

Prepared for St. Luke's Grammar School  
October 2019

Architectural Design Report

# St. Luke's Grammar School

## New Senior School Campus

ST LUKE'S  
GRAMMAR SCHOOL



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## tonkinzulaikhagreer

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ISSUE DATE	PURPOSE	ISSUED BY
March 2020	Issued for SSDA	Peter Tonkin
January 2021	Issued for SSDA - RTS	Peter Tonkin



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REVISED 14.01.2021

## Executive Summary

This Architectural Design Report has been prepared by Tonkin Zulaikha Greer Architects for the Anglican Schools Corporation for a new Senior School Campus as an extension to the existing St. Luke's Grammar School in Dee Why.

The new campus is proposed to occupy the heritage listed former Top Dog Menswear building on 800 Pittwater Road and the adjoining industrial building on 224 Headland Road, both of which are located in close vicinity to the existing school campus.

The objective of the project is to provide a new senior school campus designed to accommodate future-focused principles of learning and to meet enrolment growth, recognising increasing demand in the local catchment area. The design has been developed through comprehensive design consultation with the school, during which the brief was established and the educational model was explored.

The design has been developed from Concept through to Schematic Design Phase to meet the following scope:

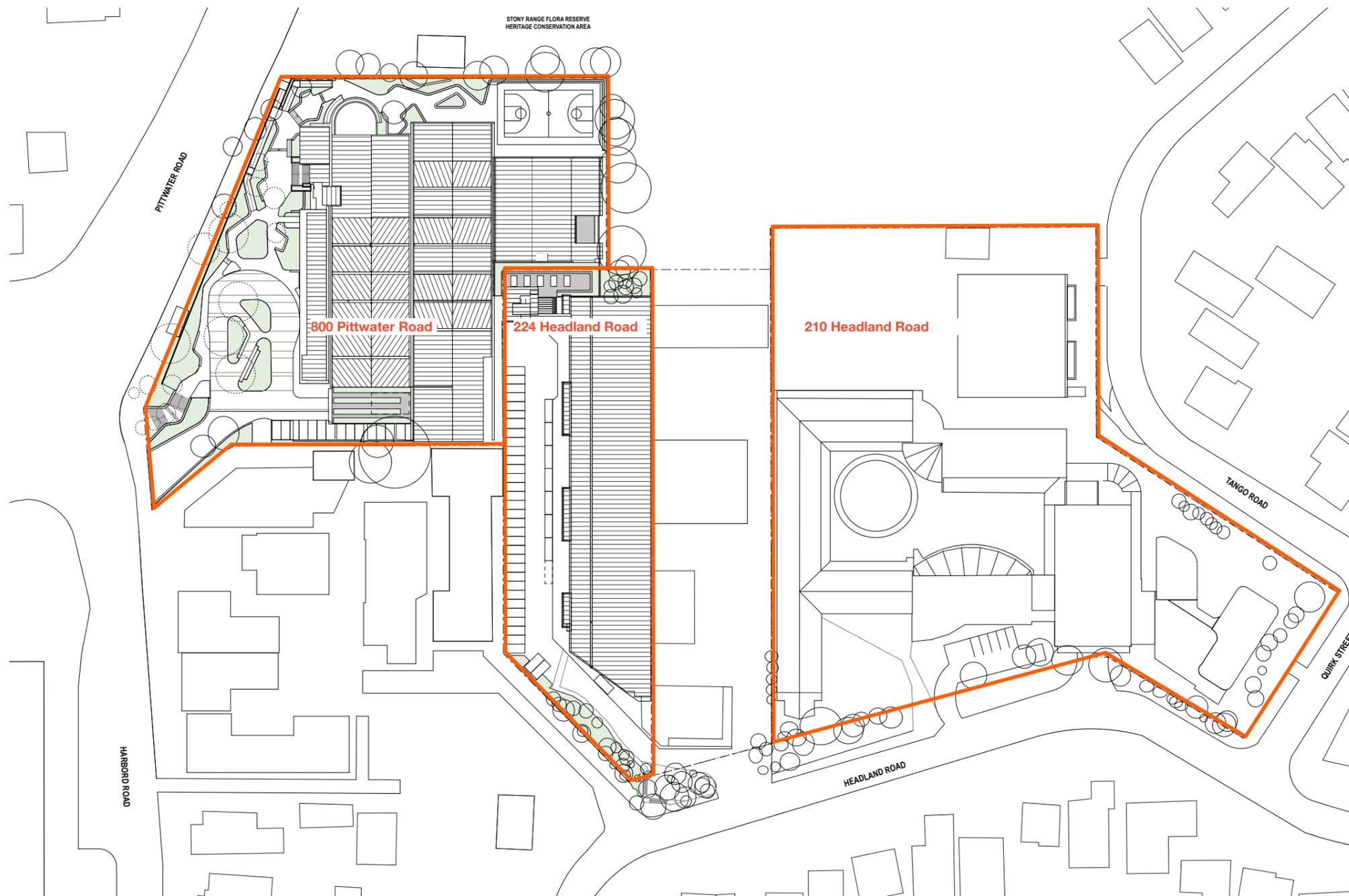
- 600 Student Senior School (year 10-12) on 800 Pittwater Road.
- Basketball Centre (all year groups) on 224 Headland Road.

Extensive consultation has been carried out with the school and the consultant team to formalise the design, including essential site investigations, planning and services analysis. At all stages, the design has been informed by the Education Rationale prepared by Ann Knock Educational Consultant and by input from consultations with the Government Architects' Design Review Panel and Northern Beaches Council.



1.0

Introduction



## 1.1 Project Overview

### 210 Headland Road

Existing School Campus to be retained. No changes proposed.

### 224 Headland Road

Existing Basketball Half Court to be expanded over whole building to provide a new Sports Centre and School Clothing Store

- 2x Basketball courts
- 1x 1/2-size Basketball court
- Gym
- School clothing store
- Vertical connection to 800 Pittwater Road
- Parking

### 800 Pittwater Road

New Senior School campus to be developed in stages to provide a fully self-contained campus for 600 Students.

- New Senior School (600 students):
- Science and Maths Precinct
- Arts PrecinctW
- Design and Technology Precinct
- Humanities Precinct
- Wellness Precinct (incl. 25m indoor Pool)
- Administration and Staff
- Social Hubs, Library Hubs, Study Hubs
- Assembly Hall (700 seats)
- Drama Theatre (220 seats)
- Cafe and Atrium
- Parking



## The Scope

The scope of the project is to provide:

- A new senior school campus for St Luke's Grammar School located at 800 Pittwater Road with sporting facilities at 224 Headland Road and an indoor pool at 800 Pittwater Road.
- Accommodation for the growing number of students. Total St Luke's school enrollment to have 1,600 students, with 600 students on 800 Pittwater Road and 1000 on 210 Headland Road.
- A senior campus with an adult learning environment that can support diverse pedagogical approaches and allow collaborative and inter-disciplinary learning in flexible learning spaces.
- A vertical connection linking 224 Headland Road and 800 Pittwater Road.
- A staged development to suit the availability of the site sections.
- An ideal delivery solution that will allow staging of the school development as the surrounding residential population grows and enrolment demand is generated.

## The Brief

The brief incorporates the school's educational vision for a future-focused environment, guiding the design of the new school facilities to be aligned with the planned learning and teaching approach.

The brief was developed in collaboration by the School and the Educational Consultant and includes the following program:

### 800 Pittwater Road:

#### Village Centre:

- Welcoming the community into the building.
- Cafe and heart of the building.
- Natural daylight + green spaces.
- Administration zone.
- Gathering Spaces.
- Auditorium for 700+ students.
- Library hubs.
- Social and Informal learning hubs.

#### Science and Maths Precinct:

- Speciality learning areas (Physics, Chemistry, Biology).
- General learning areas with connection to support units.
- Seminar rooms.

#### Arts Precinct:

- Speciality learning areas (Visual Arts, Kiln.)
- General learning areas with connection to support units.
- Seminar rooms.

#### Design + Technology Precinct:

- Speciality learning areas ( Food technology, Design and Technology).
- General learning areas with connection to support units.
- Seminar rooms.

#### Humanities Precinct:

- General learning areas with connection to support

units.

- Seminar rooms.

#### Wellness Precinct:

- Accessible 25m Pool with change facilities.
- Dance studio.
- Gymnasium.
- General learning areas with connection to support units.

#### Media Centre:

- Recording studio.
- Editing studio.
- Green screen.
- Media presentation room.

#### External Areas:

- External hardcourts.
- Open play space.

### 224 Headland Road:

#### Sports Precinct:

- 2 new basketball courts.
- Existing half basketball court.
- Existing change rooms.
- Existing school clothing store.

#### Car Parking:

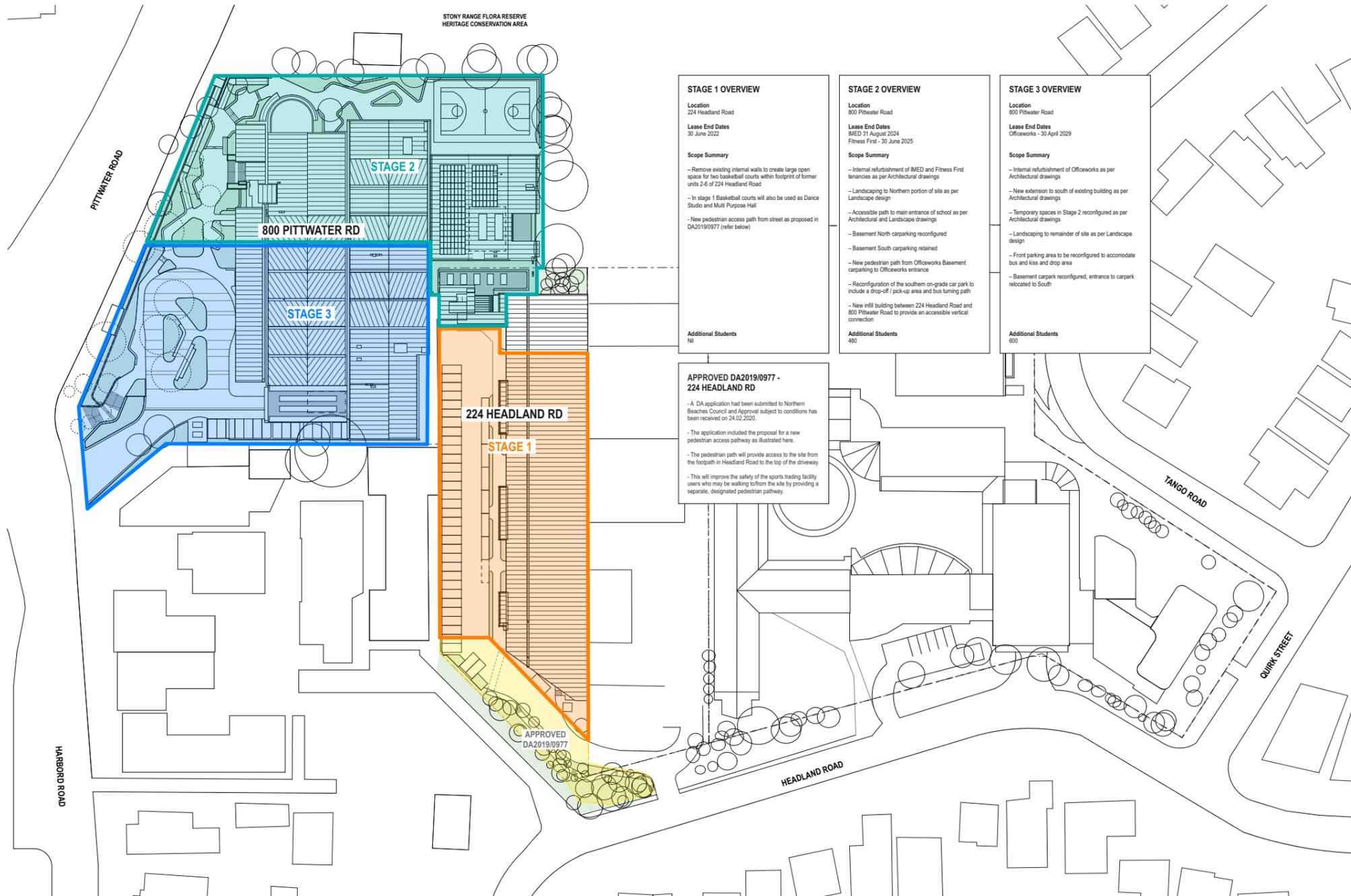
- 60 staff car parking spaces.
- 60 student car parking spaces.
- Bicycle parking.
- Loading dock.
- 'Kiss and Drop' facility.

## 1.2 Project Brief

### Educational Planning Objectives

The following objectives have been developed by Educational Consultant Anne Knock in close consultation with St. Luke's School and the design team. The objectives will guide all future decision-making, planning and evaluation of the learning environment from an educational perspective. The design is to be based on 'Destination 2030 Future Focused Learning' and is aimed to incorporate the following principles.

- Learning shifted from separate to connected.
- Focus on inquiry approaches to learning.
- Include multi-modal learning environments.
- Involve teachers as designers.
- Focus on overall wellbeing.
- Plan for and embrace technological disruption.
- Be flexible and allow customisation to suit different contexts by providing both core and optional space types.
- Provide public and community spaces to welcome the community into the building.
- Allow response to changes in student numbers.
- Offer a safe and secure learning and working environment that invites community participation and engagement.
- Be mindful of the needs of learners at different learning stages.
- Offer an engaging and supportive student experience suited to a range of learning styles.
- Offer flexible and well connected teaching and learning spaces.
- Offer technology-enabled settings with an emphasis on mobility.
- Have the capacity to support comprehensive curriculum delivery.
- Be configured to maximise meaningful and functional relationships and links between people, disciplines and resources.
- Support teachers in their roles as student mentors and members of a professional community.
- Maximise outdoor learning opportunities.
- Create a healthy and environmentally sustainable environment that serves as a tool for learning.
- Respond to varied access and usage patterns.



**STAGE 1 OVERVIEW**

**Location**  
224 Headland Road

**Lease End Dates**  
30 June 2022

**Scope Summary**

- Remove existing internal walls to create large open space for two basketball courts within footprint of former units 2-6 of 224 Headland Road
- In stage 1 Basketball courts will also be used as Dance Studio and Multi Purpose Hall
- New pedestrian access path from street as proposed in DA2019/0977 (refer below)

**Additional Students**  
Nil

**STAGE 2 OVERVIEW**

**Location**  
800 Pittwater Road

**Lease End Dates**  
iMED 31 August 2024  
Fitness First - 30 June 2025

**Scope Summary**

- Internal refurbishment of iMED and Fitness First tenancies as per Architectural drawings
- Landscaping to Northern portion of site as per Landscape design
- Accessible path to main entrance of school as per Architectural and Landscape drawings
- Basement North carparking reconfigured
- Basement South carparking retained
- New pedestrian path from Officeworks Basement carparking to Officeworks entrance
- Reconfiguration of the southern on-grade car park to include a drop-off / pick-up area and bus turning path
- New infill building between 224 Headland Road and 800 Pittwater Road to provide an accessible vertical connection

**Additional Students**  
480

**STAGE 3 OVERVIEW**

**Location**  
800 Pittwater Road

**Lease End Dates**  
Officeworks - 30 April 2029

**Scope Summary**

- Internal refurbishment of Officeworks as per Architectural drawings
- New extension to south of existing building as per Architectural drawings
- Temporary spaces in Stage 2 reconfigured as per Architectural drawings
- Landscaping to remainder of site as per Landscape design
- Front parking area to be reconfigured to accommodate bus and kiss and drop area
- Basement carpark reconfigured, entrance to carpark relocated to South

**Additional Students**  
600

**APPROVED DA2019/0977 - 224 HEADLAND RD**

- A DA application had been submitted to Northern Beaches Council and Approval subject to conditions has been received on 24.02.2020.

- The application included the proposal for a new pedestrian access pathway as illustrated here.

- The pedestrian path will provide access to the site from the footpath in Headland Road to the top of the driveway.

- This will improve the safety of the sports trading facility users who may be walking to/from the site by providing a separate, designated pedestrian pathway.

## 1.3 Project Staging

A staged development approach is proposed to accommodate for the individual lease agreements for the current tenancies of Fitness First, iMED and Office Works on 800 Pittwater Road.

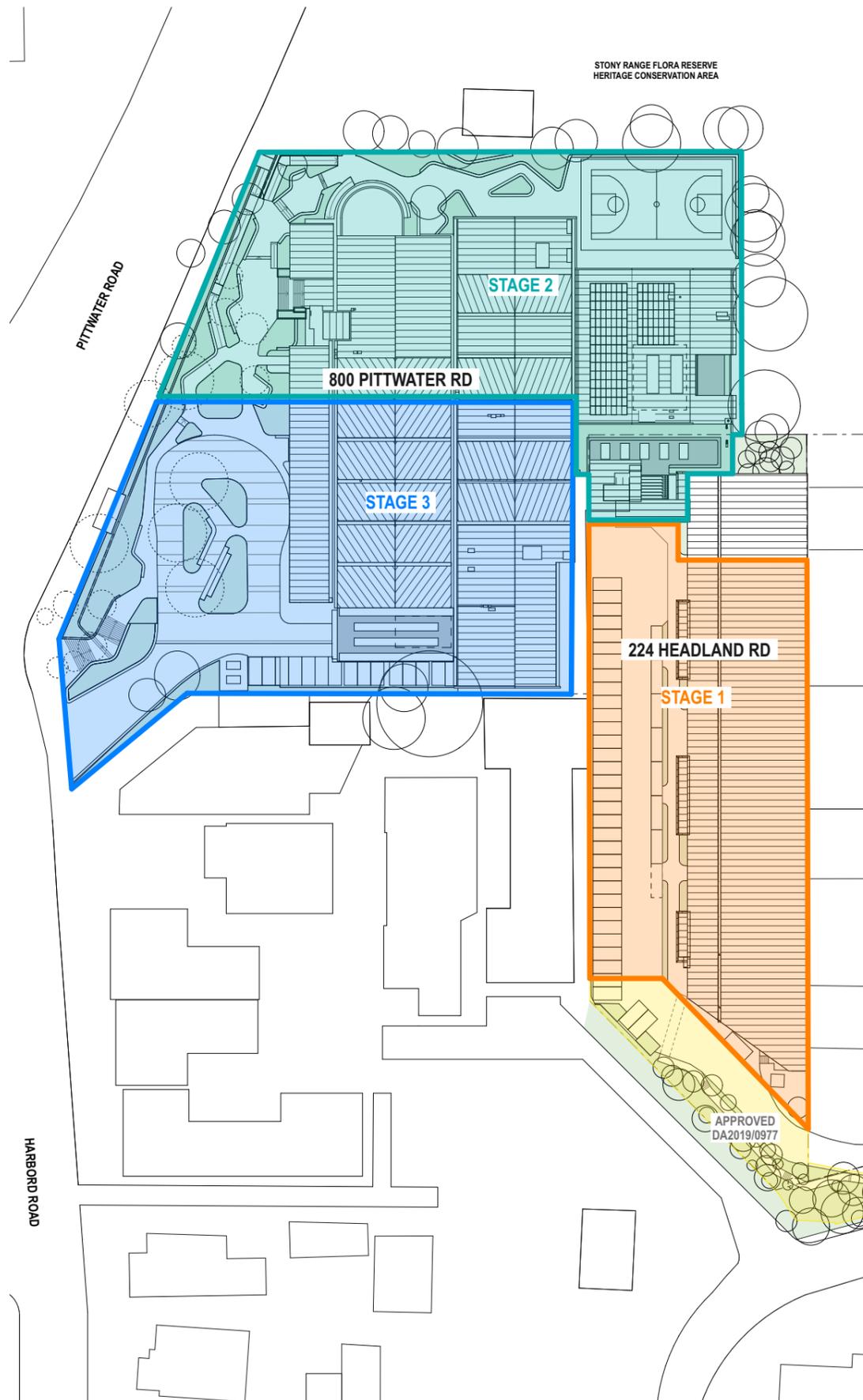
The first space to become available is the building on 224 Headland Road. The northern section of the building was upgraded in 2016 by St. Luke's School to accommodate a Half-Basketball Court with amenities and a teacher training space. In Stage 1 the remainder of the building will become available to develop the entire building into a new Sports Centre and a School Clothing Shop for the School.

In Stage 2 the current iMED and Fitness First tenancies become available while Office Works will remain to occupy the southern part of the building on 800 Pittwater Road. The northern part of the building will be developed into a fully self-sufficient reduced size senior campus with a pool and a direct connection to 224 Headland Road.

In Stage 3 the remainder of 800 Pittwater Road will become available and the senior campus will be extended to its full size to accommodate 600 Students. The need to re-configure spaces in Stage 3 has been kept to a minimum.

Refer to 6.9 Space Planning Stage 2 and 6.10 Space Planning Stage 3 for staged floor plan layouts.





## Stage 1 Overview

### Location

224 Headland Road

### Lease End Dates

30 June 2022

### Scope Summary

- Remove existing internal walls to create large open space for two basketball courts within footprint of former units 2-6 of 224 Headland Road.
- In stage 1 Basketball courts will also be used as Dance Studio and Multi Purpose Hall.
- New pedestrian access path from street as proposed in DA2019/0977 (refer below).

### Additional Students

Nil

### Approved DA2019/0977

- A DA application had been submitted to Northern Beaches Council and Approval subject to conditions has been received on 24.02.2020.
- The application includes the proposal for a new 1.2m wide pedestrian access path.
- The pedestrian path will provide access to the site from the footpath in Headland Road to the top of the driveway.
- It will improve the safety of the sports trading facility users who may be walking to/from the site by providing a separate, designated pedestrian pathway.

## Stage 2 Overview

### Location

800 Pittwater Road

### Lease End Dates

IMED 31 August 2024

Fitness First - 30 June 2025

### Scope Summary

- Internal refurbishment of IMED and Fitness First tenancies as per Architectural drawings.
- Landscaping to Northern portion of site as per Landscape design.
- Accessible path to main entrance of school as per Architectural and Landscape drawings.
- Basement North carparking reconfigured .
- Basement South carparking retained.
- New pedestrian path from Officeworks Basement carparking to Officeworks entrance.
- Reconfiguration of the southern on-grade car park to include a drop-off / pick-up area and bus turning path.
- New infill building between 224 Headland Road and 800 Pittwater Road to provide an accessible vertical connection.

### Additional Students

480

## Stage 3 Overview

### Location

800 Pittwater Road

### Lease End Dates

Officeworks - 30 April 2029

### Scope Summary

- Internal refurbishment of Officeworks as per Architectural drawings.
- New extension to south of existing building as per Architectural drawings.
- Temporary spaces in Stage 2 reconfigured as per Architectural drawings.
- Landscaping to remainder of site as per Landscape design.
- Front parking area to be reconfigured to accommodate bus and kiss and drop area.
- Basement carpark reconfigured, entrance to carpark relocated to South.

### Additional Students

600





2.0

The School

## 2.4 Design considerations for pedagogy

- Future-focused principles of learning.
- Shift from separate to connected.
- Inquiry approaches to learning.
- Multi-modal learning environments.
- Teachers as designers.
- Wellbeing.
- Technological disruption.

## 2.3 Destination 2030

In the OECD position paper, "The Future of Education and Skills: Education 2030" (2018), the director of education, Andreas Schleicher writes (emphasis added): "The children entering education in 2018 will be young adults in 2030. Schools can prepare them for jobs that have not yet been created, for technologies that have not yet been invented, to solve problems that have not yet been anticipated. It will be a shared responsibility to seize opportunities and find solutions."

Global thought-leaders and education practitioners identify the following issues will impact curriculum on the 2030s:

- Need for new solutions in a rapidly changing world.
- Need for broader education goals: Individual and collective well-being.
- Learner agency.
- Need for a broad set of knowledge, skills, attitudes and values in action.
- Competencies to transform our society and shape our future.
- Design principles for moving toward an eco-systemic change.

Curriculum needs to be considered beyond content-based, and being exam-driven, but become responsive to opportunities of the times, preparing students with a broad range of transferable skills.

This does not discount the importance of rigour, where topics should be challenging and enable deep thinking and reflection for all students.

## 2.2 New Direction

With John Scott's retirement in 2004, Mrs Jann Robinson assumed leadership of the School. Mrs Robinson brought in new Strategic Plans to take the School into its next stage, focused on the theme of students 'making a difference in the world'.

In 2007 a whole school pedagogical framework was introduced to differentiate the curriculum, while subject choices have been expanded to cater for the interests and abilities of the students. In 2014, the new teaching and learning platform, Learning@StLuke's was launched.

Since its foundation in 1993, the School's academic profile has been strengthened and the development of Christian character through service both locally and internationally is at the heart of the School.

There has been an expansion of the Chaplaincy department, significant development in the integrated use of technology across the School and major growth in sports, co-curricular activities and overseas trips (languages, cultural, service, history).

## 2.1 About the School

St Luke's Grammar School is an independent Anglican, co-educational school, with two Campuses on Sydney's Northern Beaches.

One Campus is located in Dee Why (Pre-K to Year 12) and a second Campus is located in Bayview (Pre-K to Year 6).

The School provides a leading edge educational experience for students from Pre-Kindergarten to Year 12 .

Families choose St Luke's because they place value in their child attending a local and reputable mid-size School that seeks to provide small school individualised student focused learning, with larger school co-curricular opportunities, experiences and results.

St Luke's Grammar School was founded in February 1993, following the amalgamation of three Sydney Anglican Schools Corporation schools on Sydney's Northern Beaches: Roseby Preparatory (Junior) School, Peninsula Grammar (Boys) School and St Luke's Anglican School for Girls (Founded 1961).

The amalgamated K-12 Co-Educational School opened in 1993 with 43 staff and 488 students, under the leadership of Mr John Scott.

The School has since grown to be a fully 2-stream Junior School (incorporating Cottage Pre-School) and 4-stream Senior School: over 900 students and 140 staff in 2015.

In 2016, the Anglican Schools Corporation announced that Loquat Valley Anglican School would become part of St Luke's Grammar School.

The School is now known as the St Luke's Grammar School, Bayview Campus and caters for students from Cottage to Year 6.

Text source: <https://www.stlukes.nsw.edu.au/> , accessed 23.10.2019



Image: TZG Architects



Image: TZG Architects



Image source: TZG Architects

## 2.5 The Current Campus

### Building work

*Building work has been extensively and regularly undertaken on the site at 210 Headland Road.*

*The first two decades saw the construction of the John Scott Hall, Drama Studio, Junior Centre (for Cottage to Year 1 classes), Resource Centre (incorporating Library, Administration and TAS classrooms), the Link Building, Year 12 Study Centre, and a four-storey building (incorporating outdoor courts, two-storey car park, multi-purpose space, classrooms and visual art facilities).*

*More recently, the School has seen the complete refurbishment of the Senior School, providing more than 20 new classrooms, four state-of-the-art Science Laboratories, outdoor walkways and landscaping and a totally re-developed Quadrangle for senior students - The Bennett Quad - and entrance way.*

*In 2016, the School embarked on the refurbishment of the John Scott Hall in order to create a contemporary air-conditioned performance space and rehearsal room fitted with best-in-class fit-out, acoustics and lighting. And for the first time, the Hall when completed - including the stage - will be fully accessible for the disabled.*

*A dedicated Basketball Training Centre in the industrial unit on 224 Headland Road was completed mid-2016.*

*A new Music Precinct with three new and flexible music rooms, six practice rooms, improved facilities and soundproofed individual tuition rooms is being created, and the Canteen was redeveloped with a commercial-grade kitchen.*

*A new Junior School Building is currently under construction.*

Text source: <https://www.stlukes.nsw.edu.au/>, accessed 23.10.2019



3.0  
Consultation

## 3.1 GANSW

Two meetings with GANSW Office were held during the Schematic Design and Design Development Phases.

The first meeting was held on 27.02.2019 and the Scope and Concept Design of the proposed development was presented to the GANSW Office.

The proposal was well received and it was suggested to arrange a second meeting once the design was progressed further.

The GANSW was satisfied with in-house review process in lieu of the State Design Review Panel process.

The second meeting was held on 04.09.2019 to present the Developed Design and the following feedback was received:

Generally the design and approach to the project is supported, in particular:

- Concept and staging masterplan.
- Design approach to the heritage building retaining strong horizontal banding and improving environmental performance.
- Landscape design concept based on heritage landscape re-interpretation.
- Deep soil planning and shared zone in the western forecourt.
- Consolidation of vehicular access at the southern end of the site and removal of northern carpark.
- 4-star Greenstar rating target and ESD objectives.

The following commentary provides advice and recommendations for the project:

- Provide further information on and illustrate water collection and reuse strategies.
- Provide information on the daylighting and thermal comfort modelling.
- Provide view studies of the school from public paths in the Stony Range Botanic Garden.
- The use of plexiglass or similar materials for the noise barrier along Pittwater Road is not supported. A material more sympathetic to the ecology and heritage of the area, such as sandstone or rendered masonry, is encouraged.
- Provide a view analysis from key vantage points to illustrate visual impacts of the noise barrier on the presentation of the Top Dog building to the public domain.
- Provide further details regarding incorporation, rather than applique, of indigenous stories into the landscape design and an integrated art strategy for the project.

## 3.2 Northern Beaches Council

A Pre-Lodgement meeting was held with Northern Beaches Council on 16.05.2019.

The Concept Design and The SEARS Report were presented and the following feedback was forwarded to the Department of Planning:

### Urban Design

- Consider heritage bus stop. (Note that since this meeting council has agreed, they will take ownership of the bus stop due to its location being half on council land)
- High pailsade metal fencing along Pittwater Road is not supported.
- Explore options to restore the original streetscape appearance of the building (reduce the extensive use of glass).
- Consider removal of all advertising signs.
- Digital signage pylon is not encouraged.
- New signage should be similar to the style and design the school has used for the main entry off Headland Road.

### Heritage Item

- Ensure the building at 800 Pittwater Road does retain its architectural integrity.
- The changes to the forecourt, elevations and other alterations should not detract from the principle heritage values of the building.

### Traffic and Pedestrian Movement

- The large increase in the school enrolment will exacerbate traffic impacts without a proper expansion in off-street parking and pick-up / drop-off facilities, including bus parking.
- Pedestrian safety between 210 Headland Road and 224 Headland Road raises significant concerns.
- It is therefore to be considered that the two sites be properly linked through the rear of No. 222 Headland

Road.

- Alternatively the Senior School and Junior School campuses should be created so they are entirely independent.

### Transport and Accessibility

- Address the impact of trips generated by the development on nearby intersections.
- Consider the cumulative impacts from other approved developments in the vicinity.
- Identify Infrastructure required to ameliorate any impacts on traffic efficiency and road safety associated with the proposed development.
- No private vehicle collection of students is to occur from the street frontage on Pittwater Road or Harbord Road.
- It is recommended that pedestrian connectivity with the existing footpath network (e.g. Tango Avenue) be provided for students with active travel needs.

### Landscape Open Space

- The proposal should explain how it will perform against the open space ratio of 10sqm open space per student.
- General landscape open space requirements within the Warringah DCP 2010 under part D1 Landscape Open Space and Bushland Setting should be considered.
- Public Street parking and School Parking
- Relieve pressure on kerbside parking near the school.

### Road Asset Infrastructure

- Address any changes to Council's road assets to address safety improvements or works required to assist parking and traffic management.
- An internal link through the back of No. 222 Headland Road would prove valuable for safe pedestrian access.

- Consider a wombat crossing on Tango Avenue together with a footpath on the eastern side of Tango Avenue to provide for additional capacity for a on-street student kiss and drop zone.

### Engineering and Stormwater

- Comply with Council's policies in regard to civil engineering and stormwater management.

### Streetscape and Visual Amenity

- Consider the visual amenity of the development from public places in addition to functional requirements of the school and heritage conservation.
- Provide high quality landscape to benefit both the public domain and the image of the school to large volumes of people.
- Landscape treatments need to provide high quality outcomes from all aspects presenting to the streetscape whilst being in harmony with the character of the heritage items of the sites and the Stony Range Botanic Garden.

### Public Interest

- Surrounding residents near St. Luke's Grammar School have expressed ongoing concerns over recent years with increasing traffic and parking congestion.
- The proposal is to ensure that adequate facilities in terms of pick-up / drop-off facilities and student parking will resolve residents concerns.

### 3.3 Aboriginal Community

As part of the Aboriginal Cultural Heritage Assessment (ACHA) for the proposed works, the Aboriginal consultation was undertaken by Eco Logical Australia.

Meetings with the Aboriginal stakeholder groups were held with Eco Logical and the Midson Group in attendance.

The meeting outcomes can be found in the Aboriginal Cultural Heritage Assessment Report.

Refer to “Eco Logical Australia 2019. St. Luke’s Grammar School, Dee Why - Aboriginal Cultural Heritage Assessment. Prepared for Midson Group Pty Ltd.” for the full report and the Aboriginal community consultation outcomes.

The field survey to identify aboriginal sites conducted by Eco Logical notes the following:

- Although a floral reserve containing native bushland is located directly adjacent this property ( ), no Aboriginal sites have been identified in this area and the proposed works will not impact upon the conservation area. Site survey identified low to nil archaeological potential across the whole study area.<sup>1</sup>

In addition to the consultation process conducted by Eco Logical, the GANSW recommendation is to provide details regarding incorporation of indigenous stories into the landscape design and an integrated art strategy for the project.

We agree that this is an appropriate direction. However, since the actual procurement of such input will be fairly prolonged, requiring a level of consultation with local elders and possibly the Land Council, as well as the engagement of appropriate artists/ designers, the agreed direction for the SSDA is to determine appropriate location(s) for the artworks, and insert visual ‘placeholders’ for the perspectives and plans.

A suitable methodology for the artworks is set out in the Architectural Design Statement.

<sup>1</sup> Source: Eco Logical Australia 2019. St. Luke’s Grammar School, Dee Why - Aboriginal Cultural Heritage Assessment

### 3.4 Community

As part of the planning process, St Luke’s Grammar School has undertaken a range of engagement with local residents, businesses and the school community.

The purpose of the engagement activities undertaken was to consult with the Northern Beaches community and stakeholders to:

- Provide an opportunity, early on in the planning process, for interested stakeholders and the community to hear more about the plans and ask questions.
- Undertake face-to-face engagement with key interest groups.
- Showcase plans to expand the school and the new facilities that will be delivered.
- Keep the school community informed of the plans, as they develop.
- Satisfy the SEARS and comply with legislative requirements.

**Summary of discussion points and questions:**

- Overall, sentiment was quite neutral towards the project with attendees asking specific questions relevant to their individual circumstances.
- Attendees were a mix of interested parties, including parents of current, prospective and former students, a former principal and local members of the community who were just curious about the project and wanted to find out more information.<sup>1</sup>

Refer to the St Luke’s Masterplan Communication and Engagement Outcomes Report prepared by Elton Consulting for more detail.

<sup>1</sup> Source: St Luke’s Masterplan Communication and Engagement Outcomes Report prepared by Elton Consulting



4.0  
The Site



## 4.1 Site Location

St Luke's Grammar School is located in Dee Why and Curl Curl on Sydney's Northern Beaches. The site is bordered by Pittwater Road, Harbord Road, Headland Road, Quirk Street, Tango Avenue and the Stony Range Regional Botanic Garden.

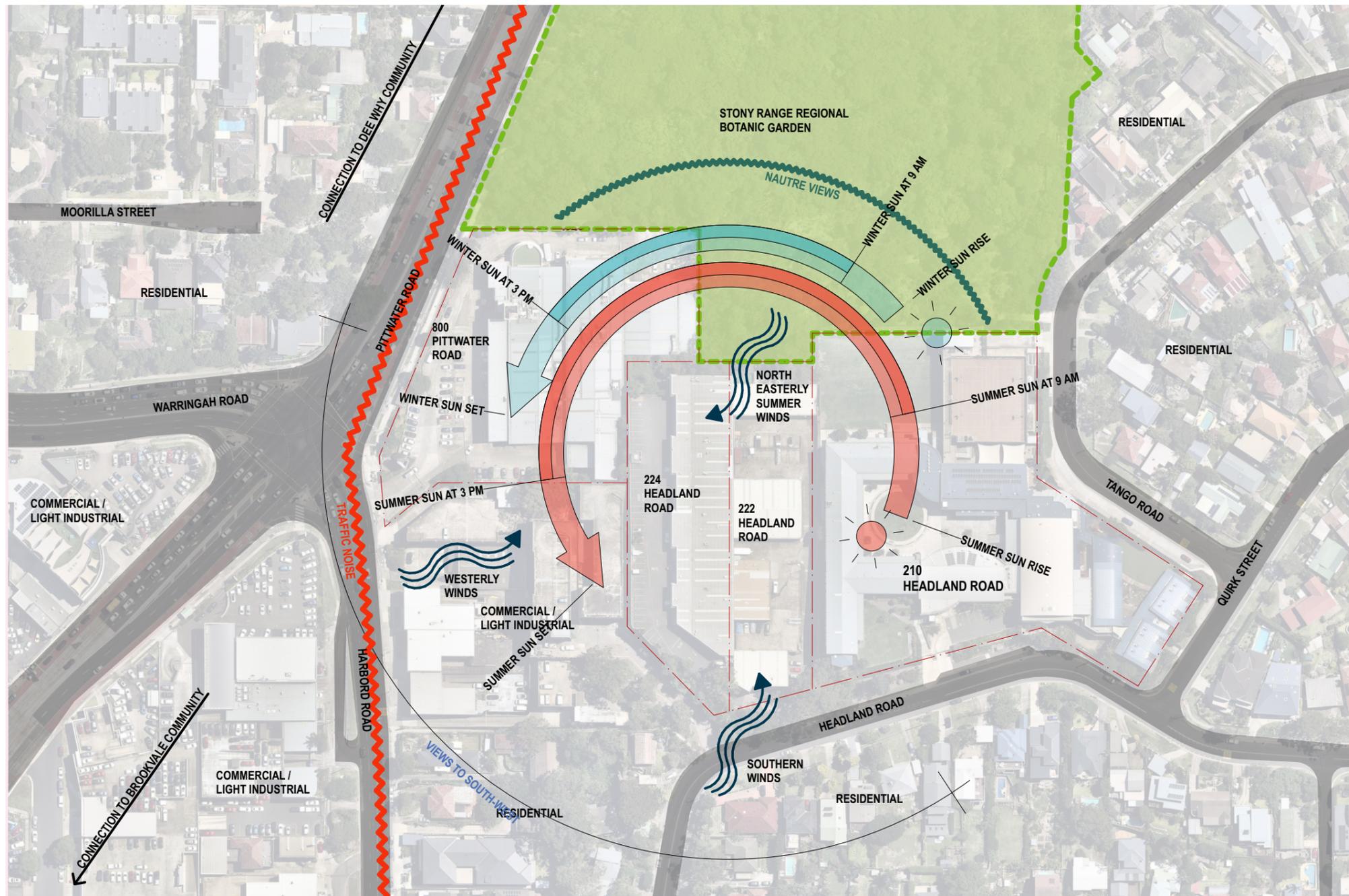
The Northern Beaches comprise the northern coastal suburbs of Sydney, on the Pacific coast. Originally the area was inhabited by the Garigal or Caregal people in a region known as Guringai country.

There are numerous schools located on the Northern Beaches and within the vicinity of St Luke's Grammar School. The area also comprises a mix of residential, light industrial and commercial buildings with the Dee Why shopping district located along Pittwater Road to the North of the school, and the Brookvale shopping and industrial district to the South.

**Key descriptor:**

- Site
- Local Green Space
- School





## 4.2 Site Analysis

A climate analysis was carried out for the site exploring solar, wind, noise impacts. The diagram to the right shows this in more detail.

### Key descriptor:

- Summer Sun Path
- Winter Sunpath
- Botanic Garden
- ~ Prevailing Winds
- ~ Road Noise

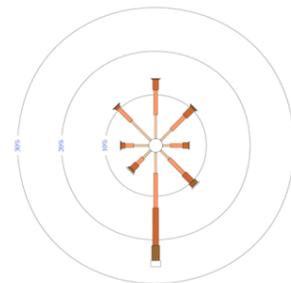


Figure 1: Wind Rose: Sydney, January avg. wind frequency  
Source: <http://www.bom.gov.au/climate/averages/wind/index.shtml>

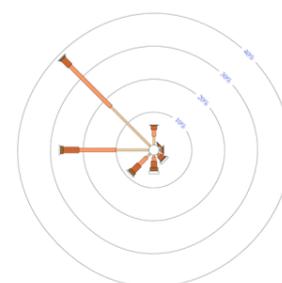
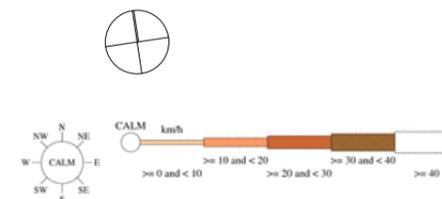


Figure 2: Wind Rose: Sydney, June avg. wind frequency  
Source: <http://www.bom.gov.au/climate/averages/wind/index.shtml>





### 4.3 Access and Movement Analysis

#### Pittwater, Harbord + Warringah Road

800 Pittwater Road is situated at the intersection of Pittwater, Harbord + Warringah Roads. It is a main transit route connecting the City to the upper Northern Beaches and beyond. Pedestrian footpaths are provided on these roads and there are traffic lights for crossing at intersections.

#### Public Transport

Bus routes running along Warringah, Pittwater + Harbord Road provide links between the City and Northern Beaches. A council school bus is provided with buses stopping at 210 Headland Road on Headland Road, Tango Road and Quirk Street.

#### Active Travel - Bicycle and Pedestrian Movement

Bike racks and parking are proposed at 800 Pittwater Road to encourage students and staff to ride to the school.

#### Vehicle, Loading and Off Street Parking

Additional off street parking is proposed at 800 Pittwater Road and 224 Headland Road to serve St Luke's Grammar School. A total of 243 car spaces is allowed for across the school including 7 accessible parking spaces. A bus turning circle is proposed at 800 Pittwater Road as well as garbage and services pick up.

#### Drop off and Pick Up Initiative

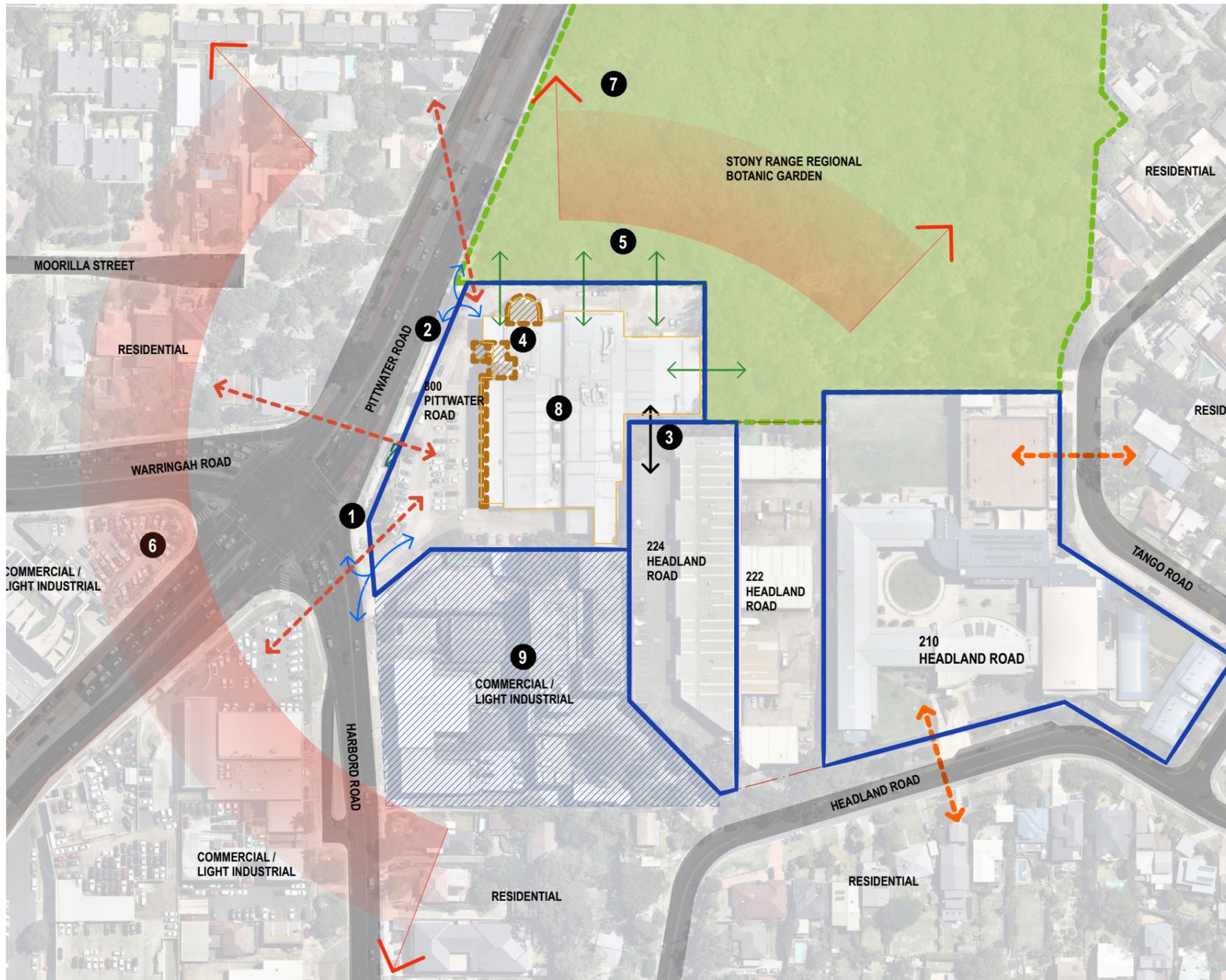
Existing drop off and pick zones are located on Tango Road at 210 Headland Road. A 40km/h School zone is required at school times for children on their way to school, with signs, road markings and flashing lights. No parking areas, signed as drop off and pickup will be required for parents to legally drop off or pick up their children within a two-minute time-frame.

Refer to the Traffic Report for further detail.

**Key descriptor:**

- |  |                   |  |                            |  |                    |
|--|-------------------|--|----------------------------|--|--------------------|
|  | PEDESTRIAN ACCESS |  | PROPOSED PEDESTRIAN ACCESS |  | BUS STOP           |
|  | STAFF PARKING     |  | PROPOSED STAFF PARKING     |  | DROP OFF ZONE      |
|  | STUDENT PARKING   |  | PROPOSED STUDENT PARKING   |  | TRAFFIC SUPERVISOR |
|  | BIKE PARKING      |  | PROPOSED BIKE PARKING      |  |                    |
|  |                   |  | PROPOSED DROP OFF ZONE     |  |                    |





**Key descriptor:**

- CONNECTION TO COMMUNITY
- SITE ACCESS + PUBLIC TRANSPORT
- CONNECTION TO 224 HEADLAND ROAD
- HERITAGE VALUE
- CONNECTION TO STONY RANGE
- VIEWS + VISIBILITY
- NEIGHBOURING PROPERTIES

## 4.4 Opportunities

The 800 Pittwater Road St Luke's site encompasses a series of opportunities that will provide the new school and community with a strong relationship and link to their surrounds.

### 1. Connection to Community

800 Pittwater Road sits at the intersection of Warringah Road and Pittwater Road providing a potentially strong link between the school and surrounds.

### 2. Site Access + Existing Public Transport

As the site is positioned on a main road, there are many existing bus routes coming from both the north and south. An accessible pedestrian entry at the N-W corner of the site will be utilized to provide access from Pittwater Road.

### 3. Link to 224 Headland Road

The proposal outlines a vertical connection between 800 Pittwater Road and 224 Headland Road. This will allow students to move between the sites without walking on busy roads. Staff and student parking is also proposed at 224 Headland Road, easing congestion and queuing on Pittwater Road.

### 4. Heritage Value

The heritage listed former Top Dog Menswear Building on 800 Pittwater Road (front entrance, tower and curved former canteen) and the decommissioned heritage listed bus stop on Pittwater Road enhance the character of the built environment and surrounding area.

### 5. Connection to Stony Range Regional Botanic Garden

The Stony Range Regional Botanic Garden to the north of the site provides an opportunity to provide a strong visual and physical connection between the school and the natural environment of the Northern Beaches as well as between the school and the community.

### 6. Visibility + Views

The site occupies a prime visual location, situated above a main intersection. It is intended views from and to Brookvale and Dee Why communities will be strengthened and enhanced.

### 7. Sustainability

The siting of the building allows for a high level of solar access as well as cross site ventilation. There is the potential to incorporate Green Design principles.

### 8. Building Fabric

The existing structure is in a good condition providing a framework for the new school program and function. Enhanced fire protection and accessible access can be added along with structural and service upgrades.

### 9. Neighbouring Properties

The site does not lie adjacent to any residential properties.



## 4.5 Constraints

The constraints presented by the site areas are as follows:

### 1. Highway Noise + Traffic

The traffic noise from Pittwater Road requires a carefully designed west facade and landscaping to mitigate the noise.

Refer to the Acoustic Report for further Detail.

### 2. Topography

The dramatic level change between 800 Pittwater Road and 224 Headland Road will be mediated with a vertical connection, providing a link across the school. This will increase mobility throughout the school as well as increasing safety by reducing encounters with local traffic.

### 3. Accessibility

A fully accessible path of travel is not achievable at this location between 224 and 210 Headland Road due to the existing conditions of the footpath and the site topography.

Refer to the Access Report for further detail.

### 4. Vehicle + pedestrian access and parking

The primary public transport to the site includes busses dropping students off along Pittwater and Headland Roads. The potential for cars queuing up will be mitigated by the drop-off / pick-up zone which will be of low demand for year 10-12 students. Ample student and staff parking will be provided as well as bike parking to encourage active transport choices.

Refer to the Traffic Report for further detail.

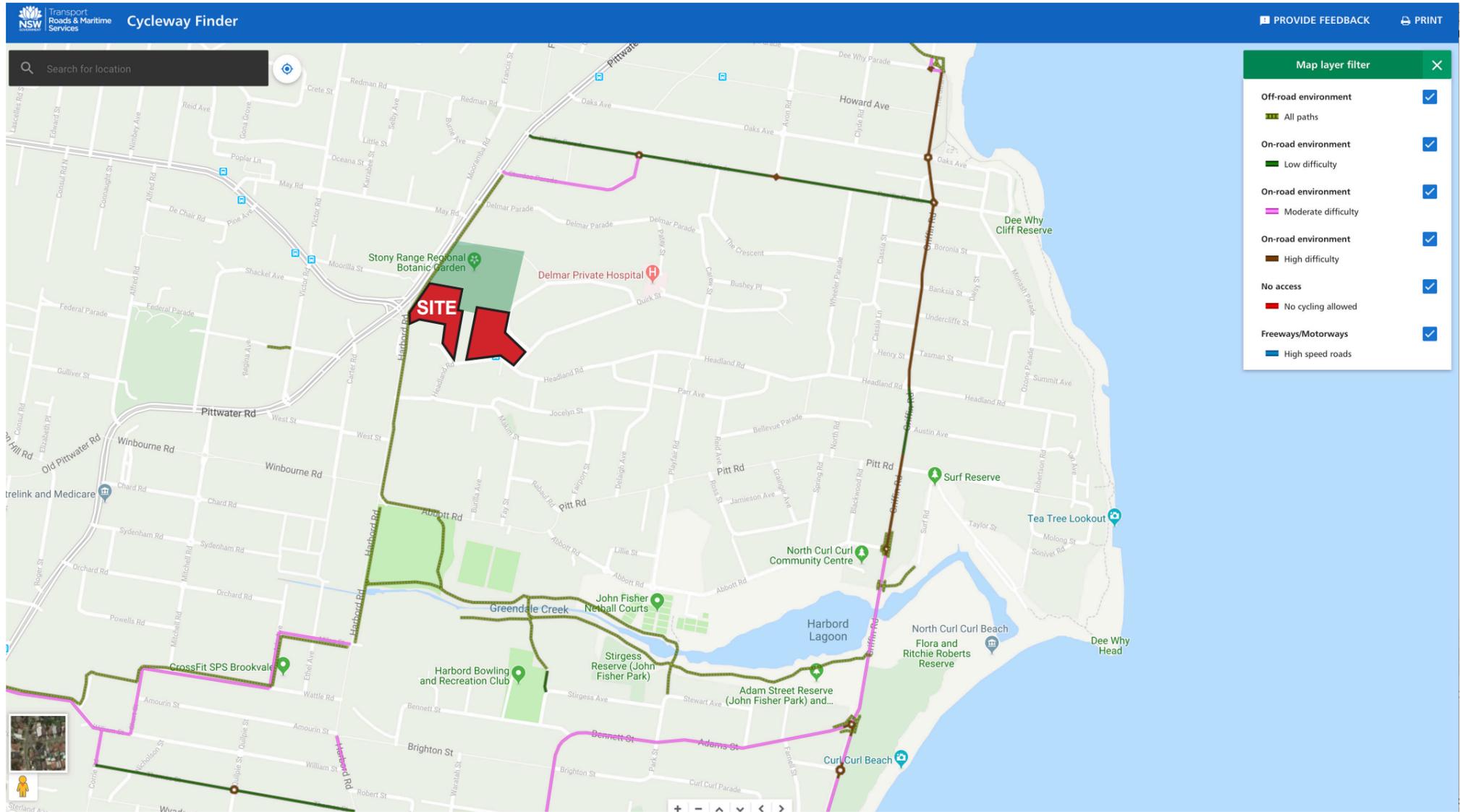
### 5. Existing volume of the building

Whilst also being seen as an opportunity, the existing volume of the building provides constraints that limit height, overall volume, orientation and daylight access.

### 6. Lack of connection

There is no direct connection between 800 Pittwater Road / 224 Headland Road and 210 Headland Road. An operational management plan will be put into place to mitigate this shortfall.

Refer to the EIS report for further detail.



## 4.6 Active Transport Linkages

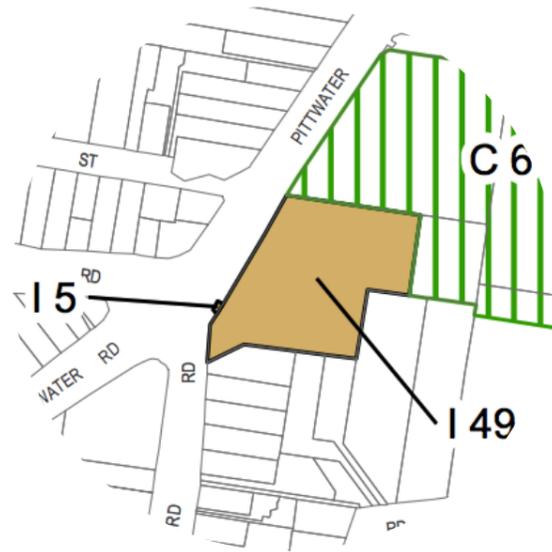
The 800 Pittwater Road site is located next to an off-road shared bicycle and pedestrian path, which connects the site north to Dee Why Shops and south to Curl Curl.

A Green travel plan is currently prepared by the Traffic Engineer.

Refer to the Traffic Report for further detail.



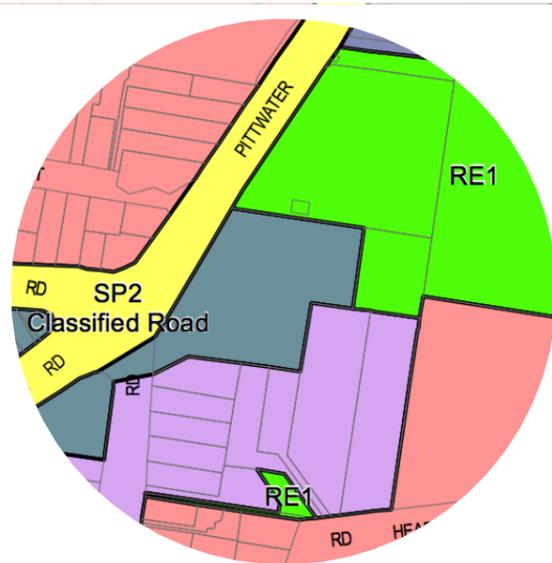
**Height of Building**  
Category L  
11m



**Heritage Items Map**  
800 Pittwater Road is identified as Heritage item 49. The historic bus stop on Pittwater Road is Heritage item 15.



**Landslip Risk Map**  
Categories A (yellow) + B (orange).  
A = slope < 5°  
B = Flanking Slopes 5° - 25°



**Land Zoning Map**  
800 Pittwater Road - Category B5 Business Development.  
224 Headland Road - Category IN1 General Industrial



**Minimum Lot Size**  
224 Headland Road - Category W 4000m2

## 4.7 Planning Controls Review

Planning Control Maps as per the Warringha Local Environment Plan 2011.  
Refer to the EIS Reprot for further detail.



Image 1



Image 2



Image 3



Image 5 - All Images : Historic views, circa 1950s.  
Source :State Library of N.S.W



Image 4

## 4.8 Heritage Context

### 800 Pittwater Road

The building formerly known as the Top Dog Menswear building and also known as the Wormald Building was designed by Spencer, Spencer and Bloomfield and completed in 1949. The building won the N.S.W Sulman Award for Public Architecture in 1950.

Historical photos show two different states of the building over two periods. Images 1 to 4 show the original Top Dog Men's Wear Production Centre (later Bond's Wear Pty Ltd) and were obtained from the State Library of N.S.W. Image 5 shows the building after slight modifications to the front facade.

The building was significantly altered in 1993 by Lippmann Architects with major additions and changes to the main façade. It now houses a Fitness First Centre, Office Works and iMED facilities.

The subject site is also located in proximity to the "Stony Range Flora Reserve" Heritage conservation area and the Heritage "Bus Shelter" on 800 Pittwater Road.

Refer to the HIS Report for further detail.



Image 1: View from the East to the back of the IMED tennancy



Image 2: View from the North past the residential building to the Fitness First tennancy.



Image 3: View from the North to the IMED tennancy.



Image 4: View from the East to the back of the IMED tennancy

## 4.9 Stony Range Regional Botanic Garden

### History

*Stony Range Regional Botanic Garden is an oasis of Australian native plants located at Dee Why in the heart of the northern beaches. [...]*

*The garden is jointly managed by Council and a Volunteer Advisory Committee. It is free and open every day of the year, including public holidays.*

*Intricate walkways take visitors to a variety of microclimates. The main circuit takes approximately 20 minutes to complete and in 2013 was extended to include the accessible sensory track - where people of all abilities can experience the Australian bush like never before. Signs along the sensory track point to plants you can touch, taste, smell, and look at, to observe the garden with all your senses. There are also side tracks for the energetic and inquisitive.*

*Stony Range was given its name because it sits on 3.3 hectares of Hawkesbury Sandstone escarpment.*

*In the 1950s, Stony Range was a disused stone quarry. Had it not been for a few visionary locals with a green thumb, the reserve may never have been established. In 2007 it became a Regional Botanic Garden of Native Bushland.*

*Since it was opened, Stony Range has been extensively weeded, regenerated and revegetated by a enthusiastic group of volunteers with the aid of public donations and funding from Warringah Council. Native plants from all over Australia have been planted in the garden alongside local indigenous species.<sup>1</sup>*

### View Analysis

The view analysis shows that the views to the site are predominantly screened by the extensive vegetation in Stony Range.

A one storey residential brick building is located close to the northern boundary of the project site. The building is a former care taker's residence and can currently be rented by the public. The building is in dis-repair and appears unoccupied.

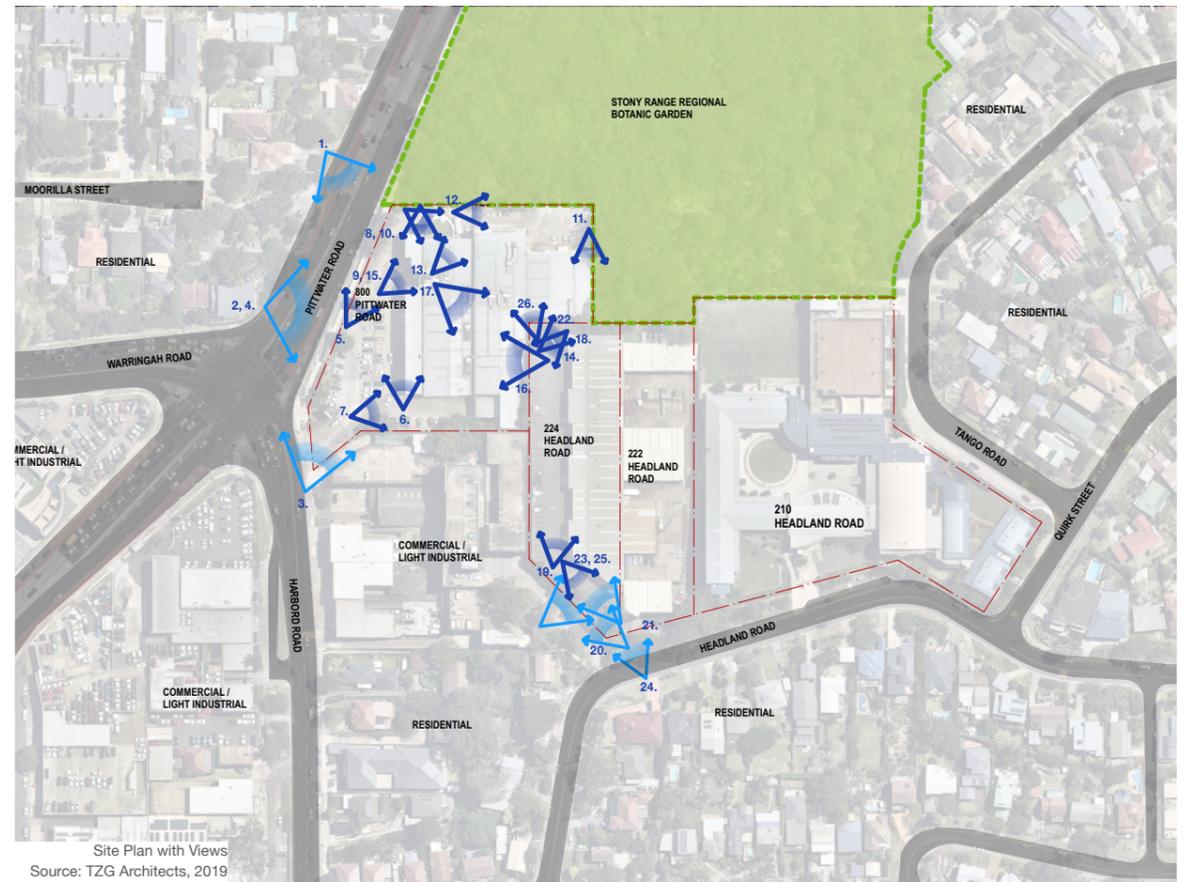
It is proposed to place a new vertical slatted timber fence along the northern and eastern boundaries adjoining Stony Range to allow views into the park land. 2 gates are proposed to connect the school grounds with the parkland.

<sup>1</sup> Source: <https://www.northernbeaches.nsw.gov.au/things-to-do/recreation-area/stony-range-regional-botanic-garden> (accessed 25.10.2019)



## 4.10 Site Photos 800 Pittwater Road

Key descriptor:



# 800 Pittwater Road



View 4 - View of heritage bus stop from across Pittwater Road. Source: TZG Architects, 2019



View 5 - Looking north from western boundary at 800 Pittwater Road. Source: TZG Architects, 2019



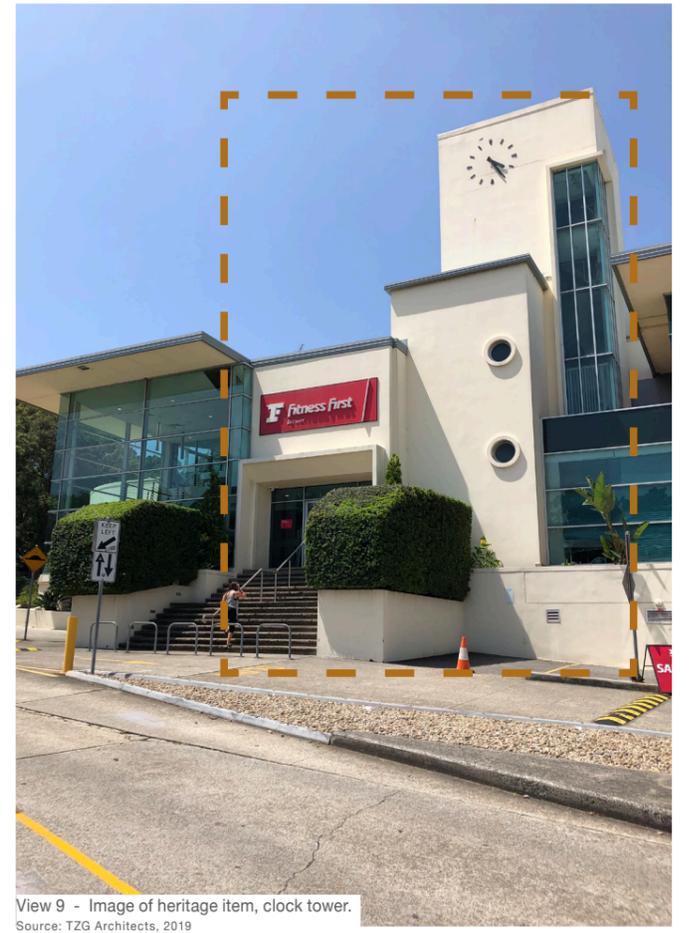
View 6 - Looking north from south-west corner of 800 Pittwater Road. Source: TZG Architects, 2019



View 7 - Looking east from current vehicular entry at 800 Pittwater Road. Source: TZG Architects, 2019



View 8 - Image of heritage item, existing curved canteen. Source: TZG Architects, 2019



View 9 - Image of heritage item, clock tower. Source: TZG Architects, 2019

## 800 Pittwater Road



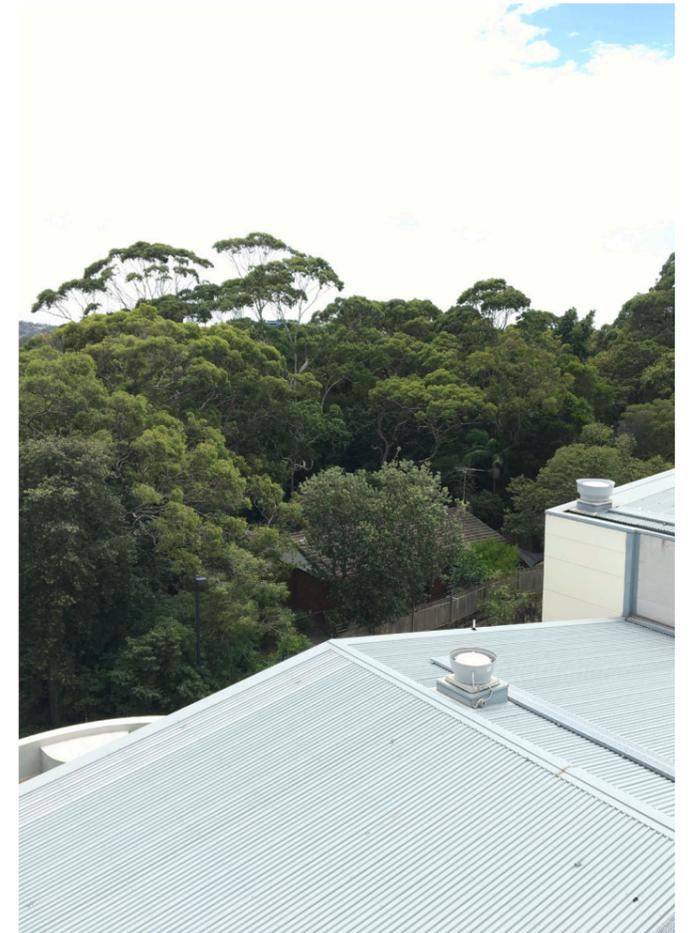
View 10 - View of heritage north-western corner of 800 Pittwater Road. Stony Range Botanic Garden heritage conservation area located on the left.  
Source: TZG Architects, 2019



View 11 - Looking south along iMed building. Stony Range Botanic Garden heritage conservation area located on the left.  
Source: TZG Architects, 2019



View 12 - Looking east to existing entry to carpark on northern boundary. Stony Range Botanic Garden heritage conservation area located on the left and in the distance.  
Source: TZG Architects, 2019



View 13 - View from heritage clock tower looking out over Stony Range Botanic Garden heritage conservation area.  
Source: TZG Architects, 2019



View 14 - View from 224 Headland Road looking out across the roof of 800 Pittwater Road showing the intersection of Pittwater Road and Warringah Road.  
Source: TZG Architects, 2019



View 15 - View of north-west corner at 800 Pittwater Road.  
Source: TZG Architects, 2019



View 16 - Looking up between retaining wall and southern side of 800 Pittwater Road.  
Source: TZG Architects, 2019

### 4.11 Site Photos 224 Headland Road



View 17 - View of 224 Headland Road taken from the clocktower of 800 Pittwater Road.  
Source: TZG Architects, 2019



View 18 - Looking west from 224 Headland Road carpark.  
Source: TZG Architects, 2019



View 22 - Cantilevered northern edge of 224 Headland Road.  
Source: TZG Architects, 2019



View 19 - Looking north along western facade of 224 Headland Road.  
Source: TZG Architects, 2019



View 20 - View of driveway leading up to 224 Headland Road.  
Source: TZG Architects, 2019



View 21 - View of footpath crossing at 224 Headland Road.  
Source: TZG Architects, 2019



View 23 - Looking south-east from the carpark at 224 Headland Road.  
Source: TZG Architects, 2019



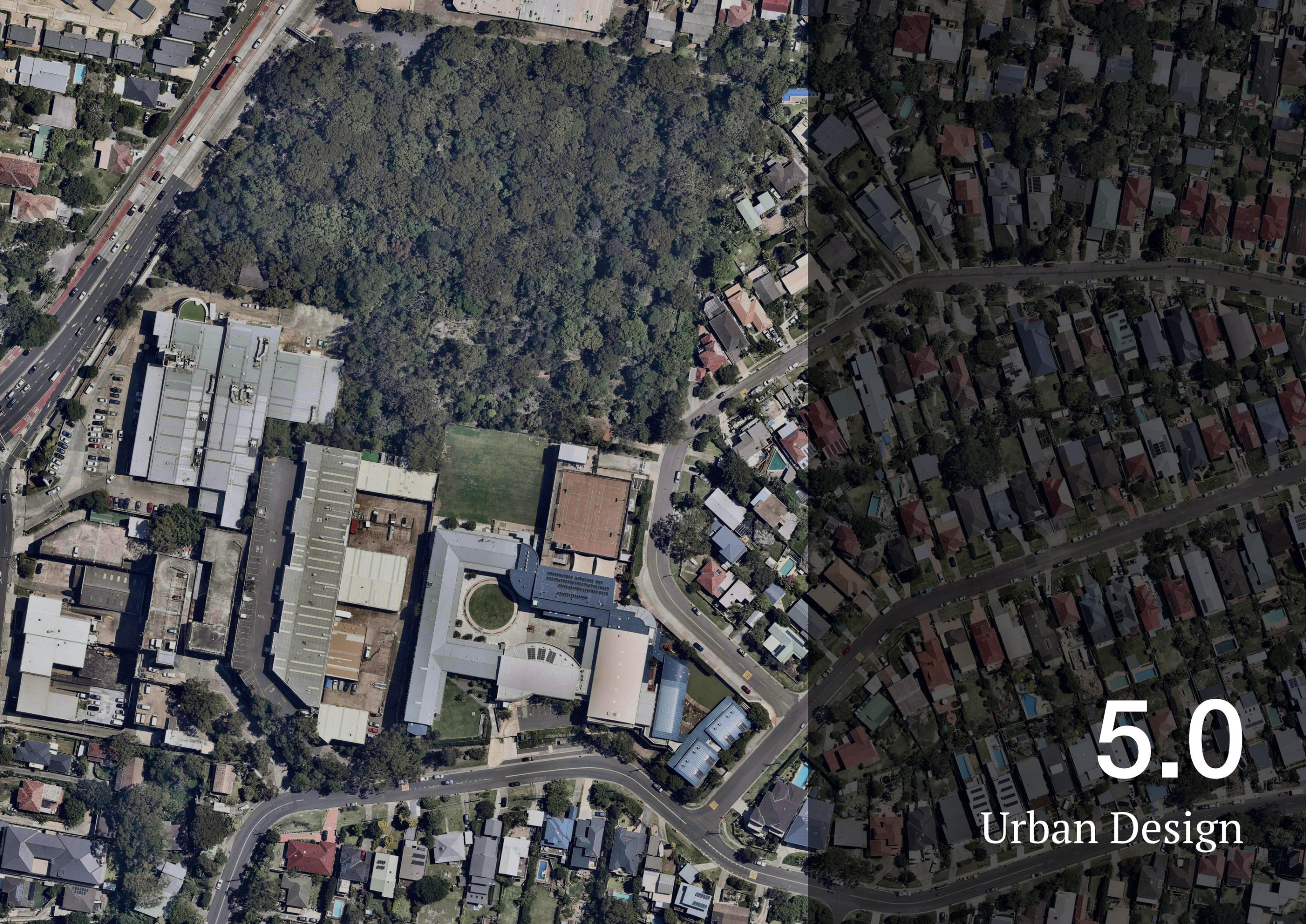
View 24 - View to 224 Headland Road.  
Source: TZG Architects, 2019



View 25 - Looking south down driveway at 224 Headland Road.  
Source: TZG Architects, 2019



View 26 - View north towards 800 Pittwater Road from 224 Headland Road carpark.  
Source: TZG Architects, 2019



5.0

Urban Design

## 5.1 School Campus Connectivity

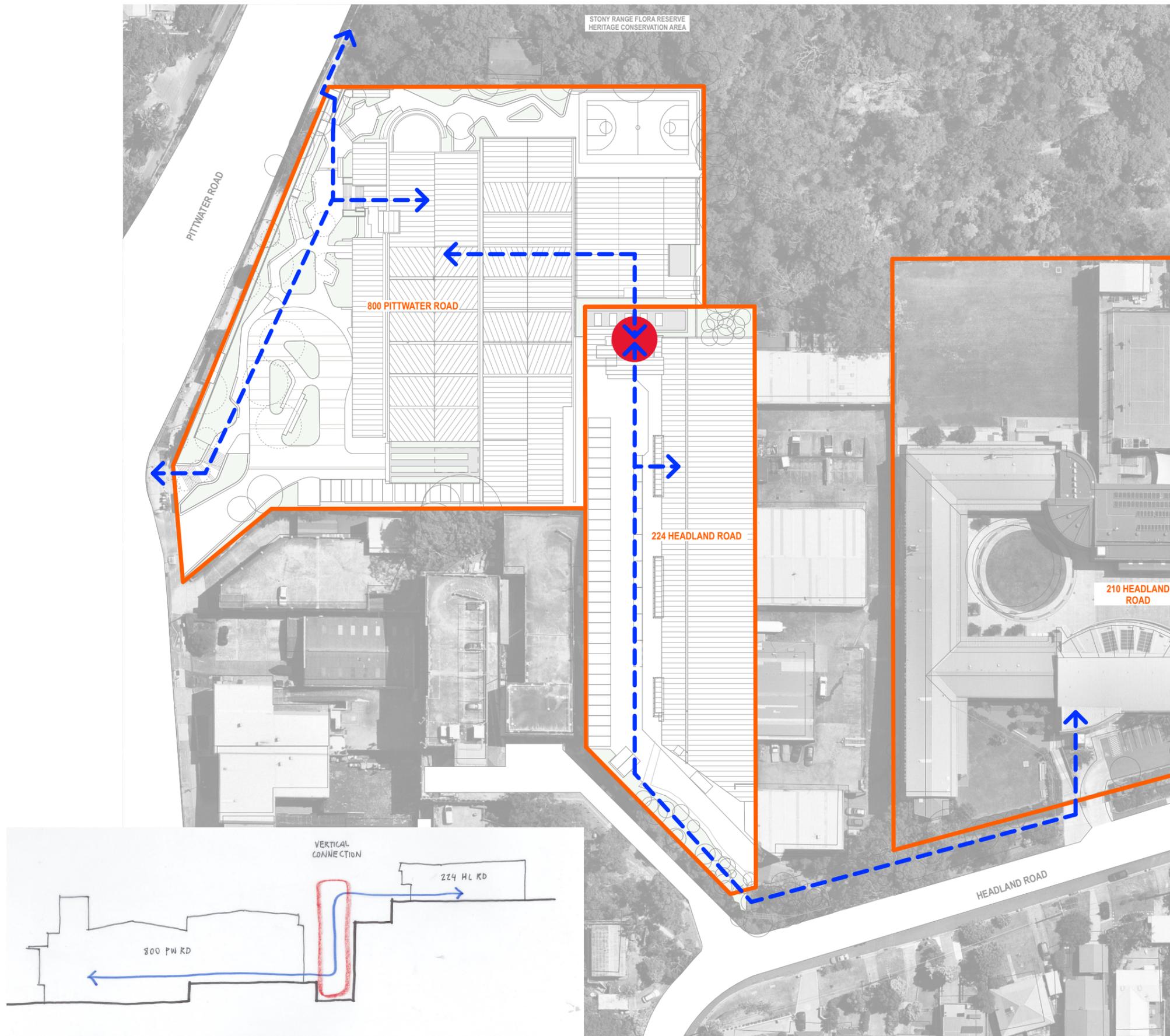
A vertical connection link is proposed between the buildings on 800 Pittwater Road and 224 Headland Road.

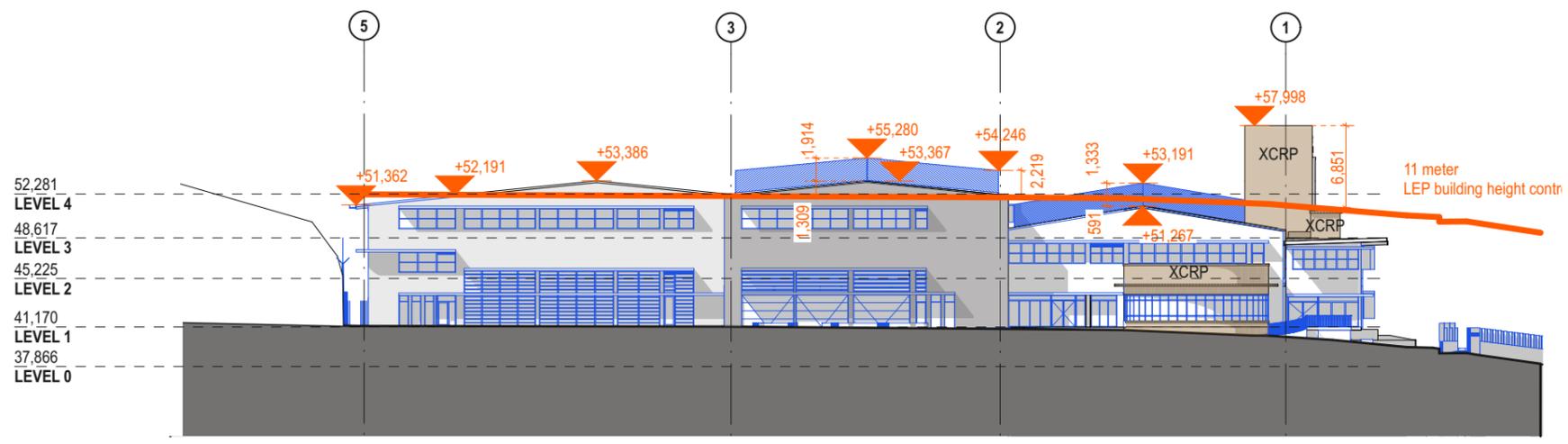
This new building will provide an internal accessible link throughout all levels of 800 Pittwater Road connecting to a covered walkway linking into the Ground Floor of 224 Headland Road.

The link between 224 Headland Road and the existing campus on 210 Headland Road is proposed to be upgraded by providing a new stairway connecting the Headland Road footpath and the driveway on 224 Headland Road. This upgrade is not part of this SSDA, but has been lodged with Northern Beaches Council with DA2019/977, submitted 09.09.2019.

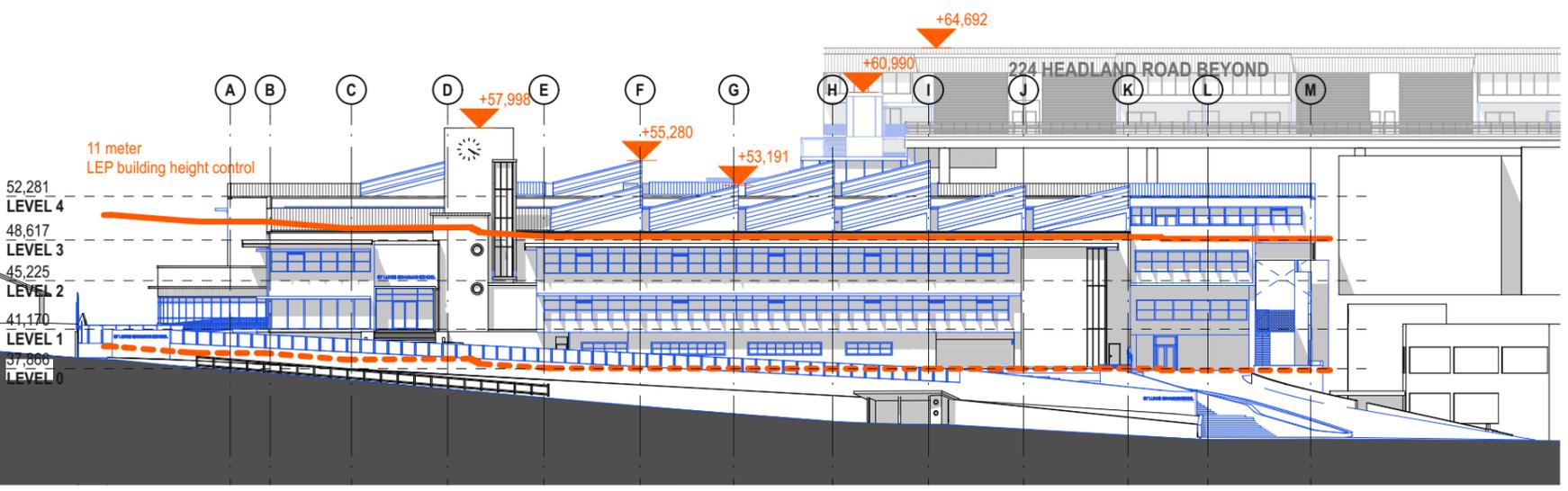
Currently the pedestrian access to 224 Headland Road is via the shared driveway only and a blind corner at the bottom of the driveway poses a risk to pedestrians.

The proposed upgrade will improve access by removing the blind spot.





North Elevation



West Elevation

## 5.2 Building Height

To provide sufficient natural light to the 'village centre' and the centrally located GLA's, we propose to introduce saw-tooth skylight structures across the western and central roof sections.

These structures will extend past the LEP height limit of 11 meters, but have minimal visual impact due to the set-back location of the skylights.

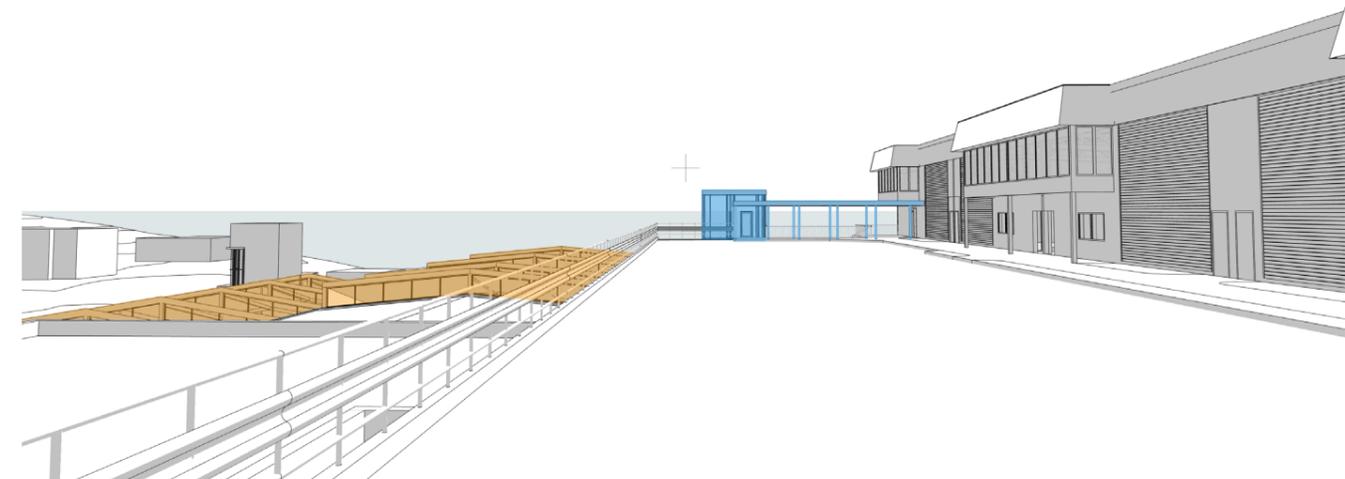
The existing building, including the heritage clock tower, also already surpasses the height limit by more than 6 meters.

The new roof structures will lift the roof line by 2 meters at their highest point.

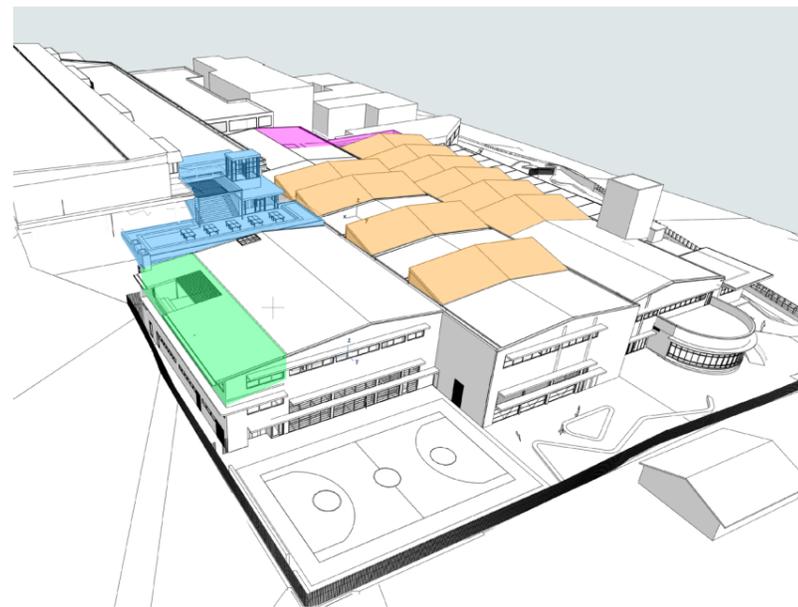
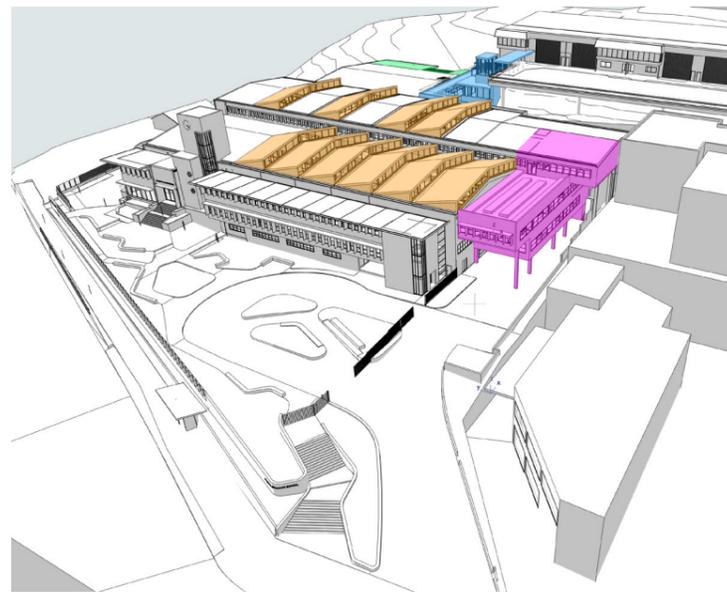
The south-facing skylights will substantially increase the user amenity by providing a natural ventilated airy and light interior space while maintaining adequate shading.

The proposed industrial-style saw-tooth form also references the history of the building, when it was used as a clothing factory. On an aerial image from 1952 it appears that the original building once had an array of skylights on the roof.

The proposed roof form and height was discussed with the Heritage Consultant and the GANSW Office. Both are in support of the proposal.



- Southern Extension
- Skylights
- Link Building
- Eastern Extension



## 5.3 Building Massing

The proposal includes 4 external extension volumes with minimal impact to the Urban Design of it's Industrial neighbourhood.

the extensions can be defined as follows.

### Southern Extension

A 2-storey extension to the southern side of the existing building provides additional floor space for learning areas with a roof terrace above and car parking below.

The extension matches height and scale of the adjoining buildings to both sides and has no negative impact to the setting.

### Skylights

A row of saw-tooth skylights pop-out structures provides natural light to the central areas of the building.

The extension is only marginally visible from the street due to the set-back from the western facade and has no negative impact to the setting.

### Link Building

The extension to the north of 224 Headland Road provides a vital vertical link to the campus and also includes additional floor space for learning areas and the Wellness Precinct.

It is set into the escarpment and has minimal visual impact from any vantage point.

### Eastern Extension

The eastern extension sits above the 2-storey section of the iMED building and fills in the gap along the eastern facade by extending the existing upper roof line across the existing building footprint.

This addition is a logical extension of the building envelope and has no negative impact on the character of the building or it's surroundings.

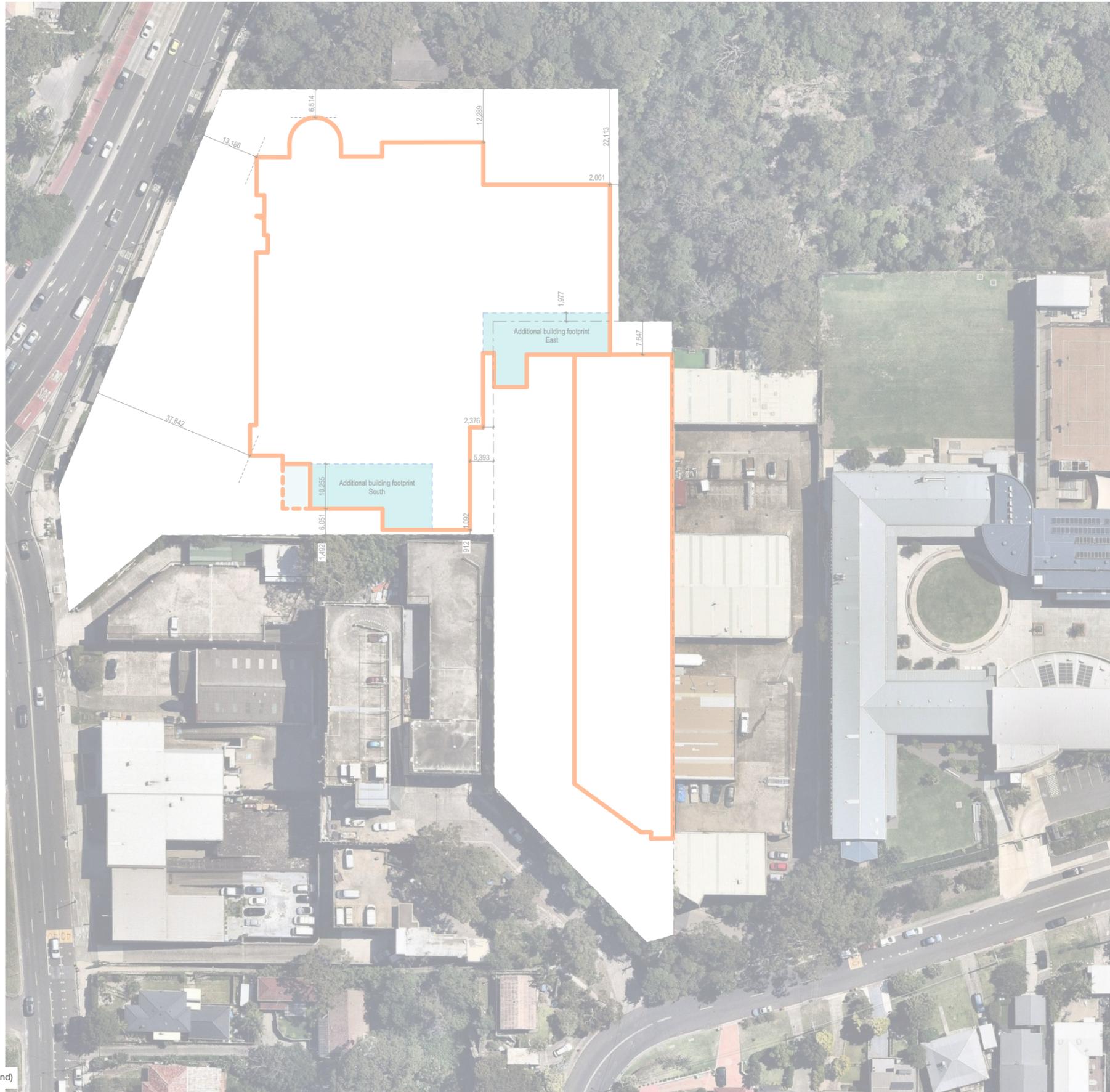


Image caption (drag to extend)

## 5.4 Site Set-Backs

The existing footprints of the buildings on 800 Pittwater Road and 224 Headland Road are retained in most parts and therefore the site set-backs are as mostly as existing.

To the east of the building on 800 Pittwater Road it is proposed to extend the building footprint to create a vertical link between 800 Pittwater Road and 224 Headland Road. The extension is proposed to extend across the site boundary. Site set-backs to adjoining properties remain unchanged at this location.

To the south of the building on 800 Pittwater Road it is proposed to extend the building footprint to create additional floor space for the school. The existing site set-back of ~1m is retained and proposed to be extended further along the southern boundary.

Along the western section of the southern boundary the existing site set-back of 16m is proposed to be reduced to ~6m site set-back to allow for the additional building footprint South.

Refer to the EIS for further detail.

5.5 Street View Analysis

Pittwater Road



Existing View



Proposed View

## Warringah Road 1



Existing View



Proposed View

## Warringah Road 2

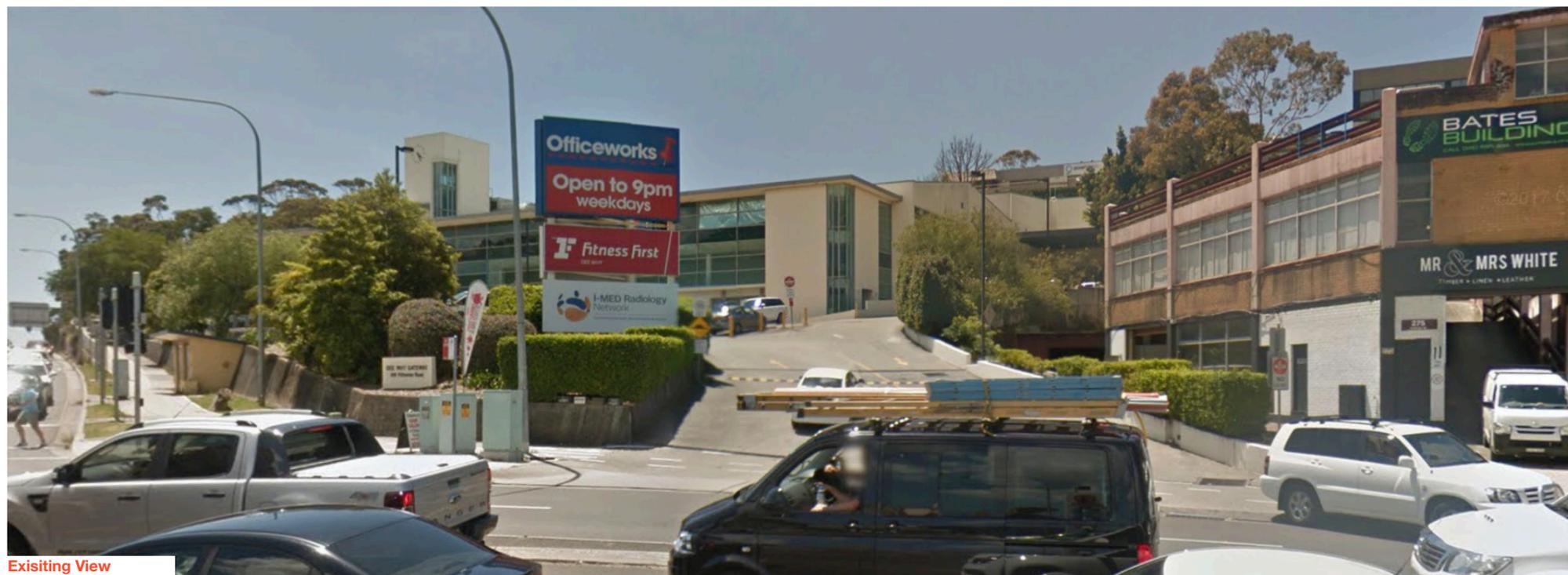


Existing View



Proposed View

## Harbord Road



Existing View



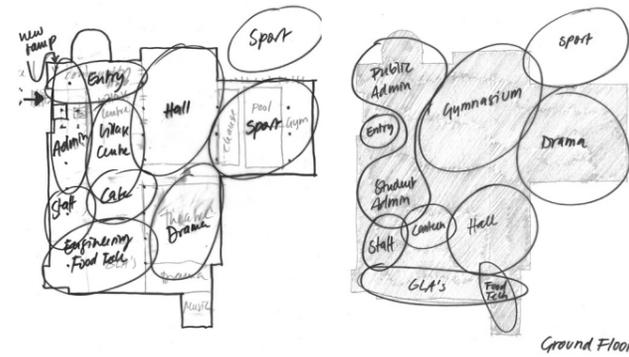
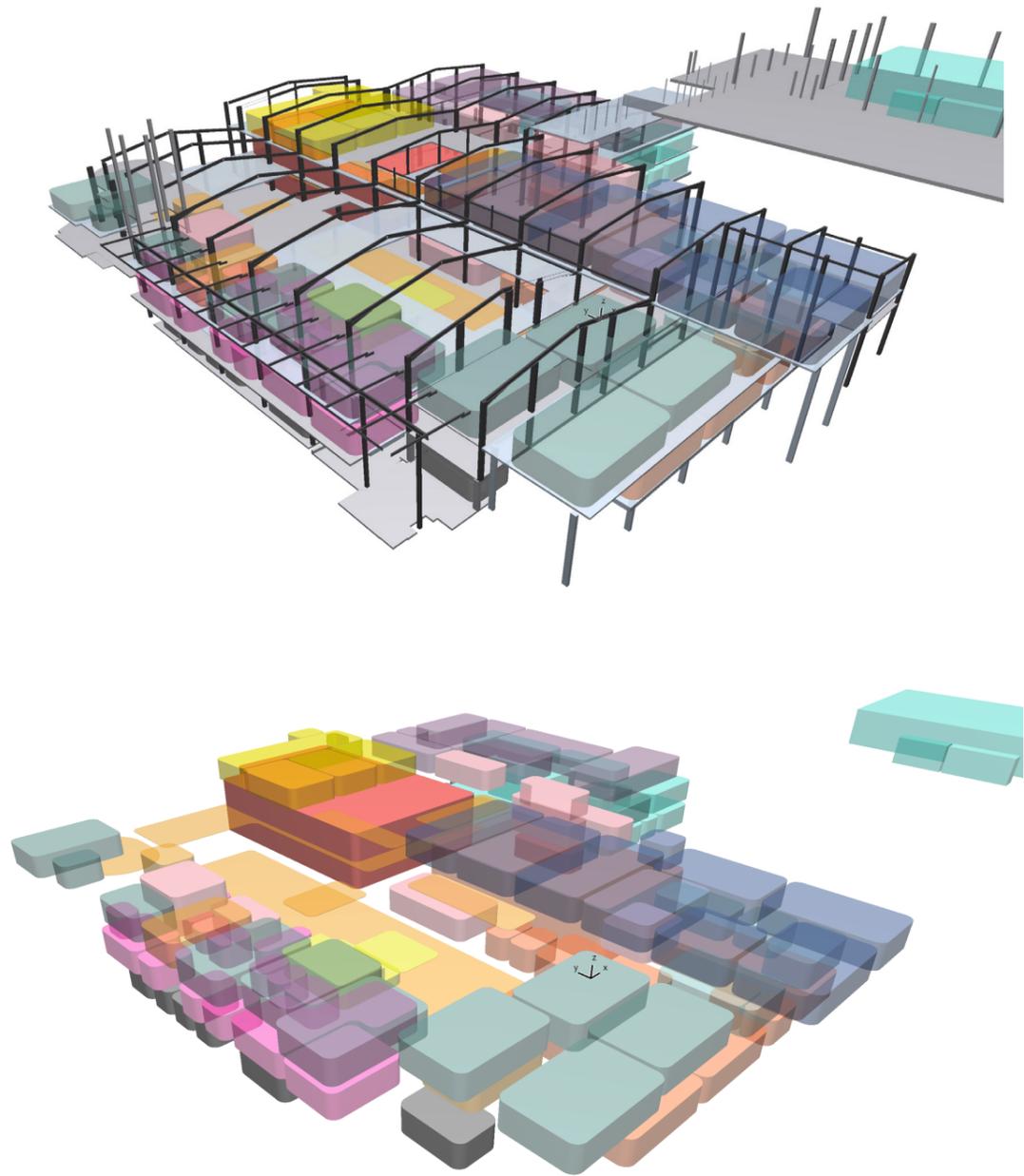
Proposed View



6.0

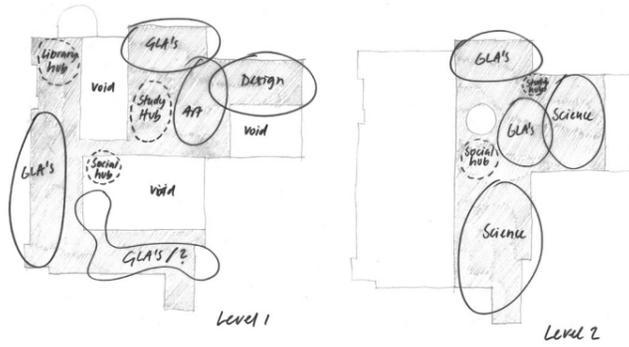
Design

800 Pittwater Road



Ground Floor

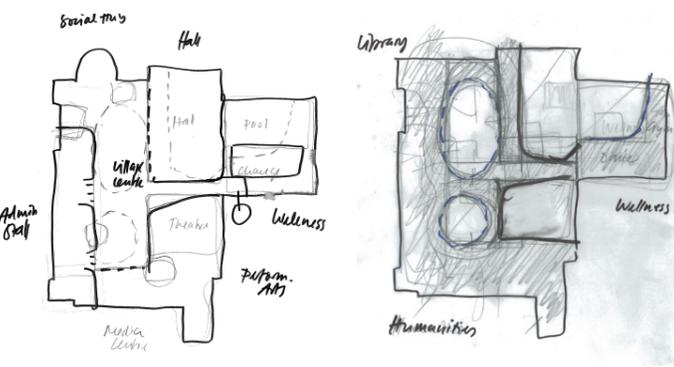
Level 2 Precincts and Voids



Level 1

Level 2

Level 1 Precincts and Voids



Level 3 Precincts and Voids

## 6.1 Architectural Design Statement

The building has been designed to provide greatest flexibility for future learning models and a high connectivity between the distinct areas.

The GLA's have been clustered around flexible learning areas which are again connect to large circulation zones.

The over-scaled circulation zones with niches for non-time-tabled activities and social interaction are designed to prevent the need of corridors for psychological benefit.

A multitude of voids provide the visual connection between separate precincts and create a sense of unity and community through light filled and airy spaces.

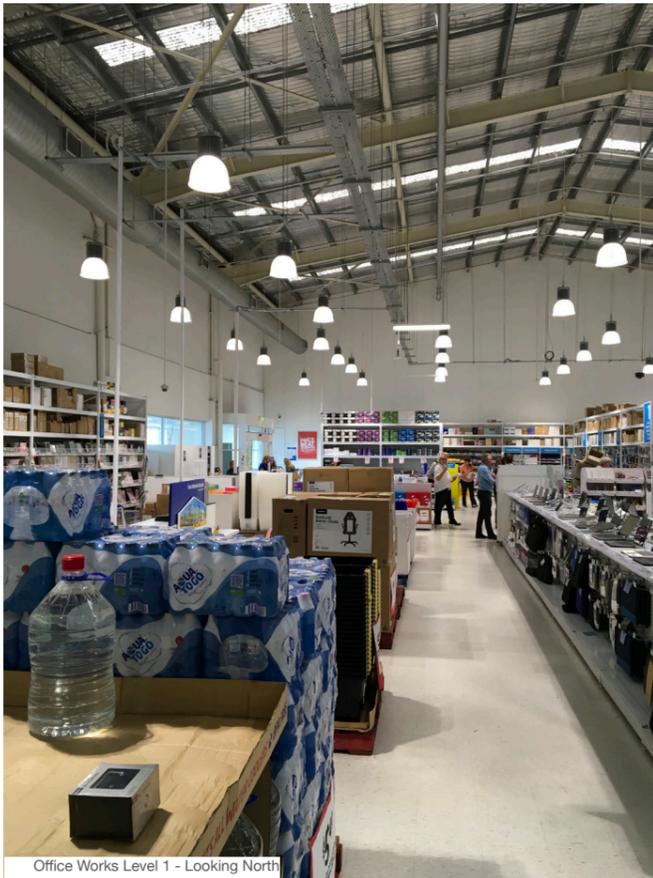
The atrium is designed to act as a Village Centre, a generous space, closely connected to the surrounding precincts, where students, staff and visitors can meet, eat and connect.

The existing structural grid provides the framework and sets the scale for the new precincts, which will be slotted into the frame.

The building envelope will be to most parts replaced by a new high performance skin to meet ESD requirements and future technologies.

All heritage elements will be retained and all new facade elements are designed to complement the heritage fabric and restore the building to its former glory. The western facade is the main focal point and historic photos were the guide for the new facade layout.

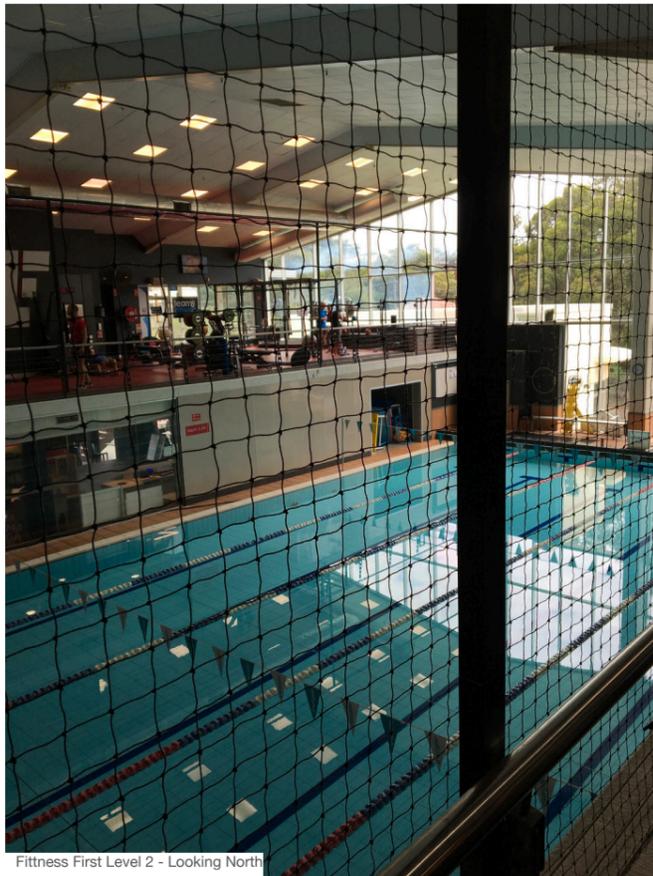
Each of the precincts and spaces has a distinct character and scale. The spaces are all connected through a multitude of voids and glazed walls to provide a sense of unity and community.



Office Works Level 1 - Looking North



IMED - Ceiling Void Level 2 - Looking North



Fitness First Level 2 - Looking North



Fitness First Level 2 - Looking North

## 6.2 Structural Design Statement

### Existing Structure

- The existing building structure was constructed in stages in the early 1990's, with parts of the original heritage building incorporated into the new works.
- The current structure comprises reinforced concrete floors, a combination of reinforced concrete columns and concrete encased steel columns and a structural steel roof.

### Proposed Structure

- The primary existing roof structure to be mostly retained and modified to suit in areas where the roof profile has been amended changed.
- New floors will be constructed "warehouse" volume of the existing Officeworks tenancy, and will comprise a conventional structure eg post-tensioned concrete, composite steel and concrete. New columns will be required to supplement the existing steel columns, that will require encasement for fire and strength.
- Alterations and additions are required to the existing floors in the Fitness First and I-Med buildings and will comprise a concrete slab system similar to the existing.
- Long span structures are required over the pool, auditorium and theatre and structure costs associated with these areas will be more.
- Acoustic requirements may need a "double structure" around the theatre and auditorium.
- Double columns will be required along the building joint between Stages 1 and 2 to allow the new floors to be constructed independently.
- Existing columns will need to be strengthened in some areas eg central columns in existing Officeworks, and columns supporting long-span structures over the pool/ auditorium.
- Anchored shoring will be required for the excavation into the area South of the new pool and stair.

### Construction Constraints

- Retaining the existing roof and roof structure will limit material handling via crane across the site.
- Structures will generally need to be erected from within the existing buildings via smaller plant do to limited access via cranes.
- Care will need to be taken in demolition of floor structure around columns and other structure that is to be retained, smaller plant and equipment - lateral temporary propping of columns may be required to retain integrity.
- Propping of the heritage façade and retained elements may be required to allow removal and reinstatement of floors that they currently rely on for support.<sup>1</sup>



3xN - Ørestad College



3xN - Ørestad College



COBE + MVRDV\_Roskilde Festival Folk High School



COBE + MVRDV\_Roskilde Festival Folk High School

## 6.3 Precedent Images

A range of Australian and International precedents were studied to inform the design.

It is proposed for the adapted building for St Luke's Grammar School to respect and embrace it's industrial past, connect to the natural environment including Stony Range Botanic Garden and the Northern Beaches Region and represent the traditional face of the school.



Hassell - Ecosciences Precinct



Franklin Azzi Architects - Saint Nazaire Higher School of Fine Art + Architecture



Bates Smart: Design competition - Australia Technology Park

## 6.4 Design Quality Principles in accordance with the Education SEPP and GANSW Design Guide for Schools

### Principle 1—context, built form and landscape

By substantially conserving the existing built form and all of the surviving heritage fabric, the proposal will preserve the high quality, award winning architecture.

The project has been the subject of a thorough Heritage Impact Assessment by City Plan Heritage.

Ongoing consultation with local elders will be undertaken to guide the provision of holistic interpretation and a significant indigenous artwork.

By limiting the footprint expansion away from the Stony Range reserve, its remnant, significant bushland will be conserved, whilst new glazing and open space will enjoy the prospect of this setting.

Extensive tree planting and landscaping, including to roof terraces, will meet the objectives of these Principles.

New fully accessible connections to the north will improve public transport use and connectivity to the local Dee Why town centre.

### Principle 2—sustainable, efficient and durable

Detailed ESD planning has been undertaken by Wood & Grieve Engineers and has informed the daylighting, natural ventilation, mechanical systems and pool heating to reduce energy consumption whilst providing a high level of indoor environmental quality.

The School's Green Travel Plan developed by Varga Traffic Planning will reinforce the use of active transport and public transport by the senior level students and staff.

### Principle 3—accessible and inclusive

The design is organised by clear, daylit east-west and north-south spines over the three levels, allowing excellent visual and physical connection across the campus. Each level of both spines connects to the external areas of the school and has good views over the surrounding landscape.

The new major lift and stair provides accessible connection to all levels of 800 Pittwater Rd and the main active level of 224 Headland rd.

A layered approach to the secure zones of the school provides good engagement with the community whilst ensuring child safety.

The café, pool and other facilities will be available for use by the community.

Age-specific play areas have been created for the Year 10-12 cohort of the School, together with the whole-of-school sporting facilities at 224 Headland Rd.

The site and all facilities are fully accessible.

### Principle 4—health and safety

Careful site planning and traffic management lead to a safe and efficient use of the limited grounds, with timetables closure of zones for bus and car pickup and dropoff.

Clear sightlines and easily supervised internal and external areas facilitate safe active play and passive relaxation.

The internal school spine and the large open Auditorium will be available for wet weather activities at recess and lunchtime.

Undercover bike parking will join end-of-trip changerooms for use by staff and students as required.

The café, pool and other facilities will be available for use by the community.

### Principle 5—amenity

The two buildings together provide a wide range of high-quality, well-lit, accessible teaching, collaborative and recreation spaces, many of which are designed to allow community and out-of-hours school use.

All have been specifically designed to meet the requirements of a future-focussed pedagogy for senior high school students.

The location of the major northern play areas and the operable glazed wall adjoin maximise connections to the open space to the north.

All teaching spaces are well daylit and able to be naturally ventilated.

The school spines are natural ventilated and will have automated stack-effect ventilation at roof level.

With acoustic engineering inputs, the glazing and boundary noise control screens provide a code-compliant noise control strategy, assisted by buffer planting to the western boundary.

### Principle 6—whole of life, flexible and adaptive

The simple, flexible layout provides short-term flexibility through the use of standardised open and enclosed teaching areas able to be modified with extensive operable glazed walls.

In the longer term, the simple structural grid, flat floors and strategic location of 'fixed' elements such as the Theatre and Pool allow for maximum long term flexibility,

The design is part of a long-range master plan for the entire St Luke's campus, based on 20 year projections of enrolment and the potential availability of sites for connection and expansion.

The design has been assessed to include consideration of ecological and other impacts.

### Principle 7— aesthetics

By building on the award-winning architectural character of the original 1950 structure, and retaining the most useful parts of the 1990s additions, the building achieves an appropriate, high quality architecture.

In particular, the presentation to the wider public domain to the west is enhanced through design and landscaping.

Public art will be included through consultation with the local Indigenous peoples, leading to the commissioning of an artwork reflecting the local Indigenous history and its ongoing importance.

Masterplan



Level 1

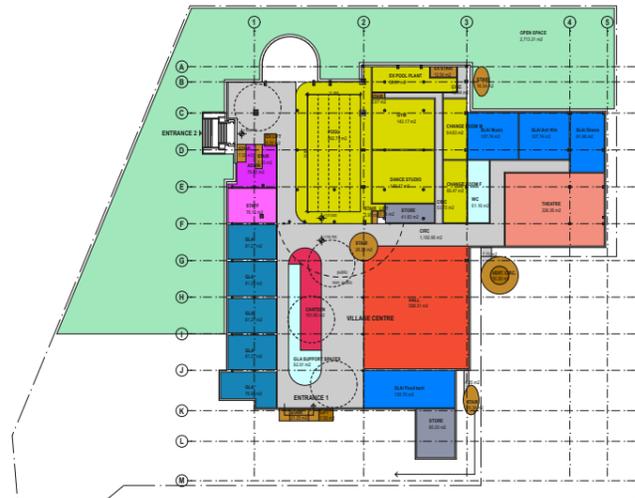


Level 2

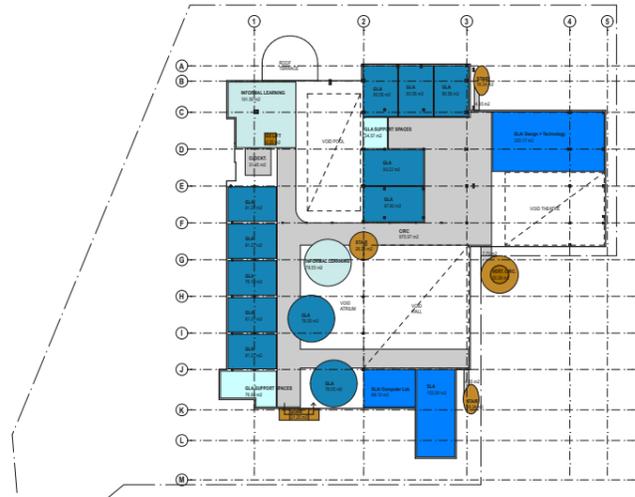


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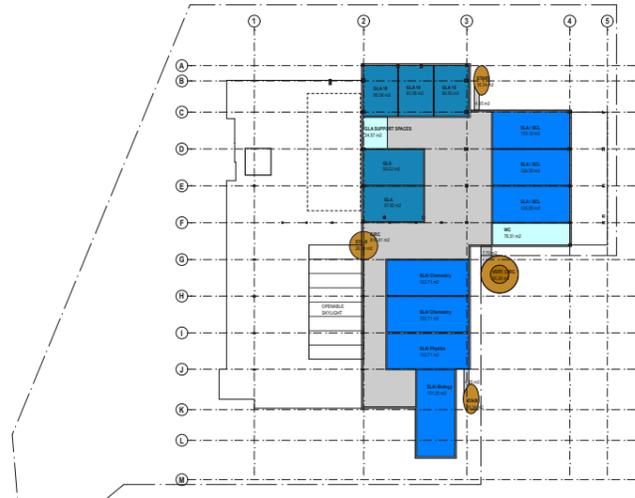
Option 1



Level 1



Level 2



Level 3

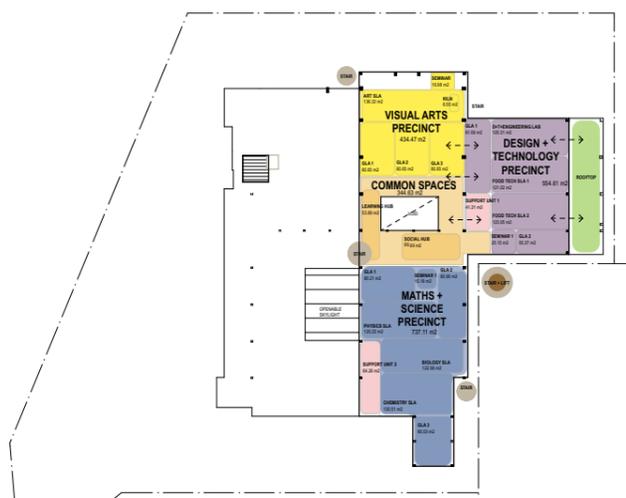
Option 2 - Preferred



Level 1



Level 2



Level 3

6.5 Options Analysis

A number of different Options were pursued at concept stage, investigating differing locations for the main school volumes, in particular the Pool and Theatre, as well as the layout and location of the smaller teaching spaces. It was initially intended to alter the existing pool to accommodate a full 25m length (the existing pool is only 20m) and provide an accessible ramp. The location of the pool however, adjoining the front entry and at a higher level than the main floor impeded access and movement, and as it required significant reconstruction, a location more suited to the overall school layout was selected.

Other Options have looked at the orientation and location of the Drama Theatre and the corresponding layout of the school spine and teaching spaces around it. Further, as the brief developed, the requirement for a modest addition to the south to accommodate the full range of briefed spaces was agreed.

Externally, differing options to reconstruct the 1990s façade to be more in keeping with the original character of the building were investigated leading to an optimal design of the sunshading to reduce afternoon sun and allow maximum views.

The design of the new roof lights, inspired by the original saw-tooth roof of the building underwent considerable development to maximise daylight and allow efficient stormwater drainage, whilst retaining the existing steel portal structure.



Original Bonds Top Dog Building circa 1950s



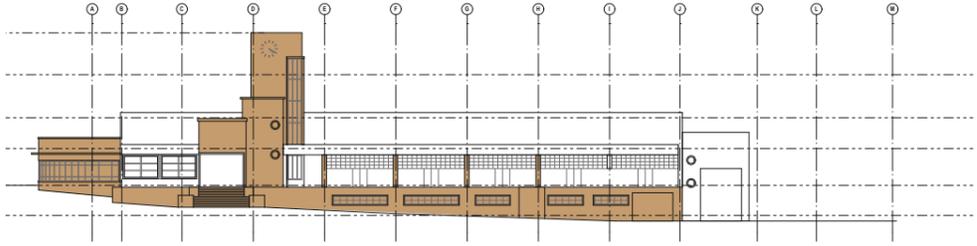
Proposed St Lukes Grammar School Senior



Revised Bonds Top Dog Building circa 1950s



Revised Dee Why Gateway Building 1993



Remaining Heritage Overlay - Original Facade



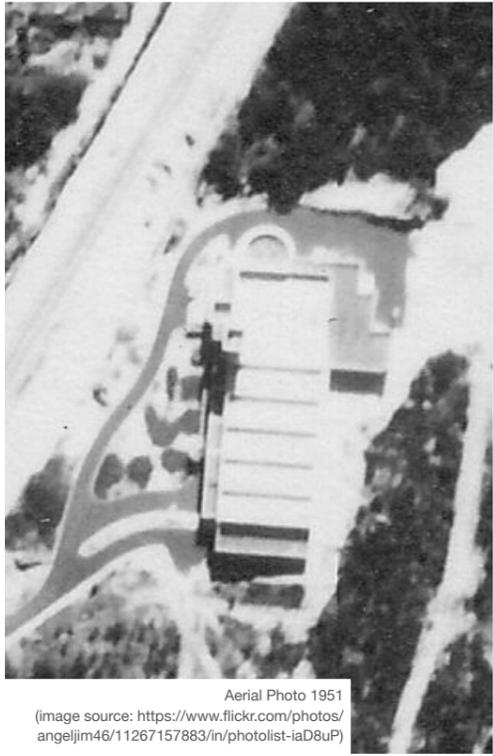
Remaining Heritage Overlay - Existing Facade



Remaining Heritage Overlay - Proposed Facade

### 6.6 Heritage Approach

All remaining heritage items will be retained. All original building and landscape elements are to be restored and conserved. The design of the new western facade is based on the original facade design by interpreting the solidity and the fenestration details of the original building. Historic aerial photos of the original building show that the Bonds Top Dog fabric had a saw tooth roof to bring in light. The proposed roof design uses the same strategy to bring daylight into the centre of the building and includes an array of south-facing skyights on the two main roofs.



Aerial Photo 1951 (image source: https://www.flickr.com/photos/angeljim46/11267157883/in/photolist-iaD8uP)

Sports building - naturally ventilated

Retained building envelope + structure: minimised embodied energy + waste

Light coloured roofs to minimise heat island effects

Solar Panels (extent tbc)

Sunshading to northern glazing

Improved thermal performance through envelope upgrade

Shared spaces benefit from bushland views

Conserved heritage elements

## 6.7 ESD Approach

All heritage items will be retained and the aim is to retain as much of the existing building fabric as possible. For sustainability reasons the external skin will be upgraded to achieve the minimum project performance outcome of a 4-Star Green Star.

- Minimised impact on surrounding bushland.
- Daylight + views to occupied spaces.
- Low toxicity materials internally.
- Indigenous species for landscaping.
- Circulation + gathering zones naturally ventilated.
- Low energy plant for pool tbc.
- Removal of dark coloured paving and maximum green planting zones.

South facing skylights for daylighting

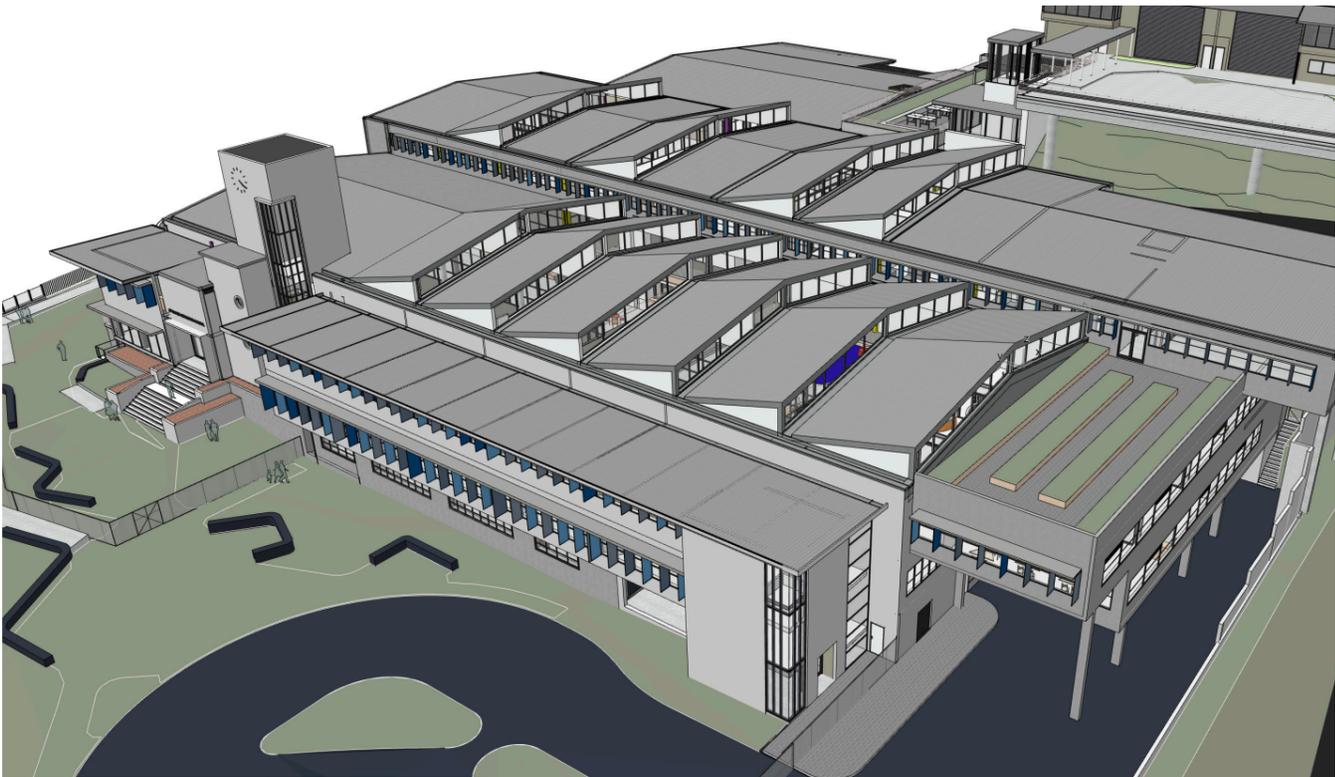
Retained building envelope + structure: minimised embodied energy + waste

Western glazing sunshades

Acoustic barrier to screen play space from road noise



Skylight Option 1



Skylight Option 2



Aerial Photo 1951  
(image source: <https://www.flickr.com/photos/angeljim46/11267157883/in/photolist-iaD8uP/>)

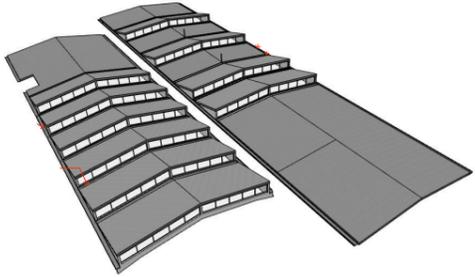
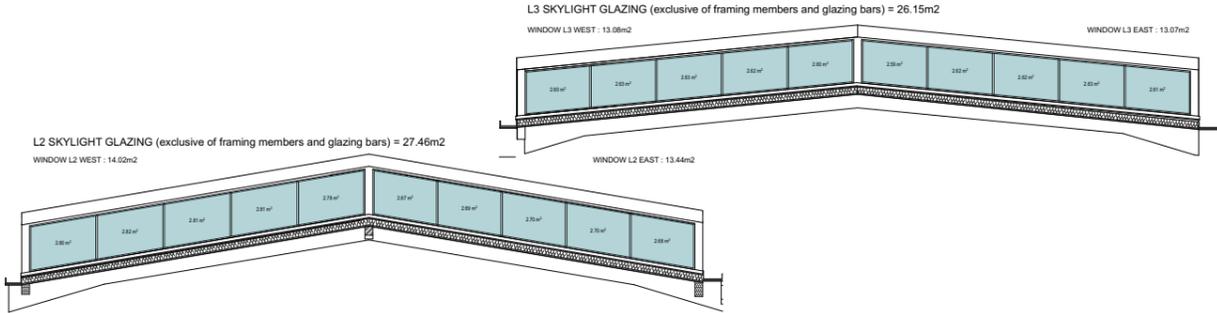
### 6.8 Roof Form Skylight

An extensive daylight access analysis has been conducted in consultation with the ESD and BCA consultants to investigate the lux levels of all learning spaces and common areas.

The existing building volume is setting the limit to the amount of window area which can be provided within the walls. To increase the amount of window area a number of skylight options was investigated to maximise natural light penetration into the central areas of the building.

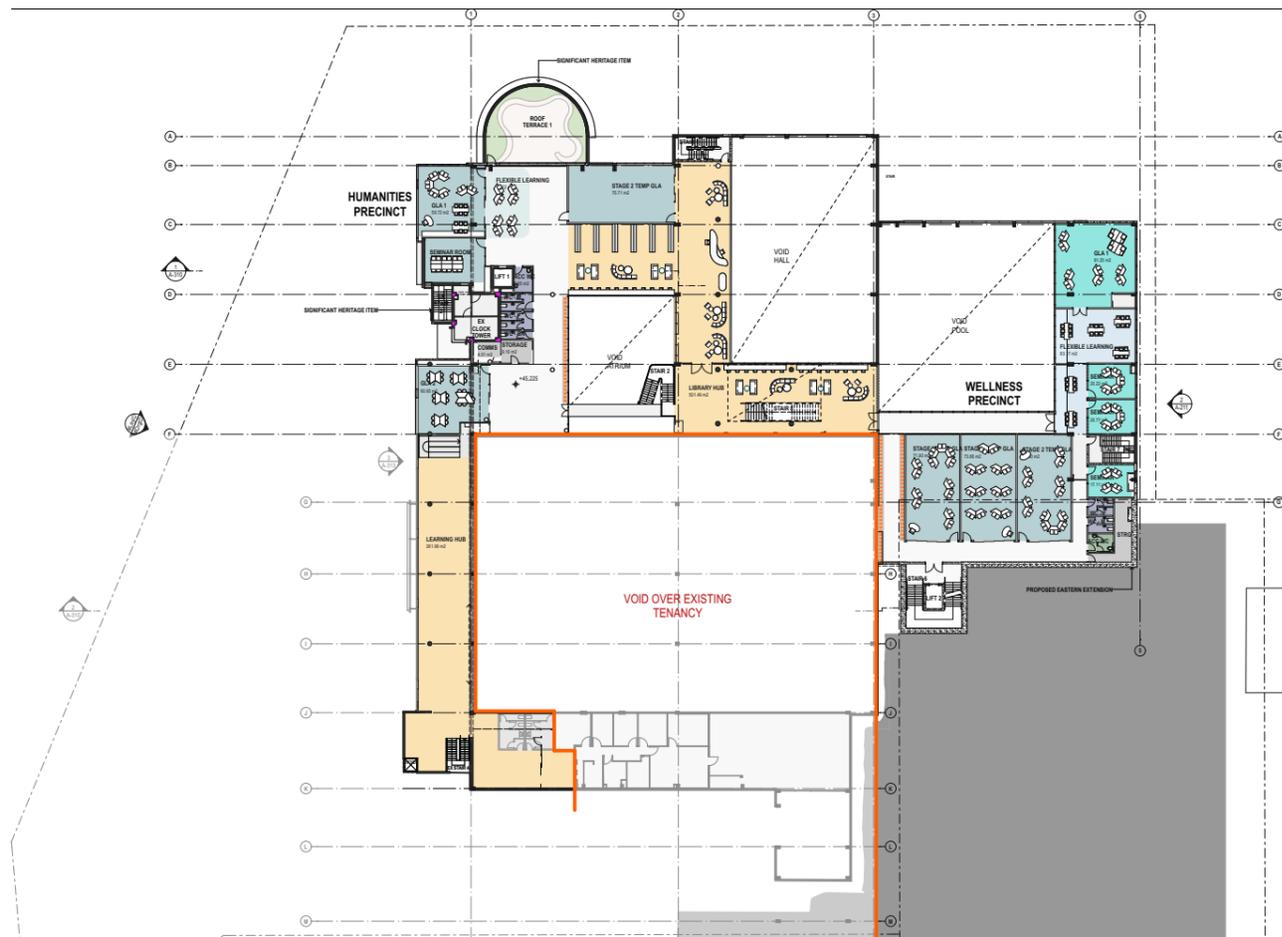
The ESD consultant team used 3D daylight modelling software to prepare lux maps for all floor levels to show the affect of the two skylight options shown here.

Refer to ESD Consultant Report for further detail.

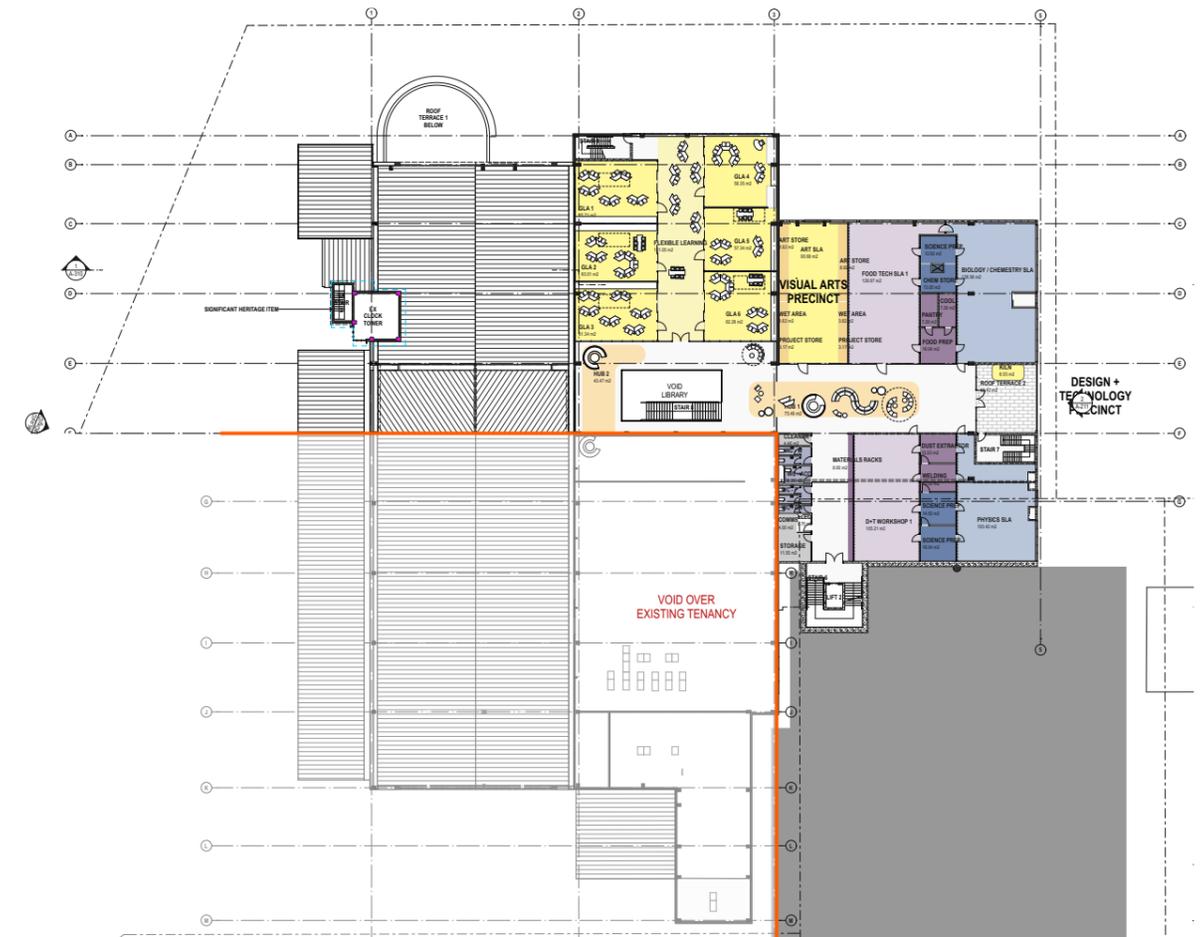




Stage 2 - Level 2



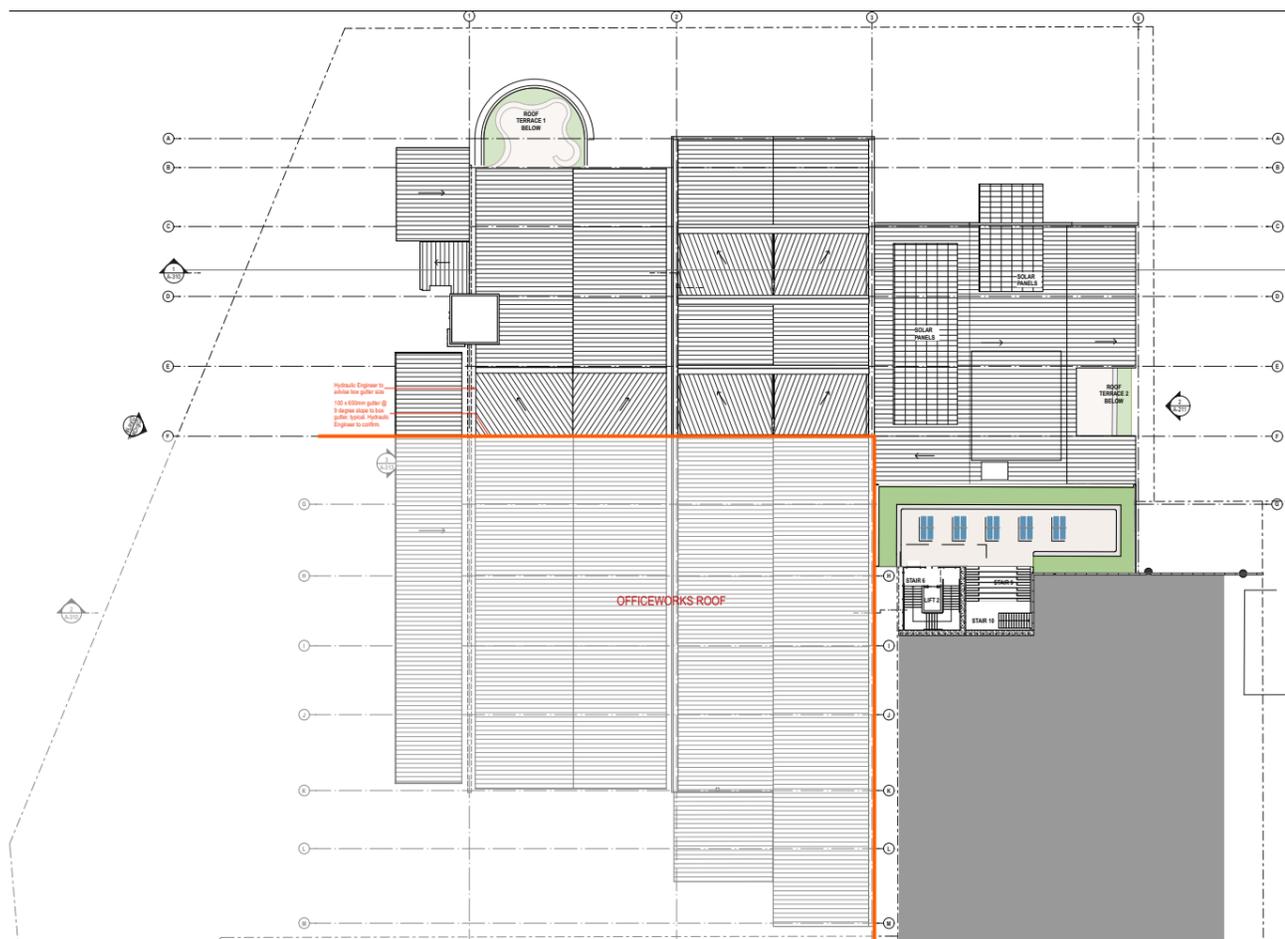
Stage 2 - Level 3



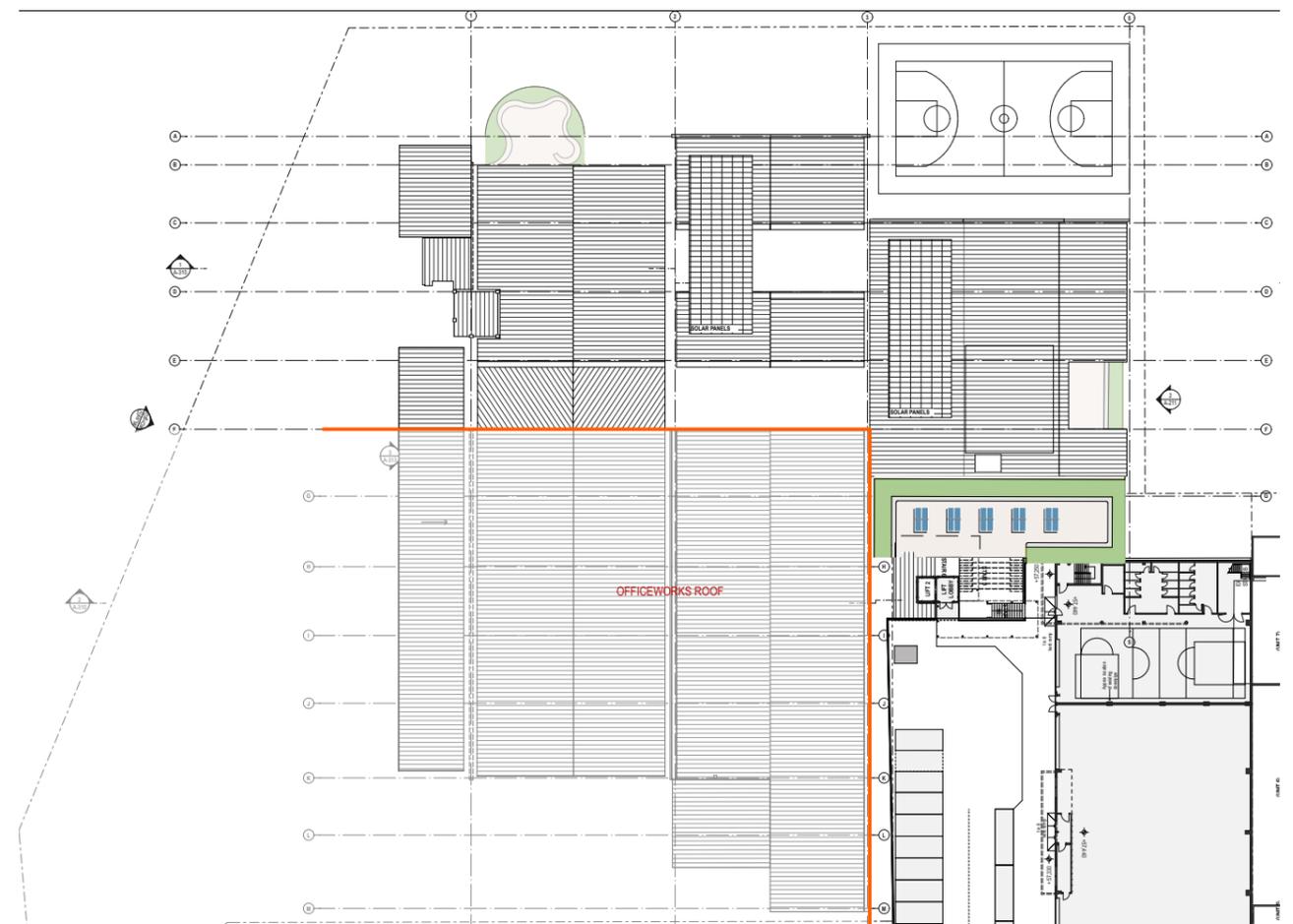
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- WELLNESS PRECINCT
- HUMANITIES PRECINCT
- LIBRARY PRECINCT
- DESIGN + TECHNOLOGY PRECINCT
- MATHS + SCIENCE PRECINCT
- ART PRECINCT
- PERFORMING ARTS PRECINCT
- AUDITORIUM

Stage 2 - Level 4



Stage 2 - Level 5

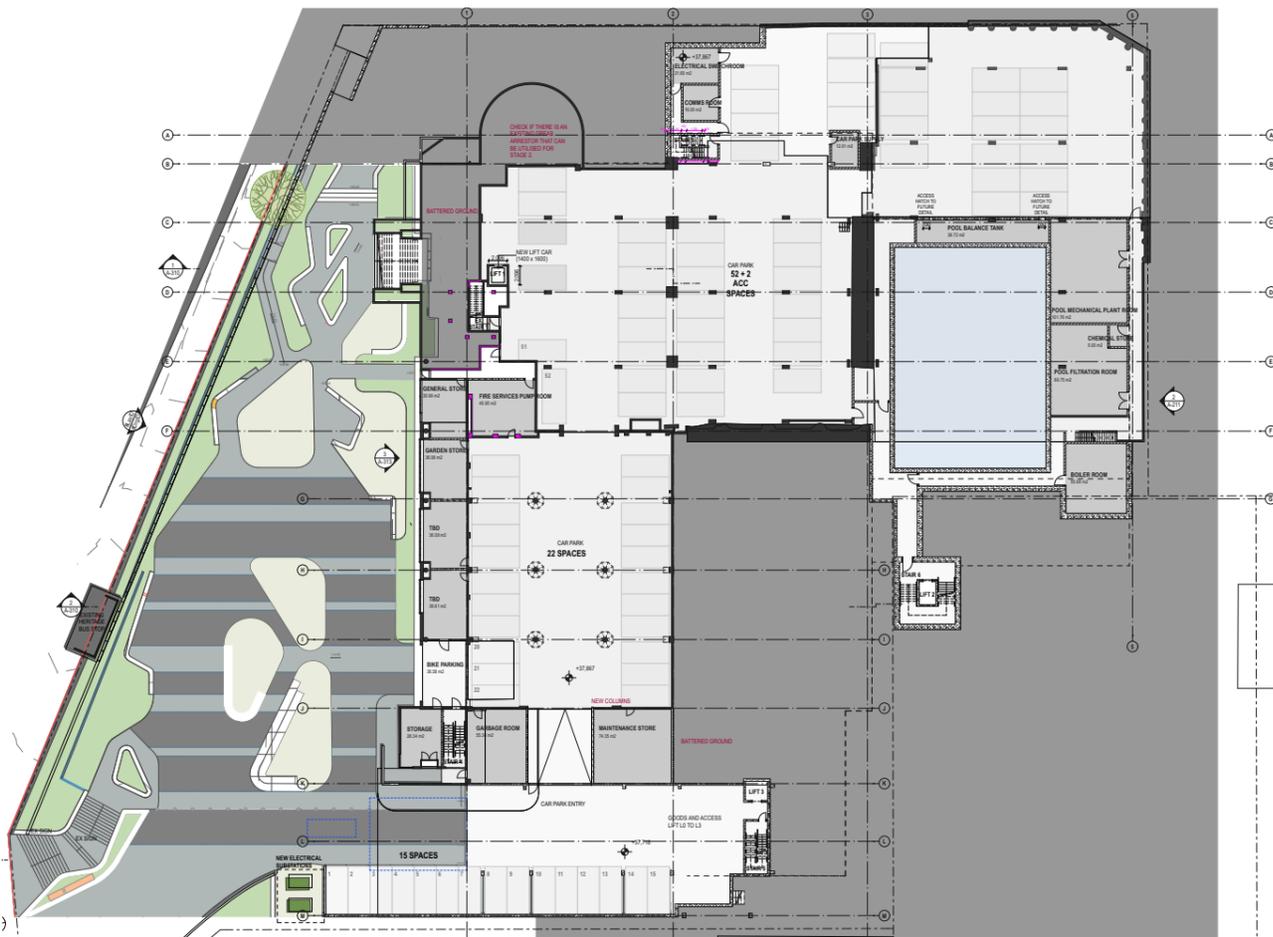


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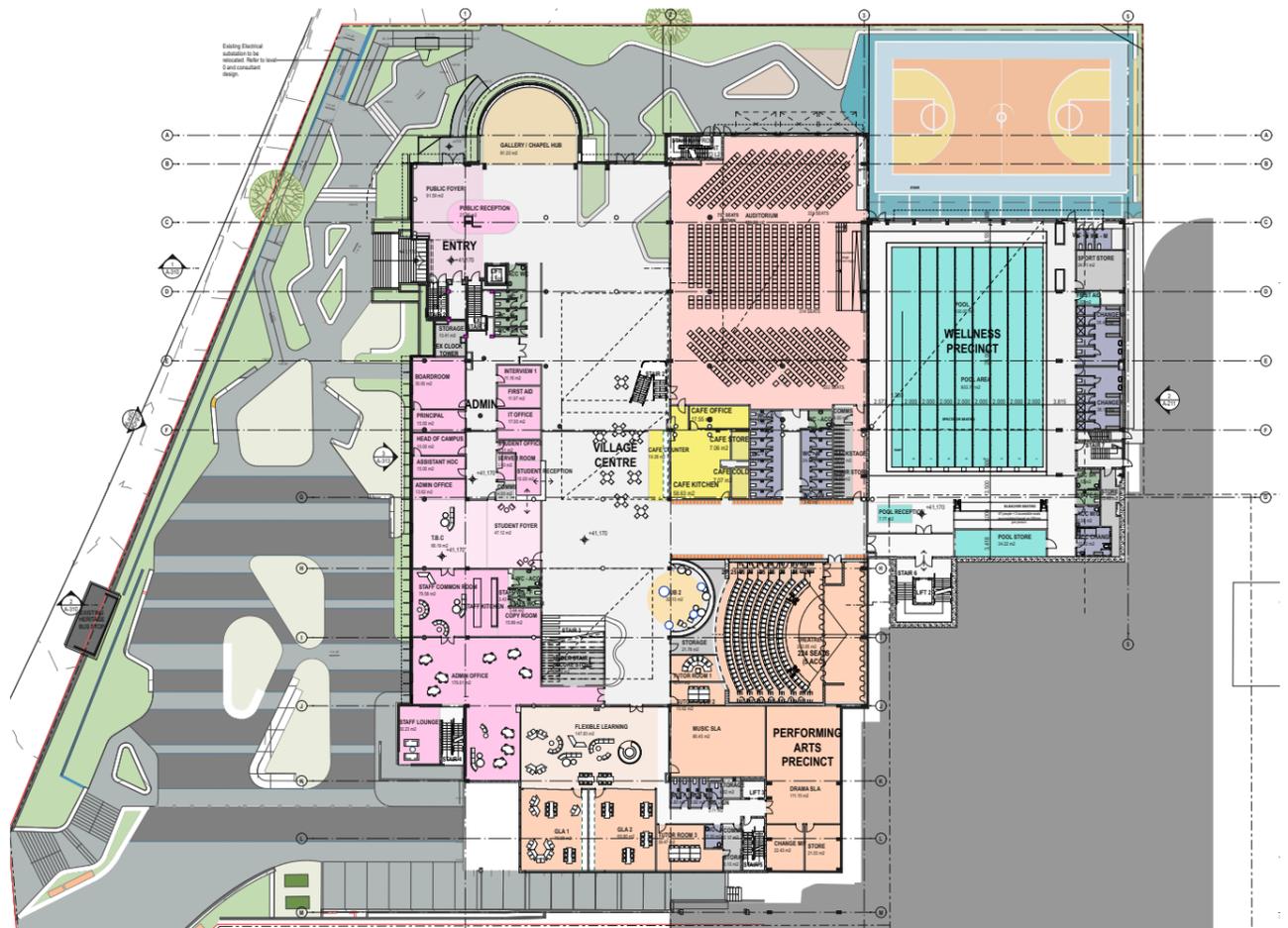
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- LIBRARY PRECINCT
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- PERFORMING ARTS PRECINCT
- AUDITORIUM

## 6.10 Space Planning Stage 3

Stage 3 - Level 0



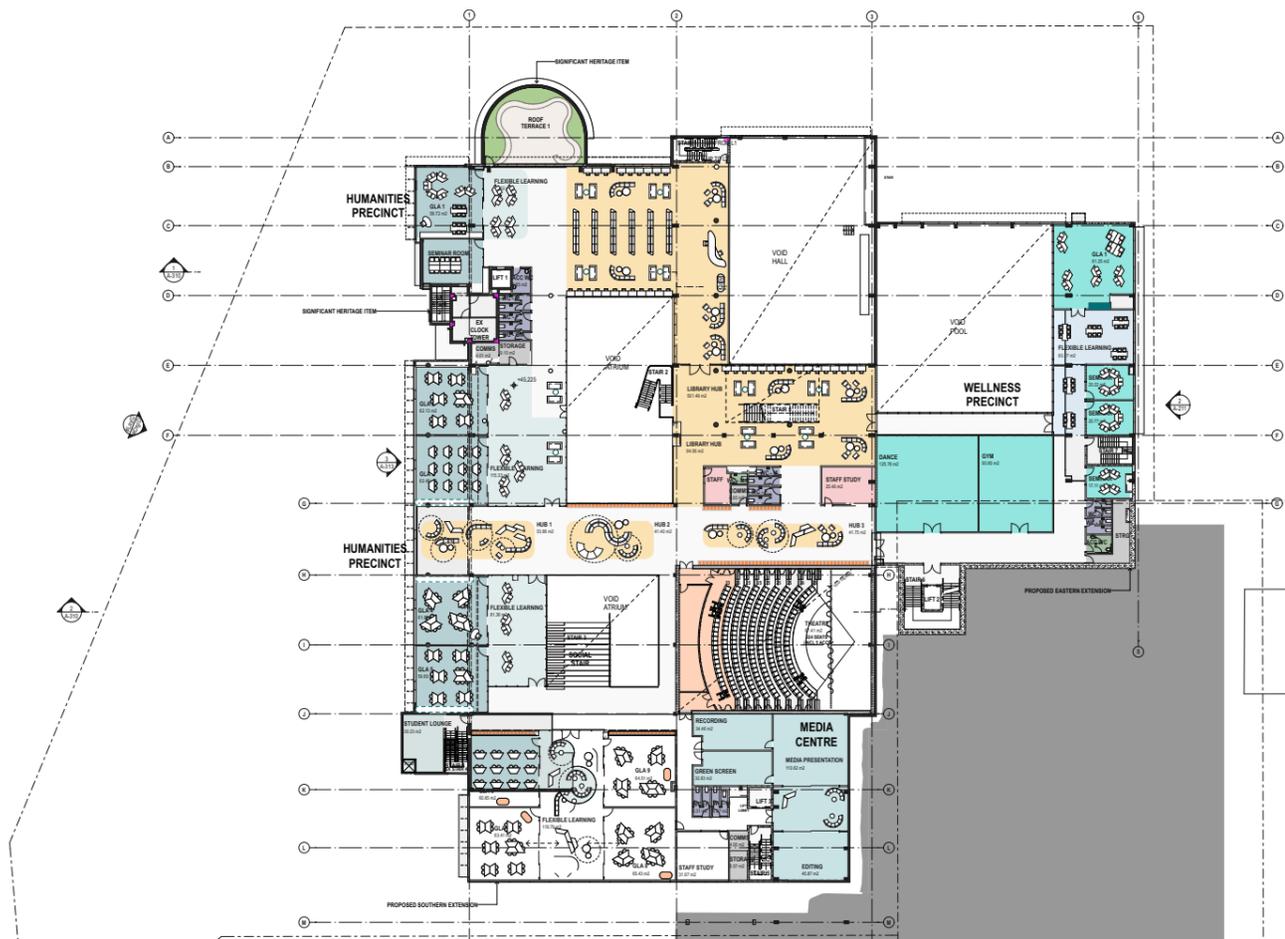
Stage 3 - Level 1



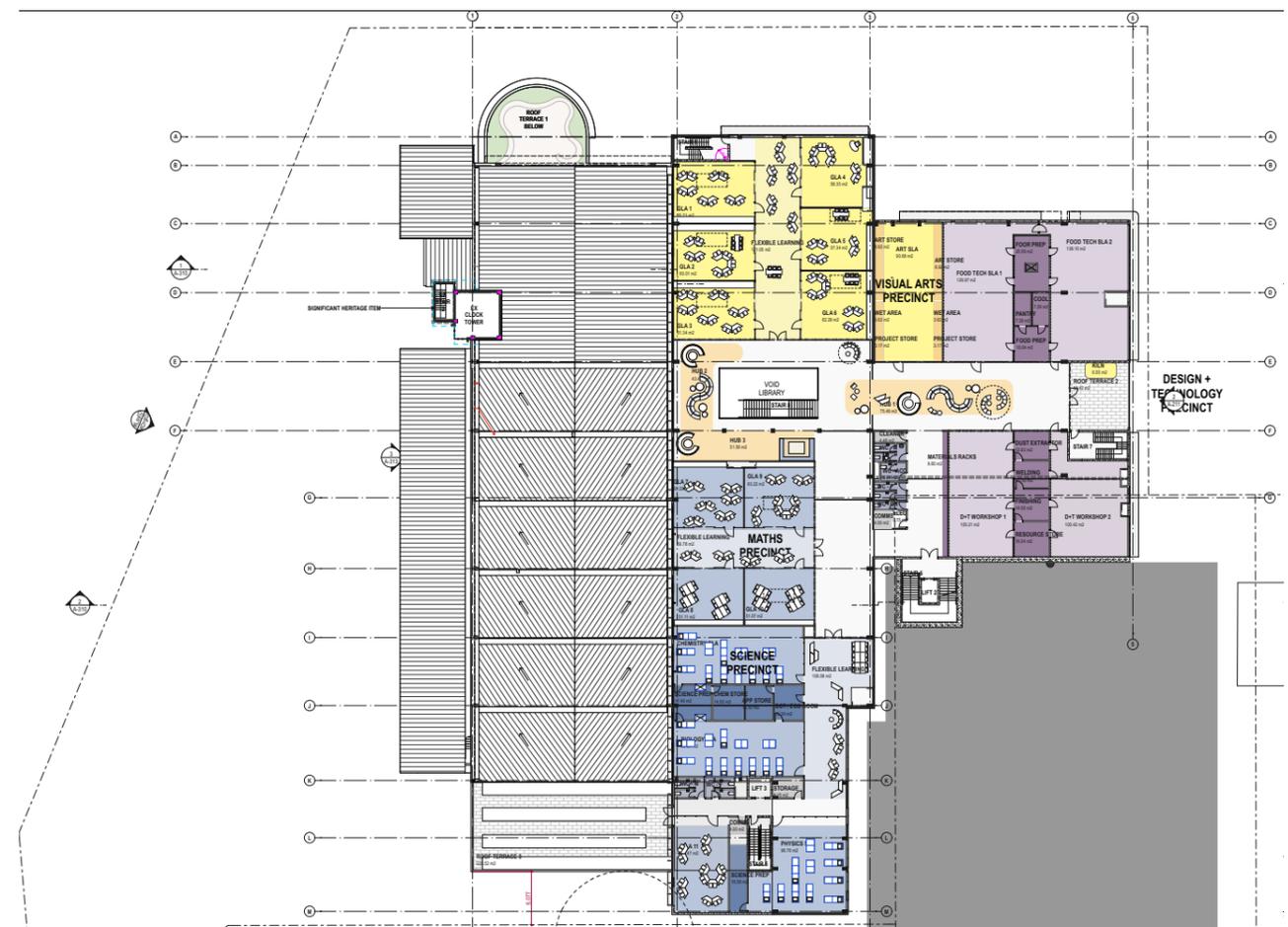
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- ART PRECINCT
- PERFORMING ARTS PRECINCT
- AUDITORIUM

Stage 3 - Level 2



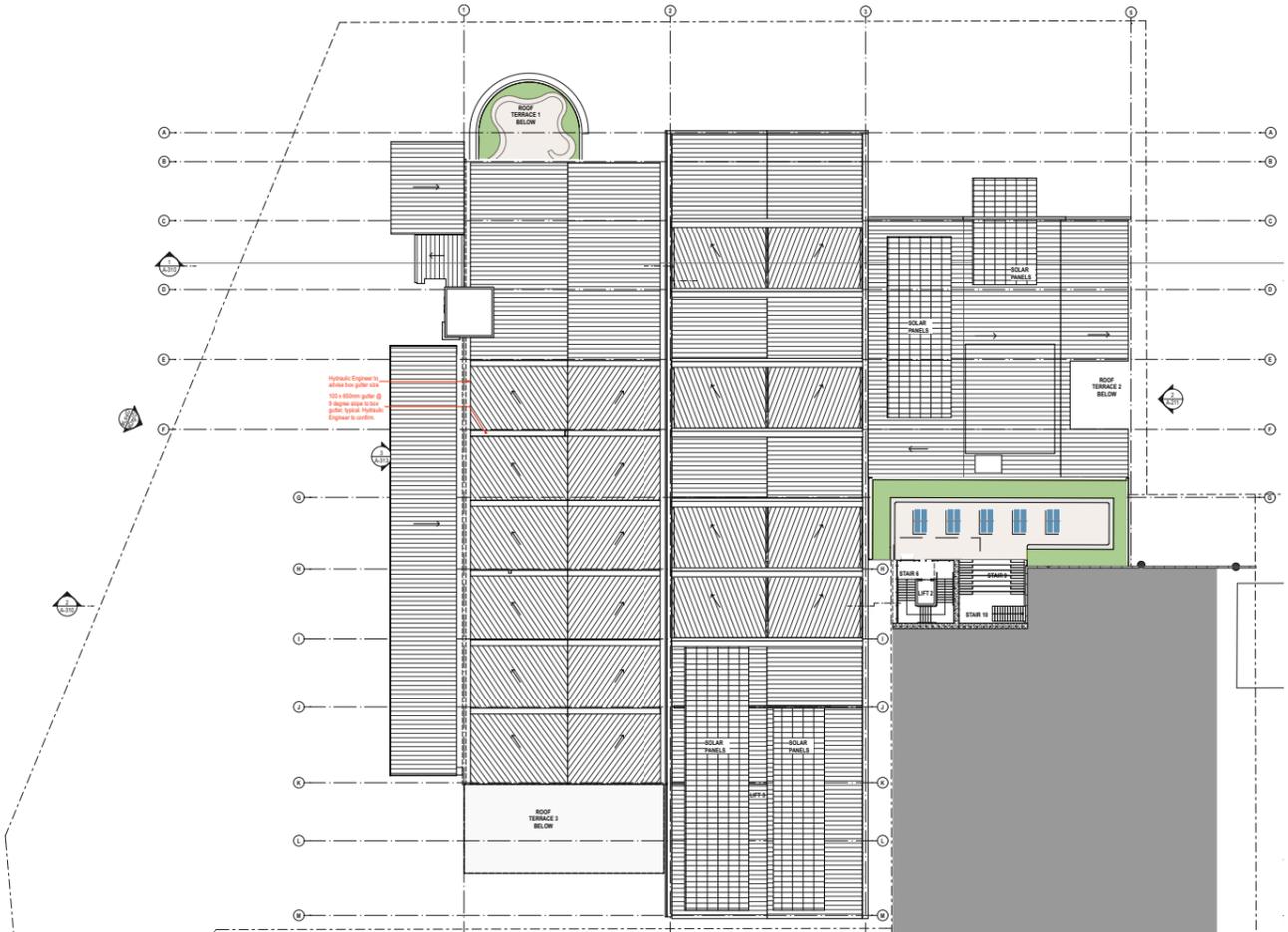
Stage 3 - Level 3



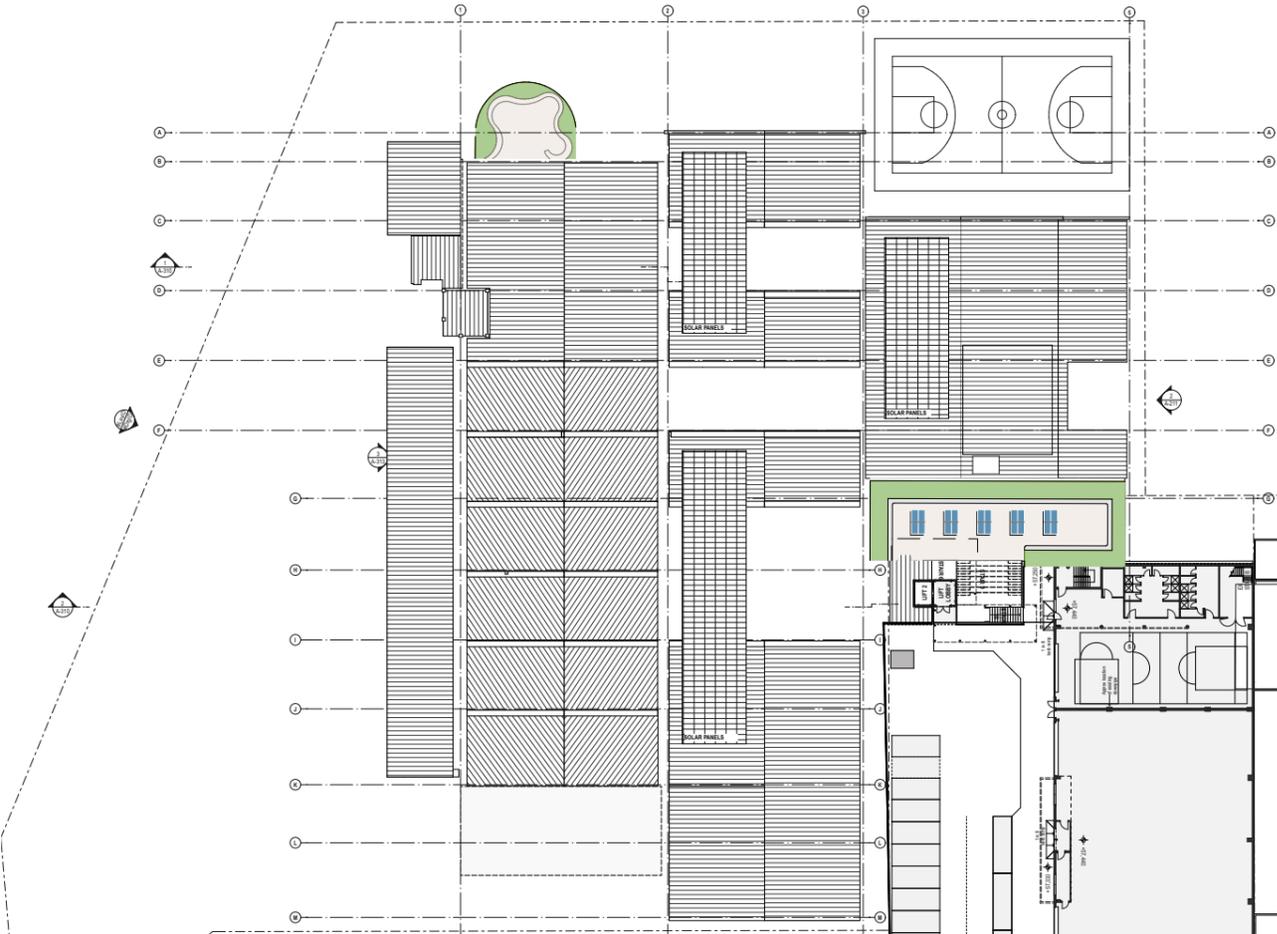
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- DESIGN + TECHNOLOGY PRECINCT
- MATHS + SCIENCE PRECINCT
- ART PRECINCT
- PERFORMING ARTS PRECINCT
- AUDITORIUM

Stage 3 - Level 4



Stage 3 - Level 5



Key descriptor:

- ADMINISTRATION PRECINCT
- WELLNESS PRECINCT
- HUMANITIES PRECINCT
- LIBRARY PRECINCT
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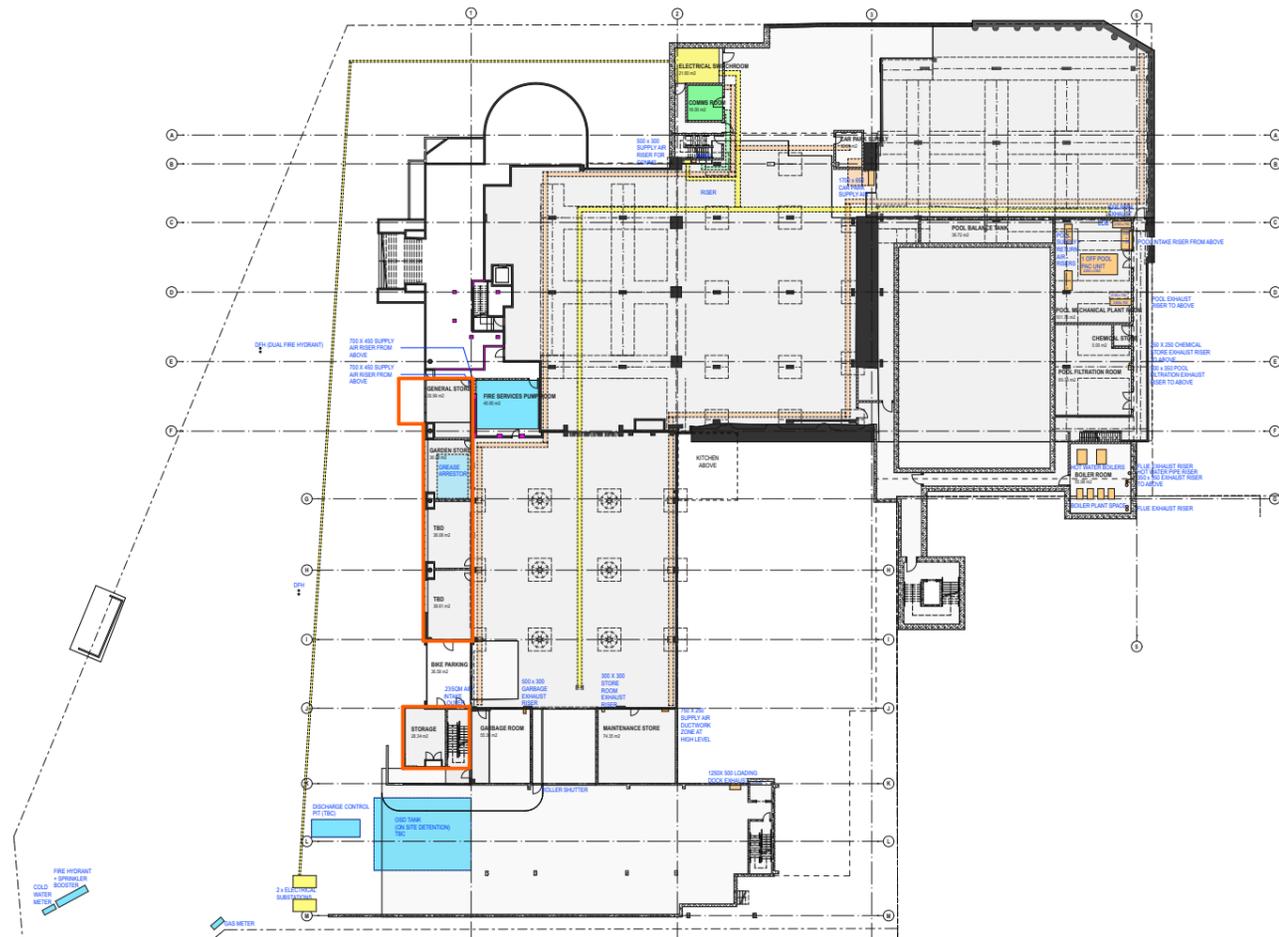
## 6.11 Building Services Integration

The proposed building services were developed in an extensive coordination period in consultation with the Electrical Engineer, Mechanical Engineer, Hydraulic and Fire Services Engineer, Aquatic Services Engineer, directed by the client brief and under review by the ESD Consultant, BCA Consultant and Fire Engineer.

All essential services will be provided in Stage 2.

The following coordination diagrams show the layout and vertical connection of the services throughout the building.

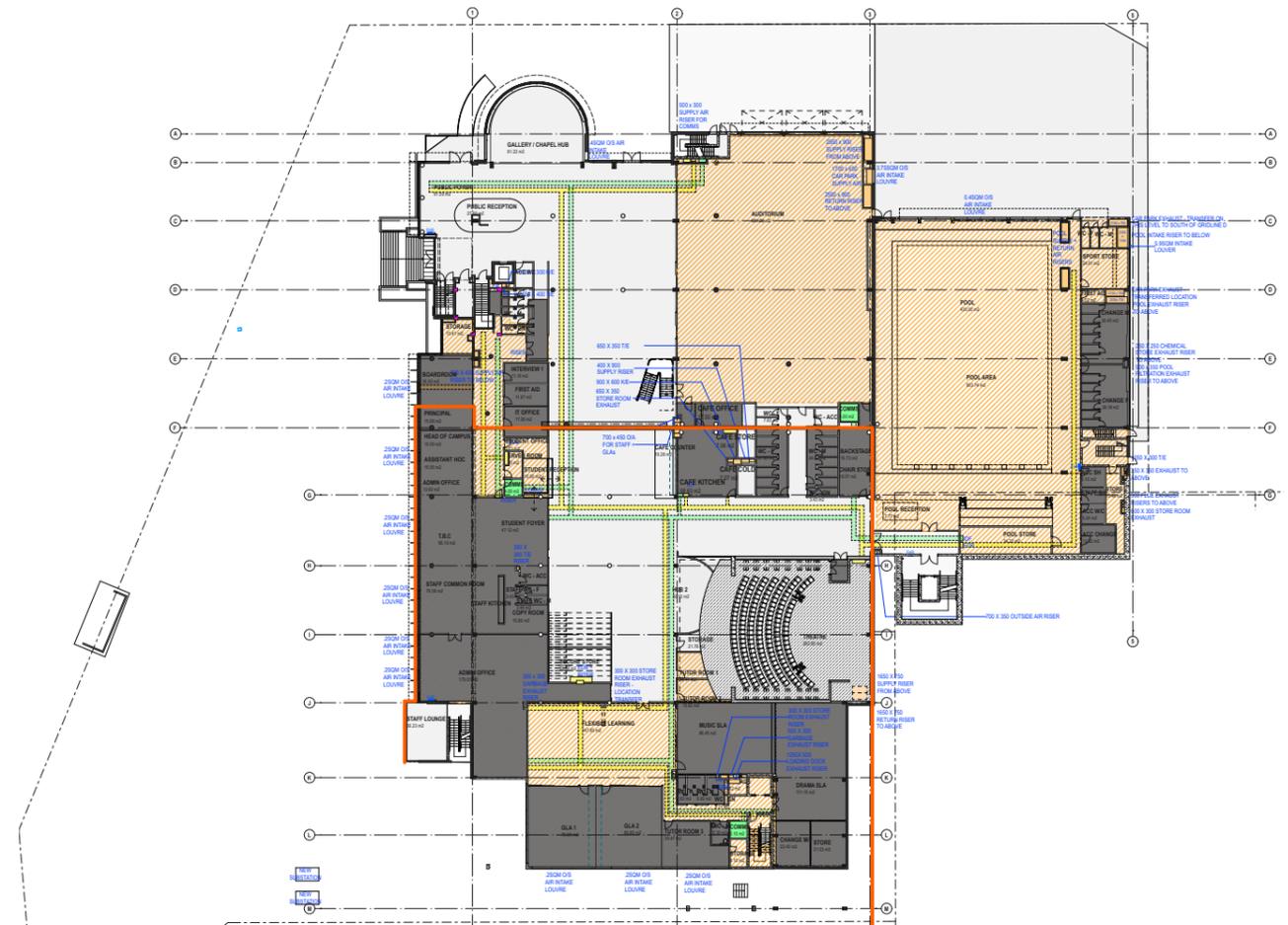
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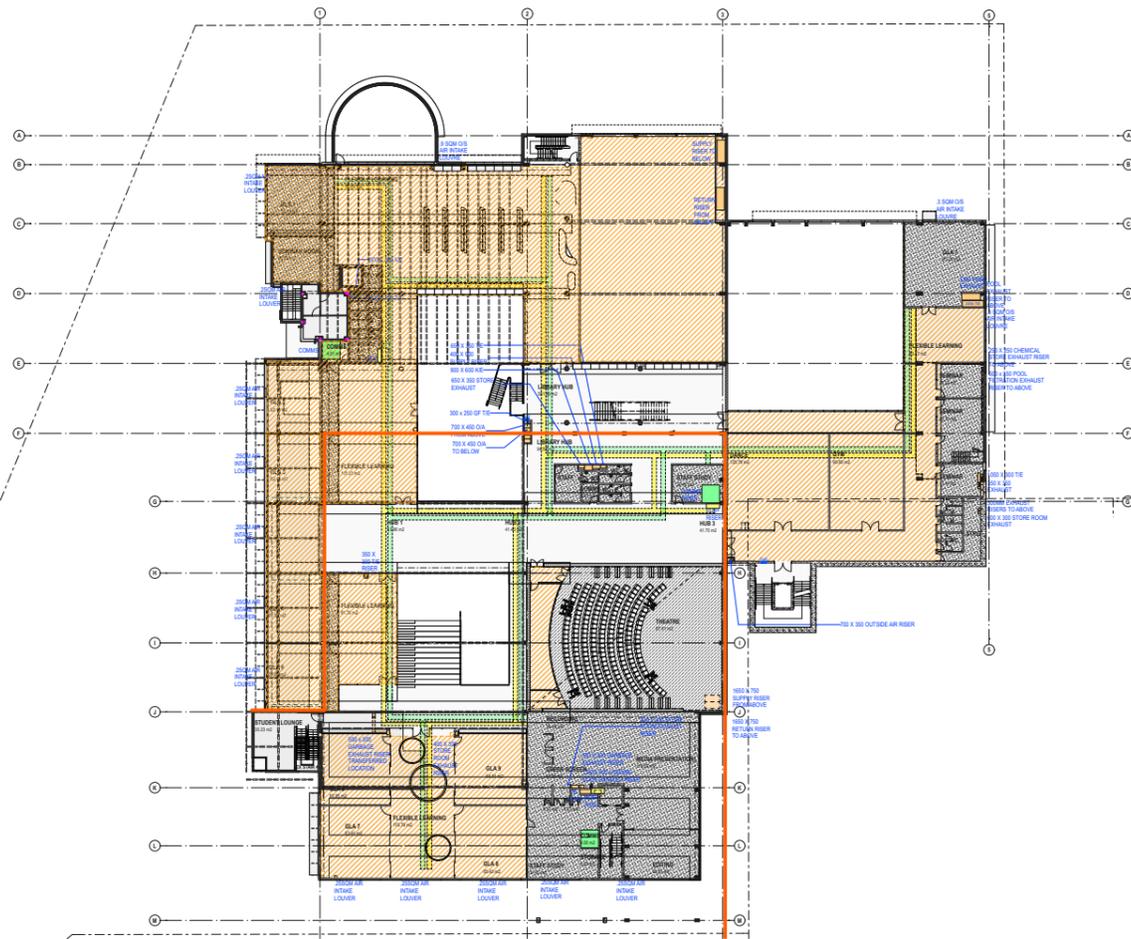
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- MECHANICAL
- ELECTRICAL
- COMMUNICATIONS
- ▨ AIR CONDITIONED ZONES

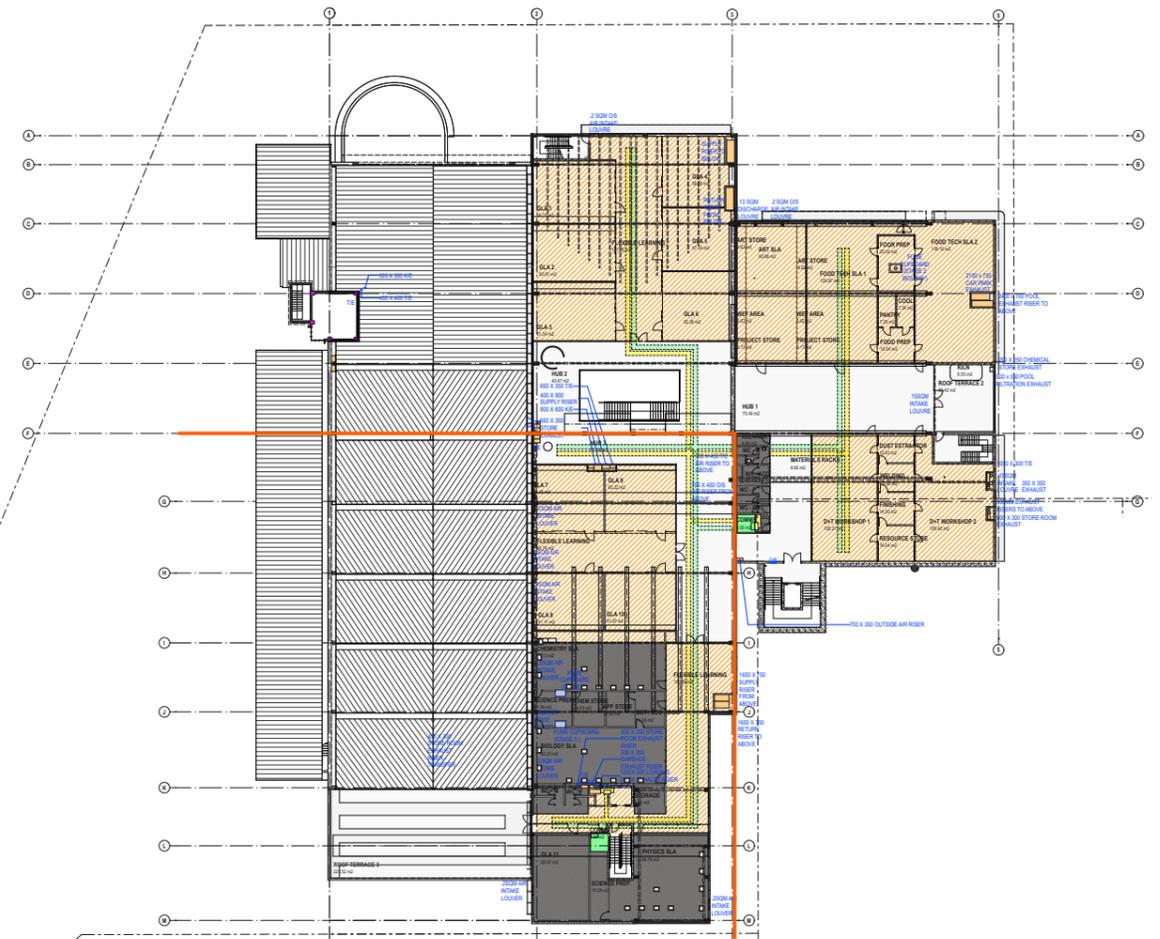
Level 1



Level 2



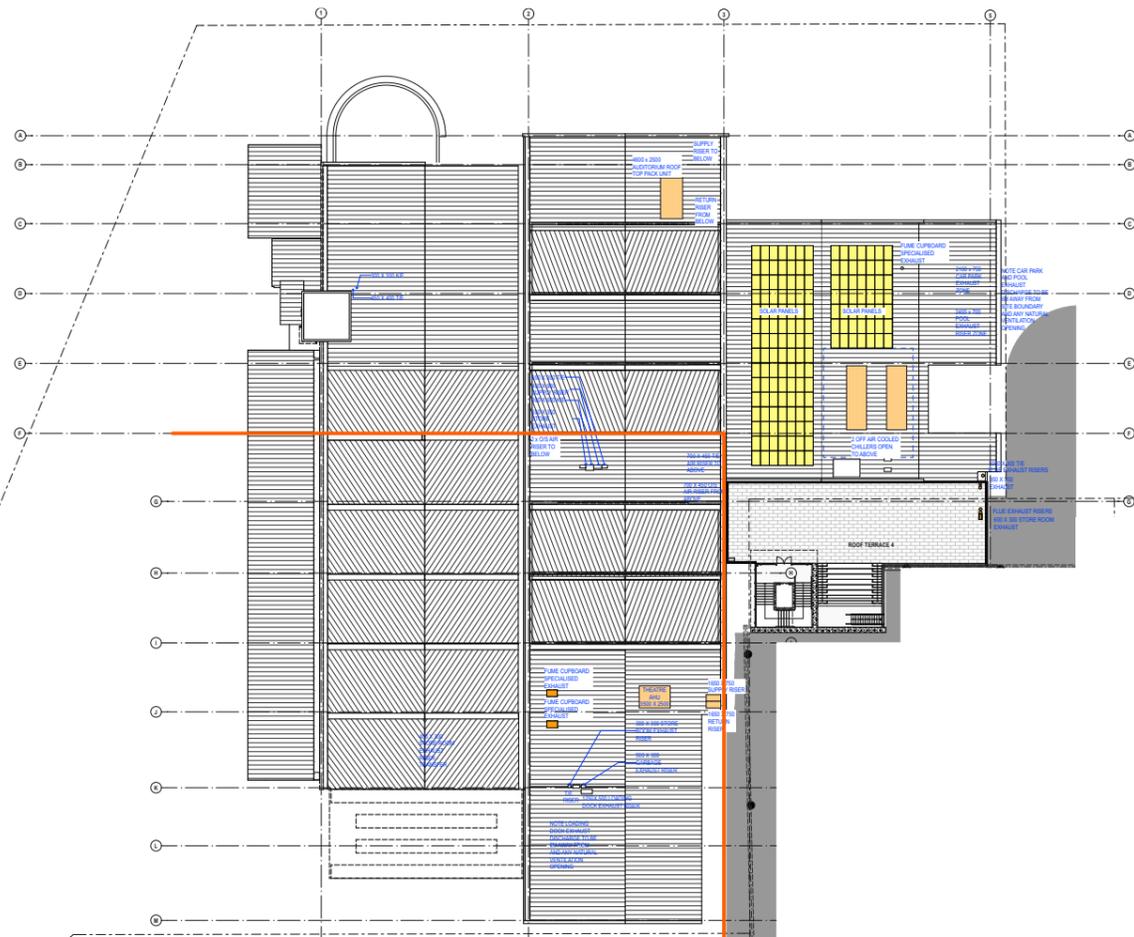
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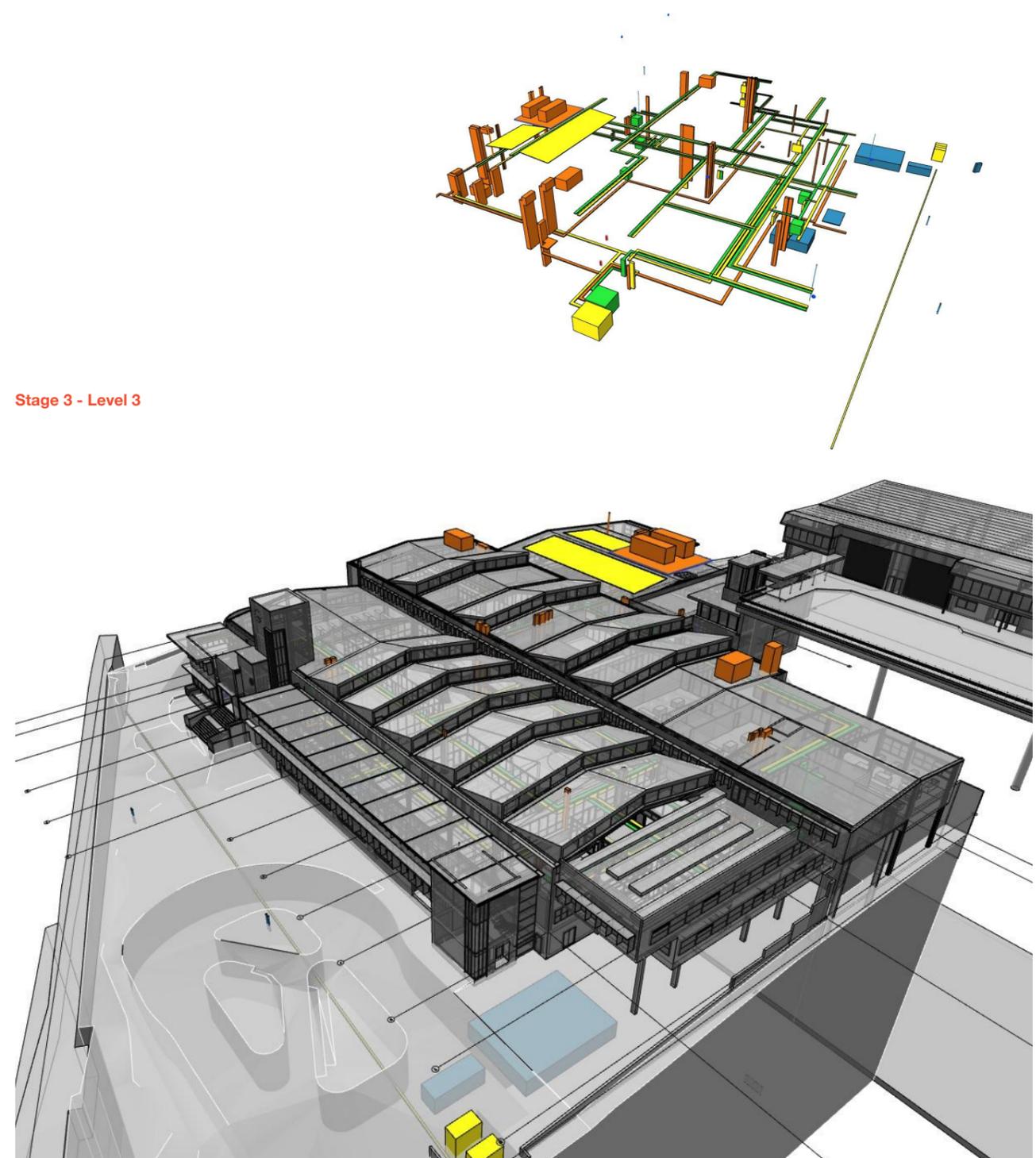
- BOUNDARY LINE BETWEEN STAGES 2 AND 3
- MECHANICAL
- ELECTRICAL
- COMMUNICATIONS
- AIR CONDITIONED ZONES

Level 4



- Key descriptor:**
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  - HYDRAULIC
  - MECHANICAL
  - ELECTRICAL
  - COMMUNICATIONS
  - ▨ AIR-CONDITIONED ZONES

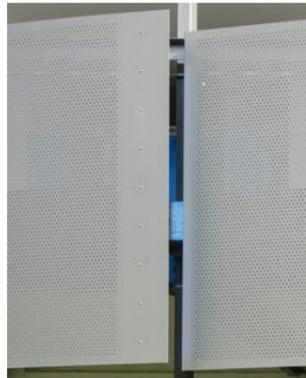
Stage 3 - Level 3



Exterior Wall Colours



Vitra Panel Facade shading



Colour Accents



Noise Barrier Wall



Polished Concrete Floor



Roof Sheeting



### 6.12 Materials Strategy

Construction materials are proposed to be economical of nature with a focus on wide, open and expansive spaces and direct link with the outdoors. The industrial robustness of the structural framework will be offset with colourful inserts and a green atrium. This will bring warmth and playfulness into the school whilst the exterior will provide a face to the community.



Concrete Paving



Timber Fence





Image 1 : Study Option 1 - Full-strength blue



Image 2 : Study Option 2 - Half-strength blue



Image 3 : Study Option 3 - Neutral

Multiple colour options for the walls and shading fins have been investigated.

Study Option 1 - Full-strength blue colour scheme is based on the current St. Luke's Colour Masterplan. The Masterplan was developed by Tonkin Zulaikha Greer Architects in 2011 for the upgrade to the existing Campus on 210 Headland Road.

Study Option 2 - Half-strength blue colour scheme still utilises the Masterplan colours, but with reduced saturation. The colours would give the Senior Campus a 'mature' identity while still linking

it back to the colours of the Campus on 210 Headland Road.

Study Option 3 - Neutral colour scheme investigates the effect of all natural materials and light colours.

The darker colours are intended to reduce bulk by blending into the darker background of the surrounding bushland and thus giving the original heritage section of the building, which is rendered white, more prominence. The white render is to reflect the original colour and finish whereby the new colours and materials have been chosen to complement the

## 6.13 Exterior Colour Strategy

historic building facade.

The bright white in conjunction with the new western facade fenestration will provide a contemporary interpretation of the original facade.

The final Option 4 (refer next page) has been developed to respond to the RTS comments by the Northern Beaches Council - Heritage Division.



Image 4 : Study Option 1 - Full-strength blue - North



Image 5 : Study Option 1 - Full-strength blue - West

**Northern Beaches Council - Heritage Comments**

*(Materials and Finishes)*

The preferred external colours are "Option 2 – Half-strength blue", with the heritage fabric rendered white to reflect the original finish.

From a heritage perspective, the preferred external colours would be those shown as "Option 3 - Neutral" in the Architectural Design Report (page 58). In addition to this, it is preferred that original components be painted in original colours (e.g. white), with the new components painted in a slightly different neutral shade. In doing so, the original fabric components would be clearly identifiable, but with the whole facade still presenting with a neutral palette, reflecting the original architectural design concept.

No objections are raised to the use of other colours (e.g. blue) for building components behind the facade, as darker colours will ensure that the heritage facade is prominent and distinct and that new building additions are recessive

**RTS Response**

Option 4 (proposed) below shows the revised colour scheme to incorporate Council's recommendation.

The original building fabric is proposed to be painted white with the new walls in the western wing of the building to be painted in a slightly darker neutral tone. The skylights and the walls of the central wing of the building are proposed to be painted dark blue to appear recessive. The walls of the eastern wing are proposed to be painted mid grey. The three different tones are to scale down the building mass and to emphasize the 3 structural wings of the building complex.

A toned down version of the blue colours is proposed for the shading fins to provide a contrast to the white walls and thus to reinforce the horizontality of the fenestration bands. The blues are referencing the St. Luke's School colour strategy as used at the Schools other campuses, including the campus at 210 Headland Road. The blues will also indicate that the fins are part of the new building fabric.

The proposed selection of 2 different shades of blues has been toned down to respond to councils preference.

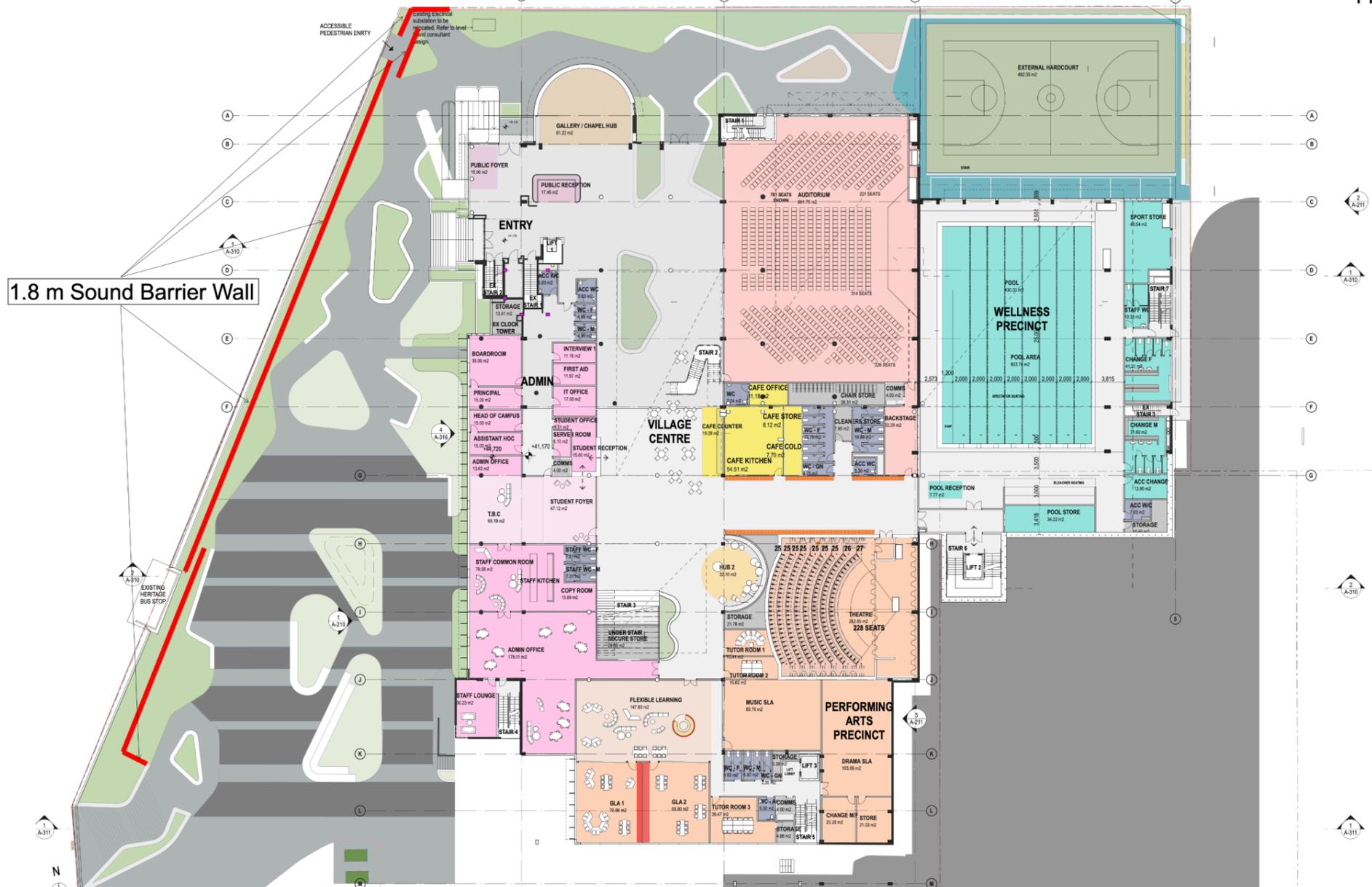
The darkest blue is proposed to be used only for the enlarged shading fins as a way to interpret the location of the original colonnade columns (also refer pg.15). The remaining 4 blue tones are proposed to be radomly placed along the all other shading fins.



Option 4 - Proposed Colour Scheme

Recommended Sound Barrier Wall Location

6479-5.3R Appendix D



## 6.14 Noise Barrier Wall

### Acoustic Assessment

A traffic noise intrusion study has been carried out by the Acoustic Consultant for the proposal at 800 Pittwater Road and 224 Headland Road.

The proposed development is affected by road traffic noise from Pittwater Road, which carries heavy traffic volumes.

The study found that noise controls are required to reduce the noise intrusion to within acceptable internal and external noise levels.

The following recommendation has informed the noise barrier wall as detailed on the following page:

#### 6.1 Sound Barrier Wall

We recommend constructing a 1.8 metre high sound barrier wall along the entire length of the western boundary of the ground level outdoor play area, as shown in the attached Appendix D.

The sound barrier wall may be constructed from masonry, 10 mm thick solid polycarbonate sheeting, 3 rail 'solid capped and lapped' timber or 6.38 mm thick laminated glass. The construction shall be free of visible air gaps to provide an impervious sound barrier. Should an alternate construction method be proposed, it must be reviewed by an appropriately qualified Acoustic Consultant.

Once the sound barrier wall is incorporated into the design, the required road TNR is reduced in some locations due to the increased shielding of Pittwater Road provided by the sound barrier wall.<sup>1</sup>

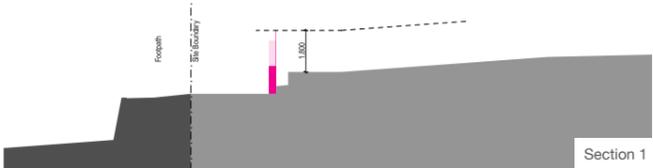
Refer to the Traffic Noise Intrusion Assessment for more detail.

<sup>1</sup> Source: 'Traffic Noise Intrusion Assessment' by Day Design Pty Ltd, page 19.

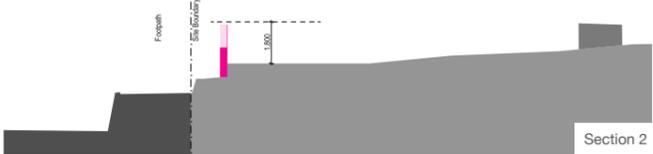




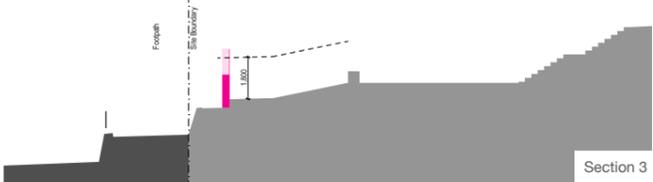
View from North



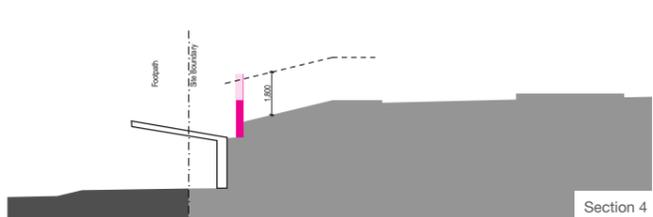
Section 1



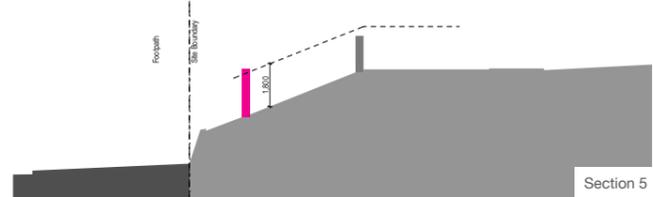
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Section 3



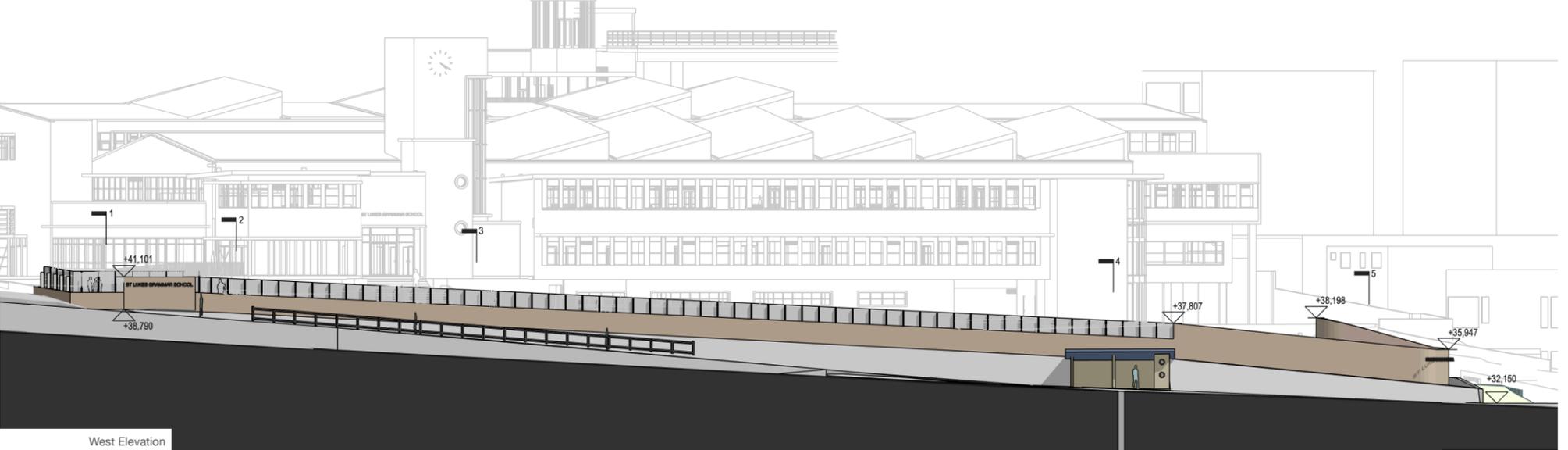
Section 4



Section 5



View from South



West Elevation

**Noise Barrier Wall Design Statement**

The design of the noise barrier wall was developed in consultation with the Landscape and Acoustic Consultant and has been reviewed by the Heritage Consultant and the GANSW Office.

Multiple options have been investigated and the final option is presented here.

The main design consideration was to provide a design that is complementary to the heritage fabric, comprising of the heritage building, the bus stop and the Stony Range Botanic Garden.

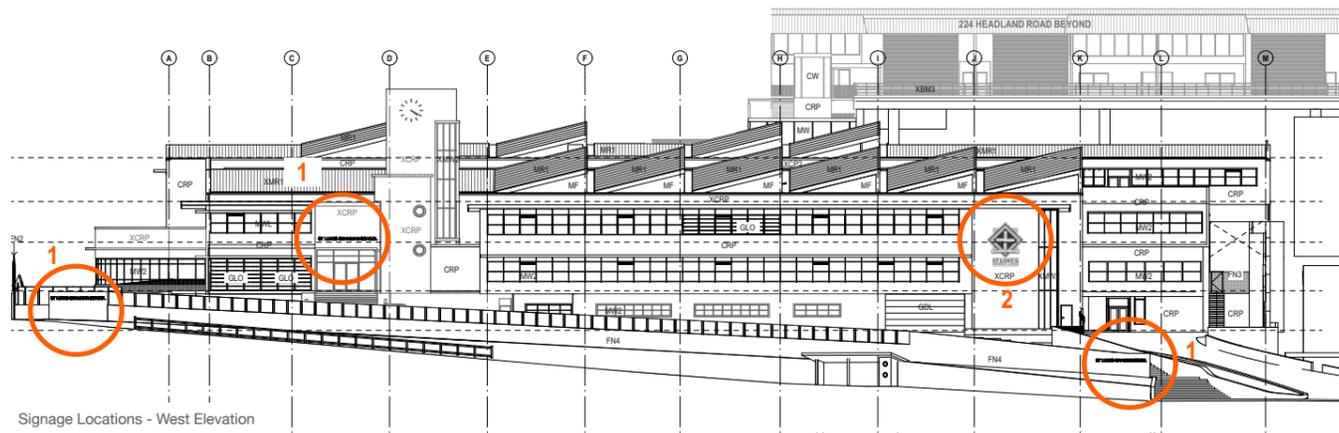
The noise barrier wall consists of three major elements:

- A solid masonry base with sandstone cladding to visually and physically anchor the wall to the ground and tie it into landscape.
- A clear acrylic top wall to allow visual connection into and from the site and to reduce the bulk.
- An array of vertical fins to talk to the shading fins on the western building facade for design continuity and to interpret the rhythm of the original timber balustrade along the Pittwater Street footpath.

Further design factors are to provide:

- A wall that satisfies the acoustic requirements.
- A wall that represents the school's public face.
- A wall that is solid and transparent.
- A wall with simple geometry and high quality materials to integrate it into the site and the landscape.
- A wall that is inviting with integrated access gates.
- A wall to provide a calm and neutral background for the school signage.

The colours of the vertical fins are to be kept in a neutral tone to blend in with the heritage building beyond.



Signage Locations - West Elevation



Image 1: Existing Signage - 210 Headland Road

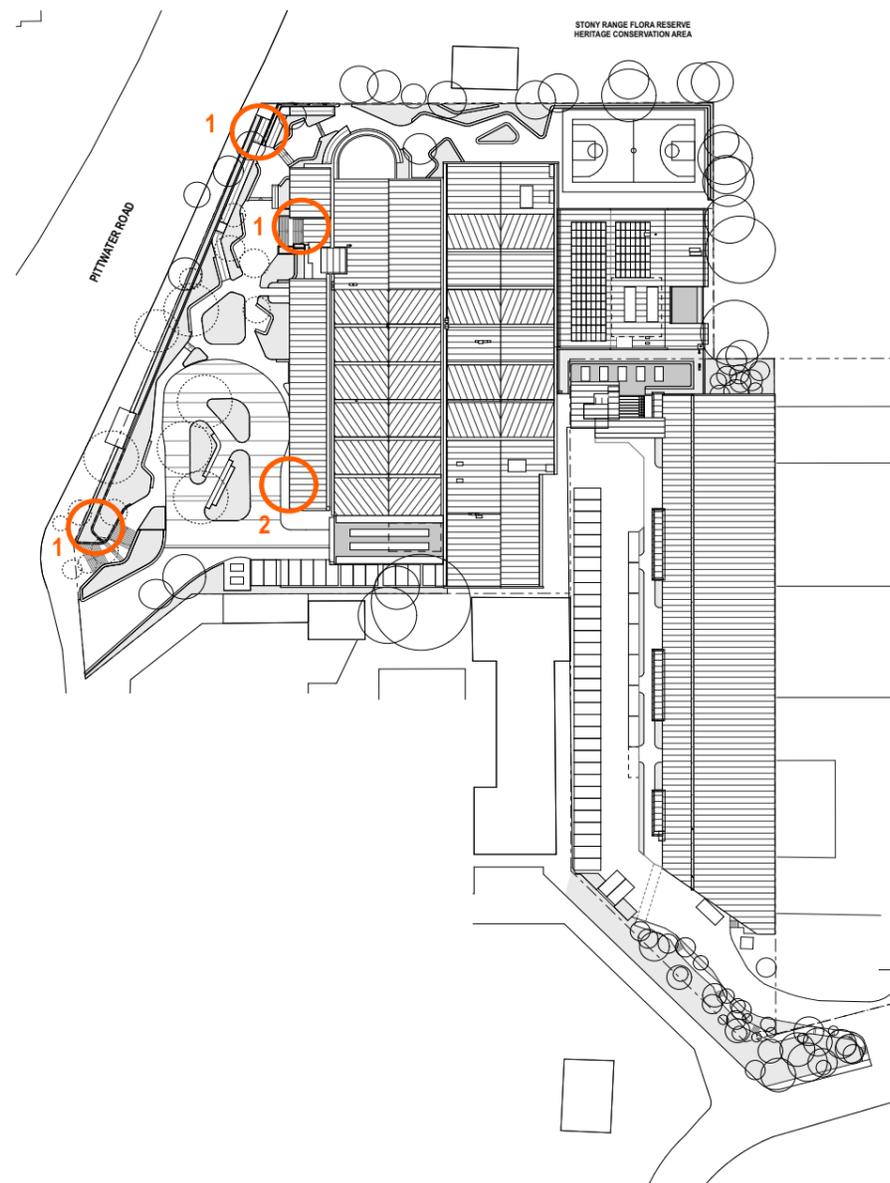
## 6.15 Signage

The proposed signage is modelled on the existing Campus signage at 210 Headland Road.

Signage type 1 is comprised of individual metal lettering only. Text content to be "St. Luke's Grammar School".

Signage type 2 is comprised of individual metal lettering "St. Luke's Grammar School" and the St. Luke's "Christ Our light" symbol.

All proposed signage to be permanent school identification signage fabricated from clear finished stainless steel plate.



Signage Locations - Plan



Image 2: Signage Type 2



Image 3: Signage Type 1

## 6.16 Carpark Entrance

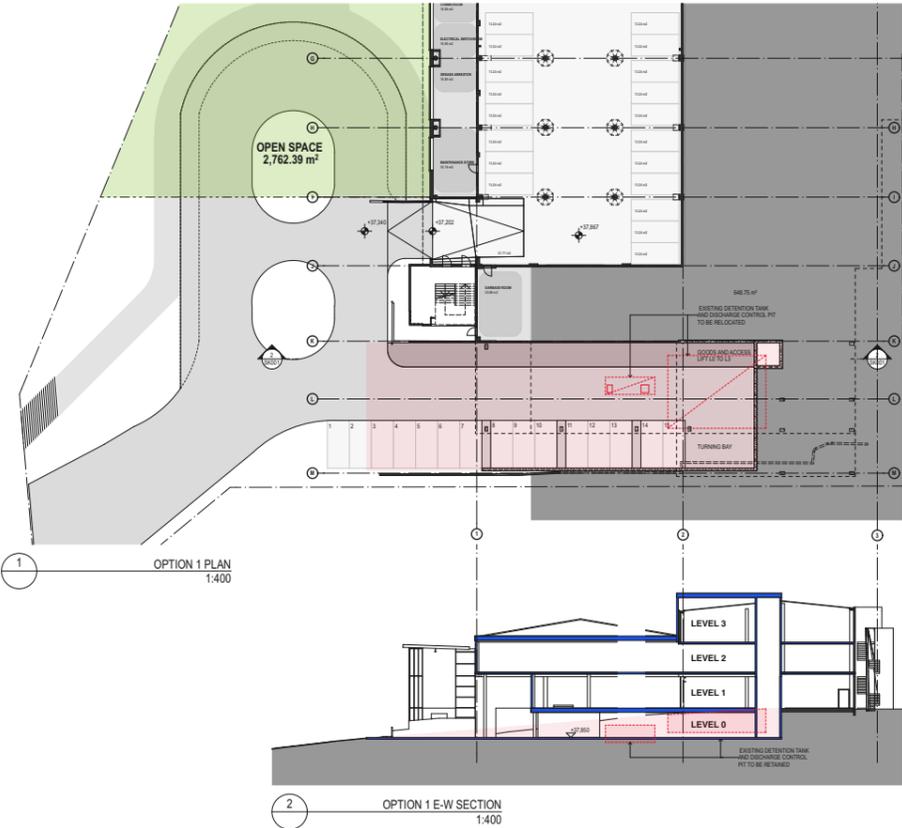
Multiple car park options have been investigated to minimise the impact of the vehicle movement on site during the day.

- Option 1**
- Existing car park entry to be retained.
  - Extensive excavation to south to provide additional car parking spots.
  - Demolition of the existing stormwater detention tank
  - A large portion of the western open space is permanently taken up by the driveway access to the basement carpark.

- Option 2**
- Existing car park entry to be closed off and re-purposed for under cover bicycle parking.
  - New carpark entry from the south to allow for the extension of the open space outside drop-off and pick-up hours.
  - Less extensive excavation to south to provide additional car parking spots.
  - Existing stormwater detention tank to be retained.
  - A large portion of the western open space is now available for use as playground space.

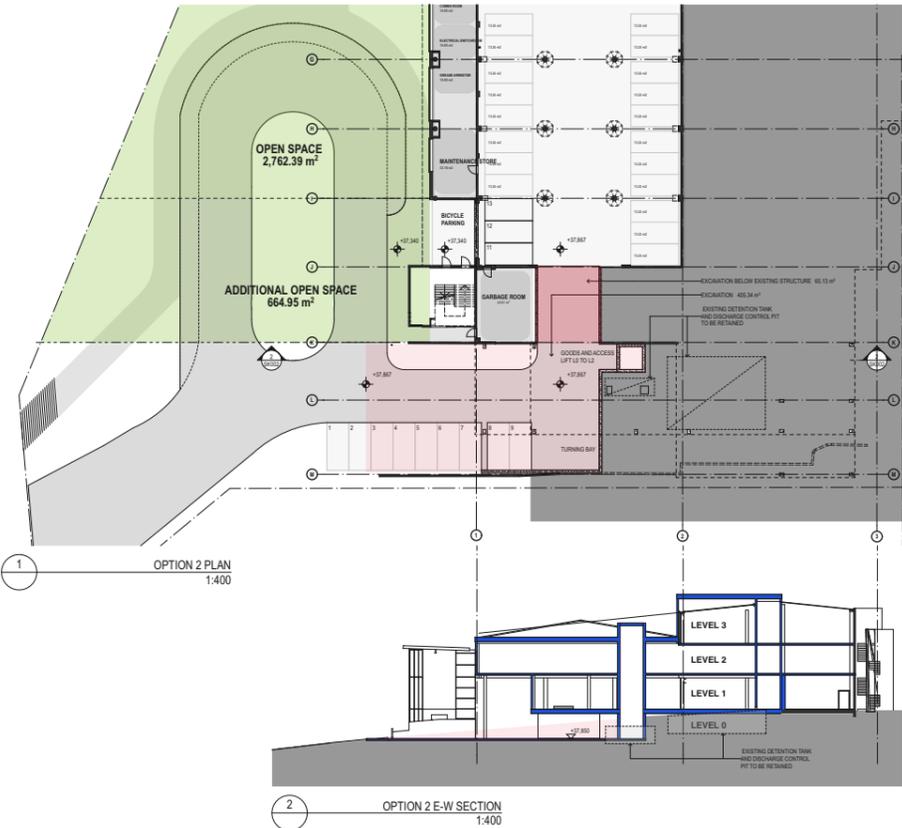
Option 2 was the preferred option and was further developed.

Refer to the Architectural drawings for more detail.



### CARPARK ENTRY OPTIONS

	OPTION 1	OPTION 2
CAR PARKING	15	9 (external)+ 3 (internal)
OPEN SPACE	2,762 m2	3,427 m2
OSD TANKS	to be relocated	to be retained
LIFT	to service L0 - L3	to service L0 - L2
EXCAVATION	627 m2	470 m2 (incl. 65m2 below existing structure)



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## 6.17 Internal View Study



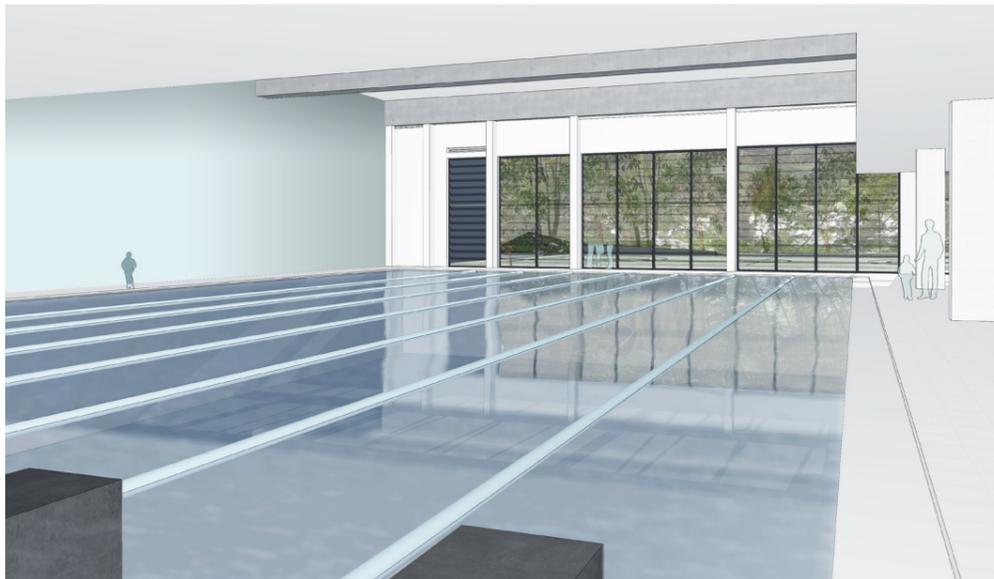
View of the 'Village Centre' - Looking from South to North



View of the Auditorium



View of the 'Village Centre' showing an earlier option with coloured walls and non-preferred skylight option.



View of the Swimming Pool



View of the 'Village Centre' showing the proposed option.

## 6.18 External View Study



View from Pittwater Road





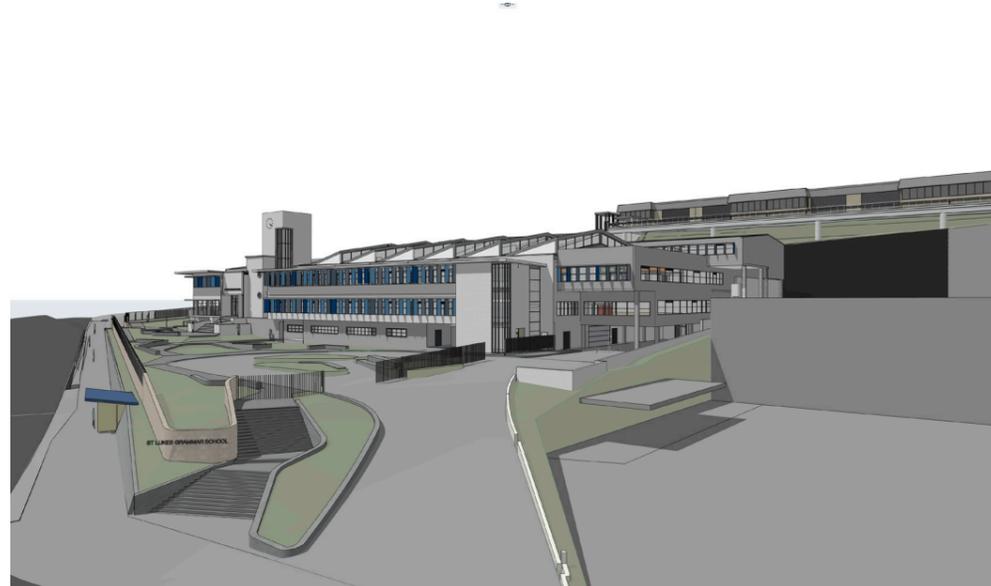
View into the pool and games court.



View into the auditorium and northern playground.



View of the car park entry and the new addition to the south.



View from south-west.



7.0  
Design  
224 Headland Road



View of the proposed link building with lift access



View of the roof terrace, social stair and vertical connection.



View of the Basketball Centre, the link building and roof terrace



View from the South.

## 7.1 Architectural Design Statement

The building has been designed to provide a functional fit-out with minimal impact on the building envelope.

The two new full-size basketball courts have been designed for training purposes with ample run-off space and space to set-up team benches.

The existing windows and roller doors are proposed to be retained to provide natural light and the natural ventilation.

A new pit-less and overhead-less lift is proposed to be inserted within the existing building envelope to provide accessible access to the school clothing store on level 1.



View of the proposed basketball courts with new steel trusses.



View from the proposed entrance lobby.



View of the proposed entrance lobbies.

## 7.2 Structural Design Statement

### Existing Structure

- The existing building structure was constructed as individual industrial units with each having an office mezzanine and adjacent warehouse space.
- The mezzanine comprises a concrete slab structure supported on concrete columns and masonry.
- The roof structure is structural steel and is supported on the concrete mezzanine and by steel columns within the intertenancy walls.

### Proposed Structure

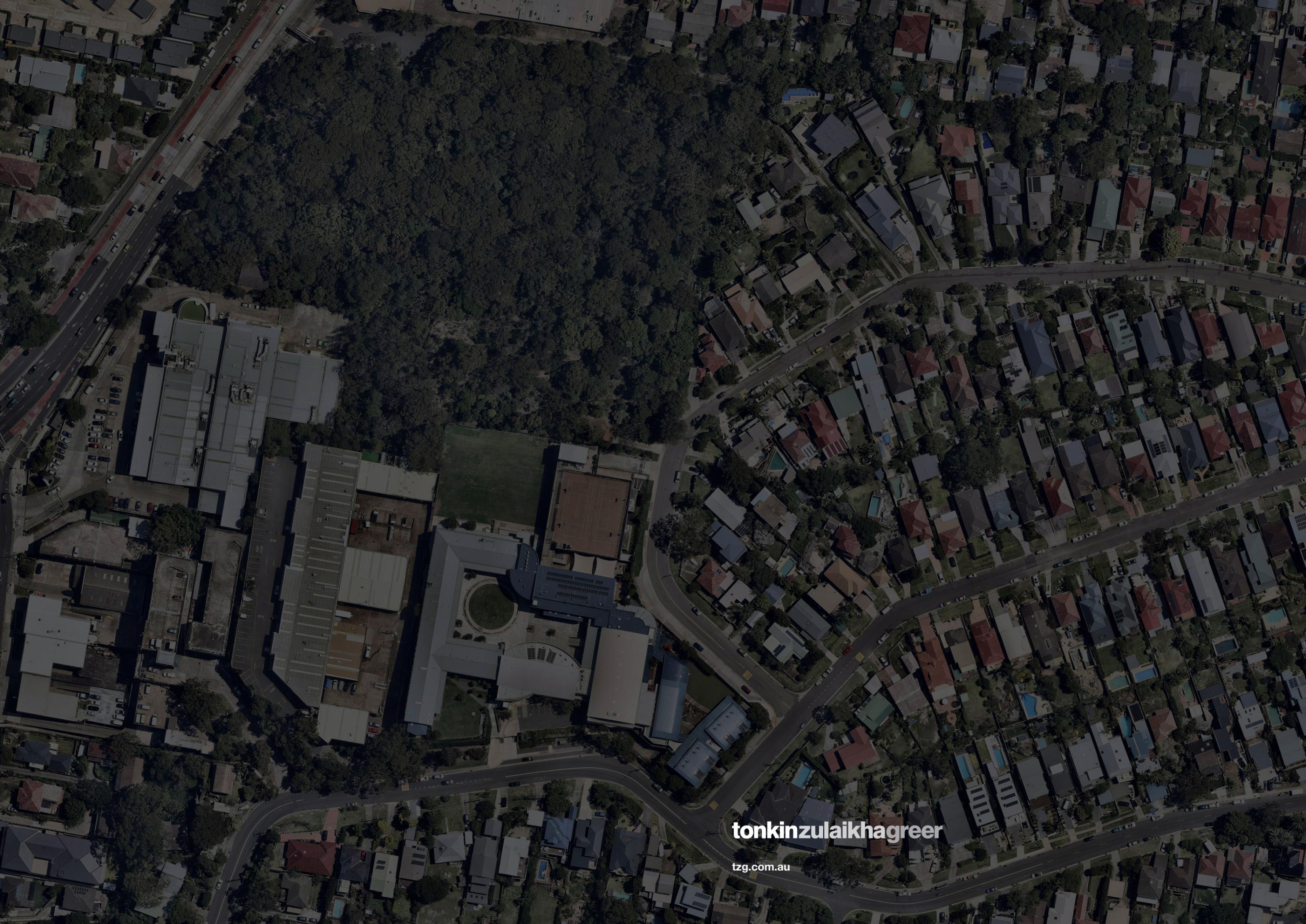
- Removal of the mezzanine and intertenancy walls to create the open space required removes the existing column supports for the roof.
- It is proposed that the existing roof beams are incorporated in a new truss system that spans the entire width of the modified building, with the new system installed prior to removal of the existing supports. (refer SK/ H1 and H2 for concepts).
- Additional lateral bracing is provided by the introduction of a new bracing truss on the Western side of the building.
- The existing "pop out" portions of the mezzanine structure will be supported onto new columns.

### Construction Constraints

- Retaining the existing roof and roof structure will limit material handling.
- The strengthening of the existing beams will need to be carried out by site-based fabrication
- Construction vehicle access will need to be restricted to the non-suspended portions of the carpark and access way unless additional verification of the suspended structure is carried out.

1

Source : SDA Structures, Andrew Simpson



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