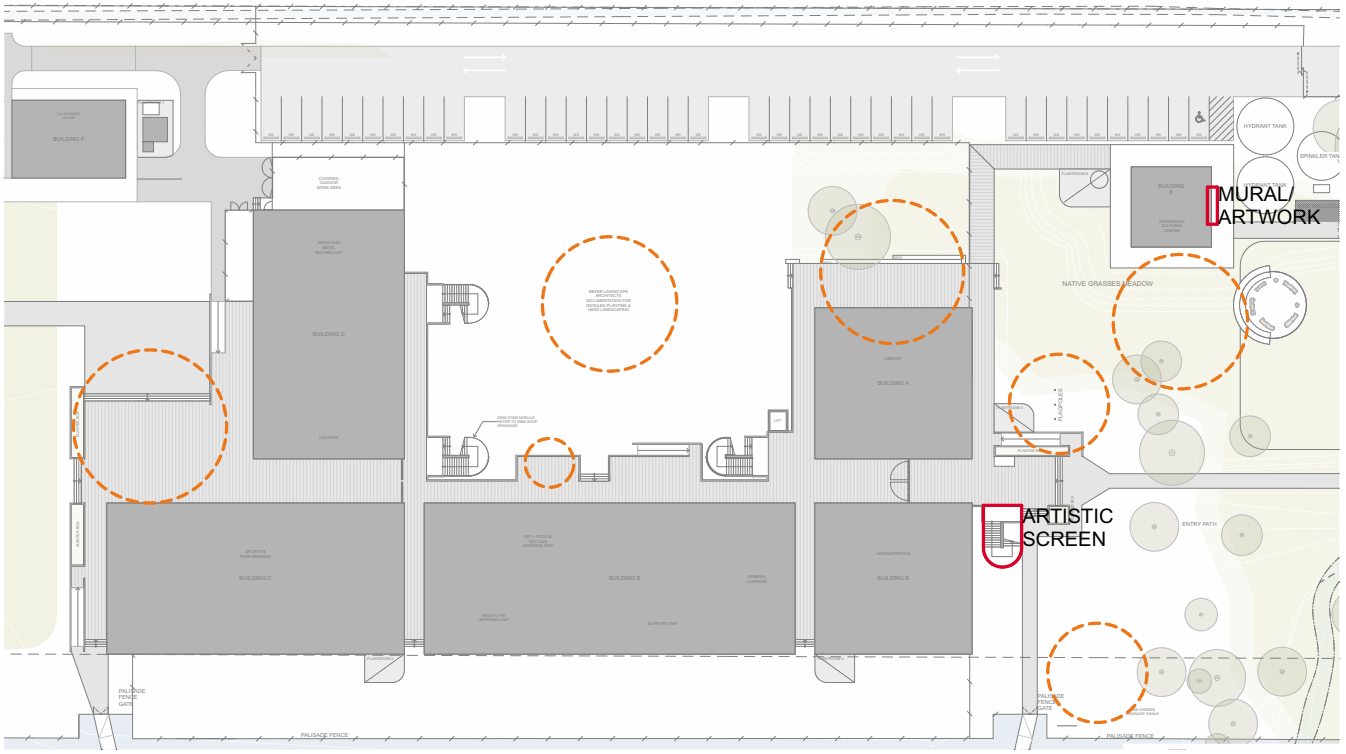
DEDICATED ART SPACE

OPPORTUNITIES FOR ART
- PERFORMATIVE / SONG / DANCE
- CEREMONIAL
- SCULPTURE / TOTEMS
- WORKSHOP

NOTE:

The Public Art Strategy is indicative only, and will be further developed during Project User Group, Project Reference Group and other community consultations.

The Public Art Strategy is not a static plan, and should be developed and updated over time to reflect the school and community of Wee Waa, the lifespan of artworks and the changing landscape and interests of art in conversation.



2.11 KEY PERSPECTIVES

CONCEPT DESIGN VISION - PROPOSED ARRIVAL AND ENTRY TO WEE WAA HIGH SCHOOL - 01

CONCEPT DESIGN VISION - VIEW BY MITCHELL STREET/KAMILAROI HIGHWAY OVER RAIN GARDEN SWALE, NATIVE GRASS MEADOW AND VIEW TO ENTRY

CONCEPT DESIGN VISION - VIEW OF BINAALBA ROOM, INDIGENOUS CULTURAL CENTRE, THROUGH NATIVE GRASS MEADOW AND VIEW OF THE ENTRY

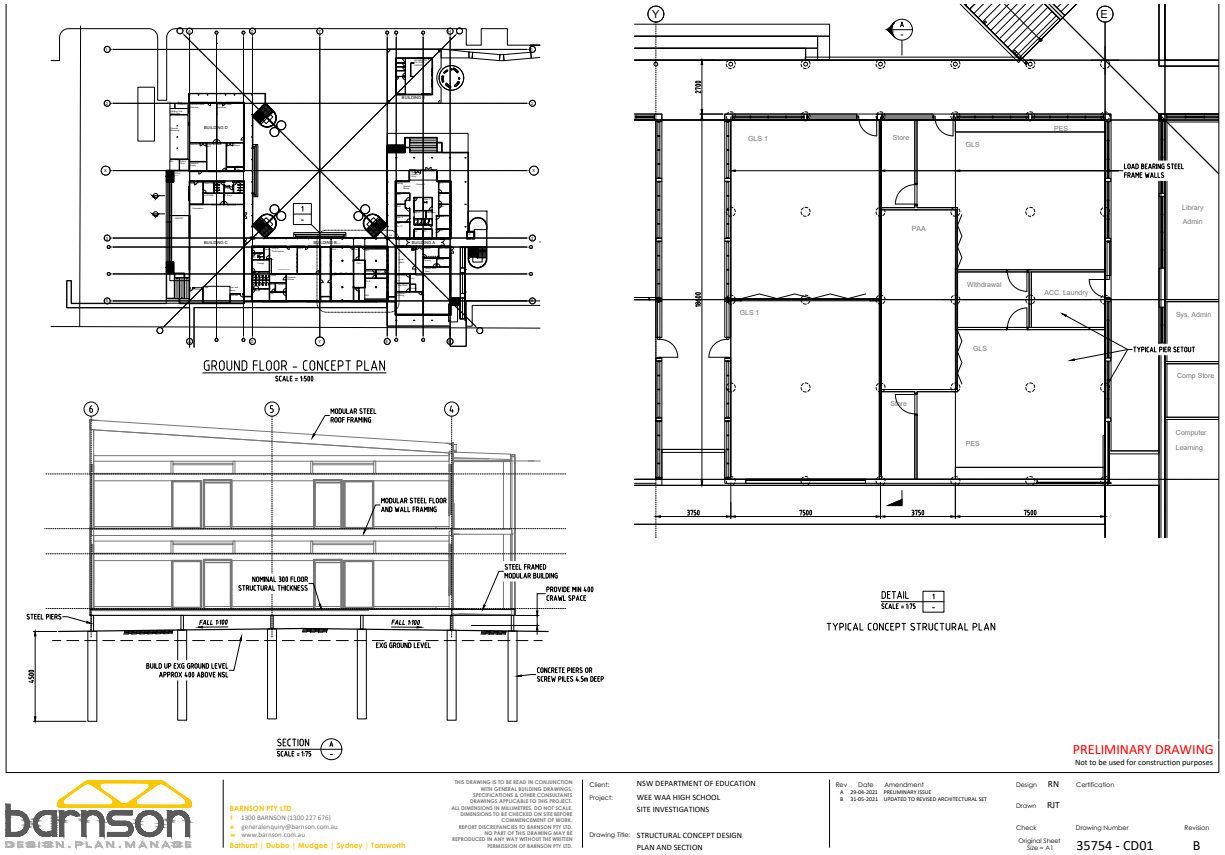
CONCEPT DESIGN VISION - AERIAL OF PROPOSED ARRIVAL & ENTRY

CONCEPT DESIGN VISION : AERIAL OVERLOOKING INDIGENOUS CENTRE, COMMUNITY CIRCLE AND MAIN COURTYARD LANDSCAPING

CONCEPT DESIGN VISION - AERIAL OF PROPOSED WEE WAA HIGH SCHOOL AND SURROUNDING CONTEXT

2.12 STRUCTURAL CONCEPT

FOR INFORMATION ONLY. REFER TO STRUCTURAL CONCEPT PLANS BY BARNSON.



2.13 SAFETY IN DESIGN REPORT

The following risks have been identified for the subject site: flooding/ drainage, mould, highly reactive soil and traffic concerns. The project has a preference for safe options. This risk appetite is suitable for a project within a public educational context, which places an emphasis on quality and reduced long term establishment and operational costs.

Prior to commencement of work, a preliminary risk assessment that identifies the nature and severity of the risks, will be considered by SHAC and recorded in the project "Safety by Design Register" and "Project Risk Register". Risk assessments will include requirements that contractors comply with the National Construction Code of Australia.

To allow for the identification of risks in a consistent and cohesive manner, risks will be identified and assessed for consequence, then ranked as either low, medium or high risks. Mitigation strategies for key risks will be developed and recorded in the Project Risk Register. The Project Risk Register will be re-assessed at various stages of the project to identify new risks and record risk treatments and mitigation measures.

A detailed project Risk Register is has been developed for this project, and will form the basis of monitoring, tracking and prioritising project risks throughout the life of the project.

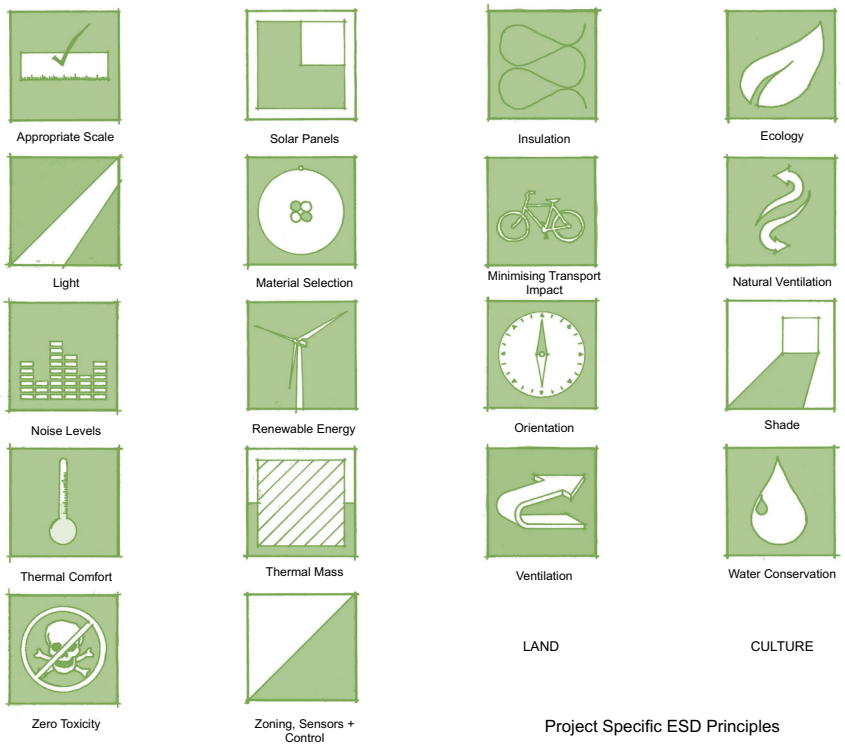
2.14 MECHANICAL AND ENVIRONMENTAL SUSTAINABILITY DESIGN (ESD)

According to the EFSG, all new building and upgrade projects must comply with the measures, targets and minimum standards of the Government Resource Efficiency Policy, to drive efficiency in energy and water use, waste and improving air quality. ESD principles to be incorporated in the design, development and operation of projects for their Whole of Life as identified by the EFSG including:

- Responsible use of energy, water, and resources in the construction, operation, refurbishment, maintenance, management and their ultimate disposal
- Protect and support biological and ecological diversity
- Restrict the flow of pollutants into our natural environment

Mandatory measures under the EFSG + NSW Resource Efficiency Policy include:

- Energy Conservation
- Water Conservation
- Sustainable Materials
- Ecological Conservation
- Waste Management
- Climate Change Adaptation
- Sustainability Benchmarking



Note: The following compilation of ESD principles will progress with the project. The responses to these strategies are in their early stages considering the current phase of the design process.

1. Energy Conservation

- Lighting - Integration of both natural and artificial lighting to maximise natural daylight in all habitable spaces, reduce energy usage, improve indoor amenity, and create a pleasant environment.
- HVAC Controls - Incorporate timed or sensor feedback functions for all lighting and HVAC systems to reduce energy consumption.
- Energy Efficient Appliances & Equipment - Specify efficient electrical equipment that exceeds the market average Energy Star rating.
- Renewable Energy Generation - Integrate PV solar power to offset energy consumption costs.

2. Water Conservation

- Water Efficient Appliances - Specify efficient water using appliances that exceeds the average WELS star rating by product type.
- Roof Water Harvesting & Tank Storage - Incorporation of rainwater tanks for various uses, including toilet flushing, irrigation, fire systems, etc.
- Stormwater Management - Incorporate strategies to minimise stormwater pollution to waterways and offsite environments.

The Sustainability in Design Matrix incorporates "**DG02: Ecologically Sustainable Development**" of the EFSG and Green Star's "**Design & As Built Submission Guidelines**" (version 1.2), and has been adapted by SHAC and is presented in this document as follows:

NOT ACHIEVED

ONGOING

ACHIEVED

3. Sustainable Materials

- Sustainable Timber - Specify timbers that are either recycled, composite, or sustainably sourced.
- Low VOC - Specify all surface coatings, sealants, adhesives, carpets, carpet underlays, and engineered wood products to be low-VOC and low-formaldehyde emitting.
- Minimised Pesticides - Integrate physical and design interventions for pest control.

4. Ecological Conservation

- Biological Diversity - Conserve the existing biological diversity of genetic materials, species, and ecosystems on the site.
- Environmental Conservation Learning - Incorporate built and landscape design strategies to demonstrate human connections to nature and the operational cycles of sun, wind, rain, and the four seasons.
- Biophilic + Cultural Design - Integrate biophilic design strategies to increase direct and indirect connectivity to nature, while incorporating Indigenous culture.
- Sustainable Agriculture - Incorporate design interventions that compliment principles of sustainable agriculture in both built and landscaped forms.

5. Waste Management

- Re-Used + Recycled Materials - Consider the re-use and recycling of materials during construction, operation, and end of life.
- Waste Storage Area - Incorporate a waste storage area to allow the separation and storage of multiple waste streams, including general rubbish, co-mingled recycling, paper, cardboard, secure waste, and green waste.

6. Climate Change Adaptation

- Sea Level Rise - Consider long term changes to coastal processes including erosion and accretion.
- Rainfall Events and Flooding - Consider long term changes to frequency, intensity, and duration of rain and flood (including associated landslides and erosion).
- Drought and Extreme Heat - Consider long term changes to frequency, intensity, and duration
- Gales and Extreme Wind - Consider long term changes to wind direction, speed, frequency, and atmospheric salt.
- Storms and Cyclones - Consider increased frequency and intensity of snow, hail, dust, and lightning storms, storm surges, storm tides, cyclones, and hurricanes.
- Soil Composition - Consider long term changes to moisture, pH, salinity, ground stability, and groundwater level
- Bush Fire Risk - Consider current or future bushfire risk, including long term changes to frequency, intensity, and duration.
- Pandemics - Smaller class sizes to be considered, along with separation of public and private spaces. Material selection to consider increased cleaning requirements.
- Food Supply - Integration of sustainable agricultural design strategies considering changes to population, density, and a changing climate.

The Sustainability in Design Matrix incorporates "**DG02: Ecologically Sustainable Development**" of the EFSG and Green Star's "**Design & As Built Submission Guidelines**" (version 1.2), and has been adapted by SHAC and is presented in this document as follows:

NOT ACHIEVED

ONGOING

ACHIEVED

7. Management

- Adaption + Resilience - Develop a project-specific Climate Adaption Plan and integrate findings into the building design and construction.
- Metering + Monitoring - Provisions for a metering system to monitor building energy and water consumption, integrating a monitoring strategy and system to capture, process, and present consumption trend data.
- Operational & Construction Environmental Management - Provisions for an Environmental Management Plan (EMP) and an Operational Waste Management Plan (OWMP). Inclusion and promotion of support practices for site workers through on-site, off-site, and on-line education programs, in addition to planning, implementation, and auditing against the EMP during the construction process, is also recommended.

8. Indoor Environment Quality

- Acoustic Comfort - Consider internal noise levels, reverberation rates, and acoustic separation requirements of spaces and organise according to their requirements.
- Lighting & Visual Comfort - Consider lighting requirements, glare reduction, surface illuminance, daylighting provisions, colour perception, fixture locations, control points, and line of sights to quality internal or external views.
- Indoor Pollutants - Reduce internal air pollutant levels through meeting stipulated low VOC and formaldehyde limits.
- Thermal Comfort - Incorporate interventions to achieve thermal comfort, including thermal mass, passive and active ventilation, HVAC systems, etc.
- Indoor Air Quality - Incorporate natural or mechanical ventilation systems to mitigate outdoor pollutant entry, maintain indoor pollutant levels to an acceptable standard, and exhaust nominated pollutant levels from specialised spaces (including print rooms, kitchens, etc.). Outdoor air provisions and contaminant monitoring to also be included.

9. Transport

- Sustainable Transport - Implement design and operational measures that reduces greenhouse gas emissions from transport, decreases mental and social impacts of commuting, and encourages the uptake of healthier active transport options.

10. Emissions

- Stormwater - Incorporate interventions that minimise peak storm water outflows from the site and reduce pollutants entering the public sewer infrastructure or other water bodies.
- Light Pollution - Incorporate interventions to minimise light pollution, including fixture and fitting selection, lighting location and orientation, timed or sensor-based controls, etc.
- Microbial Control - Implement systems to minimise impacts associated with harmful microbes in building cooling systems, including integration of naturally ventilated or waterless heat rejection systems that include measured for Legionella control and risk management.
- Refrigerant Impacts - Consider practices to minimise environmental impacts of refrigeration and air conditioning equipment.

11. Innovation

- Innovative Technology or process - Consider incorporating technologies or processes that are considered innovative in Australia or the world.
- Market Transformation - Consider potential sustainability initiatives that could substantially contribute to the broader market transformation towards sustainable development in Australia or in the world.
- Global Sustainability - Potential for adaptation of an approved Global Green Building Rating tool that addresses a sustainability issues that are currently outside the scope of the Green Star rating tool.
- Innovation Challenges - Potential to incorporate various social, economic, and environmental innovation challenges outlined by Green Star. Some challenges include renewable power, carbon positivity, building air tightness, community benefits, culture and history, local procurement, universal design, and a Reconciliation Action Plan.

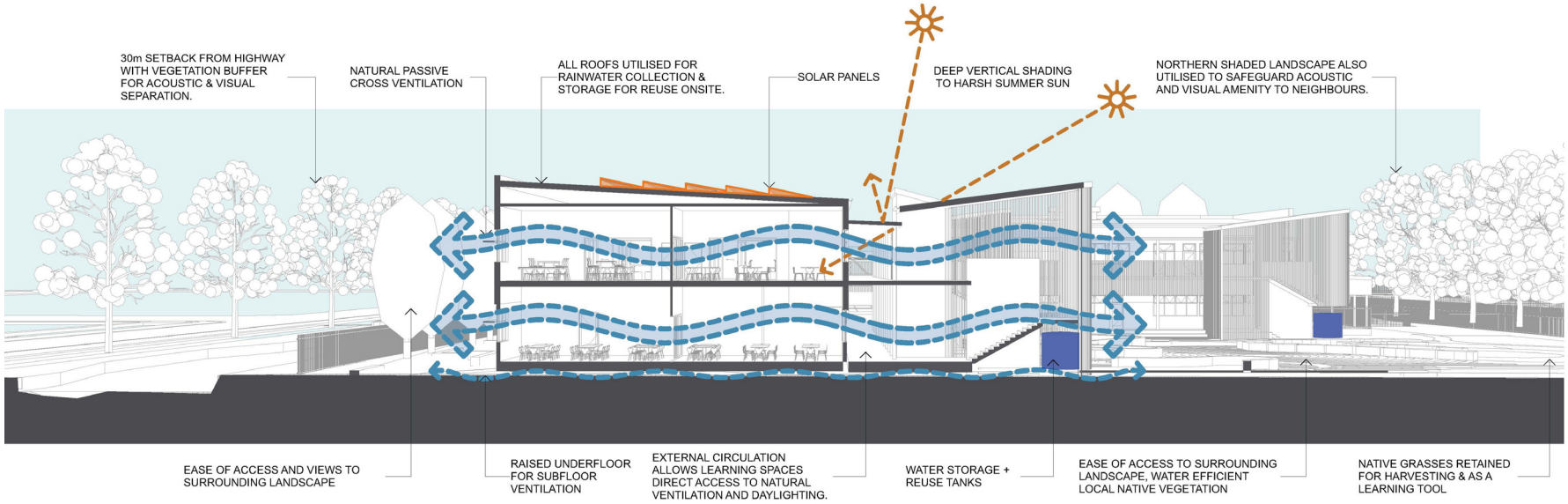
The Sustainability in Design Matrix incorporates "**DG02: Ecologically Sustainable Development**" of the EFSG and Green Star's "**Design & As Built Submission Guidelines**" (version 1.2), and has been adapted by SHAC and is presented in this document as follows:

NOT ACHIEVED

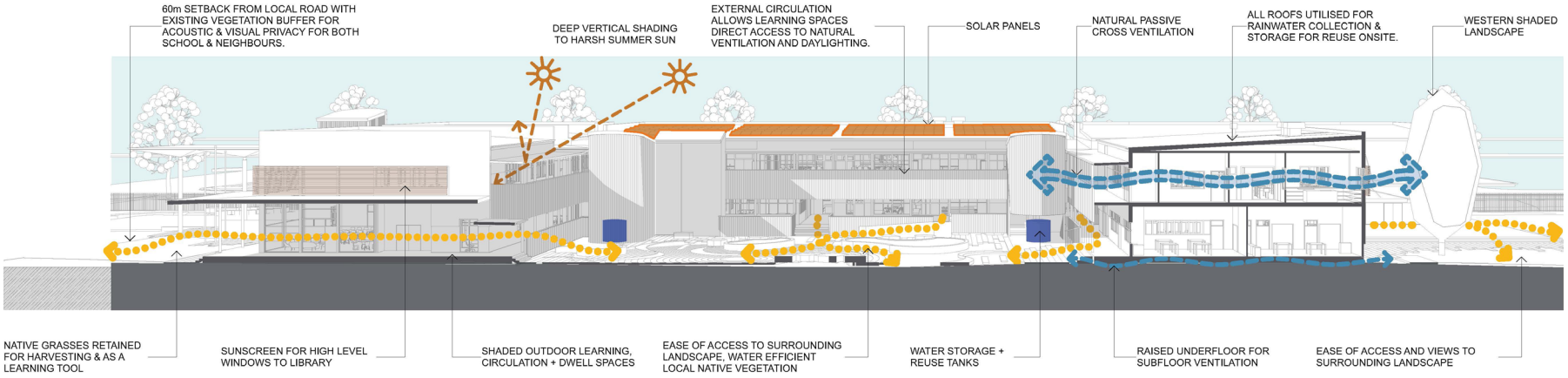
ONGOING

ACHIEVED

2.15.1 ENVIRONMENTAL AMENITY

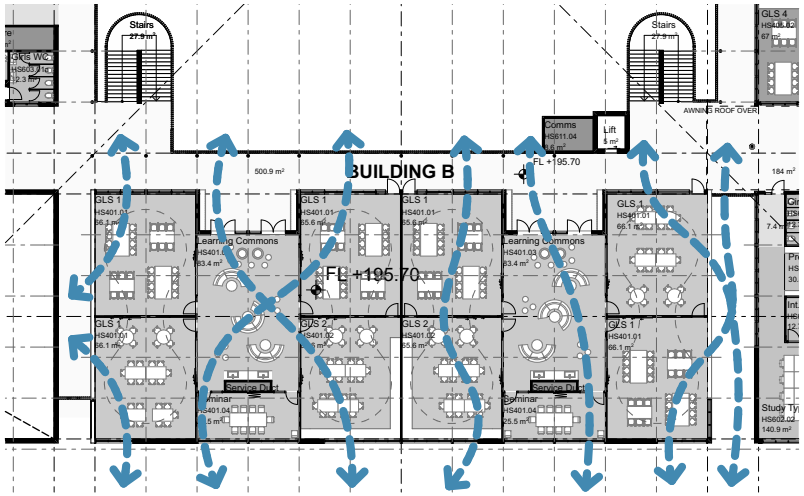


North - south sectional diagram



East - west sectional diagram

Environmental amenity is ensured within the internal learning spaces, despite the deep floor plates of the proposed buildings. Breezeways are utilised adjacent learning spaces, by strategically locating the external circulation corridors throughout the design, evidenced in the typical floor layout of general learning spaces in the opposite figure. Natural and cross ventilation is accommodated from these breezeways into learning spaces, with each General Learning Space (GLS) having access to either a direct cross breeze or operable glazing to a shared learning space. It is noted that no GLS relies solely on an adjacent GLS, safeguarding student & staff access to natural and cross ventilation, reducing the reliance on mechanical systems.



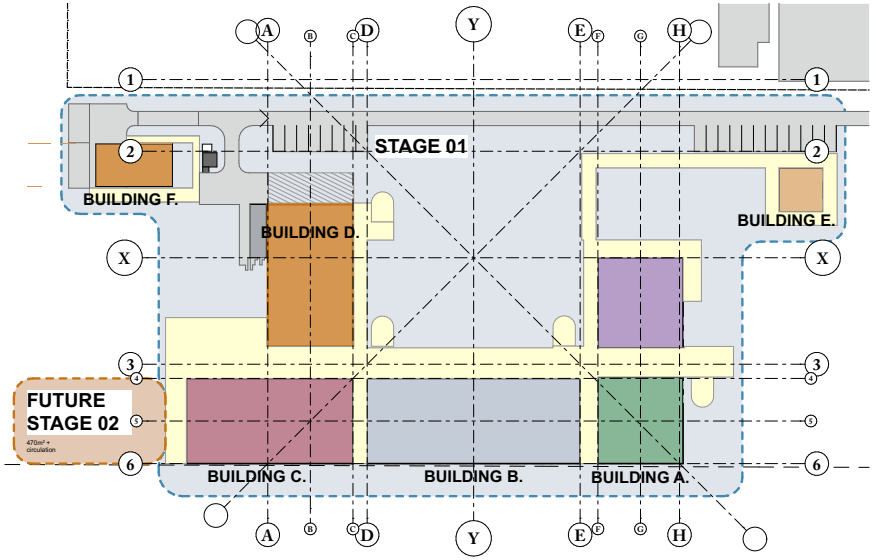
Typical learning space ESD diagram

2.15 STAGING

By employing efficiencies in design and construction methods, such as MMC, SHAC have mitigated the need for staging.

SINSW have stated that staging is to be only considered necessary should the budget or program not be met. Therefore, for the purposes of Concept Design and other con-current programs including tender proposals, a staging plan is given for discussion only, but is not to be considered as part of the overall proposal.

Stage 01 has capacity for 200 students with ability to grow to 300 students subject to funding and service need in future stages.



2.16 EFSG DEPARTURES SCHEDULE

Below is a summary of area departures, in accordance with EFSG 2-stream allocation.

4474 WEE WAA HIGH SCHOOL — **REV H**

OPTION 3Ci - ACCOMODATION SUMMARY — 13.01.22

WORKS SUMMARY

GENERAL LEARNING SPEACES INCLUDED		
HS401.01	GLS - Type 01	6
HS401.02	GLS - Type 02	2
		10

2x LS more than EFSG 2 stream allocationn as requested.

NOTE:
ORIGINAL BRIEF WAS FOR 10 GLS AND 5 SPECIALTY GLS, THEREFORE REMOVING 7 ENTITLED GLS FROM THE PROJECT.

SPECIALIST LEARNING SPACES		
HS404	SCIENCE LS	1
HS405	VISUAL ARTS LS	1
HS407	HEALTH / PE & PERFORMANCE LS	1
HS409	FOOD TECHNOLOGY LS	1
HS410	WOOD & METAL LS	1
	TOTAL	**5**

SPECIALIST LEARNING SPACES NOT INCLUDED		
HS404	SCIENCE LS	1
HS405	VISUAL ARTS LS	1
HS407	HEALTH / PE & PERFORMANCE LS	2
HS409	FOOD TECHNOLOGY LS	1
HS410	WOOD & METAL LS	1
HS501	COMPUTER LEARNING UNIT	1
	TOTAL	**7**

PLAY SPACE CALCULATIONS (300 STUDENTS)	
Sports Field	7,150
Athletics Track	4,150
Courtyard	1,800
Sports Courts	1,800
Warm Up Field	4,100
Playing Field	3,250
TOTAL	22,250sqm
	= 74sqm per student

LEARNING AND SUPPORT UNIT	
SPECIALIST EDUCATION LEARNING UNITS	**2**
TOTAL LEARNING SPACES	**17**

NOTE:
AREAS ARE IN ACCORDANCE TO 2-STREAM EFSG GUIDELINES DATED 16.06.21.
ADDITIONAL RESOURCES INCLUDED DfMA GUIDELINES AND THE DRAFT 'REVISED SoA SSECONDARY SCHOOLS EFSG SCHEDULE' DATED JUNE 2021

	EFSG Area (m2)	Option 3Ci (m2)	Departures from EFSG (m2)	
EFSG Entitlements				
Administration	212	231	19	
Agriculture	102	9.9	-92.1	Scope to be confirmed
Assembly Court	342	344.4	2.4	
Canteen	47	48.6	1.6	
Covered Outdoor Space	100	74.6	-25.4	
Food & Textile Technology	279	233	-46	
Games Unit	1292	1390.8	98.8	
General Learning Unit	694	957.4	263.4	10 GLS allocation
Health / PE and performance LU	208	89.1	-118.9	5 Specialty LS allocation
Library Unit	357.5	302.2	-55.3	
Outdoor Covered Workshop	120	137.6	17.6	
Outdoor Learning Unit	165	67.8	-97.2	
Science Learning Unit	303	405.3	102.3	Existing Highschool exceeds
Special Education Learning Unit	239	180.9	-58.1	
Sports & Performance Unit	649	679.9	30.9	Existing Highschool exceeds
Staff Unit	278	295.3	17.3	
Stores / Services	87.8	133.3	45.5	Refer to detailed schedule
Student Amenities	90	86.6	-3.4	Refer to detailed schedule
Visual Arts Learning Unit	293	247.4	-45.6	5 Specialty LS allocation
Wood & Metal Technology	440	408.1	-31.9	5 Specialty LS allocation
	6298.3	**6323.2**	**24.9**	
Circulation				
Indoor Circulation		167.5	approx.	
Ramps / Stairs		10.9	approx.	
Outdoor Covered Circulation		1,648	approx.	
		1,826		
Additional Areas outside EFSG entitlement				
Indigenous Learning Centre		81		Refer to detailed schedule
Environment Centre		81		Refer to detailed schedule
Additional spaces		116.5		Refer to detailed schedule
		278.5		
		8,428		

3. STAKEHOLDER CONSULTATIONS

STAKEHOLDER WORKSHOPS, ENGAGEMENTS AND ADVISORY MEETINGS. GOVERNMENT AGENCY PRESENTATIONS & FEEDBACK.

3.1 SCHEDULE OF STAKEHOLDER CONSULTATION

Stakeholder/Gov. Group	Date	Meeting Purpose / Comments
Aboriginal Education Consultancy Group	9-Feb-21	AECG Wee Waa President – Introduction and project status
We Waa HS Aboriginal Education Officer	10-Feb-21	AEO – Introduction and project status
Wee Waa Local Aboriginal Land Council	11-Feb-21	CEO & Chair (Public School AO) - Introduction and project status
Wee Waa Local Aboriginal Land Council	3-Mar-21	CEO - Project update
Wee Waa HS Principal, DEL, AEGC, P&C	24-Mar-21	School ops and performance overview, status of health concerns and actions taken, early planning project update
Wee Waa Local Aboriginal Land Council	30-Mar-21	Project update and introduction to Heritage and Agriculture consultants
Wee Waa HS Principal, DEL, AEGC, P&C	31-Mar-21	Project Update
Wee Waa Local Aboriginal Land Council	24-May-21	CEO - Project Update - Native Title
Wee Waa Local Aboriginal Land Council	1-Jun-21	CEO - Project Update
Wee Waa Hgh School	1-Jun-21	School faculty workshops - Individual faculty needs & desires for their future facility
Aboriginal Education Consultancy Group	26-Jul-21	AECG Wee Waa President – PRG presentation run-through. Project update
Government Architect NSW	28-Jul-21	State Design Review Panel, Session 01
Government Architect NSW	13-Oct-21	State Design Review Panel, Session 02

3.2 RESPONSE TO GANSW FEEDBACK - SDRP SESSION 01

	GANSW ADVICE & RECOMMENDATIONS	DESIGN RESPONSE
SDRP - Session 01 - 28.07.21 (first review)		
CONNECTING WITH COUNTRY (CwC)		
1	Continue the commitment to engage with the local Gamilaraay and Kamilaroi Community and respond to Country across the campus in the landscape and architectural design.	A dedicated design session with the appointed Aboriginal Education Officer (AEO) provided an understanding of the requirements of the Binbaalba Room (meaning 'A learning place'; the existing and proposed onsite Indigenous Learning Centre), what it currently has and what its needs would be, as well as the desire for connection to an outdoor community circle. There was a need for a passive approach to the school by Indigenous Elders and students, separate to the main, official entry which influenced its siting, close to the carpark and off to the side of the entry path, but a good line of sight to the library. It also highlighted that it isn't just for indigenous students, but for all students.
2	Develop a CwC strategy and embed what is learnt through the Aboriginal engagements. This is to include how to manage knowledge that is shared, demonstrate a response to that knowledge through the project, and how to 'report back' to your First Nations advisors fostering a continuing relationship through the design process.	Connecting with Country strategy is being developed in preparation for future engagements with the AEO, LALC, and local Gamilaraay and Kamilaroi Community, and 'reporting back' methods will be detailed during these engagements to ensure the appropriate methods are undertaken and to maxmise the effectiveness of the community's involvement and inputs. First Nations advisors were engaged by School Infrastructure NSW & OzArk Environment & Heritage in understanding the proposed high school site and in the development of an Aboriginal Cultural Heritage Assessment Report (ACHAR). SHAC are committed to continuing these engagements in all project phases.
3	Incorporate place names and language to connect and enrich the campus.	The Aboriginal Education Officer explained in detail the community and family totems of the area. The Kamilaroi totem is a 'snake' with neighbouring totem for the Pilliga Region being the Sand Goanna. School currently has a grant of 20k to do totem works, but on hold until this project comes to fruition. An appreciation of these is to be expressed and visually represented in art and public spaces, which is currently explored across the campus, particularly the main entry to contribute to strengthening the identity of the school within the community & showing pride in their totems.
4	Consider the locations of gathering spaces and yarning circles for after-hours use by the Wee Waa community.	The Community Circle, as the First Nations representative for the school has named, is located along George Street by the front entry of the school, which can be utilised during school hours and when this landscape is accessible after hours. A key decision for the Community Circle to remain within the confines of the school grounds (the fenced area) was to solidify its place, presence and importance to the school community. The Community Circle is also co-located with the Indigenous Learning Centre, in keeping with the intentions for both to enrich the school curriculum.
5	Provide consideration of, not only the human, but also of non-human inhabitants of the site and surroundings – including habitat retention and repair, maintenance of canopy corridors, any bush regeneration opportunities.	Maximum amount of existing trees are to remain as feasible for the operation of the school on this site. The landscaped drainage swale weaves around the trees onsite along George Street to protect these ecosystems and canopy corridors. New trees and vegetation is proposed to further enhance and regenerate the site and its ecosystems. The Native Grass Meadow stretching from George Street is to be retained and enhanced to help continue the work and events by the Local Aboriginal Land Council and the University of Sydney Plant Breeding Institute researching pre-colonial indigenous agriculture and the development and application of native grasses and grains.
6	Seek CwC advice for the remediation and repair of the site following previous uses.	During engagements and whilst walking the site to prepare the ACHAR, lessons learnt are being applied to the site and its remediation from a greenfield, waterlogged site to a place of learning and connection to Country. Repair from previous uses of the site are being imagined in a new place of learning for students impacted by a vacated school site and idea generation to instill lessons from Country in their everyday lives.
7	Develop a strong and meaningful relationship between the built form and place based on the consultations and lessons learnt.	Consultations and lessons learnt have been recorded and implemented where appropriate, and the project will continue to develop through these strong and meaningful relationships formed and maintained, as well as seeking new engagements with First Nations advisors whenever possible to sense, listen, imagine, shape & care for Country.

ARCHITECTURE		
17	Place emphasis on the legibility of key architectural elements such as the entry canopy and certain building forms, to give the school a civic presence along key street views.	The entry canopy is the highest building element, elevated above and extending out into the landscape as an inviting gesture to the community and highlighting the main entry to the campus. Indigenous artworks and totems are to be located across this entry landscape, by the Binaalba Room and the Community Circle to contribute to a strong sense of identity in the community, being the totems of the community and their families. The double-height library space and outdoor learning space addresses the entry forecourt as a shared community facility.
18	Seek opportunities for gathering and learning spaces along verandahs and internal circulation areas.	The elevated nature of the school provided an opportunity for multiple tiered outdoor learning spaces dispersed across the campus. Outdoor learning spaces are located by the library, the hospitality kitchen, the central courtyard, the gymnasium, and within the landscape as both learning and passive play opportunities. It is noted that all outdoor learning spaces can be utilised as passive play spaces and therefore increasing their viability across the campus.
19	Develop the materiality of the façade with consideration of CwC and the local character of Wee Waa.	The cladding treatment was developed from the colours of the Pilliga and the surrounding landscape of Wee Waa. The verticality of their arrangement reflects the surrounding agricultural workings and natural landscape such as the cotton stacks, wheat crops, silos, native and resilient trunks, and the rhythm these elements create when viewed as you traverse across this rich landscape.
20	Outline proposed passive solar design strategies and demonstrate how sunlight penetration, natural ventilation and cross ventilation for thermal comfort will be achieved with the deep floor plates.	External circulation allows for large eaves over glazing to learning spaces and deep window reveals to exposed facades to mitigate sunlight during hot summer months. Glazing is tailored to the orientation of each building, which opens to the north and east, and closes down to the west and south. Thermal mass and insulation will be further developed in future project phases beyond Concept Design to take advantage of natural and passive sources of heating and cooling, such as sun and breezes, and to minimise unwanted heat gain and loss.
21	Consider a reduction in the depth of the floor plates and rigidity of the column grid to achieve this.	This has been considered. However, the prefabricated nature of the building envelope has been developed to provide a balance between flexible, adaptable learning environments and the rigidity of the kit-of-parts construction.
22	Re-consider the treatment of façade openings to ensure year-round thermal performance	Glazing is considered and developed along the northern and eastern facades to maximise sunlight penetration into the floorplates during winter, with deep eaves and reveals to protect in the hotter months. Glazing & facade openings are minimised on the western façade to minimise impacts of hot western weather, as well as along the southern facade with a dual purpose to screen from road noise along the highway.
23	Demonstrate a **rigorous and innovative response to ESD**. Opportunities for renewable energy, water and waste recycling, WSUD measures and passive building performance should be incorporated and illustrated.	Early engagement with a Green Star Consultant has commenced, which assesses Energy & Carbon, Water, Resilience, Materials & Waste, Place and Resilience, and provides input on how to meet / improve these targets. 200+ solar panels have been allowed for on the roof. A dedicated onsite Environmental Learning Centre has been included within the design & curriculum to create a new industry partnership with the CSIRO, located in the next town at Narrabri and beyond in Armidale. Operable glazing elements are incorporated to maximise the passive performance of all buildings, allowing for cross ventilation in learning spaces and internal active play spaces (e.g. gymnasium).
24	Please provide a series of studies for the campus: sequential plans and sketches / 3d views / sketches of key external spaces as different age groups move along their daily journeys/activities.	A series of landscape and play space conditions are explored across the campus evidenced in the Landscape Response, including retaining a natural, passive entry forecourt, central courtyard to dwell, active play area, warm up area, sports courts, sports field, athletics track and spectator shading.

3.3 RESPONSE TO GANSW FEEDBACK - SDRP SESSION 02

	GANSW ADVICE & RECOMMENDATIONS	DESIGN RESPONSE
SDRP - Session 02 - 13.10.21 (second review)		
CONNECTING WITH COUNTRY (CwC)		
1	Continue consultation with the local Gamilaraay and Kamilaroi Community on the landscape design for the campus	A CwC Strategy is being developed by SINSW which all stakeholders and consultants will be involved with and have direct input. SHAC have continued to liaise with the Aborignal Education Officer (AEO) at Wee Waa High School, and have attended a site visit to the local mission Tulladunna to hear stories and experiences of those who lived there. A site visit was arranged for the project site on 14.12.21 to walk the site with the local Gamilaraay and Kamilaroi Community, but was unfortunately postponed due to safety issues following flooding of the river and consequent evacuation of Wee Waa. This site visit is postponed to a future date where the design team will continue to engage with the Gamilaraay and Kamilaroi Community.
2	Use the response from the consultation to influence and inform the external spaces of the campus so that the site as a whole can become an educational hub for the community.	This will be achieved through CwC consultations and workshops with school representatives, in consultation with the Landscape Architects to achieve the most beneficial campus for the community.
3	Accelerate consultation with the local Aboriginal communities to ensure their response is incorporated into this and the next stages of the design process.	A CwC Strategy is now being actioned and will be followed closely to ensure consultation and responses from the local Aboriginal communities is incorporated into the next stages of the design process.
4	Further explore the materiality of the façade to the Binaalbaa Centre so it reflects CwC consultation	The materiality of the Binaalba Centre (Indigenous Cultural Centre) responds to the campus materiality as a whole, being part of the one campus. The Centre's unique course curriculum and connection to Country is explored in its location, separated physically from the rest of the campus, yet embedded within the landscape and surrounding vegetation, connected through key circulation pathways and located by the main entry forecourt to communicate its importance to the community and campus and ensure it remains easily accessed by the community. The materiality and built form of the Centre has been endorsed by the Aboriginal Education Officer, who requested the Centre have the same aesthetic and contemporary feel as the rest of the buildings on the campus. The materiality has been communicated throughout the Concept Design phase, and will be further communicated through CwC consultations and workshops with school representatives.
	LANDSCAPE	
5	Use the landscape design to strengthen the relationship between the existing primary school campus and the bridges across the WSUD drainage channel.	Refer to Moir Landscape Response to Submissions (RtS). The landscape design will strengthen the connection between the primary school campus and the bridges over the drainage swale, currently evidenced by the location of the eastern bridge aligning with the proposed pedestrian crossing over the Kamilaroi Highway and the primary school pedestrian entrance, and the western bridge connecting both the high school sports precinct and the primary school hall. These connections will be enhanced by the landscape design, chosen plantings and pathway materiality, placement and hierarchy.
6	Further develop the connections/circulation between the existing primary school and the new high school using sketch diagrams.	Refer to Moir Landscape Response to Submissions (RtS). The above will be developed during the Schematic Design phase of services, where these connections & circulation pathways will be detailed.
7	Combine ramps and changes in levels into the landscape design where possible.	Refer to Moir Landscape Response to Submissions (RtS). Landscape elements such as ramps and level changes will be developed further during Schematic & Detail design phase where possible and necessary, with equitable access front-of-mind. Over the campus, level changes are minimised where appropriate, whilst balancing onsite stormwater
8	Further integrate the built forms into the landscape setting.	Refer to Moir Landscape Response to Submissions (RtS). The flood level requires the FFL of the building to be approx. 900mm above natural ground level. A 400mm fill pad alters the natural ground level, with the FFL of the campus being an additional 500mm above this, approximately. This condition is improved by minimising the use of balustrades where appropriate, and creating a series of large stairs, tiered outdoor learning spaces, terraces and ramps to integrate the built form into the ground plane, as well as native plantings, key garden beds and courtyard spaces that increase student and staff outdoor amenity by providing a place to sit, learn, teach, play and dwell along the periphery of the built form, in the shade and landscaped spaces.
9	Increase the number of smaller and more intimate spaces to enable smaller group interaction.	Refer to Moir Landscape Response to Submissions (RtS). Key garden beds, both risen and integrated, create places to sit, interact, and play in smaller, more internate spaces, particularly in the central courtyard space and by the library & Binaalbaa Room. These areas are dedicated for passive play & recreation, break times and outdoor learning; the intimate and smaller group activities. The larger, open outdoor spaces and landscape areas, such as the play space west of the gymnasium, fields and sports courts are for larger group settings and active purposes, but still maintains places to dwell in smaller groups by the picnic tables, the terraced steps by the gymnasium, and under tree communities.
10	Use the CwC consultation to inform useful and meaningful plant selection and planting design.	CwC Strategy is developed by SINSW. A dedicated Landscape Architect is engaged for this project who have developed and chosen meaningful and site specific plantings to suit the context and the site use. Importantly, native plantings and those deemed suitable for the climate & the site have been documented for discussion and
11	Ensure the proposed community garden reflects the Aboriginal heritage of the site and incorporates the results of CwC consultation.	Refer to Moir Landscape Response to Submissions (RtS). Planting selections and design will incorporate the results of CwC consultation, and reflect the Aboriginal heritage of the site as deemed suitable by the local Gamilaraay and Kamilaroi Community during these consultations.
12	Further develop the landscape design within the WSUD drainage channel.	Refer to Moir Landscape Response to Submissions (RtS). The design will feature an improved integration of the landscape through plantings, gardens and rockery features duriing the next stages of the design process, particularly being enriched by the consultations during the CwC Strategy.
13	Reconsider the treatment of the two fences along the Kamilaroi Highway. Integrate fence barriers into the landscape design with the use of landscape elements such as large stones/boulders, barrier garden beds or dense acoustic planting.	Refer to Moir Landscape Response to Submissions (RtS). Landscaped fence barriers will be strongly considered during the schematic design and documentation phase to soften and integrate this necessary element of safety into the natural landscape. Large stones/boulders, barrier garden beds and dense acoustic planting will be balanced between aesthetic enhancement and maintaining security/CPTED principles.
14	Maximise the number of new trees which can provide shade and shelter for the students throughout the site to enhance the potential for the school to become an oasis for the community of Wee Waa.	Refer to Moir Landscape Response to Submissions (RtS). Tree plantings will be maximised where appropriate to ensure students and staff have ample access to shade and cooling devices, whilst balancing this with access to sunlight and warmth in winter, particularly in the smaller, more intimate outdoor spaces such as the central courtyard.
15	Further develop the biophilic response to the site and learning spaces for the students.	Refer to Moir Landscape Response to Submissions (RtS). Strong consideration has been made to staff & student's connection to the site & surrounding landscape, and the connection between the built form and the landscape. There is opportunity for the curriculum to be enhanced to include knowledge of native vegetation, the onsite native grass meadow, and the importance to the local Aboriginal communities. The Binaalbaa Room and Community Circle is for all students; a place to learn and connect with Country. Outdoor learning spaces have been included as tiered learning steps adjacent the library, Binaalbaa Room and gymnasium, shaded spaces in the courtyard and native grasses meadow, and by the sports court, to further enhance this connection during teaching & learning times. During break times, a multitude of passive and active play and dwell spaces encourage participation and custodianship of the landscape features of the site including the existing stand of eucalypts, shaded tree communities, the drainage swale, the native grass meadow and the central courtyard.
ARCHITECTURE		
16	Increase the capacity for breezeways on the second levels of all buildings - especially into areas with deep floorplates to maximise ventilation.	This is achieved despite the deep floorplate, by utilising shared and communal learning space as opportunity for cross ventilation as well as adjacent breezeways. A balance between the implementation of breezeways and creating a large, flexible learning space with accessible shared learning for 4 GLAs was achieved.
17	Explore different architectural expressions for the facades of the different building blocks which can enrich the visual quality of their design.	This will be achieved through CwC consultations and workshops with school representatives.
18	Reduce the brightness of the selected colour palette of the facades to compliment the natural tones of the surrounding landscape and character of Wee Waa.	The colour palette will be discussed and workshopped during CwC consultations. The chosen colour palette reflects both the natural tones of the surrounding landscape, as well as the industrial and built forms in the local area, which is imperative to its relevance as a landscape and built solution. The 'brightness' of the yellow chosen represents the yellow flecks found in the vegetation of the pilliga; in flowering plants and trees, the Sawn Rocks popular geological site in the surrounding National Park, the bright yellow wrap used for cotton bales, the tractors and farmsheds of Wee Waa; 'The cotton capital of Australia'.
19	Introduce a site marker that can be seen when traveling along George Street towards the site from the town centre.	Site signage has been integrated into the design, with particular mention to signage on the corner of George Street & the Kamilaroi Highway. The large entry canopy provides a strong site marker for those approaching the site.
20	Activate the central spine walkway and Central Courtyard with designated interactive learning/play spaces such as sports lines and amenity for student shelter.	Elements to highten student experience and amenity along the central spine of the campus will be detailed further during Schematic & Detail design phase, in consultation with the School & user groups in intensive, onsite workshops mid-November.
21	Investigate the undercroft areas of raised buildings as suitable shaded areas for student shelter.	The building is only raised 400mm from the fill pad and therefore this suggestion is not viable.
22	Present further developed ESD principles at the next SDRP including the water harvesting strategy, solar panel use and how these could be learning experiences for the high school students.	Presentation of ESD principles will be presented through ongoing consultation with Green Star consultant, the school and SINSW, and will be presented at the next SDRP.

4. CONCEPT DESIGN VALIDATION

SUMMARY OF KEY CONSULTANT REPORT COORDINATION, STAKEHOLDER CONSULTATIONS AND PROJECT RISK TO CLOSE OUT CONCEPT DESIGN SERVICES, ACKNOWLEDGING NEXT PHASE OF WORK.

4.1 RESPONSE TO KEY CONSULTANT REPORTS

Key consultant reports are responded to below. Refer to Section 4.1.1 for a full list of consultant reports that were submitted as part of the Environmental Impact Statement (EIS).

LANDSCAPE ARCHITECT

SHAC are satisfied with the contributions of the Landscape Architects, Moir Landscape, and the design has been implemented.

SHAC are waiting for formal appointment of the Landscape Architect by the Contractor for further design development and coordination in the next phase of services.

CIVIL ENGINEERING

SHAC liaised closely with Lyall & Associates and Moir Landscape to incorporate the flood mitigation strategy into the design of the campus, including landscape design and coordination, fence & security requirements.

TRAFFIC & TRANSPORT ENGINEERING

The design incorporates onsite carparking required by Council, bus bay and kiss&drop bay along George Street.

The proposed pedestrian crossing on Mitchell St / Kamilaroi Highway has been raised as a concern by Transport for NSW and awaiting an outcome. This concern was also raised in the Community Info Session and Chamber of Commerce meeting. Student, staff & visitor safety along the Highway remains the primary concern.

DFMA

SHAC have been engaging with BUILT to interpret and evolve their integrated DfMA solution including a trip to Sydney to view and discuss their General Learning Area prototype.

SHAC are currently in receipt of BUILT's tender model (based on 75% concept design) and are liaising with them in production of the 90% concept design model, including;

- fenestration review
- Window apertures
- Parapets
- Cladding panel design/breakup
- Floor to floor height
- EFSG compliance w/ reference to DfMA grid
- integration of PUG / Stakeholder changes

ESD / GREEN STAR

SHAC coordinated the design to include ESD/Green Star outcomes as reported by Aurecon, including bulk waste pad & resource processing onsite.

Consultations with the PUG were positive with a vision to incorporate ESD/Green Star initiatives into the curriculum, including incorporating recycling, resource management and composting, for example.

PROJECT USER GROUP / STAKEHOLDER CONSULTATIONS

Stakeholder meeting outcomes have been recorded and resolved or responded to for further development (Refer meeting minutes dated 01.06.21 & 16.11.21, and feedback in Section 4.2 of this report). Each school faculty was consulted with key objectives discussed and included within the Concept Design. Further development of internal layouts and requirements developed in the next phase of services.

SINSW / EFSG

SHAC have engaged and participated in PRG, ERG, PUG workshops and information sessions to present the Concept Design and its development stages. Through this process, SHAC have received acceptance / sign-off of EFSG departures and changes to the design resulting from Stakeholder consultation outcomes.

SHAC have identified and communicated project risks throughout Concept Design phase of work to SINSW.

The Connecting with Country Engagement Strategy has yet to be implemented by SINSW. SHAC have conducted two consultations onsite with the school's Aboriginal Education Officer who has expressed support and gratitude for the project, particularly the inclusion of the Indigenous Cultural Centre and its endeavours.

SHAC / ARCHITECTURE

SHAC have developed the design from 75% Concept Design (Tender documents) through to Concept Validation phase past 90% Concept Design. These changes were driven by the flood mitigation strategy through consultation and coordination with Civil & Landscape.

The Agricultural Plot has been reviewed to move to the original school site. In response, SHAC have developed a Concept Design for site layout of agricultural requirements, animals, equipment and machinery, including vehicular and animal transport systems. Site layout includes an allowance for room to demolish the existing school, and captures opportunities for community development of the site once remediated.

The Science Modular building has been considered for re-use as part of the Agriculture Learning Unit, with existing facility analysis and opportunities for refurbishment captured.

The concept development of Agriculture is pending approval BUILT, the PUG and SINSW.

4.1.1 LIST OF CONSULTANT REPORTS

1 Environmental Impact Statement
Ethos Urban

A Site Survey
Barnson

B Secretary's Environmental Assessment Requirements
Department of Planning, Industry and Environment

C Architectural Drawings
SHAC

D Architectural Design Report
SHAC

E Landscape Design Report
Moir Landscape

F Landscape Plans
Moir Landscape

G Arborist Report
McArdle and Sons Arboricultural Services Pty Ltd

H1 Civil Engineering Drawings
Manage-Design-Engineer Pty Ltd

H2 Civil Engineering Plans - Road Works
Manage-Design-Engineer Pty Ltd

H3 Sediment and Erosion Control Plan
Manage-Design-Engineer Pty Ltd

I Traffic and Accessibility Impact Assessment
TTW

J Flood Impact Assessment
Lyall and Associates

K Stormwater Management Plan
MDE

L Ecologically Sustainable Development Report
Aurecon

M Social Impact Assessment
Ethos Urban

N Aboriginal Cultural Heritage Assessment Report
Ozark Environment & Heritage

O Consultation Outcomes Report
Ethos Urban

P Infrastructure and Utilities Management Plan
Marline

Q Biodiversity Development Assessment Report
EcoLogical

R Acoustic Assessment Report
Day Design

S Preliminary Site Investigation
Barnson

T Detailed Site Investigation
Barnson

U Soil and Water Quality Report
SMK Consultants

V Geotechnical Report
Pacific Geotech

W Structural Report
Manage-Design-Engineer Pty Ltd

X Heritage Impact Statement
Ozark Environment & Heritage

Y Waste Management Plan (Construction and Operation)
Manage-Design-Engineer Pty Ltd

Z Air Quality Assessment
EMM Consulting

AA Operational Management Plan
Ontoit and SINSW

BB Preliminary Construction Management Plan
Ontoit

CC Building Code of Australia Capability Statement
Group DLA

DD Accessibility Assessment
Group DLA

EE Section 10.7 Certificate
Narrabri Shire Council

FF Lighting Strategy Report
Marline

GG Remedial Action Plan
EMM Consulting

01 Consultation Outcomes Report
NSW Department of Education

02 Connecting with Country Engagement Strategy
NSW Department of Education

4.2 RESPONSE TO PROJECT USER GROUP (PUG)

4.2.1 SCHOOL WORKSHOP 01

4474 WEE WAA HIGH SCHOOL
REPONSE TO SCHOOL FACULTY WORKSHOP 01
Refer to meeting minutes dated 01.06.21

	SCHOOL FACULTIES	DESIGN RESPONSE	*OWNER*
ADMINISTRATION, STAFF & GENERAL ASSISTANT			
1	Location of the Administration building, library, and the Indigenous Cultural Centre (Binaalbaa)	SHAC investigated location of Library, Administration & Indigenous Cultural Centre, with consideration to front entry pathways, connection to the Primary School and with the site. The Indigenous Cultural Centre has now been located within the landscape and has visual and physical connection to the library, where the library is the community's connection to the world and the Indigenous Cultural Centre is the community's connection with Country. Stakeholders have provided support and sign-off.	*Resolved.*
2	School requested a private counsellor room for students. Location in Admin is seen as ideal.	Achieved. Counsellor office located in the Administration block, that can be accessed via a private entrance if required, with nice outlook to the existing stand of eucalypts.	*Resolved.*
3	Archive store to be located on Ground Floor in Admin.	Achieved, with dual purpose of IT Store / Service room as requested by the School.	*SHAC/School*
4	School indicated they only need one sick bay. SHAC to investigate EFSG conditions and alternate options for space.	For the purpose of equity and standardisation, the school are entitled to two clinics which will be delivered. It is to the disgression of the school whether these rooms are always operating as Clinics. There is good line of sight from Student Reception for student safety,	*SHAC/School*
5	Combined staff facilities need to consider resource storage options and apportioning different zones within the one space. Ie quite zones and group zones.	Kitchenette, printing/resource preparation, group and individual study zones, lounge zones and seminar/meeting zones have been accommodated. Division of these spaces to occur during next phase of services.	*SHAC/BUILT*
LIBRARY			
6	Opportunity to split library office use for extra purposes.	For the purpose of equity and standardisation, the school are entitled to the areas provided, however the administration area & main library space are open plan, thus could accommodate a range of teaching and learning modes, smaller study spaces, wellbeing centre etc	*School*
7	The school requested a wellbeing team meeting space.	There is a seminar room in the Library, with additional meeting spaces in the Staff Room that could be utilised for this purpose closeby the Library. Refer to above point #6.	*School*
VISUAL ARTS			
8	Art store requires ventilation for wet items to dry	Art store is not an internalised space and has access to glazing & ventilation. This will be further developed during the Documentation phase of works. The Pottery Store is located outdoors adjacent the kiln space for additional ventilation.	*SHAC/BUILT*
9	School requested to join GLS with Art Workshop for easier supervision between.	The Art Workshop & GLS are now directly adjacent, with glazing maximised between the two learning spaces.	*SHAC/BUILT*
10	Kiln needs a constant monitoring of temperature. School requests a dedicated ceramics / clay room with kiln. Storage racks for clay pots required in clay storage area. SHAC to investigate	The Pottery Store is located outdoors adjacent the kiln space. New kiln will supersede kiln at vacated school site which may alleviate concern for temperature being a new/current kiln model than previously old/outdated model.	*SHAC/School*
11	Connections to outside is important. School suggested an outdoor art / working + display space. School requested large windows to view across library to trees	Achieved. Visual Arts is located adjacent the existing stand of eucalypts with visibility to the canopy.	*SHAC*
12	School requested a sink within the GLS area	Furniture requirements to be developed in next phase of services.	*SHAC/BUILT*
13	School requested a chemical storeroom to include fridge, cupboards and stainless-steel surfaces, with direct access to Dark room.		
SUPPORT UNIT & GENERAL LEARNING UNIT			
14	Acoustic separation between GLAs to be considered.	To be developed during the next phase of services.	*SHAC/BUILT*
15	School requested playground/garden area with vegetable garden, screened from main courtyard yet maintain sense of connection.	An outdoor learning space / deck has been accommodated adjacent Learning Support which is screened from the central courtyard space. Funishing to be developed in consultation with the School during the next phase of services, which could include veggie patch / raised garden beds. Location of this learning unit also has access to additional garden space adjacent the drainage swale for plantings / vegetation.	*SHAC / School / BUILT*
Sport, HEALTH/PE			
16	Refer to equipment requirements in meeting minutes dated 01.06.21	Furniture & equipment requirements to be developed in next phase of services.	*SHAC/BUILT*
17	Requested COLA over sports courts as per original school site. Courts to be fenced.	Achieved. Deemed as required due to climate and to be implemented in cost planning.	*SHAC/BUILT*
18	Original school site has cricket nets.	Achieved at proposed site, adjacent sports courts.	*Resolved.*
19	Active gym spaces, athletic and long jump spaces to be considered.	Long jump & grassed athletics track implemented into design. Area for active / outdoor gym equipment considered. To be developed during next phase of services.	*SHAC/BUILT*
20	Upper windows to Hall to be reduced where possible.	Achieved, however some louvres remain for ventilation of this space.	*SHAC*
21	Exam lighting & A/C required for the Hall.	To be developed during the next phase of services.	*SHAC/BUILT*
TAS			
22	Welding space to be located externally.	Most recent meeting minutes dated 16.11.21 supersedes this note. Welding space now ideally located inside for supervision purposes, however to include a partition/screen for safety of other students, but maintain visibility for staff. Planning and services changes to be developed in next phase of services.	*SHAC/BUILT*
23	Facilities to accommodate flexibility for future course offerings, including 3D printing, textiles etc.	Refer Response to PUG 02 and meeting minutes dated 16.11.21. Ducting and storage to GLA space to accommodate this flexibility to be developed in next phase of services.	*SHAC/BUILT*
23	Door egress/clearance for major works to be considered.	To be developed during the next phase of services.	*SHAC/BUILT*
24	Ease of deliveries needs to be considered.	Delivery & service bay has been accommodated, with consideration to access ramps and external access to storerooms accommodated for ease of delivery.	*Resolved.*
Science			
25	SHAC to investigate whether the two apparatus stores can be combined.	To be developed during the next phase of services.	*SHAC/BUILT*
26	School requested Science seminar, as per original school site.	Achieved.	*Resolved.*
Agriculture			*Resolved.*
27	Equipment and machinery detailed within meeting minutes dated 01.06.21 and 16.11.21.	To be developed during the next phase of services.	*SHAC/BUILT*
28	Space required for Aquaculture in tanks within Ag Shed is desirable	Meeting minutes dated 16.11.21 discuss potential for Aquaculture to be located on main school site. To be developed during the next phase of services.	*SHAC/BUILT*
29	Senior school students are part of a rural online learning programme, which includes 1 lesson per week in virtual classroom, so access to GLS important.	SHAC investigating conversion of existing Science modular into Ag classroom on existing school site. Students also have access to Environment Centre on proposed school site with GLA.	*SHAC/BUILT*
Indigenous Cultural Centre			
30	Totems are to be explored for implementation throughout design.	SHAC have explored and allocated space for totems throughout the campus, however specific imagery/artworks to be developed during future project phases in close consultation with stakeholders.	*SHAC / School / BUILT*
31	Yarning circle is to be referred to as "Community Circle"	Achieved	*Resolved.*
32	To improve connection of the Cultural Centre to the site, placing the facility on an earth mound is ideal.	This was investigated and achieved during concept design, however will be developed during the next phase of services.	*SHAC / SINSW / BUILT / Lyall & Associates*
32	Native language on signage to be included.	To be developed during the next phase of services.	*SHAC / School / BUILT*
33	Bush tucker garden to be implemented.	To be developed during the next phase of services.	*SHAC / BUILT / School / Landscape*

4.2.2 SCHOOL WORKSHOP 02

4474 WEE WAA HIGH SCHOOL
REPONSE TO SCHOOL FACULTY WORKSHOP 02
Refer to meeting minutes dated 16.11.21

	SCHOOL FACULTIES	DESIGN RESPONSE	OWNER
STAFF			
1	Request for glass operable wall between staff lounge & staff study	No structural implications and will be developed with BUILT in the next phase of services.	*SHAC / BUILT*
2	Ability for Staff Study to be divided into 3 or 4 faculty study areas		
3	Ensure access to suitable technology, including location of screens and data points in meeting rooms/spaces		
ADMINISTATION			
4	Ensure offices/clinics/interview rooms can be multipurpose so that functions can change as the school develops. Refer to list of possible function changes in meeting minutes dated 16.11.21.	Furniture, access to technology and window apertures will be developed with BUILT in the next phase of services.	*SHAC / BUILT*
5	IT Service / Store to include student servery & additional windows for light, ventilation & view to outdoors.		
TAS			
6	Required machinery & equipment detailed. Refer to meeting minutes dated 16.11.21.	These items will be developed with BUILT in the next phase of services.	*SHAC / BUILT*
7	Material store to be thermally insulated.		
8	GLA to have dust extraction / exhaust for laser & 3D printing.		
9	Review size/clearance of doors to ensure minimum 2m clearance for major works.		
10	SHAC to flip wood & metalwork to improve access to services and dust extraction.		
11	BCA to review egress of roller versus swing doors.	BCA consultant to review in next phase of services.	*BCA Consultant*
12	Include gallery space, if possible.	SHAC to provide options to BUILT for review and cost management in next phase of services.	*SHAC / BUILT*
Science			
13	Co-locate storerooms		
14	Include safety measures/equipment including eye wash shower and hand basin, with floor waste.	SHAC undertaking EFSG coordination for each learning space and their requirements, and implementing in next phase of services. BUILT have allocated budget to suit standard EFSG requirements in cost planning report. BCA / DDA consultant have provided report during the Concept Design phase, and will continue development in next phase of services. Refer meeting minutes dated 16.11.21.	*SHAC / BUILT*
15	Include second exit from Physics lab.		
16	Include accessible science bench in each lab.		
17	Reduce benches to accommodate 12 students only.		
18	Remove vision / glazing between classrooms for student safety.		
19	Ensure appropriate power supply for equipment.		
20	Include storage, teacher's desk, screen & technology appropriate for the GLA.		
Agriculture			
21	Ideal to utilise more land inside the levee on the original school	SHAC will investigate in consultation with BUILT & SINSW	*SHAC / BUILT / SINSW*
22	Refer to meeting minutes dated 16.11.21 for a detailed list of animal/stock requirements.	These items will be developed with BUILT in the next phase of services.	*SHAC / BUILT / SINSW*
23	High security / dog proof fencing required		
24	Vermin-proof feed room, storage for flammables and liquids.		
25	Aquaculture, poultry, veggie patches, vines & bush tucker gardens to remain on main school site.		
Learning Support			
26	Review / include additional long bench for work skills.	A long bench for work skills has been implemented. Additional bench space to be investigated by SHAC in next phase of services.	*SHAC / BUILT / SINSW*
27	School to consider sensory space / garden.	This will be reviewed by SHAC, Landscape Architect & BUILT in the next phase of services.	*SHAC / BUILT / SINSW*
Hospitality			
28	Refer to standards for Certificate II Hospitality, as well as list of equipment from the School Hospitality course coordinator. Refer to meeting minutes dated 16.11.21.	These items will be developed with BUILT in the next phase of services.	*SHAC / BUILT*
29	Include demo bench with screen in kitchen.		
30	Ensure appropriate services and stacks for equipment and req. technology.		
31	Ensure appropriate design of technology and cut-off switch for safety and safeguard of materials & food, ie. Ensure the fridges are excluded from the cut-off switch circuit so they remain powered.		
32	Ensure appropriate design of technology and cut-off switch for safety and safeguard of materials & food, ie. Ensure the fridges are excluded from the cut-off switch circuit so they remain powered.		
33	Implement recycling initiatives in consultation with the School.		*SHAC / BUILT / School*
34	Consider security after hours for staff.		
Indigenous Cultural Centre			
35	Shower for students to be implemented in the design.	These items will be developed with BUILT in the next phase of services. This item could be implemented in the Accessible WC already within the proposed design.	*SHAC / BUILT / School*

4.3 PROJECT RISK REGISTER

4474 Wee Waa High School Concept Design
Project Risk Register

Project Info:
Design for a new High School in Wee Waa, NSW.

Issue Date: 29.11.21
Approved: Justin Hamilto
Position: Director, Project Architect

4474.040.03.ProjectRiskRegister Concept Design Phase Rev C.xlsx

Risk Level	Very Likely	Likely	Unlikely	Very Unlikely
Project Failure	H	H	H	M
Major Impact	H	H	M	L
Minor Impact	H	M	L	
No Impact	M	L		

Purpose of Document
This register captures and records project-wide risks during the masterplanning and design phases of the project. Project risks are items which may adversely affect the feasibility of the project or a particular aspect of the project's success. The purpose of the register is to communicate project risks throughout the life of the project so that all stakeholders are sufficiently warned. Where residual risk is owned by Client, it may be necessary for the key personnel acting as SHAC's client contact to communicate the risk to operational staff and managers, or other linked stakeholders. Where a residual risk is owned by a stakeholder, SHAC recommend the engagement of a quantity surveyor or construction risk specialist to assist in the establishment of financial and programme safeguarding sufficient to protect the stakeholders project interest.
Note that this register does not record occupational health and safety risk - for this information, refer to the Safe Design Register which will be undertaken as part of the further design development of the masterplan.

No.	issue	Risk	Risk Response	Current Risk Status			Residual Risk Owner	Rev
				Likelihood	Severity	Risk assessment		
1	Flooding	The 'Wee Waa Levee Risk Management Plan and Study Report' (dated December 2019) identifies the site as flood affected. The subject site is below the surrounding road levels and is considered waterlogged after rainfall. Flood mapping indicates flooding to the subject site and the surrounding neighbouring properties and roadways.	Civil Engineer specialising in flooding has been engaged for flood assessment and civil design. The Civil Engineer has reviewed flood mapping of the site, neighbouring properties, the town of Wee Waa, the levee surrounding, and the impacts of flooding from the Namoi River system on the site and town. A perimeter drainage swale has been proposed to channel stormwater to connect to the road stormwater system downstream. An upgrade to the stormwater drainage system downstream beyond the subject site has been proposed, as well as cut & fill design for the subject site to alleviate stagnant water after rainfall, and channel onsite water to the perimeter drainage swales.	Likely	Major Impact	H	Client/Design Team	B
2	Bushfire	Not identified as bushfire prone, however still could be affected by fire.	Climate adaptation and resilience of the project is being developed by a specialist consultant. Hydrant tanks are proposed onsite for use in the instance of bushfire.	Unlikely	Major Impact	M	Client	B
3	Contamination	Hazardous materials for example asbestos, residual organic remains, lead based paints or other similar materials are found during works on the site.	A preliminary site contamination investigation of the property carried out in April 2021 identified asbestos containing materials as well as elevated levels of heavy metals and polyaromatic hydrocarbons (PAHs) in samples of surface soil collected from the site. The preliminary site contamination investigation report identified concentrations of lead and zinc that exceeded health-risk and ecological screening values in samples of soil collected in a specific (hot spot) area of the Subject Site. In response, a detailed investigation was undertaken that focused on the hot spot which is located in the northern portion of Lot 124 DP 757125. The investigation concluded that the Subject Site is suitable for the proposed development, but that use of the area where contamination was detected is subject to removal of fibre cement fragments present in the area and the implementation of a procedure to lower the concentration of lead (Pb) present in a localised area of the site.	Likely	Minor Impact	M	Client/Design Team	C

No.	issue	Risk	Risk Response	Likelihood	Severity	Risk assessment	Residual Risk Owner	Rev
4	Water + Mould Contamination	Water + Mould Contamination affected previous school site	Existing site has hygenist investigation awaiting outcomes to be shared to consultant team to allow the consultant team to apply solutions to lessons learned. Findings of the report have been communicated anecdotally to SHAC and Consultant design team, and SHAC have communicated project risk via email to SINSW dated Tuesday 9 November 2021. As a minimum, the Concept Design is coordinated with all consultants and designed above natural ground level to allow for ventilation of the subfloor space, as well as cut & fill design for the subject site as a fill pad to alleviate stagnant water after rainfall and as a device to channel onsite water to the perimeter drainage swales and into the engineered stormwater system. Please note the severity associated with this item is very hard to quantify within the scope of this risk register without the results of the investigation.	Likely	Major Impact	H	SINSW	B
5	Budget/Cost overrun	Cost of development or vision overruns budget allowances.	Business case input by qualified Quantity Surveryor (SINSW or Private) engaged by project manager. Budget checks throughout the masterplan and concept design development was undertaken. Balance between competing elements such as EFSG, DfMA (MMoC), transportation limitations, SDRP Design Response (narrower floor plates), Educational and functional imperatives. Preliminary concept design was tendered and builder awarded. SHAC engaged directly by Builder to continue to inform design during cost planning and documentation and recommends the Builder undertake regular project cost checks.	Unlikely	Project Failure	H	Client/Design Team	C
6	Programme	Programme for the project is delayed or falls behind.	appropriate, based on Client's programme and discussions within weekly progress meeting. Discussions on potential delays will be held as soon as these items are known, and provisions made.	Unlikely	Major Impact	M	Client/Design Team	A
7	Changes to brief and / or scope of works	Strategies and plans require review and amendment. Cost and time implications.	Change control procedure enforced to provide auditable process. Project milestones have been set and reviews to be undertaken to predict and mitigate potential changes.	Unlikely	Major Impact	M	Client/Design Team	A
8	LALC	Local Aboriginal Land Council input is undefined.	Engage LALC early on in order to include them and hasten process. SHAC have requested engagements. A Connecting with Country Engagement Strategy has been developed by SINSW, but is yet to be implemented.	Likely	Minor Impact	M	Client/Design Team	B
9	Traffic Safety Management	Potential traffic issues during construction and upon opening. Risks to the surrounding road network to traffic congestion and ongoing affects to local residents.	SHAC recommended the engagement of a traffic consultant to identify a traffic management strategy. Through various masterplanning layouts, subsequent discussions with council clarified exsiting road services and the most suitable design solution. Transport Consultant has been engaged and developed a Transport & Accessibility Impact Assessment to assess the traffic and transport impacts and design elements of the proposed development, and is considered suitable on consideration of the traffic and transport elements of the site and its surrounds, and the transport strategy proposed for its management.	Likely	Major Impact	H	Client/Design Team	A

No.	issue	Risk	Risk Response	Current Risk Status			Residual Risk Owner	Rev
				Likelihood	Severity	Risk assessment		
10	Pedestrian Traffic Safety	Risk to life of pedestrians, students, staff, parents, guardians, visitors to the site.	Safe, equitable pathways, separation of cars & kids. Pedestrian safety along the Kamilaroi Highway remains the primary concern of the community. A pedestrian crossing has been proposed and the project is awaiting response by Transport NSW.	Likely	Major Impact	H	Client/Design Team	B
11	Wayfinding/Orientation	Circulation through the site not clear or wayfinding unresolved.	Ensure that the project resolves clear and coherent passage around the site through comprehensive design workshops with client.	Very Likely	Major Impact	H	Client/Design Team	A
12	Causing irreversible impacts to threatened species	A part of the site has been identified as potentially containing koala habitat vegetation there is a the risk of causing irreversible harm to threatened species.	SHAC reccomends engaging an ecology consultant to suggest strategies to reduce the risk of harm. An Arborist was engaged	Unlikely	Major Impact	M	Client/Design Team	A
13	Needs of teachers ' learners and community	Design strategy used which does not meet the needs of the teachers, learners or wider community	An engagement strategy with both the school and wider community has been prepared for and actioned upon after the project was announced by the Minister. The strategy allowed a high level of user input into the masterplan and resulting concept design through a series of workshops with SHAC at the school with each Faculty and regular workshops with the PCG via zoom. Transparency is to be maintained with community via regular design workshops and meetings, including any other related stakeholder groups as necessary. Design team to ensure that requirements of EFSG guidelines are met.	Unlikely	Major Impact	M	Client/Design Team	B
14	Approval strategies	Ill-suited strategy is used which could lead to disapproval. Unspecified adjoining development controls could impac approval of DA's for subsequent stages.	Ensure that the approval strategy is appropriate for the project. SHAC suggests for a town planner to be engaged to provide advice on the best approval strategy.	Very Unlikely	Major Impact	L	Client/Design Team	A
15	Approvals Pathways	Approval not achieved	Address all planning codes and justify departures in accordance with legislation. Undertake pre submission liaison with council as much as possible due to constrained timelines. Work with the client to prepare strong planning proposal for LEPAmendment.	Very Unlikely	Major Impact	L	Client/Design Team	A
16	Ground Conditions	Ground conditions adversly affecting construction techniques in time and cost.	Seek advice from qualified Geotech engineer to liaise with the MSB over development conditions.	Unlikely	Major Impact	M	Client/Design Team	A
17	Services Amplification	Infrastructure upgrades may be required. Slow approval of infrastructure may be a cost imposed on the development or delay project delivery	Design Team to review as-built drawings and undertake DYBD investigations. Engage subterranean service locator to work with a surveyor and map services on the site prior to works commencing. Clarify location of assets within proximity of any proposed development with service providers.	Likely	Minor Impact	M	Client/Design Team	A
18	Access around infrastructure	Existing infrastructure on site not known or obstructs future facilities	Ensure that consideration is made to exisitng infrastructure in reviewing DBYD.	Unlikely	Major Impact	M	Client/Design Team	A
17	School Aesthetic	The design team does not advantageously translate the clients vision in regards to design aesthetic	Ensure transparency with client through regular meetings and workshops to ensure the clarification of the design direction to support the aspirations of both the client and design team.	Unlikely	Minor Impact	L	Client/Design Team	A

SHAC

No.	Issue	Risk	Risk Response	Current Risk Status			Residual Risk Owner	Rev
				Likelihood	Severity	Risk assessment		
18	Impact on carparking, accessibility, surrounding road network and infrastructure	Potential traffic issues during construction and upon opening. Existing carparking, accessibility, risks to the surrounding road network and risk of traffic congestion and ongoing effects to local residents are increased, particularly if a Primary School were to come onsite.	SHAC recommend the engagement of a traffic consultant to identify a traffic management strategy, followed by discussions in collaboration with council to assess existing road services and provide expert advice on the impact of the school through various layouts. SHAC to reference carparking requirements within Council DCP and any carparking / traffic management strategies publicly available.	Unlikely	Major Impact	M	Client/Design Team	A
19	Understanding of site conditions and constraints change the impact of the project masterplan / adjoining infrastructure upgrades are undertaken without notification to the design team.	Project is no longer feasible or masterplan requires revision due to: - Site suitability incl. Geotech, bushfire, contamination & setback to vegetation - Compliance requirements for access & egress as well as guidelines and regulations governing school operations. - Council road widening and traffic control measures. - Staging of masterplan works that maintain fully functional school.	During the Concept Design Phase, SINSW conducted site suitability scenarios that assessed surrounding sites assessing both location/accessibility, surrounding context, size, ownership, for example.	Unlikely	Major Impact	M	Client/Design Team	A
20	Pedagogy for public schools changes or regulations governing schools change	The new school practice and philosophy of learning is abandoned or superseded by the NSW DoE Curriculum. The proposed does not accommodate new teaching and learning methodologies. Delays to project delivery.	SINSW to stay informed with all education pedagogy and curriculum changes and to notify the design team as required. SINSW has conducted an educational workshop with the existing high school, and have submitted brief overview and endorsed educational rationale to SHAC. SHAC to maintain knowledge of current educational research. The Concept Design includes flexible, adaptable learning spaces, strengthened by the large, unimpeded learning space as a result of the design in parallel to the prefabricated / kit-of-parts construction methodology.	Unlikely	Major Impact	M	Client/Design Team	B
21	Noise	Noise impacting teaching quality for students, staff. Noise from the proposed development impacting surrounding community.	Acoustic Consultant engaged & Acoustic Report submitted. The findings show that the level of noise emitted by the proposed development will be able to meet the acceptable noise level requirements of the EPA NSW Noise Policy for Industry. Recommendations for facade construction have been provided to help mitigate traffic noise intrusion from the Kamilaroi Highway. Recommendations for noise controls have been provided during construction activities. Acoustic insulation & facade fenestration tailored to the Highway is a key consideration during Design Development.	Likely	Minor Impact	M	Client/Design Team	A
22	Dust	Dust impacting air quality for students, staff, visitors & the public generally, as well as mechanical systems.	SHAC identifies risk of dust and lowered air quality during construction and after practical completion.	Likely	Major Impact	H	Client/Design Team	A
23	Drainage Swale Flood Mitigation Works Safety	Drowning in open swale	Identify functional access & maintenance risks to allow drain to function without exposing students, staff, visitors or public generally to temptation or risk of slip/fall/drown/entrapment in drainage system	Very Likely	Major Impact	H	Client/Civil/Council	A

4.4 DESIGN CERTIFICATE - CONCEPT DESIGN PHASE

As required for each phase of the project preceding, SHAC have provided a Design Certificate for the Concept Design Phase to form part of the Concept Design Validation.

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Annexure Part E

Design Certificate

Consultant's Certificate

Provided by: SHAC PTY LTD *ABN 21 131 584 846* (**Consultant**)

- The State of NSW through the Department of Education ABN 40 300 173 822 (**Client**)

and

- Built Pty Ltd ACN 083 928 045 (**Built**)

In relation to:

Project: Wee Waa High School

Consultancy Agreement No: 14346001

In this certificate, unless stated otherwise, defined terms have the same meaning as in the Contract Conditions.

The Consultant hereby certifies to the Client and to Built that:

(a) the design provided by the Consultant for the Works as depicted in all the drawings, specifications, schedules and other documents prepared by the Consultant and issued to date to Built (other than drawings, specifications, schedules and other documents which are marked "*Preliminary*") satisfy the requirements of and are in accordance with the Brief, the Contract and all Legislative Requirements including all relevant Australian Standards and Codes of Practice.

(b) all inspections, advice and approvals required to be carried out by the Consultant by Built have been carried out; and

(c) the results of inspections and test procedures and any other matters arising in the Consultant's inspection reports, establish that all construction work relevant to the Services to the date of this certificate:

  (i) is in compliance with the Brief and Built's obligations to the Client which are known or which should reasonably have been known to the Consultant; and

  (ii) has been carried out in accordance with the design intent of Contract Material provided to Built by the Consultant.

SIGNED by an authorised representative for and on behalf of the Consultant

Authorised representative signature	Witness signature
Justin Hamilton	Tom Lambie
Authorised representative name and title (print)	Witness name (print)

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