



MURWILLUMBAH EDUCATION CAMPUS

MURWILLUMBAH, NSW, 2484

LANDSCAPE SSDA REPORT

PREPARED FOR NSW SCHOOL INFRASTRUCTURE

MARCH 2022
ISSUE D

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Issue D

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We respectfully acknowledge the Traditional Custodians of the lands where we live and work. We acknowledge their unique ability to care for Country and deep spiritual connection to it. We honour Elders past, present and emerging whose knowledge and wisdom has and will ensure the continuation of cultures and traditional practices.



01 PROJECT INTRODUCTION

Project Introduction

Murwillumbah Education Campus

PROJECT OVERVIEW

Department of Education and Schools Infrastructure NSW are planning the development of an education campus at the Murwillumbah High School site.

The campus will include a primary school, a high school and school community health facilities co-located within an integrated, purpose designed and built education campus.

The campus will bring together students from Murwillumbah Public School, Murwillumbah East Public School, Murwillumbah High School and Wollumbin High School.

LANDSCAPE SEARS REQUIREMENTS

Condition: Provides evidence that opportunities to retain significant trees have been explored and/or inform the plan.

Reference: Please refer page 13 of Landscape Report for existing significant trees across the site. Similarly, the landscape masterplan on page 19 shows the groups of significant trees that have been retained through the landscape design, in areas not impacted by Buildings. Consideration has been given to the protection of significant Indigenous tree species across the campus such as the Davidson Plum.

Condition: Considers equity and amenity of outdoor play spaces and integration with built form, security, shade, topography and existing vegetation.

Reference: Please refer page 20 for accessibility diagram, showing that all landscape spaces can be accessed via accessible pathway connections. Landscape Masterplan (page 19) shows the integration of outdoor classroom spaces adjacent to Building use as well as the inclusion of passive and active play zones in and around the existing trees on site.

Condition: Demonstrates how the proposed development would:

- contribute to long term landscape setting in respect of the site and streetscape
- mitigate the urban heat island effect and ensure appropriate comfort levels on-site
- contribute to objectives to increase urban tree canopy cover

Reference: Please refer to landscape masterplan on page 19. The landscape design aims to be respectful to the existing character of the site and surrounding environment. It has always been a focus to integrate the design into the existing community fabric in order to create a welcoming and familiar place for all. Additional trees have been proposed across the site to offset those removed due to the development. Care has been taken to ensure that any large area of hardstand will be accompanied by proposed tree planting to mitigate the heat island effect and maintain comfort levels.





02 SITE APPRECIATION

Site Appreciation

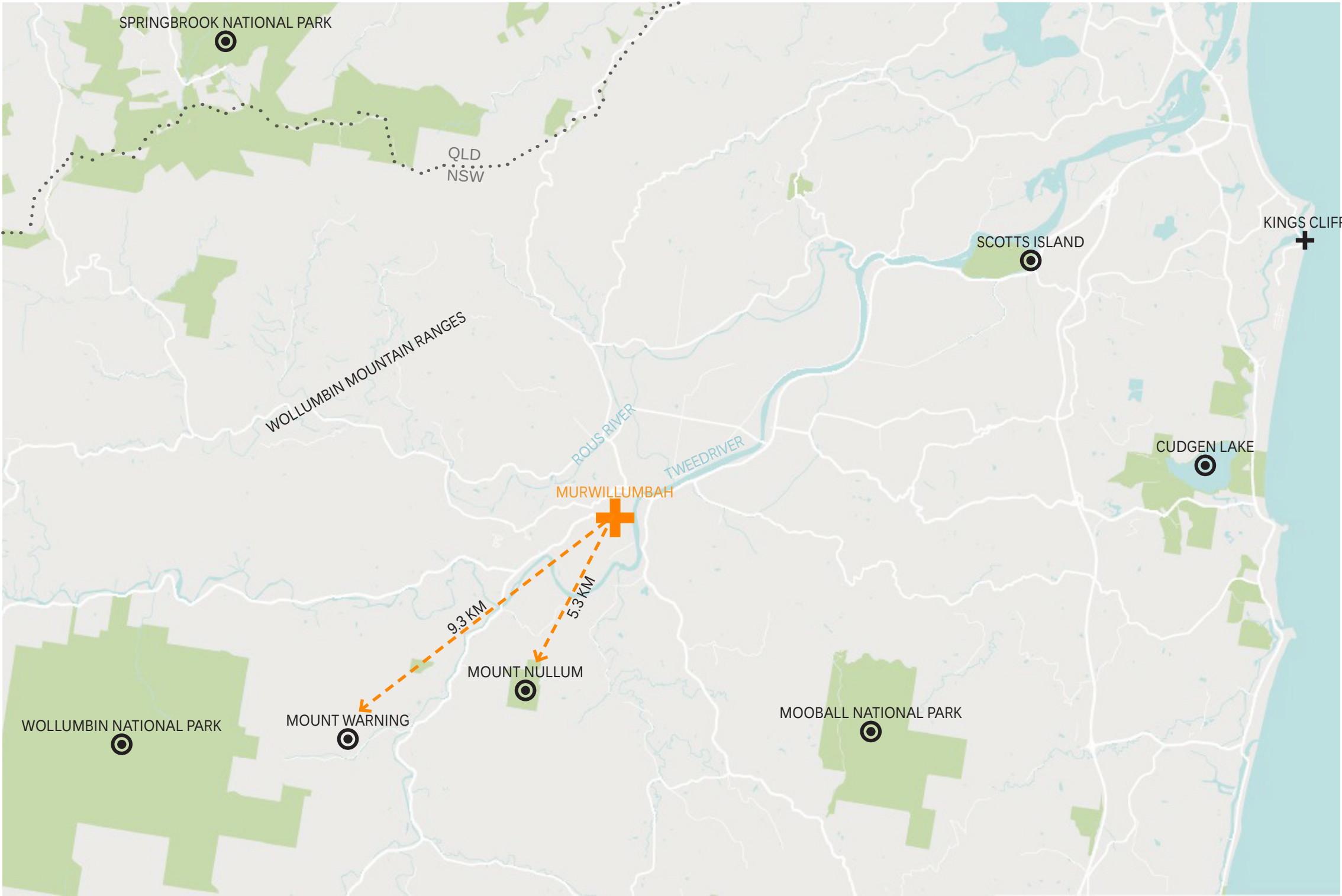
Regional Context

MURWILLUMBAH

Located in North-Eastern New South Wales Australia, situated between both Rous and Tweed River as part of Tweed Shire Council.

Murwillumbah forms part of the highly fertile Tweed River Valley, the caldera of the Wollumbin shield volcano, which includes natural amenities such as Wollumbin National Park, Mount Warning Rainforest Park and Hattons Bluff Nature Reserve.

The town is renowned for its produce including sugar cane, bananas and dairy products as well as its lively art culture.



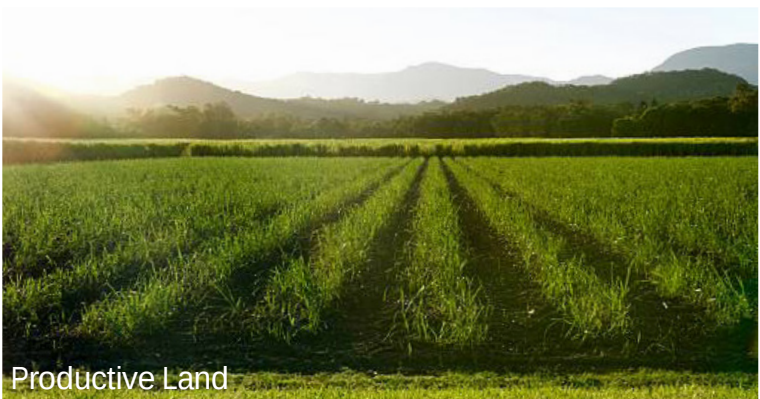
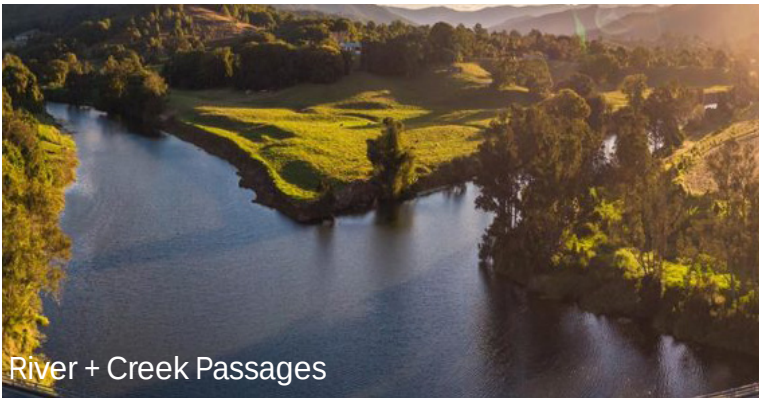
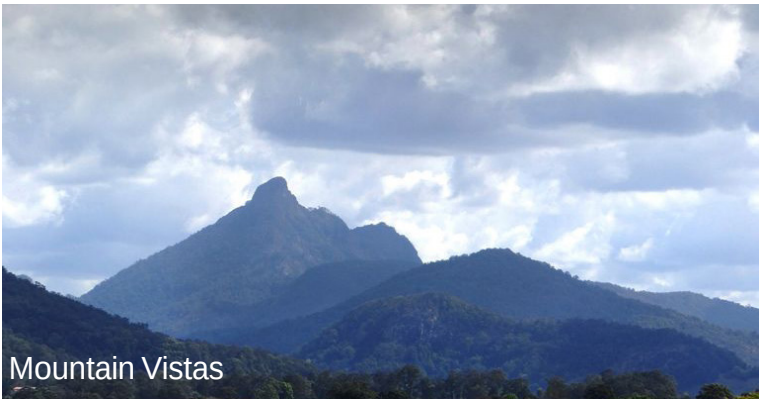
Site Appreciation

Regional Landscape Character

MURWILLUMBAH IN CONTEXT

Murwillumbah’ surrounding region is abounding in natural beauty, enjoying the benefits of the coast as well as lush hinterland.

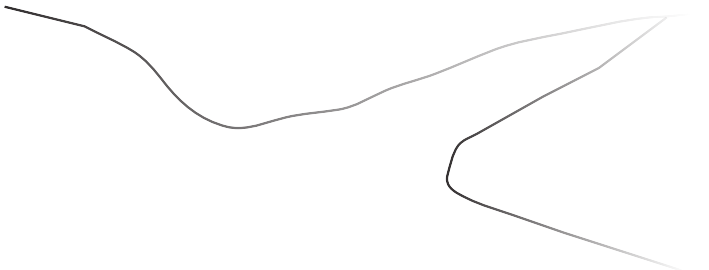
The region shares a close relationship with The Tweed River, Mount Warning and its National Parks, while its productive lands help support local communities.



Mount Nullum
Mount Warning
Mooball National Park



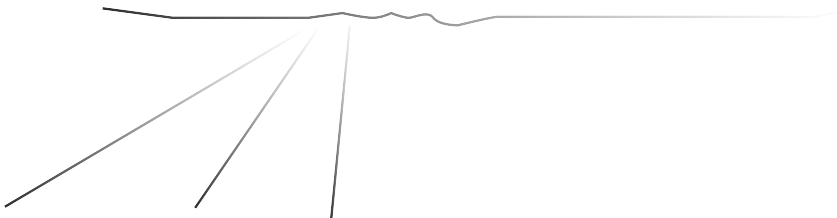
Tweed River
Rous River
Myal Creek



Wollumbin National Park
Mooball National Park



Bananas
Coffee
Vegetables
Dairy





03 DESIGNING ON BUNDJALUNG COUNTRY

On Bundjalung Country

*“Jingi walla blagganmirr
Banjalang na Jugun ba la”*

Hello and welcome, you are on Bundjalung Country.

The Traditional Owners of the lands surrounding Murwillumbah are the Bundjalung Nation, with Murwillumbah located at the foot of the sacred dreaming place, Wollumbin, an ancient volcano plug dubbed Mt. Warning by Captain Cook.

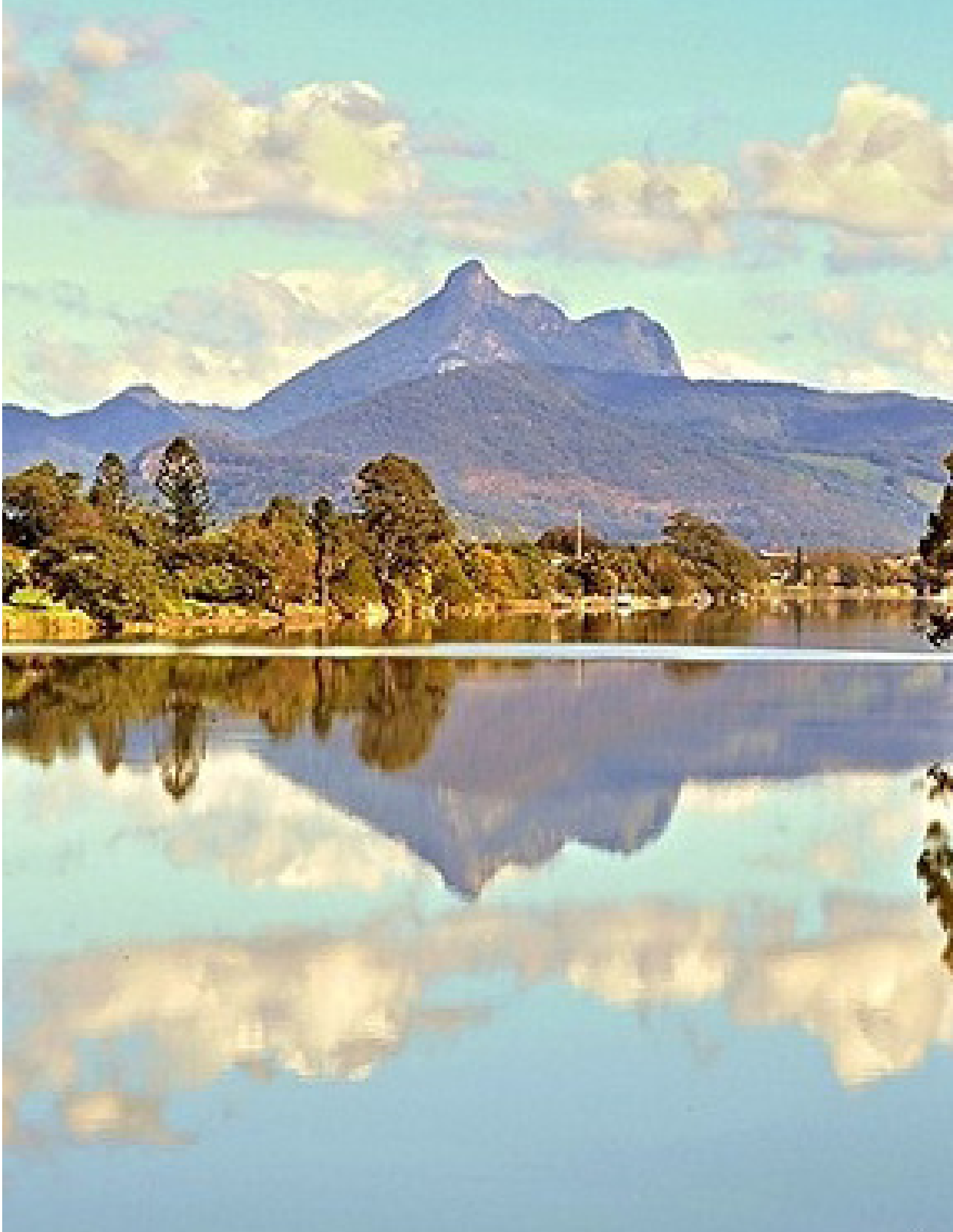
Bundjalung Country spans from Logan River and Tweed heads in the North to the Clarence river in the South, from the sea in the East to as far west as Tenterfeild. It includes the regional centres of Lismore, Casino, Kyogle, Murwillumbah, Ballina - Byron Bay and Tweed Heads.

Having cared for Country since time immemorial, the Bundjalung people have many sacred associations to their lands - threads that can be explored in richer detail during an engagement process.

*Wollumbin - a sacred
dreaming place*

The mountain that many know as Mt Warning has been known as Wolumbin for thousands of years by local Indigenous people. It is a sacred place to all the First Nations people surrounding Northern NSW and Southern QLD.

The site is known as the last place of initiation for men and very sacred to Bundjalung people.



Designing With Country

CARING FOR COUNTRY

Caring for Country is integral to First Nations culture and practice, encompassing agricultural practice, biodiversity management, community health and spirituality, among many other practices and cultural obligations - it is a holistic understanding of our place in the world and our responsibility to it.

Prior to (and despite) colonisation, the Bundjalung people have cared for their lands through processes of fire management, farming, cultivation and hunting methods.

Many of the place names in Bundjalung Country are anglicised Indigenous names - with Murwillumbah said to be named after a tree and the totem of a local clan. These place names give insight into the significance of place.

INDIGENOUS THINKING AND LEARNING

There are many reasons for employing an Indigenous strategy in educational environmental design. As an educational environment, there are opportunities to foster understanding and appreciation of Aboriginal culture, history and modes of learning. This is particularly crucial for Indigenous students to feel visible, safe and supported, and an important step in cultural learning for our non-Indigenous communities, engendering stewardship of the wonderful connections that make up our beautiful Country.

Utilising the educational program of the new school, employing Indigenous thinking and learning offers an exciting learning landscape proposition. Educating Indigenous and non-Indigenous students alike, the vision is to support emotive environmental learning of the reciprocal landscape systems that tie us all to Country

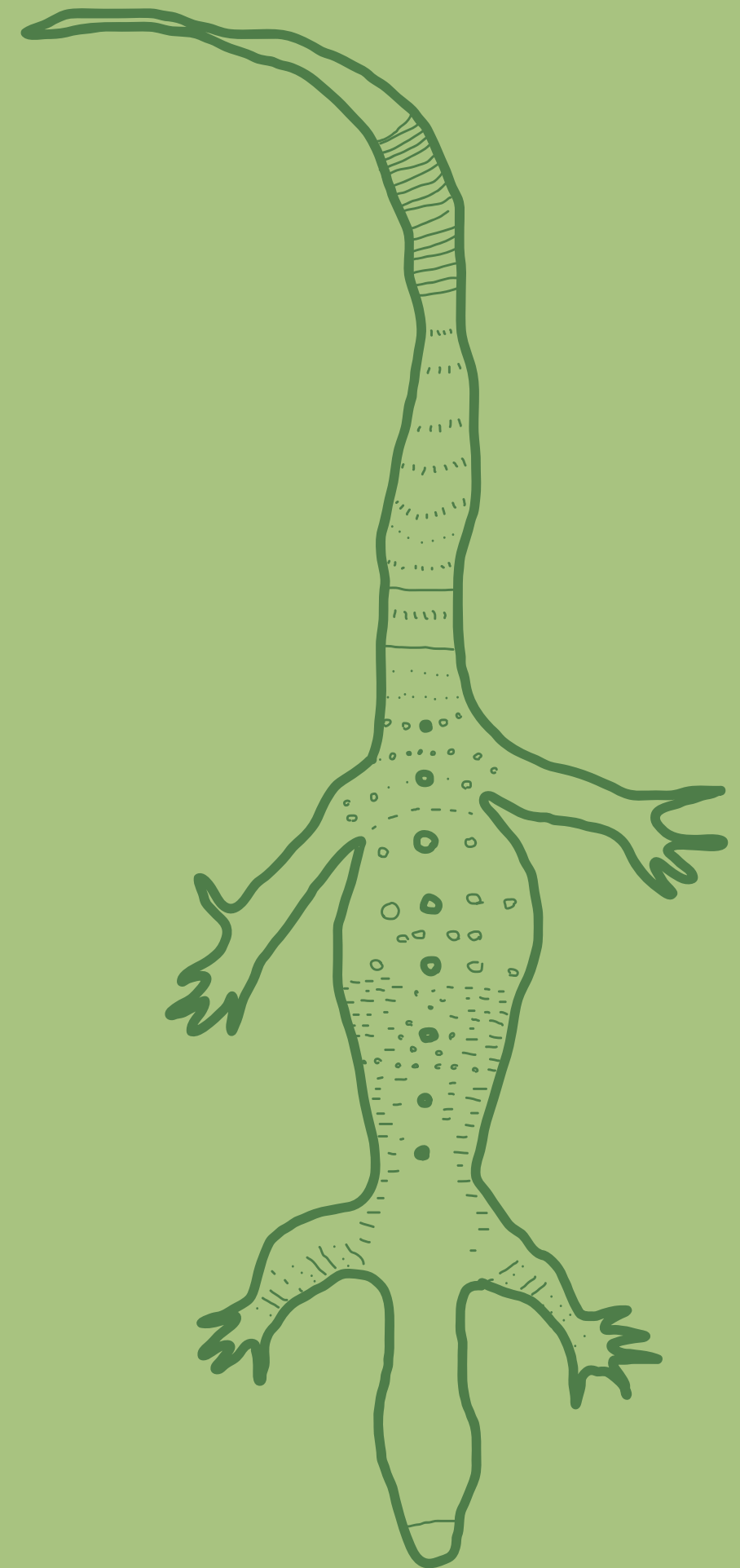
ENGAGEMENT PROCESS

Our preferred method of employing an Indigenous design strategy is to engage directly with local Elders and cultural leaders to ensure the story of Country is being told authentically, as well as embarking on a reconciliatory process of co-design.

As part of a national move towards reconciliation, it is essential we acknowledge and pay respect to the Traditional Custodians of the lands we live and work in, exploring opportunities to exchange knowledge and culture.

Typically, an engagement process for a school consists of:

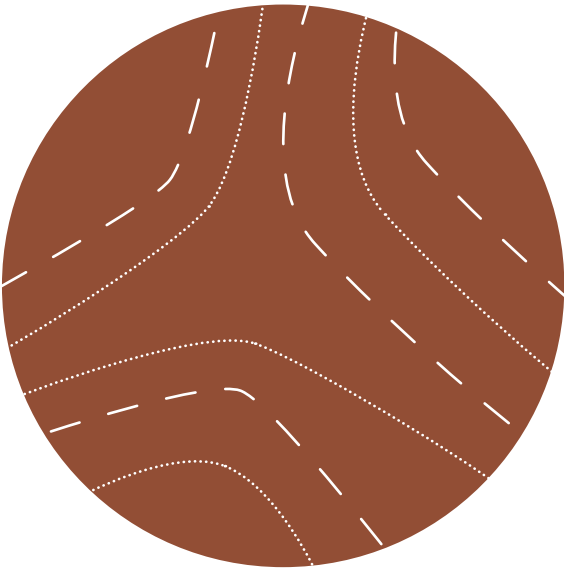
- Walkshops and design jams with local Elders and knowledge holders
- Design collaboration sessions and feedback meetings
- Development of an Indigenous design strategy with feedback sessions
- Presentation of design and feedback sessions
- Indigenous teachers and students



Designing on Bundjalung Country

Preliminary Indigenous Design Strategies

* TO BE DEVELOPED WITH ELDERS AND
COMMUNITY LEADERS



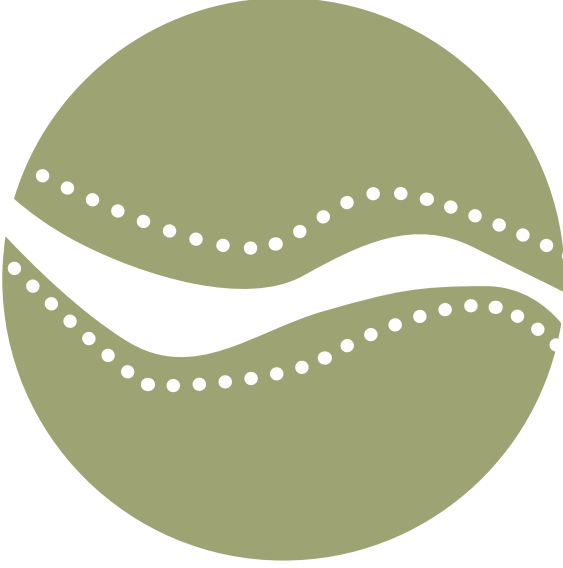
KNOWING COUNTRY

- Acknowledgment of Bundjalung Country
- Use of language throughout
- Incorporate local dreaming stories
- Strengthen visual ties to significant Country features, educate on significance of Wollumbin and rivers



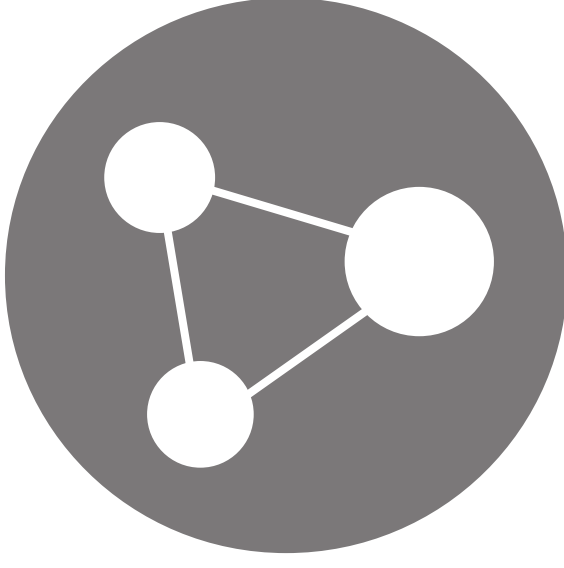
STUDENT HEALTH AND WELLBEING

- Creating culturally sensitive places
- Supporting mental health
- Yarning circles for students to connect with country
- Pride and visibility for First Nations students



PRACTICING CULTURE

- Design spaces to support cultural practices including:
 - Bundjalung Art
 - Bundjalung language
 - Yarning
 - Dancing
 - Ceremony
 - Story telling utilising land resources



RECONCILIATION + LEARNING

- Provide opportunity for all students to engage in learning and cultural practice
- Teach students about the colonial history of the area
- Gain an understanding, appreciation and respect of country
- Provide opportunity for all students to acknowledge and respect Aboriginals past, present and emerging.
- Create spaces for students to reflect and gain insight through the Aboriginal interpretations.



BUSH RESOURCES AND HABITAT

- Use native planting throughout
- Incorporate Indigenous bushfoods, resources and medicines throughout the planting palette
- Support habitat systems/ care for ecological systems

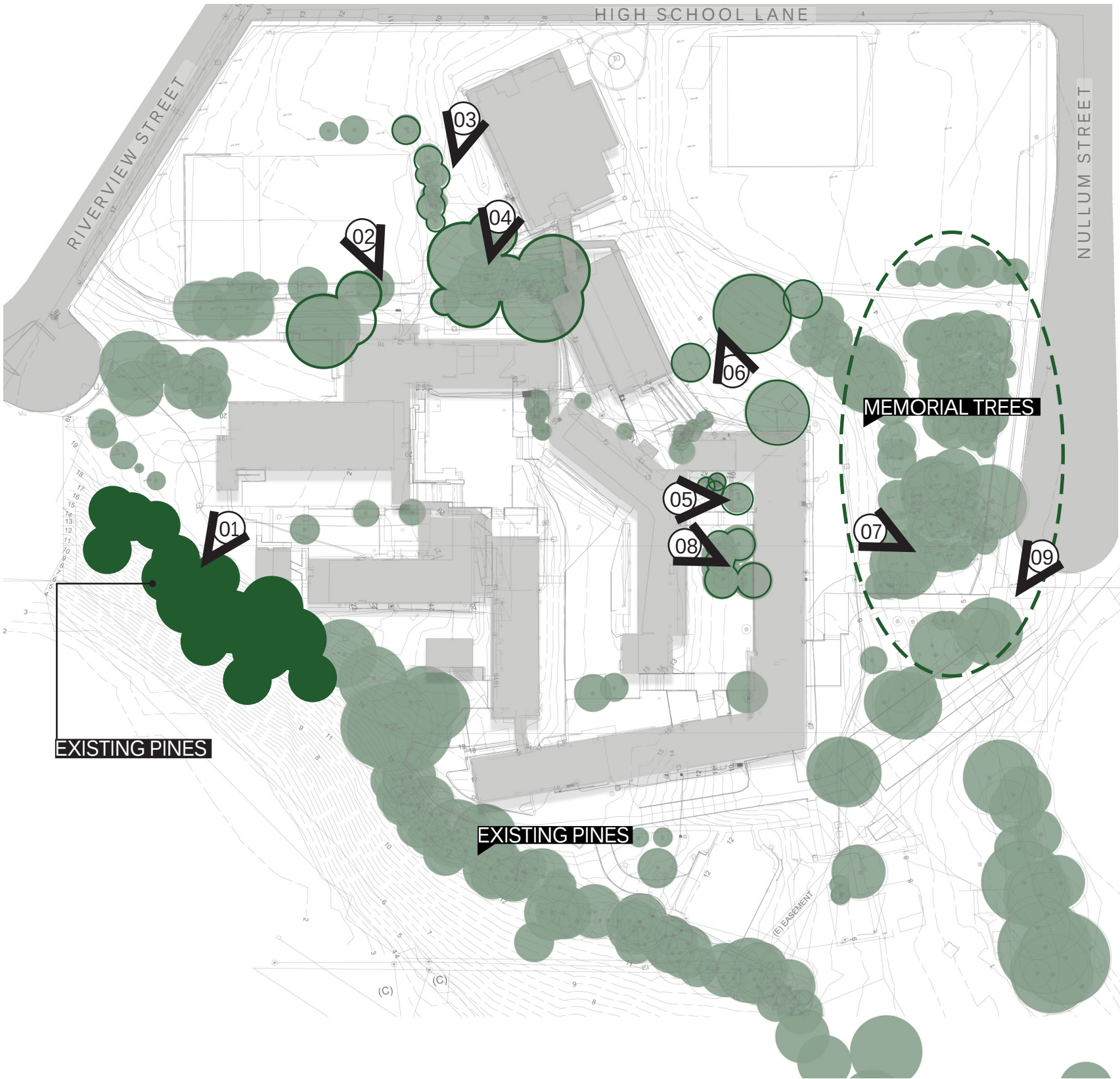


04 SITE UNDERSTANDING

Site Understanding

Existing Vegetation

The below diagram illustrates the existing established tree clusters on site + their impact on the character of the landscape



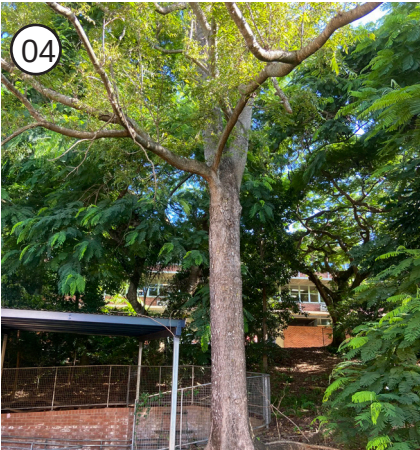
01 These trees are a significant landscape feature on the existing site.



02 Established trees provide needed shade + shelter and are significant within the School character.



03 This tree cluster contains many established significant species. Underpruning could help spaces beneath become useable.



04 Existing levels around trees to be retained and protected to enable tree health



05 Tree clusters provide shade amenity + cooler, passive spaces beneath. These should be retained in new design due to the comforting microclimate they create.



06 Significant Eucs and Corymbias provided cooler, passive environments for students during warmer months.



07 Memorial trees provide cooler microclimates and opportunity for passive spaces beneath.



08 Tree clusters provide shade amenity + cooler, passive spaces beneath. These should be retained in new design due to the comforting microclimate they create.

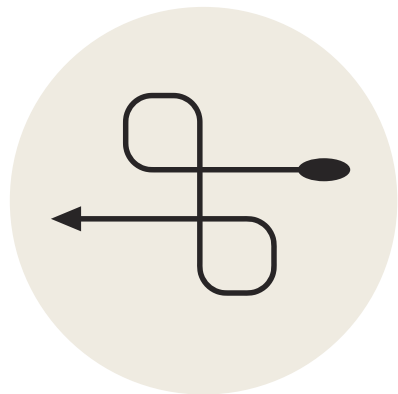


09 Memorial trees along Nullum street provide important screening and added privacy to School Boundary .



05 LANDSCAPE VISION

Vision Principles



01

IMPROVE ACCESS AND CIRCULATION

While enhancing spaces using site levels, the design aims to improve the pedestrian movement through the different spaces with ease.



02

MANAGE WELLBEING

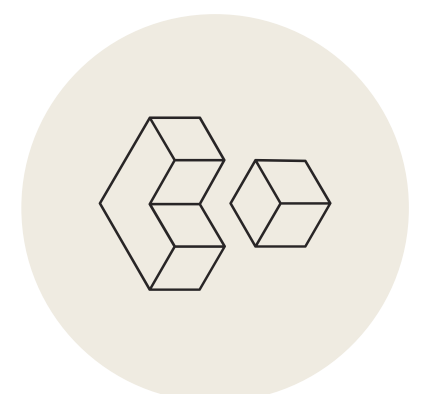
For students, staff and visitors. The design creates various adaptable spaces that create microclimates that offer uses for groups of different sizes, set within a green environment.



03

CREATE SENSE OF PLACE

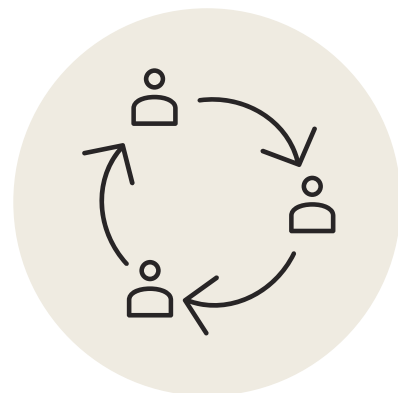
That celebrates the site attributes and reinforces unique character through the clever use of materials and levels to create a 'one of a kind' landscape experience.



04

RESPOND TO BUILT FORM

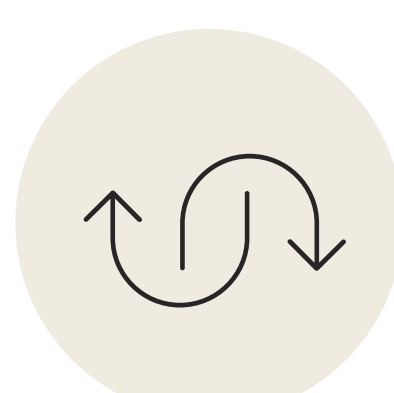
The landscape integrates with both the existing and proposed buildings cohesively. It is this sense of flow and complimentary design helps solidify the values the Campus.



05

FACILITATE SOCIAL INTERACTION AND ENGAGEMENT

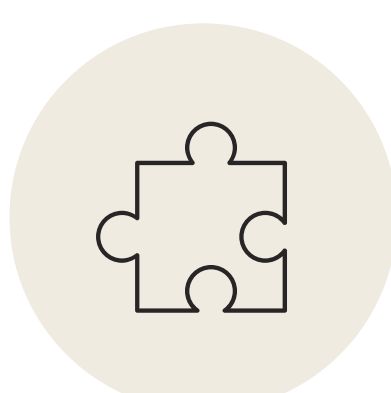
Promote diversity and inclusion through the creation of adaptable areas for teaching, recreation, study and relaxing. These areas are designed to fit groups of all sizes and encourage inclusive learning practices.



06

CREATE FLEXIBLE SPACES

The design is also drawing on contemporary teaching practices that will be able to incorporate new learning strategies well into the future.



07

INSPIRE NEW WAYS OF LEARNING

And facilitate innovative pedagogy through inclusive learning and encouraging students to be involved in the learning processes.



08

CONNECTION TO COUNTRY

Minimise resource use / energy usage by introducing indigenous planting palette. Enhance education and holistic learning through fostering a cultural experience of art and celebration of ecology.

Vision

Pedagogy Research

The landscape approach seeks to provide students with an integrated + unique environment which provides opportunities for students to learn from multi-sensory outdoor experiences. Outdoor environments are an extension of the internal learning space and can provide locally appropriate and inclusive pedagogies.

Effective learning spaces are:

- **Flexible:** to accommodate current and future student groups across all age groups
- **Future** proofed: to enable space to be re-allocated and reconfigured depending on School or Community needs
- **Creative:** to inspire students + teachers
- **Supportive:** to develop the potential of all learners
- **Enterprising:** to make each space capable of supporting different purposes
- **Bold + Innovative:** to look beyond tried and tested technologies and pedagogies

LEARNING OPPORTUNITIES:



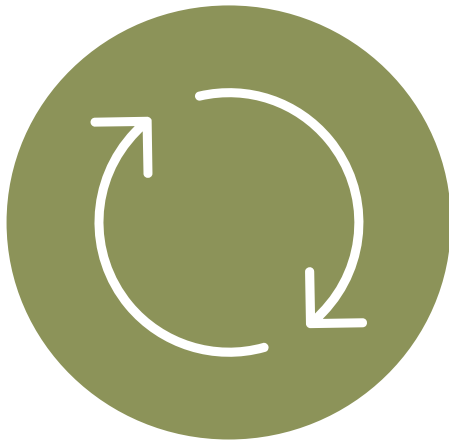
**CLASSROOM
INTERFACE**

To further expand on internal learning spaces, adjacent courtyard spaces will be developed to accommodate extended use and provide optimal and flexible spaces for teachers and students



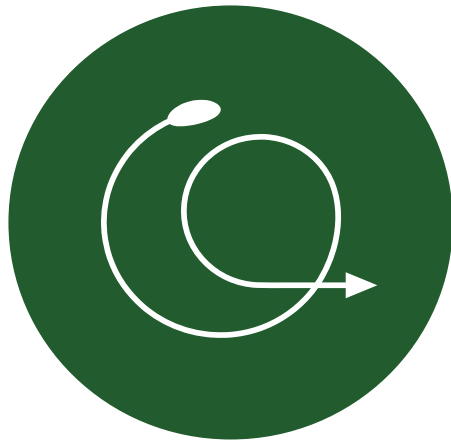
**ENVIRONMENTAL+
INTEGRATED**

Immersive learning in the natural and unique environment has multiple benefits. Research also shows that green spaces are important for physical + mental health. Immersing students within the natural environment can help to better connect them with local eco-systems + ecologies + sense of place.



INQUIRY BASED LEARNING

Inquiry based learning is all about thinking - thinking in order to create meaning. The urge to inquire and be curious activates thinking on many levels and in many forms which can be accommodated for within the landscape

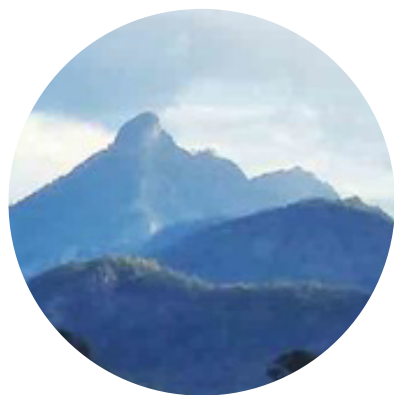


**PERIPATETIC
EXPEDITIONS**

To optimise the educational attributes provided by the site, the landscape approach seeks to promote alternative methods of learning where teachers are able to engage students on peripatetic walks. The potential for dispersed teaching zones scattered across the campus is afforded by the unique location + wider landscape connections.

Vision

Landscape Typologies



RIDGE LINE

Mount Warning or Wollumbin has a monumental presence in the region and integral to the Bundjalung, Yuggera and Yugumbeh people as a sacred place

- Dynamic Changes in appearance hour to hour
- Frames views



ROCK FACE

Rocky outcrops expose ancient rock faces and shear plunges toward the Mountain foothills, they often have water trickling down them

- Extensive views beyond
- Smooth rock
- Terraced landscape treatment



FOREST

A Sub Tropical Rain forest Canopy is complex in its layering. Large existing trees create canopy and shelter for the understorey below.

- Densely wooded areas
- Large existing trees
- Opportunity for nature based play + interpretation



CLEARING

The Sub Tropical Rain forest Canopy is complex in its layering, allowing filtered light through its lush broad leaf canopy, while trees such as Strangler Figs host multiple plant species including ferns and vines

- Minimal changes in topography
- Often lively, busy
- Opportunity for activation



GULLY

The gully is fed by the gravity of the mountains starting from high velocity waterfalls all the way to the river. Gullies are calm water zones, often flanked by boulders and mosses.

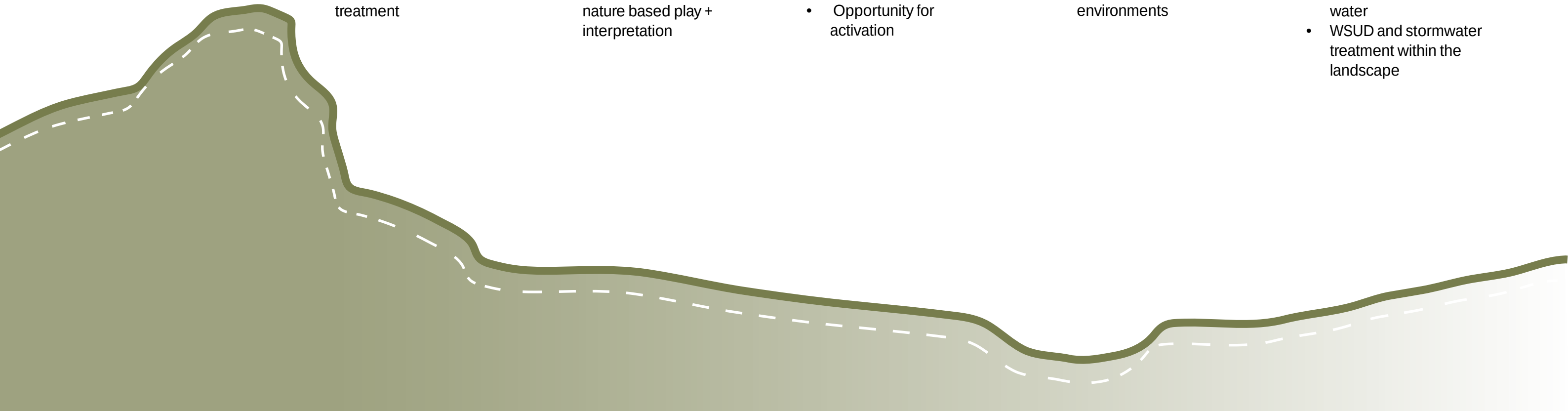
- Gentle water flow
- Small scale, intimate
- Protected/shady environments



RIVER BANK

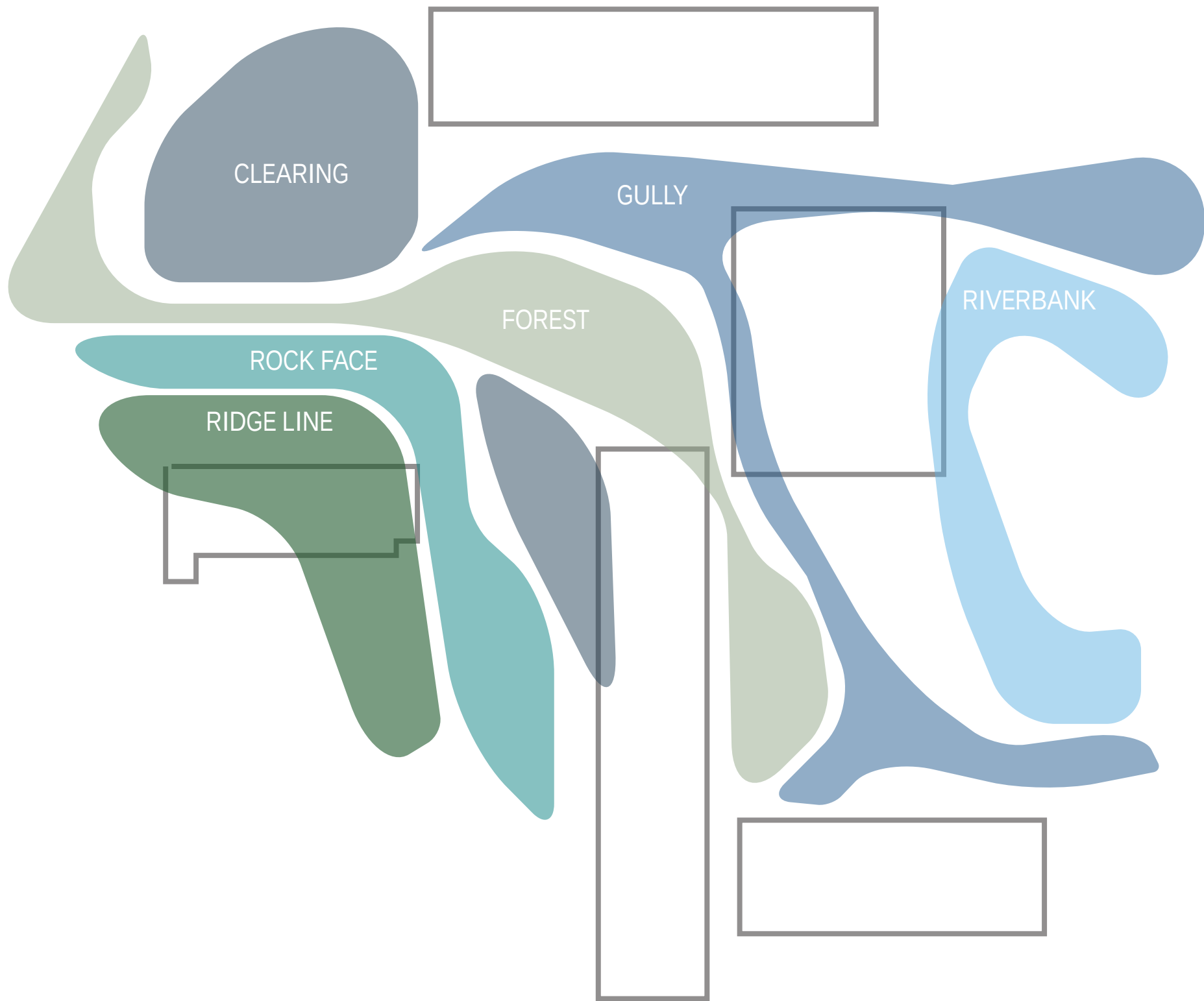
The Tweed and Rous Rivers are central to recreational activities, celebrations and industry. The bank is an important interface both environmentally and socially as the meeting of land and water

- Dynamic zones- water rising and falling
- The merging of land and water
- WSUD and stormwater treatment within the landscape



Strategies

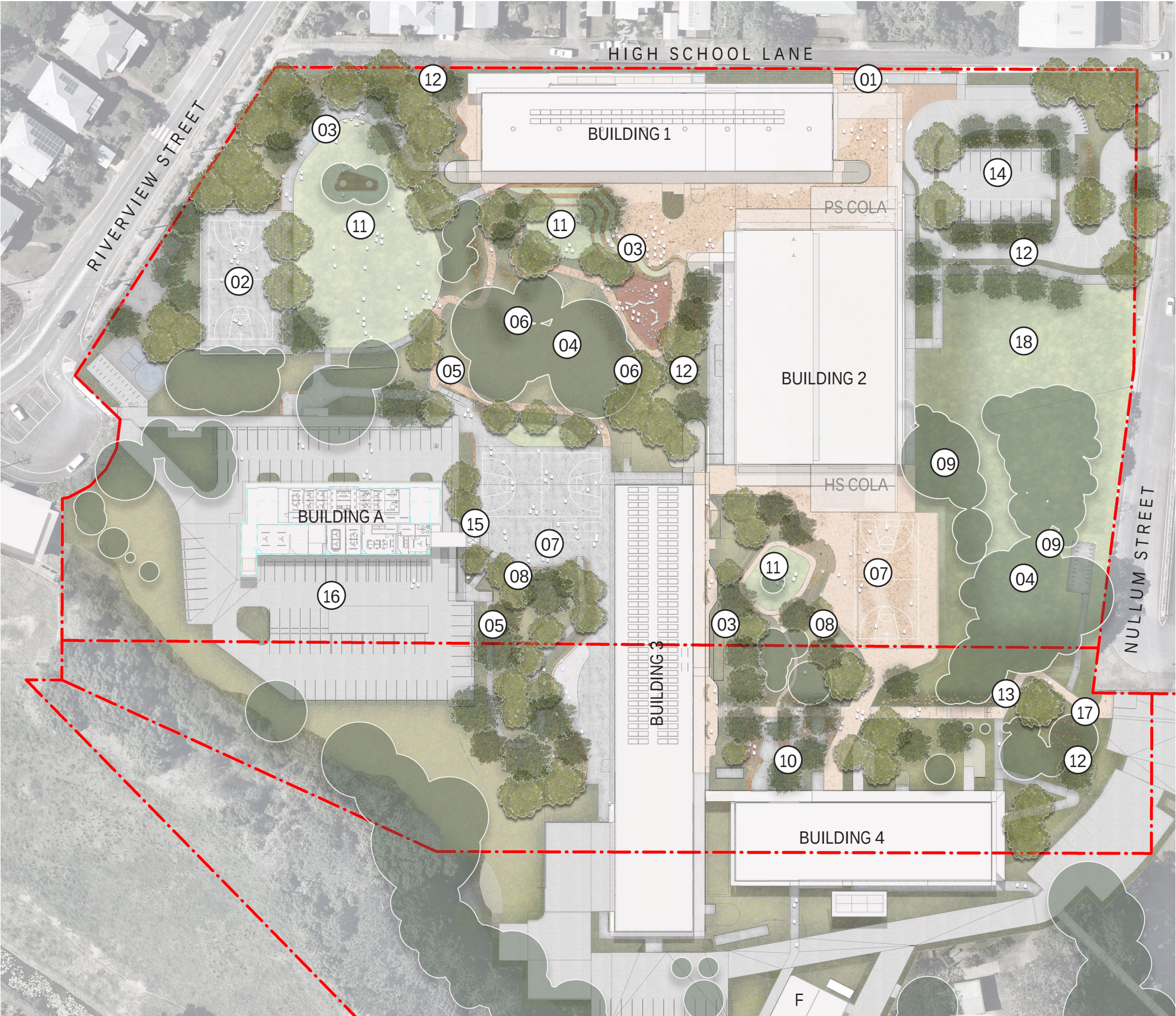
Landscape Typologies



- LEGEND
- Ridge-line**
Design elements within these zones include: lookout points, elevation, openness to view the landscape beyond, framed views, open and flexible space.
 - Rock face**
Design elements within these zones include: a terraced landscape treatment, interactive changes in topography, hard edges and surfaces,
 - Forest**
Design elements within these zones include: Densely wooded areas, groups of large existing trees, opportunity for nature based play + interpretation, shaded and sheltered landscapes, passive spaces
 - Clearing**
Design elements within these zones include: minimal changes in topography, open and busy spaces, entry plazas, opportunity for activation, open turf areas
 - Gully**
Design elements within these zones include: overland flow paths, dry creekbeds, shaded and sheltered landscape, intimate landscape spaces, protected environments, opportunity for nature play based activities
 - Riverbank**
Design elements within these zones include: small landscape walls relating to flood zones, the merging of land and water and the merging of old vs new, planted and grassed embankments

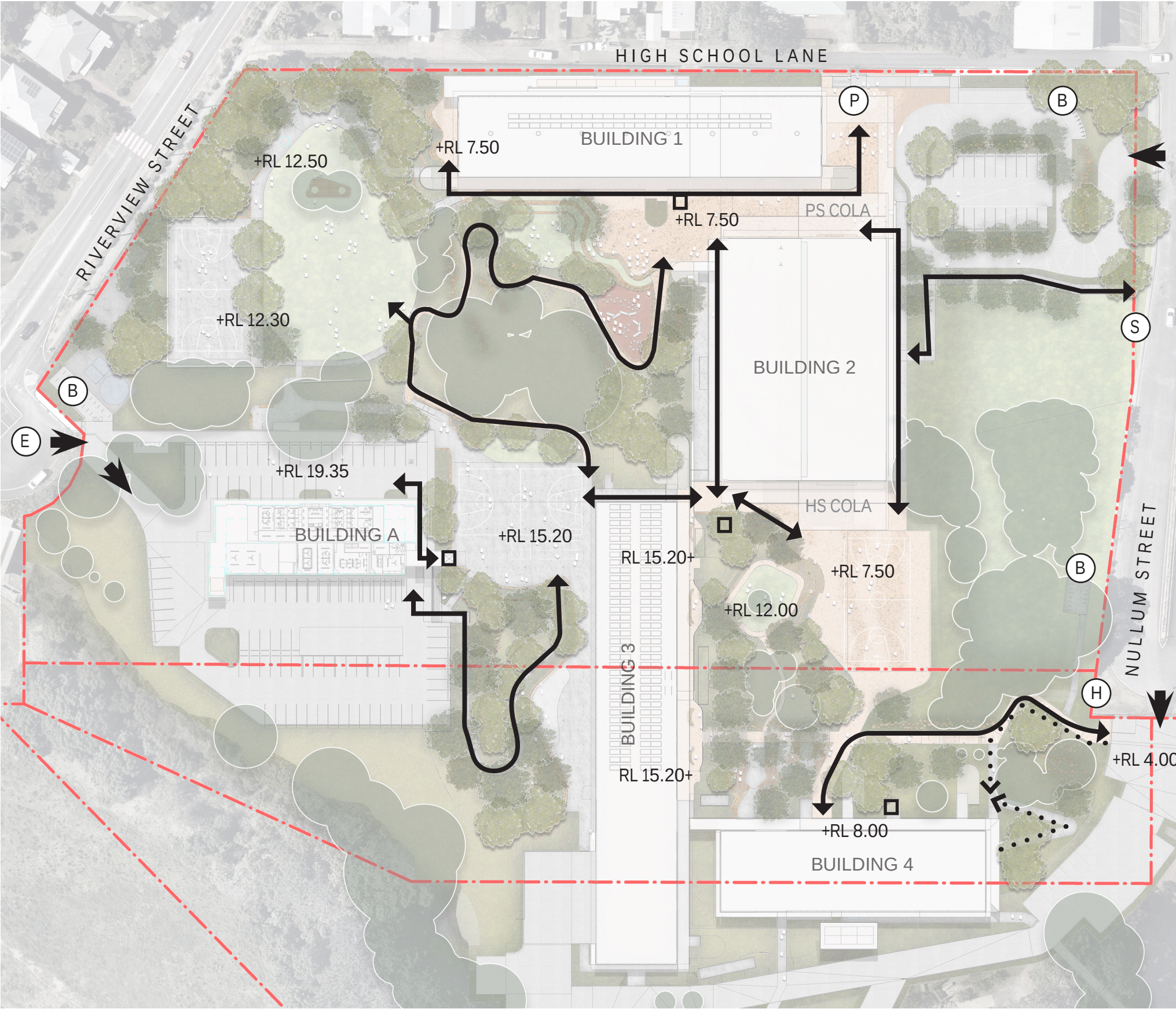
Vision

Landscape Masterplan



- LEGEND
- 01 High School Lane Entry
 - 02 Multi purpose court
 - 03 Outdoor classroom areas
 - 04 Existing trees to be retained.
 - 05 1:20 walkway to upper level
 - 06 Interpretive primary school nature play
 - 07 High school assembly space - open + flexible
 - 08 Amphitheatre terracing
 - 09 Memorial trees to be retained
 - 10 Social terraces for High School students to gather
 - 11 Open turf area with planting and trees for shade
 - 12 Watercourse/overland flow path
 - 13 Accessible connection from Nullum Street to Highschool
 - 14 Kiss + Drop + Carpark
 - 15 External lift to Building A
 - 16 Proposed carparks, refer Architecture plans
 - 17 After Hours High School Access
 - 18 Open shared turf area

Strategies
Accessibility



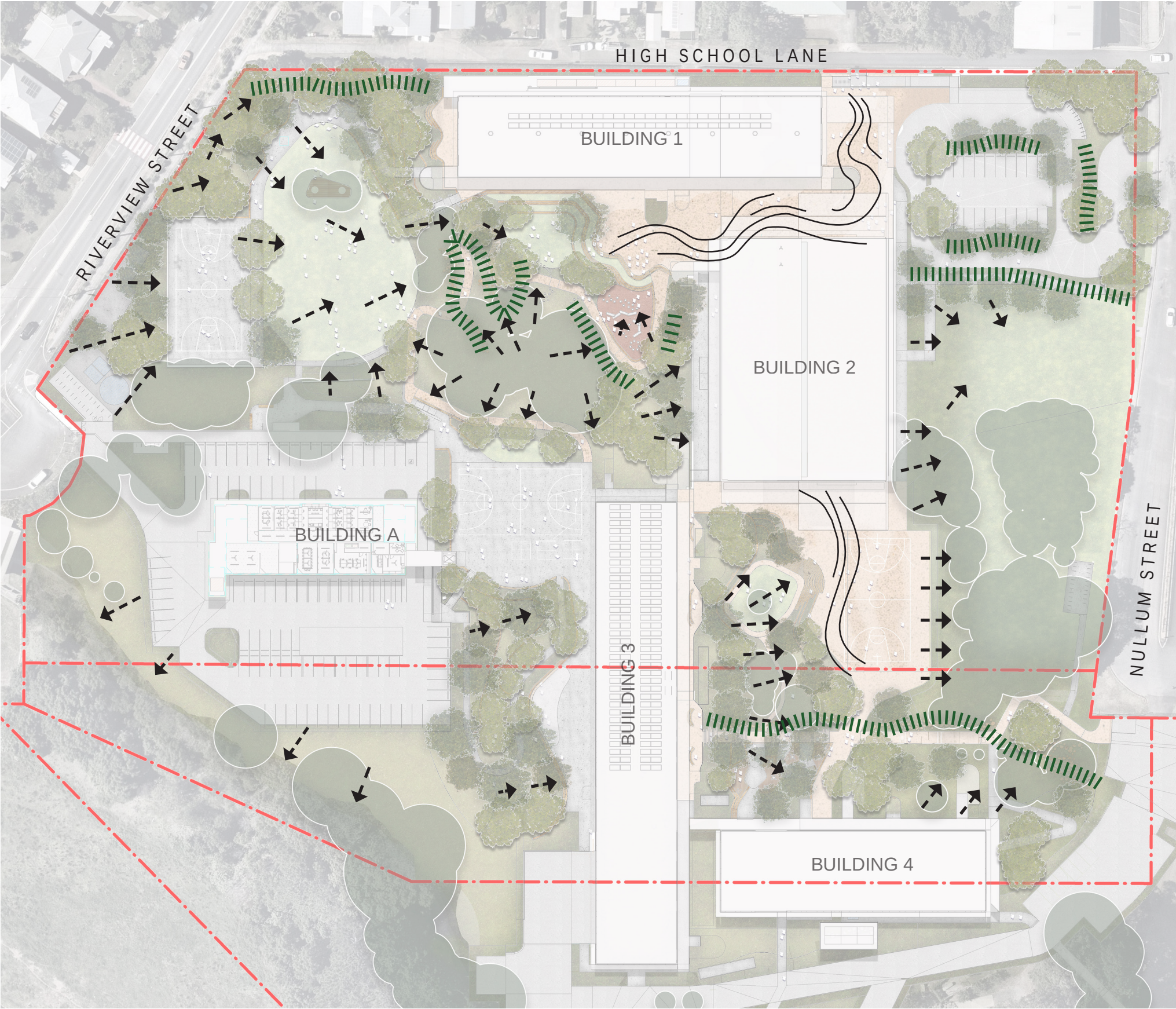
NOTES

The landscape spaces have been designed so that each offering ie. passive, active or outdoor classroom use, will have an accessible path of travel.

The spaces and pathways have been designed to work in with the existing site contours to create a connected campus.

- LEGEND
- Accessible pathway (max 1:20 gradient)
 - Internal lift access
 - (P) Primary School Entry
 - (H) High School Entry
 - ➔ After hours High School Entry
 - ➔ Vehicular Entry points
 - (S) Student Entry
 - (E) Existing Entry
 - (B) Bike Parking

Strategies
WSUD Measures

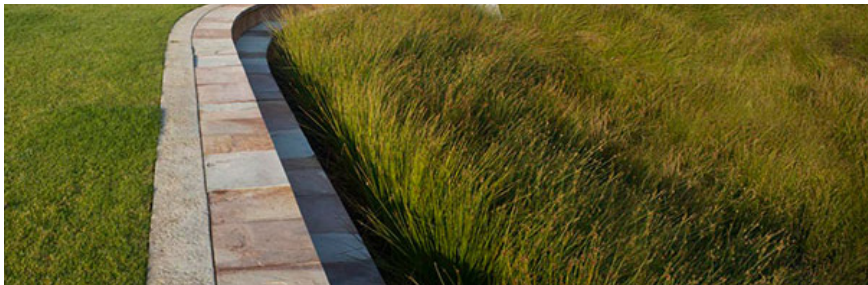


NOTES

Due to the steep nature of the site, level changes across the campus necessitates a water management strategy to ensure that water is channeled and treated appropriately.

Water Sensitive Urban Design (WSUD) strategies ensure that water can be intercepted and filtered before it reaches precious waterways such as The Tweed River.

WSUD strategies rely on natural filter media such as rocks, plants and algae which can be arranged in a variety of ways to make once invisible processes visible which present unique learning opportunities for students.



- LEGEND
- ➔ Overland flow path
 - ||||| Planted swales
 - ~~~~~ Water movement interpretation within Entry paving areas

Strategies

Interpretation Elements



NOTES

Cultural planting ensures that the new campus integrates appropriately with the existing fabric of the Town and wider landscape, while offering educational opportunities as well as support existing local ecologies.

Indigenous planting is a key component to fostering an appreciation for Aboriginal culture, history and modes of learning. The planting strategy will also look to incorporate Indigenous bush foods and medicines to engage and educate students, teachers and visitors.

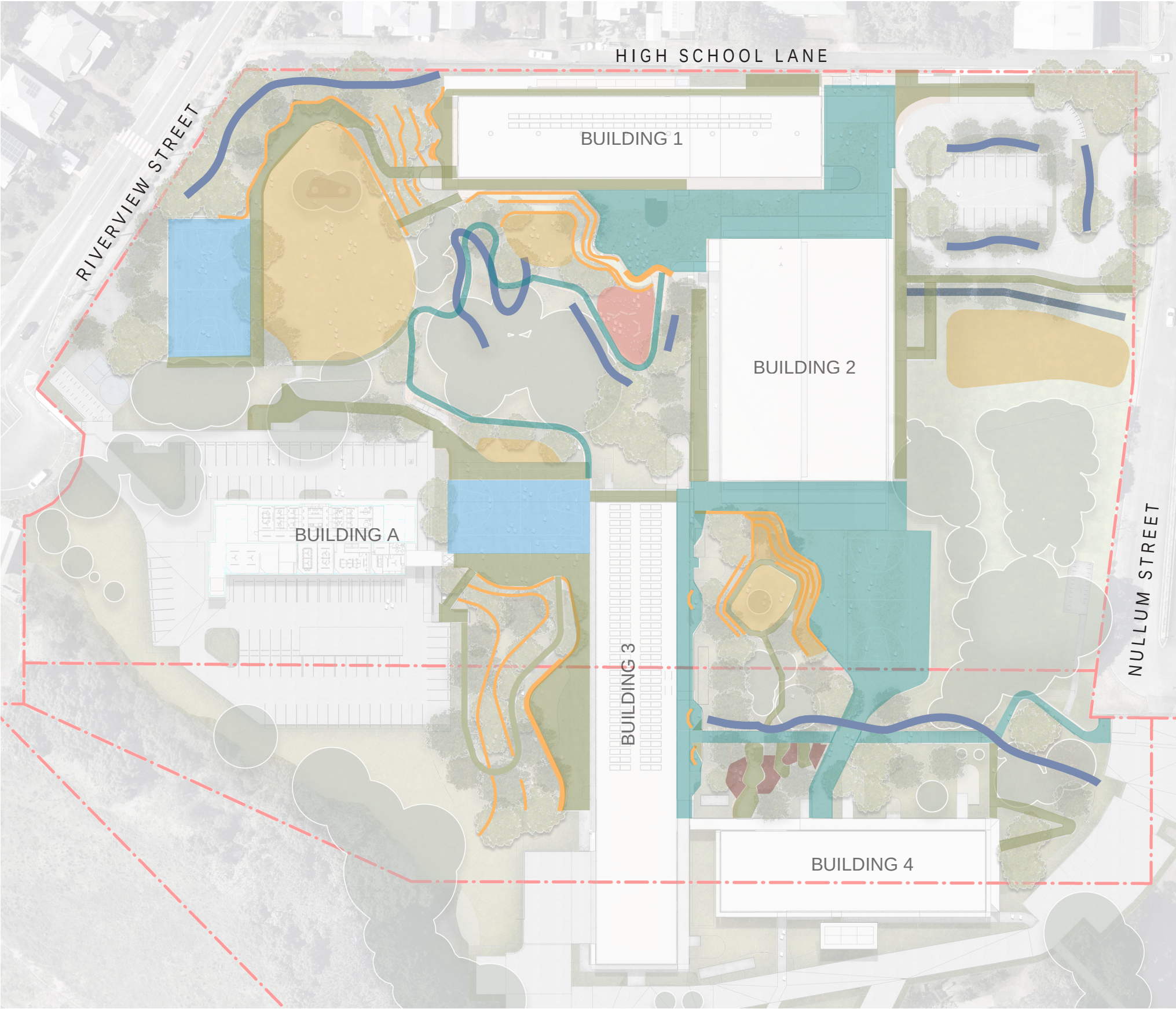
Native planting can also serve to strengthen visual ties to the landscape beyond such as the Tweed River and Mount Wollumbin.



- LEGEND**
- Existing trees with Indigenous importance: Davidson Plum
 - Areas for cultural planting, educational trails
 - Indigenous cultural garden
 - Yarning Circles (to be located during collaboration process)
 - Lookouts to important cultural landscape elements
 - Future provisions for school community to add interpretation elements post occupancy

Strategies

Landscape Materials

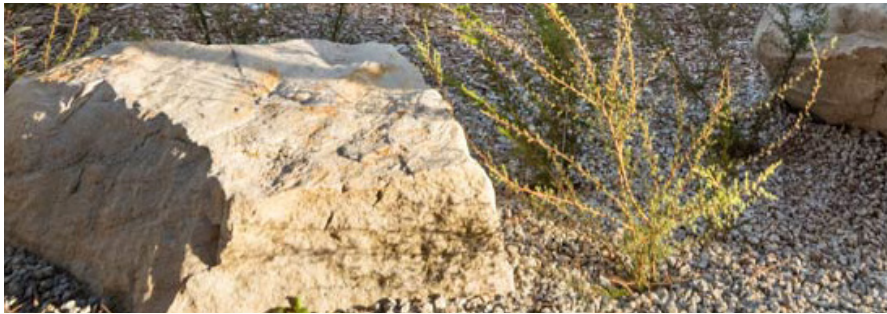


NOTES

The materials palette for the new campus should celebrate the region's natural forms, textures and tones to ensure that that campus blends seamlessly within its surrounds.

Material inspiration will be drawn from the rivers, mountains, forests and geology in raw and more refined forms to support outdoor learning, events, water management and planting.

As a once active volcanic region the area is of basaltic geology, which features in the landscape surrounding Mount Wollumbin. All material forms will be in line with appropriate EFSG requirements.

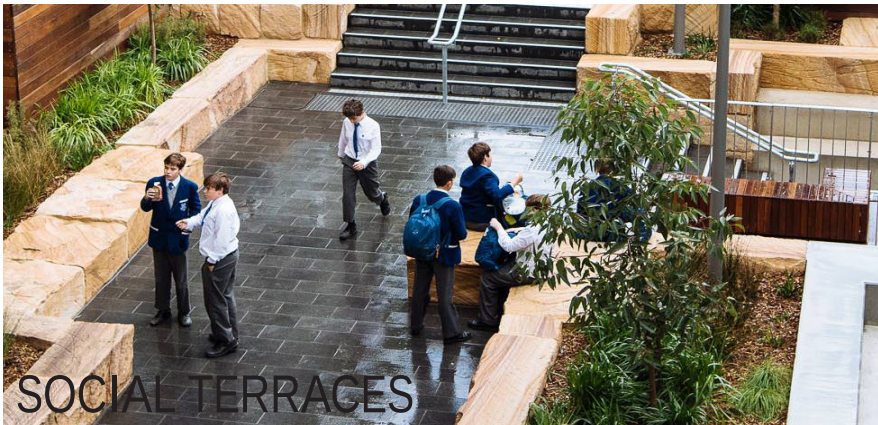
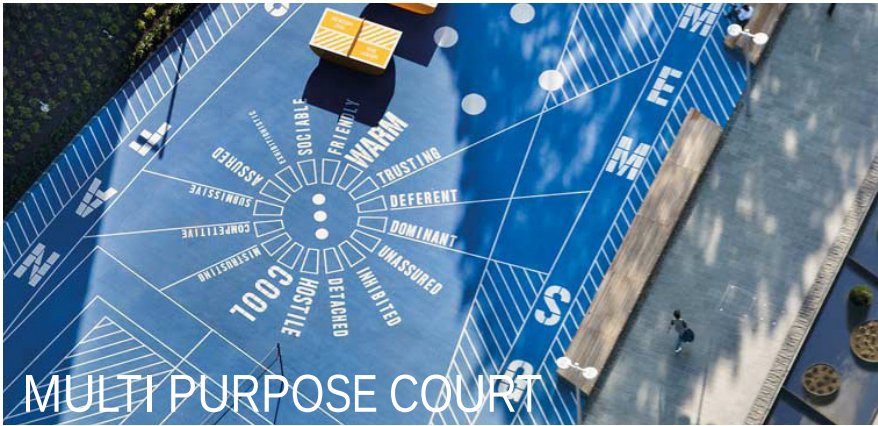
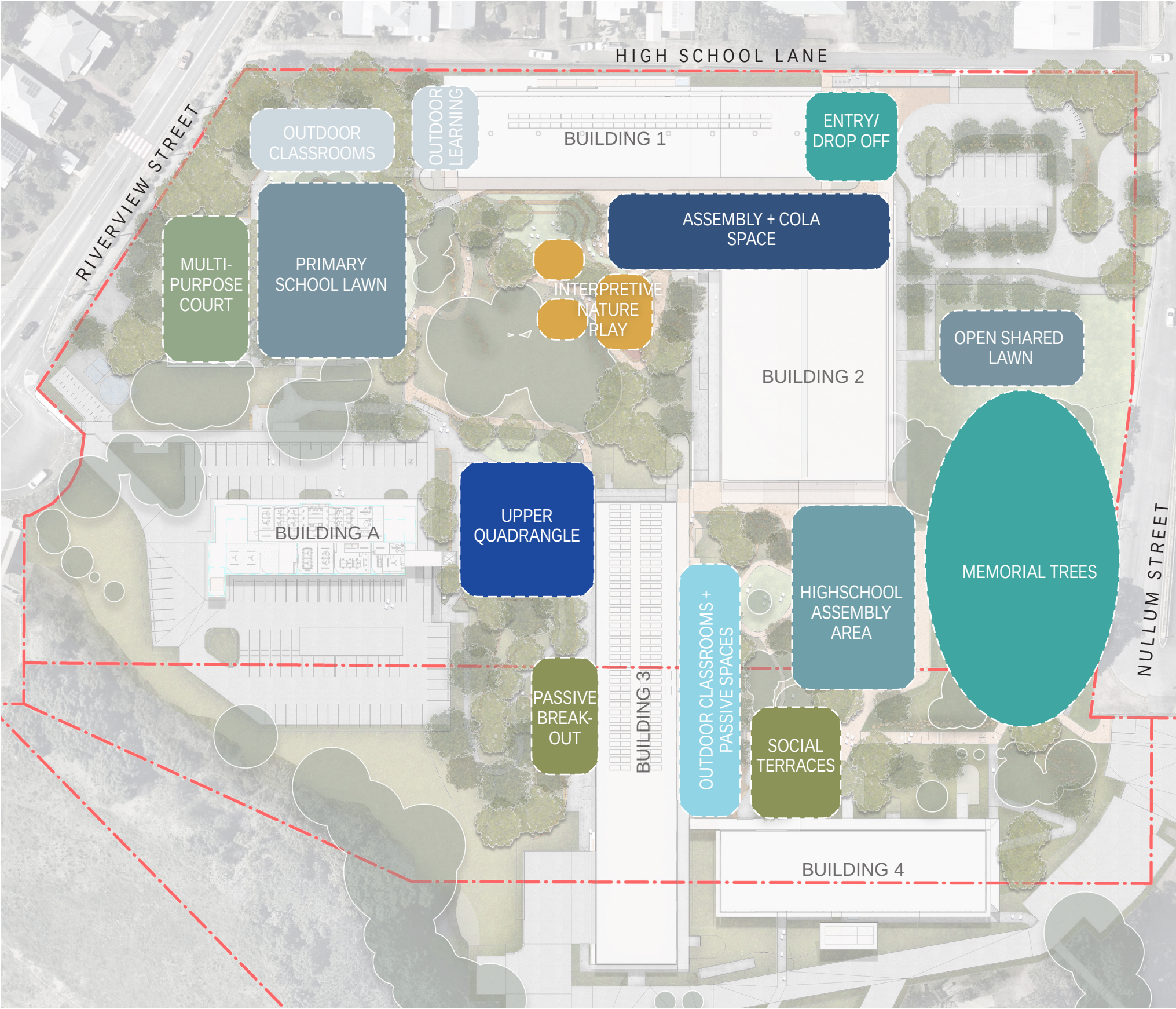


LEGEND

	Grey concrete
	Concrete with oxide
	Sandstone quarry log retaining walls
	Dry creek bed/swale
	Timber deck areas
	Multi-purpose court surface
	Softfalls
	Turf areas

Vision

Landscape Spaces



Vision

Landscape Plan_Primary



LEGEND

- 01 Primary School Assembly + COLA space
- 02 Accessible pathway from Assembly space to turf area
- 03 Primary School Basketball Court
- 04 Primary School central lawn
- 05 Outdoor classroom areas
- 06 Existing trees to be retained.
- 07 Terrace seating to assembly space
- 08 Accessible connection from Building 1 towards upper Quadrangle
- 09 Softfalls surfaced play space
- 10 Outdoor SSU spaces
- 11 Access path to west of Building 2

KEY PLAN



Vision

Landscape Sections_Primary



SECTION A

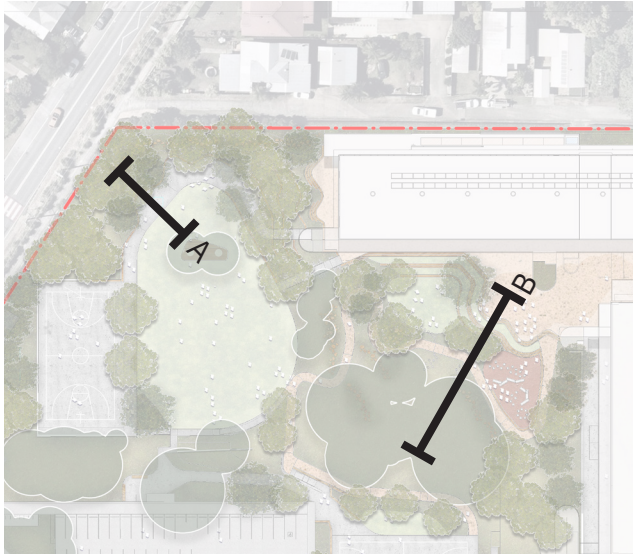


SECTION B

LEGEND

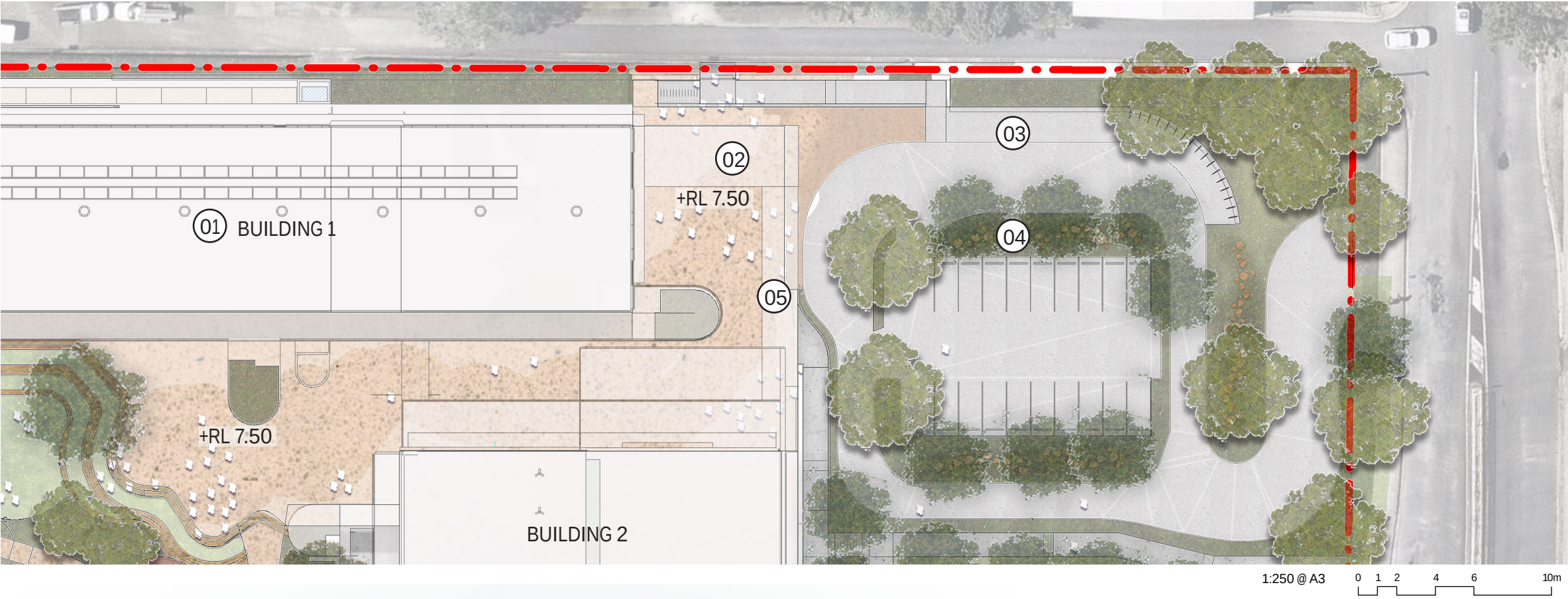
- 01 Proposed planting
- 02 Existing trees to be retained
- 03 Outdoor classroom areas
- 04 Open turf area with planting and trees
- 05 Interpretive nature play
- 06 Rock Boulders
- 07 Pathway
- 08 Watercourse/overland flow path

KEY PLAN



Vision

Landscape Plan_Primary Entry

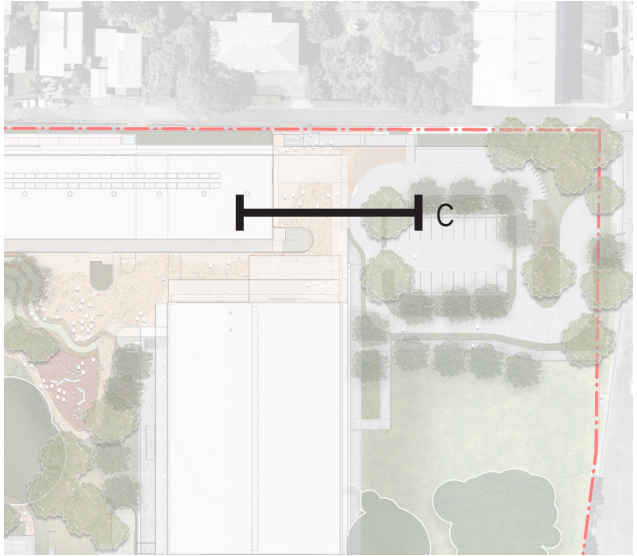


LEGEND

- 01 Building 1
- 02 Primary Entry Plaza
- 03 Kiss and drop
- 04 Planting against carpark
- 05 Covered walkways



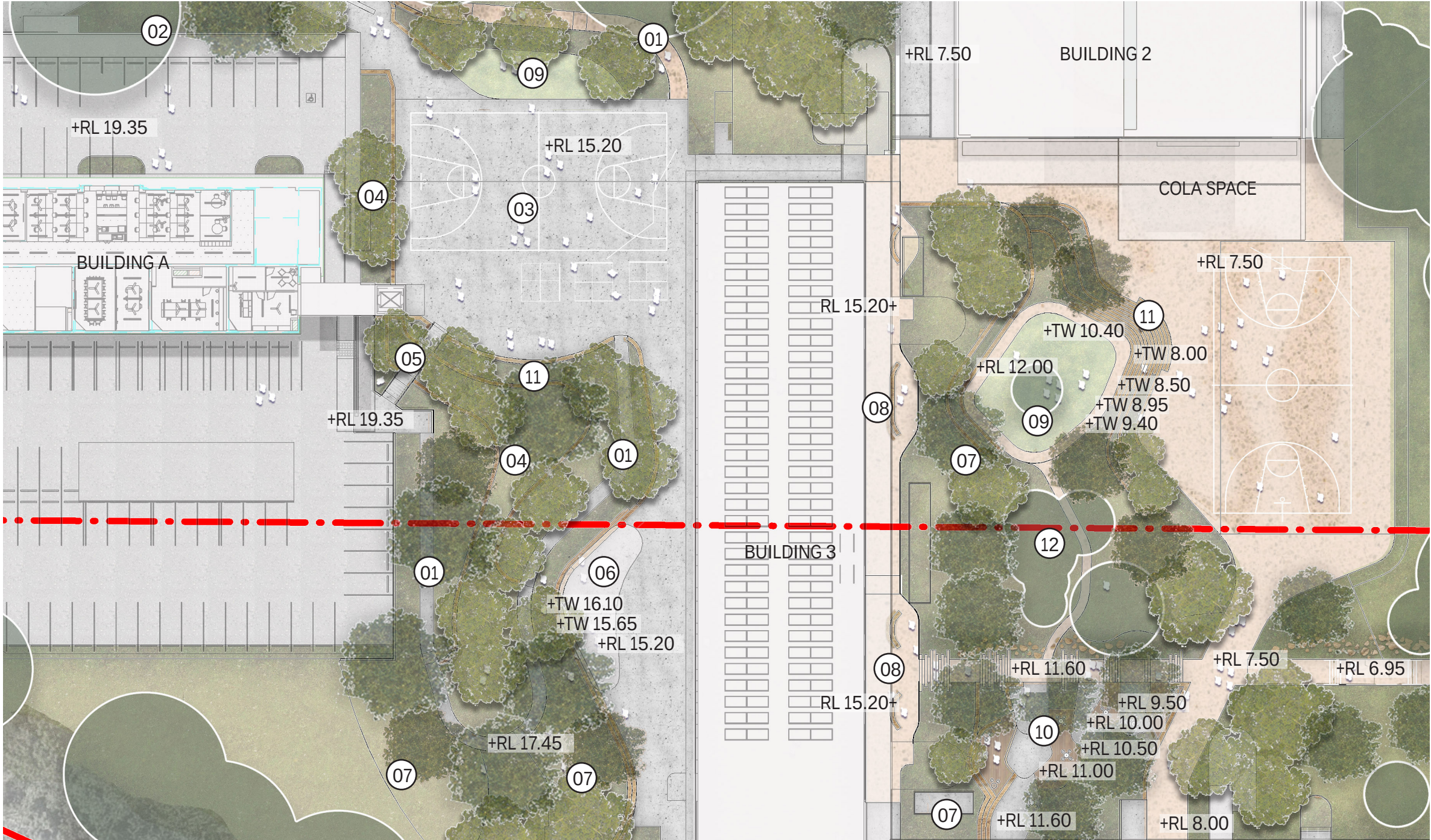
KEY PLAN



SECTION C

Vision

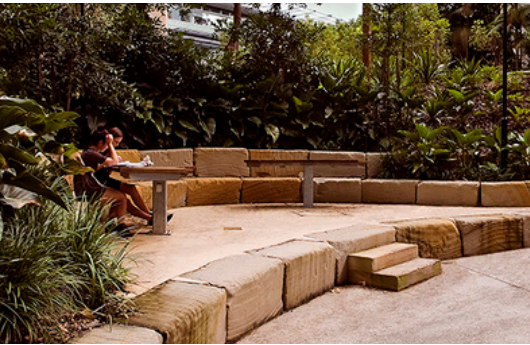
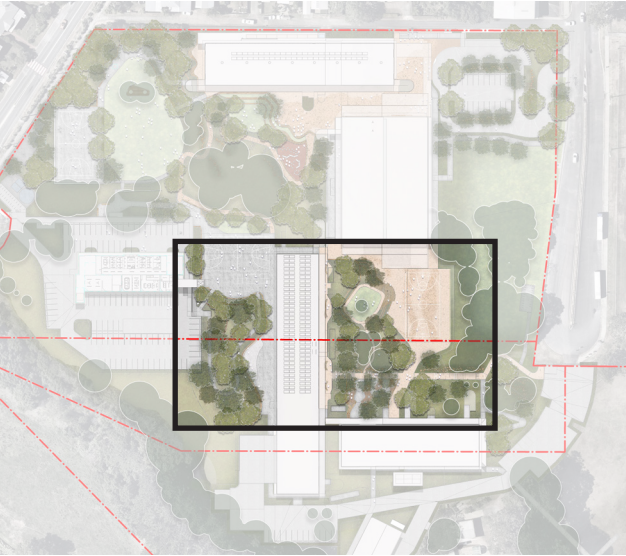
Landscape Plan_High School



LEGEND

- 01 1:20 accessible walkway
- 02 Retain brick heritage wall + existing tree
- 03 Upper Quadrangle - open, accessible + flexible for large groups with multipurpose court.
- 04 Planted terraces. Tree planting will provide shade to proposed hardstand areas
- 05 Stair connection to Building A
- 06 Breakout space. Flexible learning opportunities
- 07 Native planting + rock elements to accommodate level change
- 08 Outdoor classroom areas to east of Building 3
- 09 Passive turf spaces
- 10 High school social terraces which connect in with existing topography
- 11 Turf amphitheatre steps to assembly area
- 12 Retain existing trees + include additional trees to provide shade and comfort to HS assembly area.

KEY PLAN



Planting
Trees + Screening



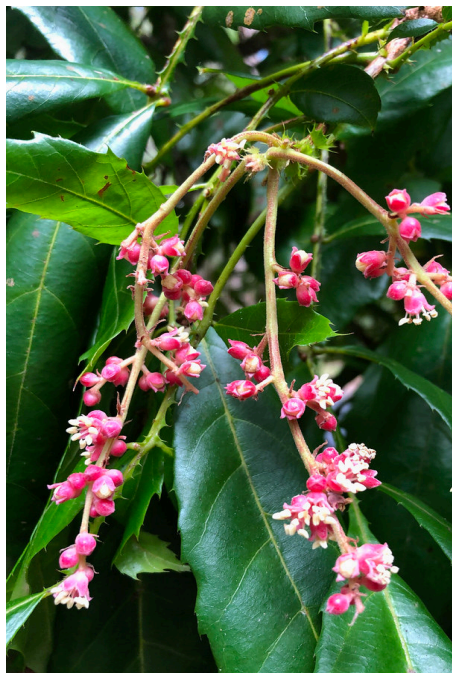
Corymbia intermedia



Corymbia Maculata 'Dwarf'



Cupaniopsis anacardioides



Davidsonia johnsonii



Eucalyptus microcorys



Eucalyptus haemastoma



Melaleuca quinquenervia



Syzygium tierneyanum



Tristaniopsis laurina 'Luscious'



Macrozamia lucida

Planting
Native Shrubs + Accents



Atriplex nummularia



Banksia robur



Callistemon pallidus



Caustis blakei



Correa reflexa



Hakea sericea



Platylobium formosum



Pseudanthus orientalis



Correa alba



Westringia 'Wynyabbie Gem'



Westringia 'Low Horizon'



Rhagodia spinecens

Planting
Native Grasses + Groundcovers



Aristida jerichoensis var. *subspinulifera*



Artanema fimbriatum



Carpobrotus glaucescens



Casuarina glauca prostrate



Dianella caerulea



Dianella longifolia



Lomandra longifolia



Patersonia glabrata



Hibbertia scandens



Lobelia membranacea



Viola hederacea



Myoporum parvifolium

Planting
Indigenous + Edible



Atriplex nummularia



Davidsonia johnsonii



Carpobrotus glaucescens



Malaleuca quinquenervia



Goodenia rotundifolia



Hakea sericea



Macrozamia lucida



Patersonia glabrata



Callistemon pallidus



Lomandra longifolia



Rhagodia spinecens



Westringia wynyabbie gem

● Edible Plants

Planting
Shade Mix



Blechnum indicum



Macrozamia lucida



Doodia caudata



Dicksonia antarctica



Adiantum aethiopicum



Microsorium diversifolium



Hibbertia scandens



Viola hederacea

ARCADIA