

Architectural Design Report

Rev. 02

Cranbrook School Hordern Oval Precinct Redevelopment

architectus™

GA NSW Design Verification Statement

Project Name:	Cranbrook School, Bellevue Hill Campus
Project Address:	5 Victoria Road, Bellevue Hill, Sydney
Architect's Name:	Ray Brown
Registration Number:	NSWARB 6359

I confirm responsibility for designing the proposed development and have applied the Education SEPP Design Quality Principles.

Response to Education SEPP Design Quality Principles can be found within Section 4 of this report and on the pages as noted below;

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Response to Design Quality Principles of the Education SEPP

Context, Built Form and Landscape
Sustainable, Efficient and Durable
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Health and safety
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Aesthetics

05

Appendix A

Supporting Letter



Executive Summary

This document has been prepared for Cranbrook School to accompany the State Significant Development Application (SSDA) for the Hordern Oval Precinct Redevelopment at Cranbrook School's Senior School Campus, located at 5 Victoria Road, Bellevue Hill, Sydney.

The purpose of this document is to provide an overview of the development proposal and to describe how each of the seven design quality principles outlined in Schedule 4 of the Education SEPP have been specifically and comprehensively addressed in the proposed architecture and landscape architecture solutions documented in the SSDA.

This document has been prepared by Architectus, engaged by Cranbrook School, as the Architect for the Hordern Oval Precinct Redevelopment.

Cranbrook School is proposing a significant improvement of its existing facilities in the Hordern Oval Precinct recognising that a high quality, well designed school environment contributes to better educational outcomes and that it can create a sense of pride, identity and ownership for the communities that the School serves. Cranbrook's mission statement seeks to contribute to the betterment of society through the educational experience provided to its students, so that the students may discover and make the most of their talents, to give of their best and to thrive in and love the pursuit of excellence.

The Hordern Oval Precinct is located at the northern end of Cranbrook School's Senior School Campus which is bounded by Victoria Road, Rose Bay Avenue and New South Head Road, Bellevue Hill.

The Precinct is characterised by its significant open space playing field – known as Hordern Oval – and an ensemble of buildings developed sequentially over approximately eighty years that form a backdrop to its southern edge. In terms of use, the Hordern Oval Precinct combines both academic and sporting activities. The proposed redevelopment of the Hordern Oval Precinct will upgrade facilities but not change the fundamental nature of these academic and sporting uses.

The proposed Hordern Oval Precinct Redevelopment will consist of three main built components comprising a new academic and liberal arts building – termed the Centenary Building, a new sub-surface car park and a new Aquatic and Fitness Centre. The surface of Hordern Oval will be re-turfed and will retain its original purpose and high amenity as a significant open space for sporting and play activities.

Necessary for the development of the proposed new Centenary Building will be the demolition of two existing non-heritage listed buildings - the War Memorial Hall and the Mansfield Building.

These existing buildings have not met the School's needs in terms of capacity or pedagogical direction for many years. The Conservation Management Plan (CMP) has identified the War.

Memorial Hall and Mansfield Building as post-war buildings which have been assessed to have been modified over time and to be of moderate significance. The Urbis Demolition Report accompanying the SSDA supports the demolition of these two buildings.

The proposed Centenary Building comprises multiple future-focussed teaching and learning spaces, a 246 seat drama theatre, a dining commons, an assembly hall that also functions as a two-court basketball facility with tiered seating for 300 spectators, a Chapel for 300 worshippers and the provision of significant high amenity open landscaped space that the School is currently lacking. Mechanical plant areas associated and a loading dock form part of this building's back of house accommodation.

Mindful that the parking of staff and student vehicles on the surrounding street network currently places pressure on the local community during School terms, the Hordern Oval Precinct Redevelopment includes the proposal to discretely accommodate a sub-surface car park beneath Hordern Oval which will provide an additional 124 car parking spaces on the Senior School Campus. This facility will also accommodate bicycle parking spaces and end of journey facilities.

Adjacent to the proposed car park - and also to be constructed beneath the playing surface of Hordern Oval - is the proposed new Aquatic and Fitness Centre. This facility is designed to accommodate a fifty metre swimming pool with 300 seat tiered viewing area, a learn-to-swim pool, a gymnasium, a multi-purpose sports hall and separate change room and toilet facilities for students and external community members. Mechanical and filtration plant areas associated with the two pools will form part of this building's back of house accommodation.

This facility will form a new and inviting point of entry to the School to address the campus's northern boundary adjacent to the intersection of Rose Bay Avenue and New South Head Road. This is an area of the School that is currently un-activated with a high retaining wall forming a physical barrier to community engagement and access. Significant landscaping in a proposed forecourt area will enhance the public domain to improve the amenity of pedestrian experience along this prominent and revitalised area of the School campus.

The turfed playing surface of Hordern Oval is to be reinstated over both the new car park and the new Aquatic and Fitness Centre. At the surface level of the oval a new field maintenance shed is proposed to replace the existing series of sheds along the eastern side of Hordern Oval. Exhaust and heat rejection plant is proposed to be contained within on-field enclosures.

Through design excellence the proposed Hordern Oval Precinct Redevelopment will manifest in physical form Cranbrook's vision of being one of the World's great schools to support future focused learning and the pursuit of excellence of its students in a supportive and nurturing environment.

As described in this document the proposed Hordern Oval Precinct Redevelopment will respond positively to its physical, social and environmental context to deliver excellent learning environments in accordance with the seven design quality principles outlined in Schedule 4 of the Education SEPP.





1 Background

In this section we explore the background and history of Cranbrook and the schools vision for the future.

1.1 Cranbrook's Unique Site and Historical Context

Cranbrook's Bellevue Hill campus, on the shores of Sydney Harbour, is a culturally and historically significant Australian site with strong ties to the early governorship of the colony of New South Wales. The land upon which Cranbrook sits was originally granted to Captain Piper and is one of the first of the leases from the Cooper Estate and initially encompassed some forty acres (16 ha.) On the southern side of New South Head Road. It was acquired in 1856 by Robert Tooth, of the well-known Sydney Tooth's Brewery family with the home (and subsequently the School) being named "Cranbrook" after a village in Kent, England from where the Tooth Family originated.

Cranbrook house was built in 1859 and had several expansions and renovations, some undertaken by the notable Australian colonial architect J. Horbury Hunt, who lived in a cottage in the grounds of Cranbrook. The house and land was owned by a number of important members of Sydney society including James White, a pastoralist and member of the Upper House of the NSW Government.

Between 1901 and 1917 the house and its land were used as the new Government House of New South Wales. In 1917 the NSW Government put Cranbrook up for auction. It was purchased by Sir Samuel Hordern on behalf of a group of men from the Church of England who had decided to utilise it as a School. In July 1918 Cranbrook School was officially opened.

Cranbrook School was established through the generous benefaction of a small number of prominent individuals who were parishioners at St. Mark's Anglican Church, Darling Point. The leading member of the group of Founders, and main benefactor, was Sir Samuel Hordern (after which the School's main oval is named). The School's Founders desired to create the leading Church of England (Anglican) School for boys in the Eastern Suburbs, and were successful in purchasing the land upon which Cranbrook's Bellevue Hill campus remains today.


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01 1909-1913 Victoria Road gates
02 1933 TC Dec aerial photo
03 Cranbrook House Portico
04 Cranbrook House
05 John Saunders Pavilion

1.2 The Site's Heritage and Social Importance

Due to the site's national significance, Cranbrook House and various elements within the School were listed on the Australian National Heritage List, which was closed in 2007 and is no longer a statutory list. Its listing noted that Cranbrook is: An important building both historically and architecturally that fortunately retains its restrained Classical appearance despite many later additions. Magnificent grounds once covered 100 acres, much of which still exists and is used for Cranbrook School.

Clearly Cranbrook House itself is the centrepiece and is of great historical importance in the history of NSW. The School's campus contains a number of other significant and beautiful heritage items, including other heritage buildings, mainly in the Heritage Precinct and gates and significant trees within the campus and oval.

The Hordern Oval precinct has deep social importance and emotional value within the psyche of Cranbrook. It is viewed by many within Cranbrook's wider community and by its stakeholders as an exceptionally distinctive, special, and iconic place. The Horbury Hunt rotunda, which is an important architectural element within the Hordern Oval precinct, was separately listed on the Australian National Heritage List.

Since the school was established in 1918 it has been a significant part of the local community, providing the best possible education for the boys entrusted to its care for 100 years. The name Cranbrook has become synonymous with an expectation that each boy is acknowledged as an individual and given the opportunity to develop his personal strengths and talents in an environment which is both supportive and nurturing. By fostering these ideals, by providing leadership in education and teaching, and by serving the broader community, on completing their education Cranbrook boys leave with the knowledge, skills and confidence to realise their full potential.











01 1945 Preparatory School boys on parapet steps
02 ca1961 gardening
03 1948 Group of 3 boys in hats
04 1962 rotunda and boys
05 1937 Athletics Under 16 high jump TC Dec



1.3 The School's Vision for the Campus

The School's vision is to be a world-class School which encourages and enables all students to explore, enjoy and fulfil their potential.

The School motto Esse Quam Videri means 'to be rather than to seem to be' and this resonates through all aspect of School life. Culturally, the School values authenticity and integrity in all that it does; it generally errs on the side of being understated rather than brash and 'flashy'; greatly preferring substance over superficiality and generally seeking to avoid 'idle boasting' (as explicitly exhorted in the School's prayer).

The School's aim is to nurture and develop the whole individual within a strong academic framework, and to prepare its students to voyage out beyond the comfortable, with courage and confidence. The School values critical thinking and strives to build self-belief for all students.

The future development of Cranbrook's Bellevue Hill campus should be considered at various levels:

1. The quality of the environment in terms of health and well-being of the staff and student body;

2. The quality of landscape and how the built fabric can draw inspiration from, and be sympathetic to it, so that the experience of living and working in the School can be positive, aspirational and uplifting;

3. The real ambition to be a responsible citizen and limit energy, water and resources consumption;

In each of these areas the School is looking to the Hordern Precinct Redevelopment to positively contribute to these environmental considerations and elevate standards at every opportunity.

The ultimate outcome is to create a unique campus of beautiful spaces and buildings with a unifying architectural aesthetic that is harmonious and consistent with the School's highly valued legacy.

1.4 Design Competition

In late 2016 the Cranbrook School Building and Development Committee issued an expression of interest to thirteen prominent Australian architectural practices. After an assessment process the final four selected from the long list to participate in the design completion were the practices of Architectus, BVN, FJMT and Tonkin Zulaikha Greer. These four practices provided detailed submissions and presented to the School 25th March 2017. Architectus was ultimately selected as the successful architectural practice on the 3rd April 2017 by the School's Building and Development Committee.

Principal Objectives of the Project
The new development is intended to achieve the following objectives:

- Optimise the use of the site's potential for useable outdoor and indoor space;
- Develop new buildings which will be durable and avoid the excesses of fashion;
- Incorporate the best principles of contemporary educational design;
- Provide flexible spaces that will readily adapt to changing educational needs;
- Be cost effective in construction and ongoing use acknowledging that the School is the owner of the buildings and so cost benefit should be assessed in the long term;
- Achieve high levels of amenity with good natural light, limited glare, external views and effective natural ventilation;
- Use of high quality materials and design subject to meeting cost parameters;
- Ensure the ground plane is inviting, pedestrian friendly and sufficient for school play and breakout areas;
- Sensitively address the key heritage items on the site to ensure a complimentary and positive relationship between new and old;
- Maximise solar access to outdoor space and building floorplates;
- Minimise the impact on pedestrians of entry and exit points for both public and private transport;
- Improve the amenity of the School's neighbours;
- Enhance the address points, gateways and entry statements to the campus;
- Ensure ease of access for all vehicles accessing the site.
- Reduce or avoid interaction between pedestrians and vehicles;
- Consider through-site links noting that the campus needs to also be a secure zone;
- Examine the opportunities for incorporating building plant within areas of the building that mitigate impact on occupiable floor space, views and the aesthetics of the design; and
- Provide optimum environmentally sustainable design initiatives.

1.5 Architectus Design Competition Process

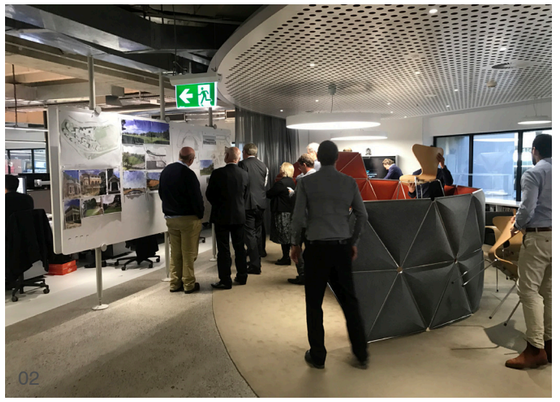
During the competition Architectus carried out a rigorous design process which combined clear strategic design thinking and a collaborative approach to problem solving. Our focus was to thoroughly understand the clients' needs, apply our research, experience and technology to develop a solution that was functional and elegant.

The project team was aided by excellent design reviews which were enhanced by the input of our internal network of education, aquatic centre and technical specialists to ensure the design was responsive to its global, regional and immediate locality and respectful of the landscape, climate, history, culture and community that defines Cranbrook School.

The design response hoped to achieve a sensitive response to the massing and elevational treatment of the development and reduce the bulk and scale of the reference design and create interest to all internal spaces. Public space and landscape were to be integrated into the design to enhance on-site amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites.

In response to context and school culture; the materials and detailing was to conserve, respect and respond to existing heritage and streetscape whilst taking into account sustainability, energy consumption, water and waste efficiency with an aim of achieving a performance standard commensurate with best practice ratings for benchmark School facilities and improve to construction methodology including issues such as cost, buildability and staging.


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The Architectus submission was supported by specialist in-house education expertise, continuous design research in the education sector, intimate knowledge of the proposed site and through our innovation in the pursuit of design excellence.



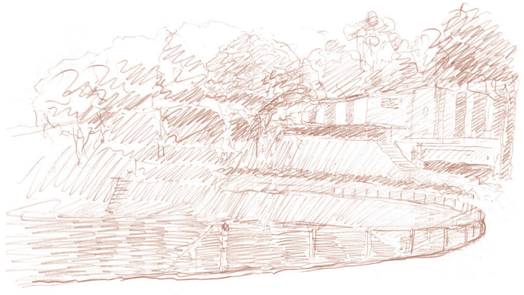
















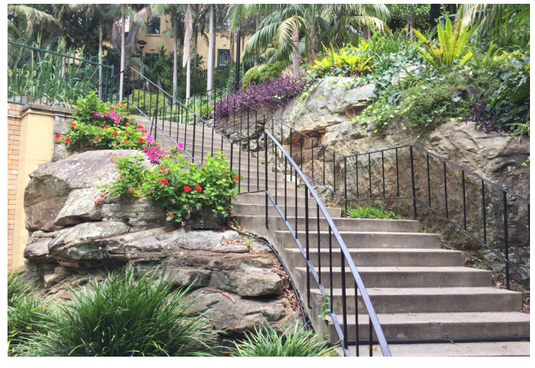




















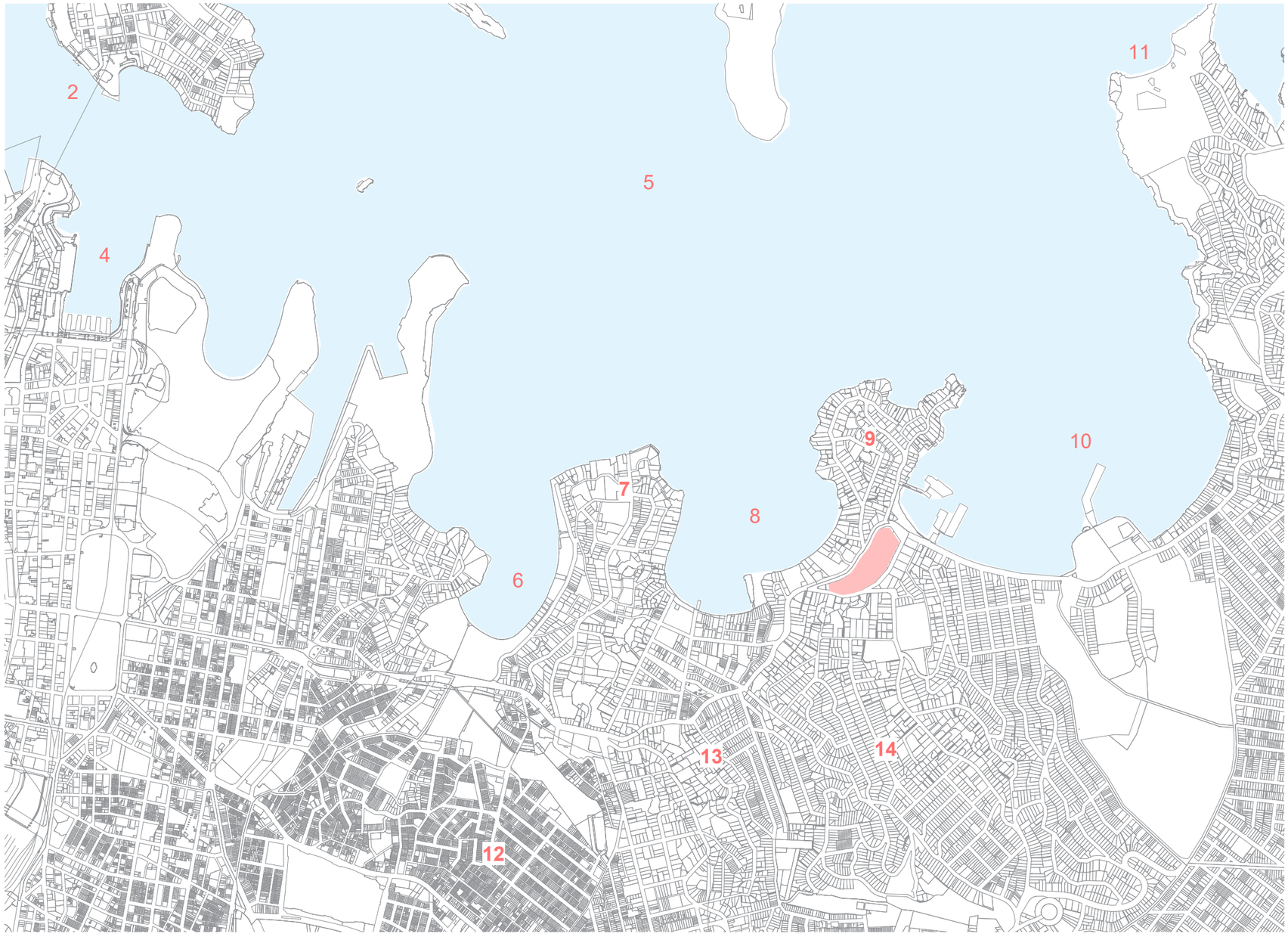




2 Design Response

This section describes the design response post competition and the continued pursuit for design excellence.

2.1 Site and Context Analysis - Location



Cranbrook School

1 Sydney CBD
2 Sydney Harbour Bridge
3 Central Station
4 Circular Quay / Sydney Opera House
5 Sydney Harbour
6 Rushcutters Bay
7 Darling Point
8 Double Bay
9 Point Piper
10 Rose Bay
11 Shark Beach
12 Paddington
13 Woollahra
14 Bellevue Hill

2.2 Site & Context Analysis - Schools in Locality

Cranbrook School

1 The Scots College

2 The Scots College Preparatory School

3 Cranbrook Junior School

4 Double Bay Public School

5 Cranbrook School - St Mark's Pre-school

6 Ascham School

7 Bellevue Hill Public School

8 Rose Bay Public School

9 McAuley Catholic Primary School

10 Sydney Grammar School Edgecliff Preparatory

11 Crown Street Public School

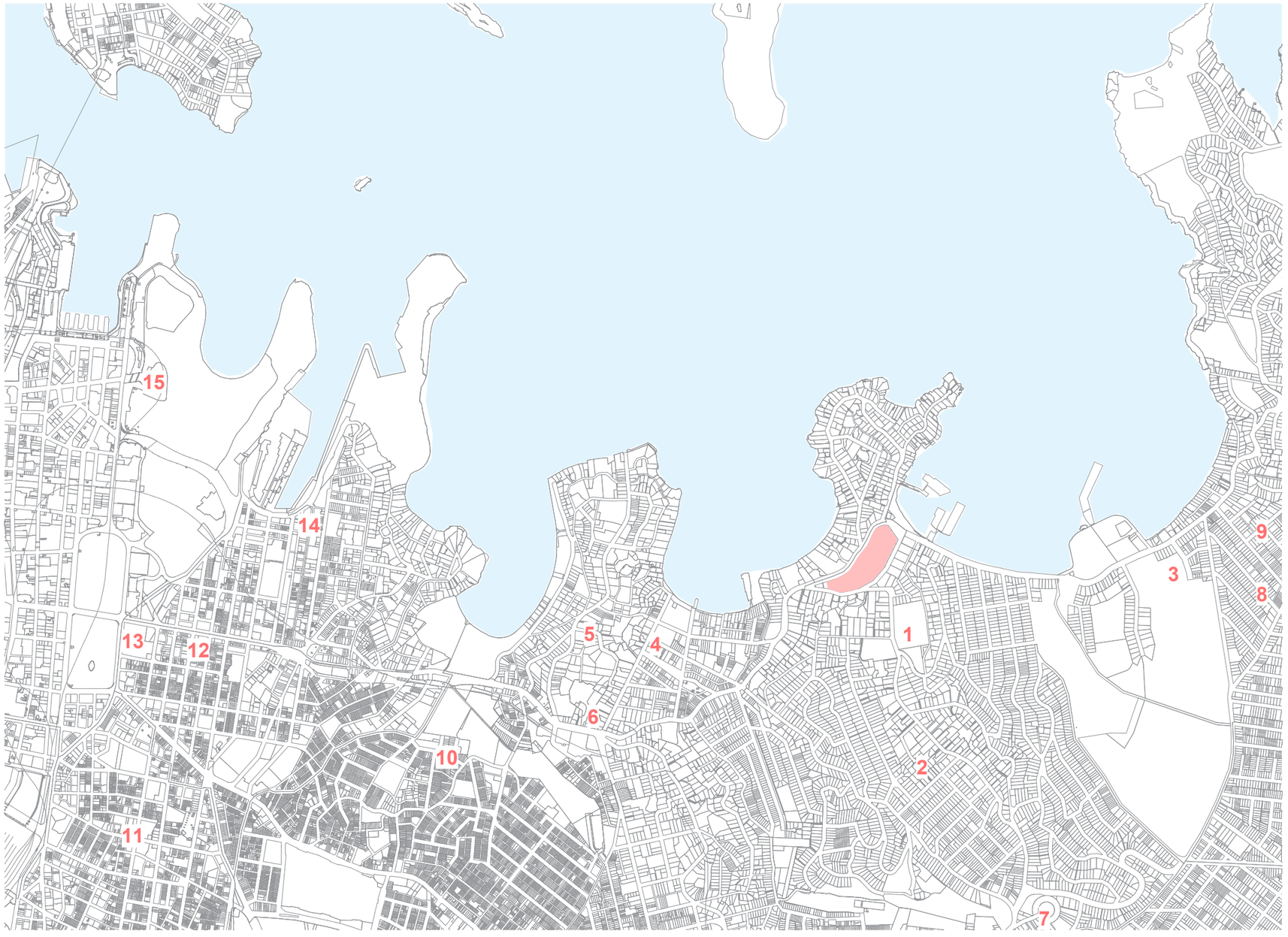
12 East Sydney High School

13 Sydney Grammar Senior School

14 St Vincent's College

15 Conservatorium High School

16 Fort Street Public School



2.3 Campus Analysis

2.3.1 Vehicular and Public `1`Transport

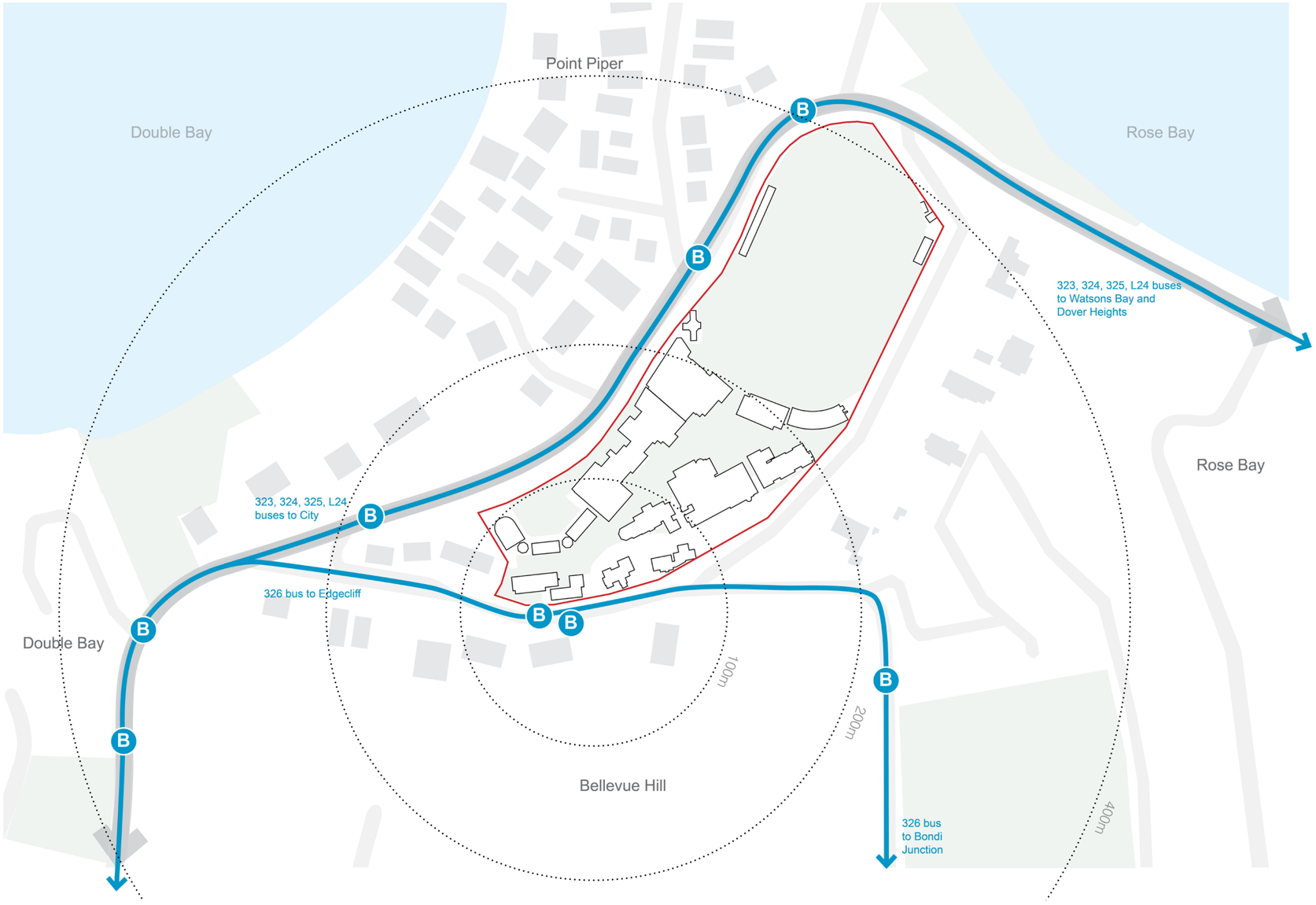
The campus is directly serviced by buses that operate from the 7 bus stops near the site:

- New South Head Road: Routes - 323, 324, 325 and L24
- Victoria Road: Route 326

In additional to the STA bus routes servicing Cranbrook School, the school operates three private services:

- North Shore Bus Services;
- South; and
- Inner West Services.

The routes are operated by the school and drop off and pick up students at the STA bus stop located on New South Head Road at the corner of Wolseley Road. These services provide current and future parents, students and employees with an opportunity to access the site via other means than the private car.



LEGEND

- bus stop
- bus route
- site boundary
- water
- open space
- roads
- significant road

2.3.2 Pedestrian Access

The Schools main entry point is off Victoria Road through the Heritage gates which provides access to the top of the School's site.

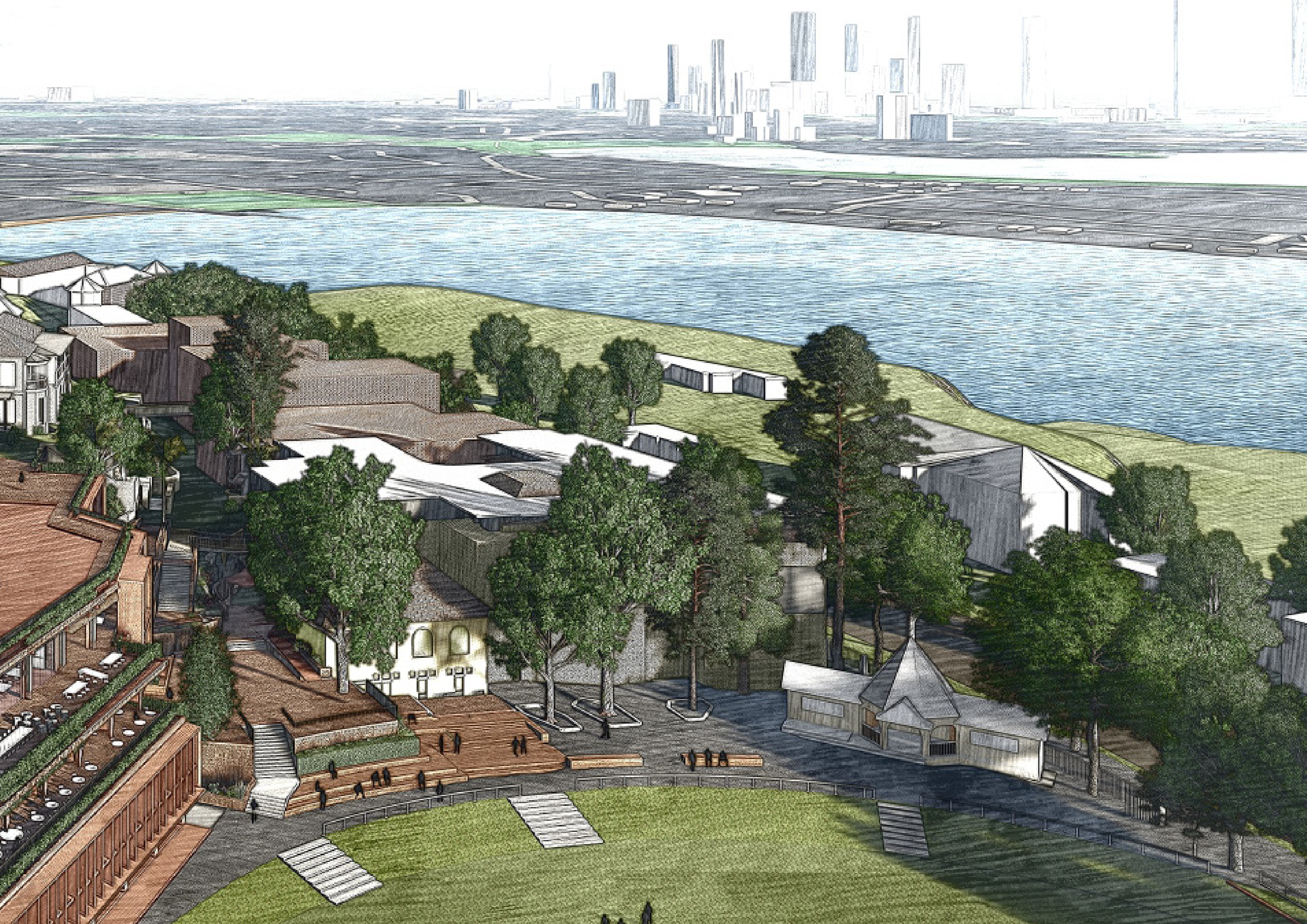
The site topography falls steeply from Victoria Road on the east with Rose Bay Avenue and on the West down to New South Head Road which sweeps round the campus with connection to Rose Bay Avenue creating the island site. There are multiple pedestrian access points on Rose Bay avenue and New South Head Road which provide pathways for pupils and teachers into the heart of the campus.



LEGEND

- site boundary
- water
- open space
- roads
- significant road
- pedestrian pathways
- main entry
- pedestrian entry point
- field maintenance access





2.3.3 Existing Campus Built Form

The School campus presents multiple access points to the surrounding roads of Victoria Road, Rose Bay Avenue and New South Head Road. The existing buildings on the site are diverse, spanning over a century of architectural design and aesthetic influence. The buildings are set within a topography that is steeply sloping in many places, exhibiting over twenty metres of height difference from the main point of entry at Victoria Road to lower level of Hordern Oval and gates at New South Head Road.

There are multiple buildings with local heritage significance that occupy the “Heritage Precinct” at approximately RL 35. These buildings are predominantly constructed in heavy masonry with a range of materials from exposed sandstone to rendered brick. “Teaching Street” and the ‘Academic Precinct’ are located approximately 7m lower than the “Heritage Precinct” and are characterised by post-war and Brutalist era buildings of brick and exposed concrete. The Horbury Hunt Pavilion is a fine timber building of heritage significance and is located at the New South Head Road gates adjacent to and over-looking Hordern Oval.

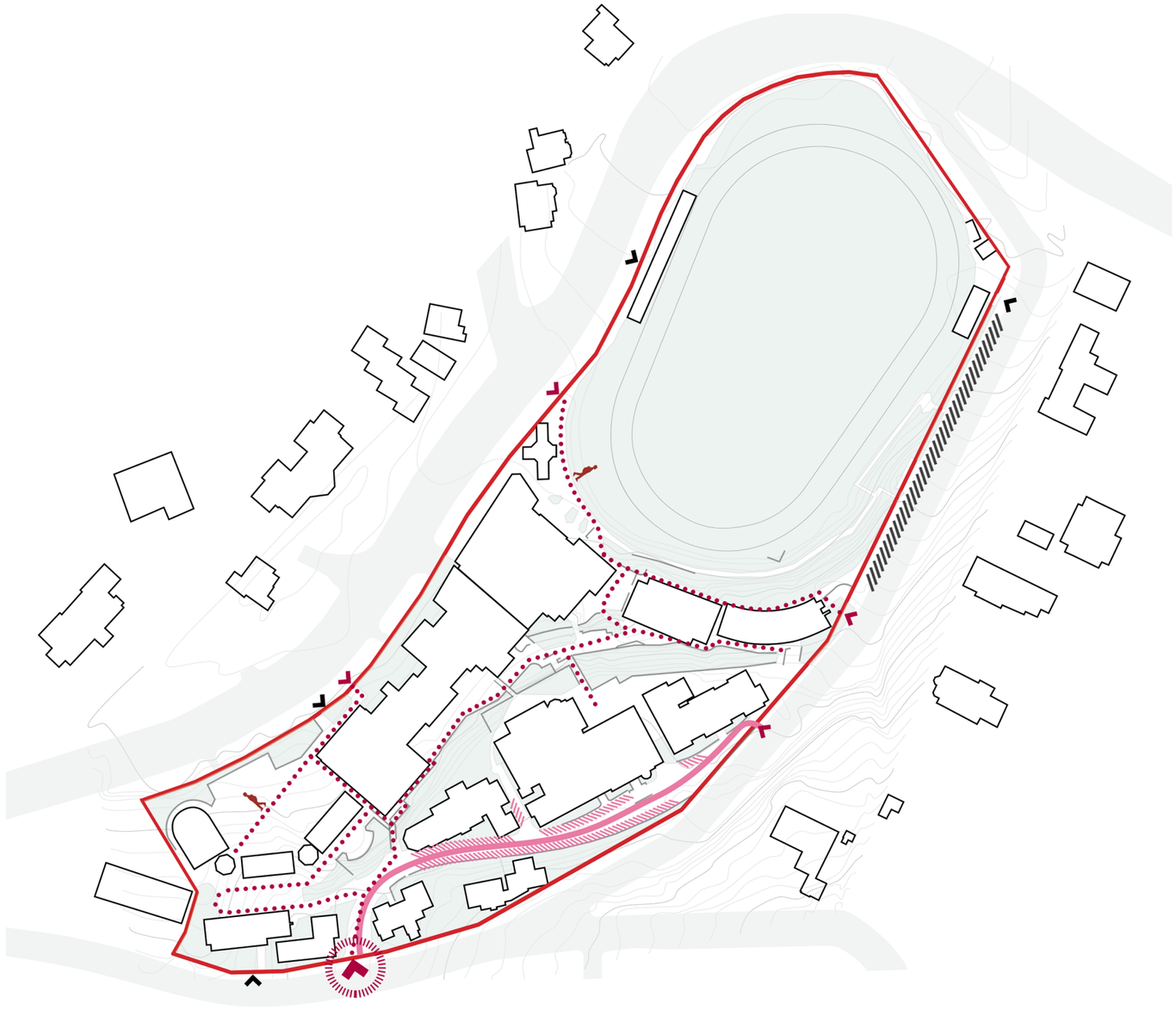


2.3.4 Existing Campus Access

The main Vehicular driveway access is through the main gates at Victoria Road. Teachers, residents and various deliveries currently use this. The existing driveway in the Heritage Precinct includes vehicle parking.

School Drop off zone is currently on Rose Bay Avenue creating unwanted congestion in the mornings and afternoons at drop off. Parking and Traffic Consultants has undertaken extensive reviews of the volume of drop offs and pick ups and including flows of traffic and has made recommendations in its Traffic Report.

Maintenance access to Hordern Oval is predominantly off Rose Bay Avenue and there are multiple pedestrian access points on Rose Bay Avenue and New South Head Road which all have a direct connection to 'teaching street' which is one of the main paths of travel within the campus.

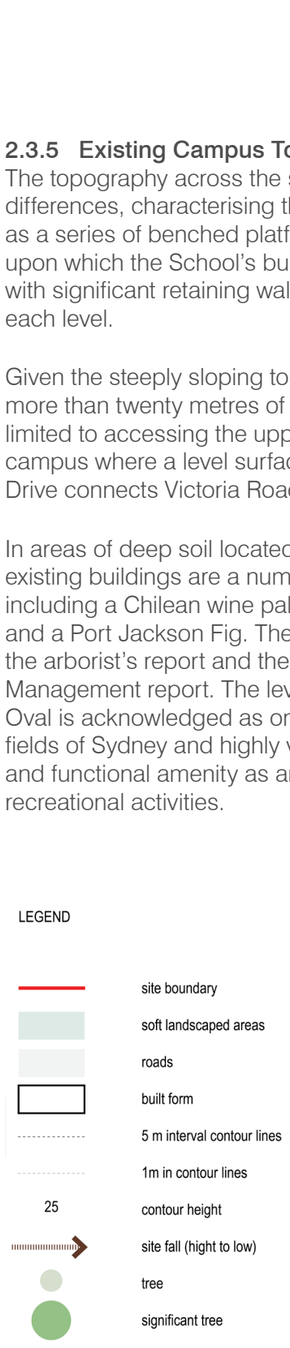


2.3.5 Existing Campus Topography

The topography across the site exhibits large level differences, characterising the campus experience as a series of benched platforms and terraces upon which the School's buildings are founded, with significant retaining walls and stairs connecting each level.

Given the steeply sloping topography that traverses more than twenty metres of elevation, vehicles are limited to accessing the upper most areas of the campus where a level surface in the form of the Main Drive connects Victoria Road with Rose Bay Avenue.

In areas of deep soil located between the School's existing buildings are a number of significant trees including a Chilean wine palm, Norfolk Island Pines and a Port Jackson Fig. These are documented in the arborist's report and the School's Conservation Management report. The level surface of Hordern Oval is acknowledged as one of the great playing fields of Sydney and highly valued for its visual and functional amenity as an area for sport and recreational activities.





2.3.6 Environmental Conditions

The site's topography is ideally suited to protect from Southern Weather Systems and is ideally orientated and elevated to take advantage of summer cool breezes from the Harbour.

The School has great access to solar penetration to the majority of built form and any new buildings should be able to take advantage of adventitious passive solar design principles however solar control should be carefully considered in the architectural language to control the summer sun.



LEGEND

- site boundary
- soft landscaped areas
- roads
- built form
- 5 m interval contour lines
- 1m in contour lines
- 25 — contour height
- tree
- sun path
- wind
- noise

2.4 Urban Design Strategy

The proposed development seeks to enhance the natural, historic and cultural significance of the campus's urban design with contemporary architectural and landscape solutions that are harmonious in character to the existing context and which provide a diverse range of new accommodation much needed by the School to address current pedagogical and functional requirements.

The new development seeks to engage positively with the existing built form of the campus and its neighbouring community by being sympathetic in scale, character and materiality. The proposed built form of the new development complements existing buildings on the site by nestling into the existing topography and landscape whilst creating new connections to the existing pedestrian pathways and benched levels already established on the campus.

The proposed Centenary Building replaces the existing bulky War Memorial Hall and Mansfield Building with an architectural solution that addresses the sloping topography of the site by way of a series of terraced levels that step down with the sloping landform. The new building has a turfed roof surface which will engage the building with its landscape and establish a formal lawn space to the historic Cranbrook House.

The proposed Chapel is purposefully located within the Heritage Precinct on the newly established Centenary lawn. Its low scale and modest volume generates a contained space with exceptional views out over the campus and towards the Harbour.

Through rigorous testing of the height, density, bulk and scale, setbacks and landscaping of the proposal in relation to the neighbouring buildings, streetscape and existing topography the impact of the proposed Centenary Building and Chapel when viewed from beyond the campus is minimal.

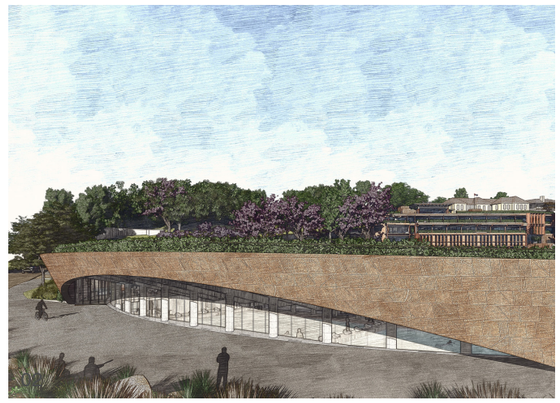
A new sandstone gate for pedestrian access at Rose Bay Avenue will provide much needed separation of pedestrians from vehicles and establishes equitable access from street level to upper most level of the proposed development. From here a vertical transport spine connects every level of the Centenary Building and provides equitable access that is currently absent in this part of the campus.

The proposed Aquatic and Fitness Centre at the north of the site addresses the public domain with an open space and landscaped area which will symbolically and physically reconnect the School to the public realm. The proposed façade offers a welcoming gesture to the community, transforming this elevation of the School from its current disconnected condition.

Both the proposed Centenary Building and Aquatic Fitness Centre address design quality with specific consideration to the use of high quality materials such as sandstone and copper whilst carefully integrating new landscaping and planting, turfed roofs and environmental design principles to strive for design excellence in its urban design outcome.



01 Aerial view from north
02 Aquatic Centre from New South Head Road







The ultimate outcome is to create a unique campus of beautiful spaces and buildings with a unifying architectural aesthetic that is harmonious and consistent with the School's highly valued legacy.

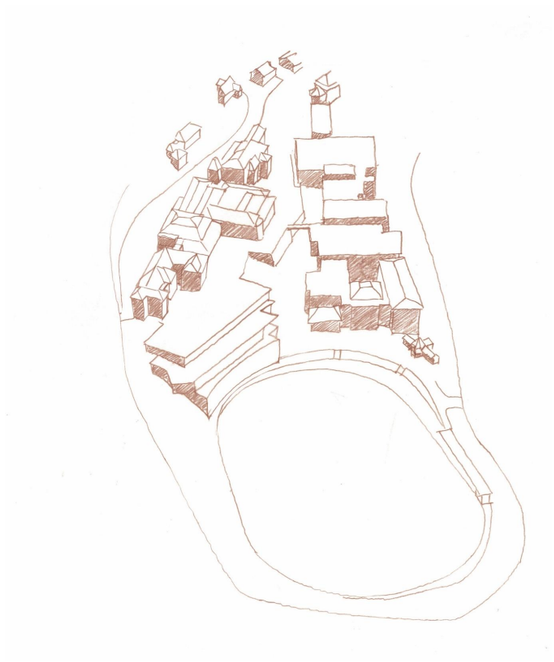
2.5 Built Form

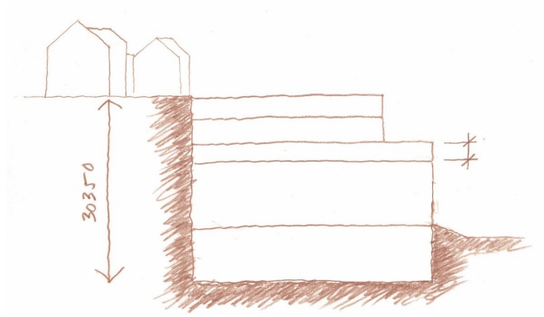
The proposed built form is, in its scale, proportions and materiality, respectful of the existing heritage buildings and defers to their prominent position at the top of the campus.

The existing built form in the heritage precinct of the campus is characterised by a series of modestly scaled buildings with pitched roofs, verandas and separated by lightly landscaped interstitial open space. Along New South Head Road, the campus is characterised by larger scale built form and a Brutalist aesthetic.

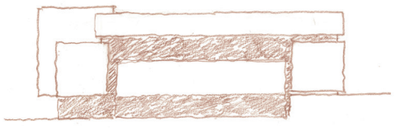
The proposed Centenary Building is conceived of as a series of stepping terraces which transition from the upper heritage precinct level down towards Hordern Oval. The proposed architectural mass is further “broken down” into a series of smaller volumes that are then articulated with a finer grain of sun-shading devices. This combined series of architectural manoeuvres has the effect of reducing the visual impact of the proposed development on its context. Landscape is threaded through the proposed development with integrated terrace planting and deep soil planting.

The Aquatic Fitness Centre compliments the existing form and shape of Hordern Oval – reinforcing it elliptical form with a sweeping sandstone façade that echoes the curvature New South Head Road in this location. The proposed built form is wholly contained beneath the oval minimising its physical impact yet establishing a new and welcoming portal to New South Head Road. The significant view from Rose Bay Police Station towards the roof form of Cranbrook House is not impacted by the proposed development.









2.6 Public Domain

The Campus has frontages to Victoria Road, Rose Bay Avenue and New South Head Road. The Hordern Precinct Development seeks to respond positively to the public domain by improving the surrounding amenity. The School has explored numerous options and wishes to be identified as “a good neighbour” and as such has relocated the ‘Kiss and Go’ facility from Rose Bay Avenue on to the schools grounds within the main driveway in an attempt to alleviate the traffic on the surrounding streets.

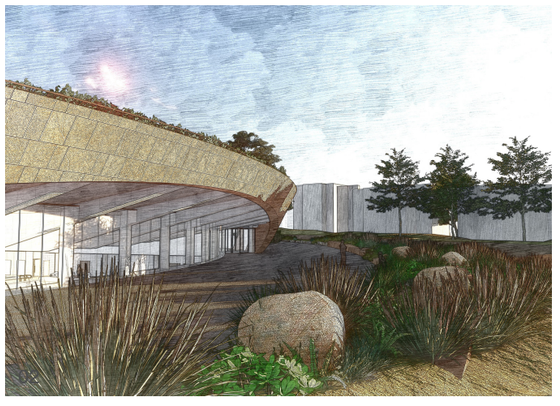
The development proposes a car park of 126 spaces, significantly reducing the strain on street parking and further demonstrates the School’s aim to be a “good neighbour”.

A generous public plaza at the entrance to the Aquatic and Fitness Centre greatly enhances the public amenity on New South Head Road, and not only offers an activated street frontage but provides an improved pedestrian access and safer crossing sequence by realigning the public access route.

An integrated landscaped solution responds to the built form of the new Aquatic and Fitness Centre and the natural conditions of the Northern boundary at New South Head Road with a sculptural sandstone wall hugging the plaza and providing a physical barrier and shelter from the traffic on New South Head Road.

01 Proposed Aquatic Centre Plaza
02 Proposed Aquatic Centre Plaza
03 Proposed Aquatic Centre Plaza


01


02


03

2.7 Streetscape

The site has the distinction of being an ‘island site’ which is relatively self-contained and with minimal shared boundary. The surrounding streetscapes to the south and east of the campus including Victoria Road and Rose Bay Avenue are characterised by an eclectic mix of large high end residential houses on large landholdings. To the north west of the campus across New South Head Road is a mix of apartment buildings, houses and the Woollahra Council chambers. The view from the campus to the North East is predominantly uninterrupted to the Harbour and Harbour headlands.

The current design has been rigorously tested to consider the impact of the built form on the surrounding streets. Whilst Victoria Road largely remains without change the new building mass and form presents itself to the Rose Bay Avenue frontage as the topography steeply falls from Victoria Road to New South Head Road. Option testing lead the the design team to arrive at a single level pavilion building to accommodate The Chapel at the Heritage Precinct level and careful analysis of the visual impact of the building influenced its placement on the site. The assessments suggest there would be a neutral impact on views to and from the site.

The bulk and mass of the Centenary Building is greatly concealed by the existing topography and further concealed by the green roof over and only reveals itself half way down Rose Bay Avenue. This provides glimpses into the teaching terraces and external garden spaces which are carefully considered with screening devices to provide privacy, solar shading and architectural merit. The building is set back from the boundary which allows an opportunity for contemplative gardens, teaching terraces and informal areas for collaboration, group work and social interaction. The set back also provides a buffer to the public domain with integrated landscaping and the planting of new Jacaranda trees.

The selection of natural, locally sourced sandstone for the Aquatic and Fitness Centre reflects the school’s commitment and investment in design excellence and betterment of the existing streetscape. The introduction of the new plaza encourages social interaction and activation of the streetscape in a prominent location visible to the community. The integrated landscape design combines natural and local planting species which are responsive to the local climate and the new deep soil zones provide an opportunity to replant mature trees which also enhance the streetscape.



Existing Northern end of site



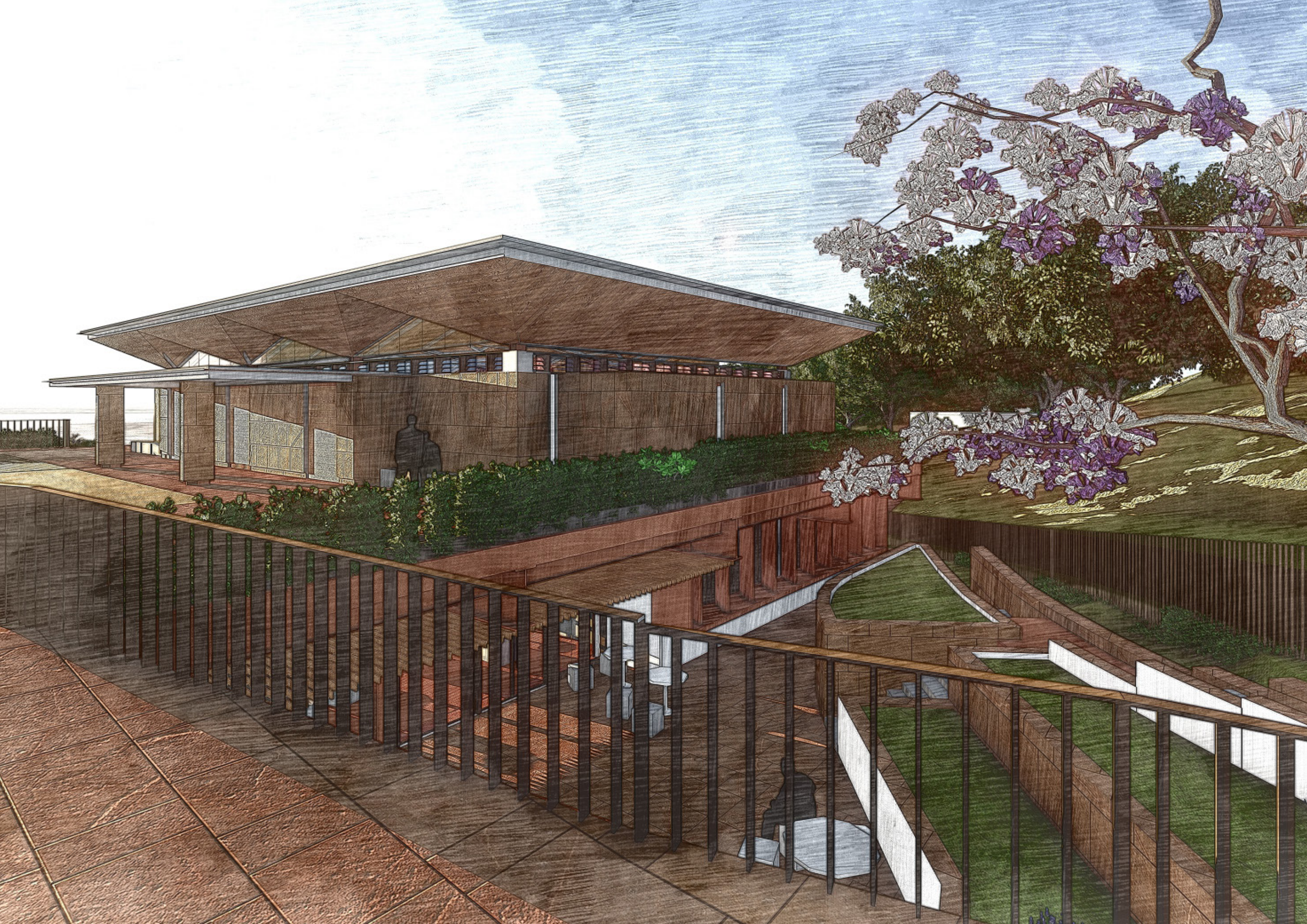
Proposed Northern end of site



Existing Northern end of site



Proposed Northern end of site





Existing Boundary



View to Centenary building from Rose Bay Avenue

2.8 Views

The geographical location of the campus affords elevated and glorious views to Sydney Harbour to the north east and west including the Harbour Bridge, the CBD and out to Sydney Heads. The new development will reinstate a lawn in front of Cranbrook House and Perkins House, which extends an area of elevated ground to take advantage of the spectacular view out of the site.

The reinstated ‘Heritage Lawn’ not only provides an amazing viewing platform which offers views out over the Harbour but contains the carefully positioned chapel to take advantage of the remarkable views. The integrated landscaping elements on this level are minimalistic and modest, with low level planting to the building edges and glass balustrades to ensure views are maximised.

The design also proposes to reinstate view corridors back towards the campus and its heritage buildings. The redevelopment of The Oval proposes the removal of the wooden fence and replanting of trees to new deep soil zones to clear the view corridors and open the campus views to the community.



Location Plan

2.9 Heritage Strategy

The School is listed as a local heritage item under the Woollahra LEP 2014 and a detailed Heritage Impact Statement (HIS) has been undertaken to assess the impact of the new development in accordance with the NSW Heritage Branch guideline 'Assessing Heritage Significance'.

The campus has clearly defined precincts which the new development carefully responds to and enhances:

Heritage Precinct
Located in the south west of the site and accessed from the main gates on Victoria Road, the Heritage Precinct is the historic centre of the site and contains buildings and landscape elements which are highly significant to the social and historical context of the site.

To construct the new Centenary Building the proposal is to demolish the underutilised Mansfield Building and War Memorial Hall. The Conservation Management Plan (CMP) has assessed the War Memorial Hall and Mansfield Building as post-war buildings which have been modified and of moderate significance. The Urbis Demolition Report accompanying the SSDA supports the demolition of these buildings to allow for the new education facility.

Despite increasing the teaching floor space from that currently available in the Mansfield and War Memorial buildings, the new Centenary Building has been carefully considered with the existing topography, minimising the visual impact and reducing the dominance of building scale. Through a series of stepped terraces with varying architectural form and integrated landscaping to soften the architecture the building knits into the existing conditions of the site.

The Chapel is the only proposed building which has a dialogue with the Heritage buildings on this level in the Heritage Precinct. The tangible relationship of The Chapel and the existing heritage buildings has been delicately managed with The Chapel being set back from the heritage buildings and the boundaries to appear as a pavilion building on the newly created lawn. The form of The Chapel has direct discourse with the pitched roofs of the existing heritage buildings, reimagined in a contemporary fashion.

Academic Precinct
The Academic Precinct generally fronts New South Head Road and is several meters lower than the Heritage Precinct due to natural topography of the site. It connects a series of contemporary buildings with limited significance through a pedestrian route called 'Teaching Street' which has a high social significance on the campus.

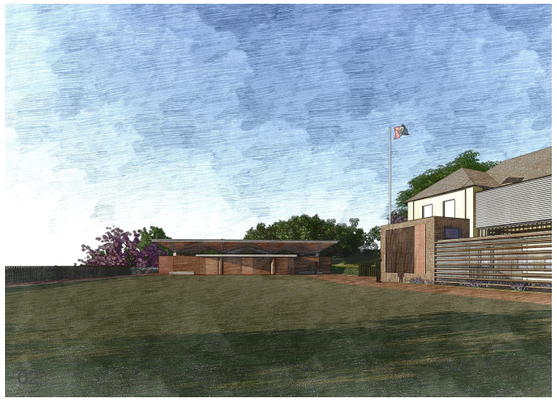
The proposed development will have no impact on the built form of the Academic Precinct and aims to reinforce connectivity throughout the campus by integrating the Centenary Building into the existing levels of Teaching Street and by providing equitable access through the building at a higher level of the site all the way down to The Oval level.

Oval Precinct
The Oval Precinct to the North of the Site is bound by Rose Bay Avenue and New South Head Road and contains a number of historical items and significant buildings such as the Horbury Hunt Rotunda, the Hordern Oval Gates, the McPherson Gates and the Justin McDonald Grandstand.

The new development, whilst disruptive during construction presents no negative impact to the overall significance of The Oval and actually aims to enhance The Oval with a new maintenance facility which will amalgamate and combine the current scattering of sheds into one architecturally designed facility to improve the aesthetic qualities whilst improving the pedestrian access routes.











01 Aerial Vew of Camila Court
02 View of Chapel and Perkins building
03 Internal view of Chapel
04 Aerial view of Centenary Lawn
05 View to Centenary building from Rotunda





2.10 Significant Vegetation

Cranbrook School engaged an arborist to better understand the arboricultural implications associated with the Hordern Oval Precinct redevelopment and to ensure the design enhanced the on-site amenity, contributed to the streetscape and mitigated any negative impacts on neighbouring sites.

The School has identified a protection plan for the trees on site and a tree replanting strategy to ensure that any trees which are removed, for various reasons, are replenished to protect the special visual qualities and natural environment of the campus.

The subject site is identified as heritage item I44, Cranbrook School, as listed under Schedule 5 of the Woollahra Local Environment Plan (LEP) 2014. The listing mentions the following trees:

- Two Hoop Pines;
- Three Norfolk Island Pines;
- A Kauri Pine;
- A Black Booyong;
- A Port Jackson Fig; and
- A Chilean Wine Palm.

The arborist report identifies that there are four (4) historically significant trees documented within this portion of the school grounds and that one of these has entered a cycle of decline and is being recommended for removal irrespective of this development. The remaining historically significant Norfolk Island Pines and Kauri Pine have been documented as essential for retention and will be preserved.

There are 3 trees located adjacent to the proposed excavation that will require ongoing arboricultural monitoring to ensure their retention. These include the Phoenix palm, the historically significant Bunya Pine documented and the mature Black Bean.



2.11 Traffic and Parking

The School aspires to reduce the impact of traffic generation and parking on surrounding streets and residents created by school operations including pupil drop off and pick up. The design has sought to address this issue by proposing a new on-site carpark and a new pick up and drop off accessway within the existing campus. This initiative has received positive support from the local Council and is further explained in the Parking and Traffic Assessment prepared by Parking and Traffic consultants (PTC).

The site currently provides parking for 29 vehicles within the main driveway at the main school entrance which are allocated to senior staff members and employees. On street parking, including the time restricted drop off / pick up zone in Rose Bay Avenue is also used by staff and students.

The proposal will provide an additional 126 basement car parks and reduce the parking in the Heritage Precinct. The Heritage Precinct will be a 10 k/hr speed limit and designated as a ‘shared zone’ for use by vehicles and pedestrians. This area is to be accessed via the main school entrance off Victoria Road and the exit is via a driveway onto Rose Bay Avenue. There are also four maintenance vehicle access points to the school, two off New South Head Road and one off both Victoria Road and Rose Bay Avenue.

The development proposes two designated on street loading bays due to the site limitations, topography and the heritage implications of taking services vehicles on to the campus. The proposed loading zones are located on Rose Bay Avenue to facilitate loading into the new Centenary Building and the Aquatic and Fitness Centre.



On Site Parking and Site Access

2.12 Crime Prevention

The design contemplates the importance of safety of students and is cognisant of the principles of crime prevention through environmental design and has been assessed against the principles of CPTED to identify and quantify crime risks. The Hordern Precinct Development incorporates Safer by Design principles to ensure the risk of crime is minimised, and perceptions of safety are enhanced.

The development is designed to ensure it includes consideration of:

- Territorial re-inforcement
- Surveillance
- Access control
- Space and activity management

The school is an island site and generally the boundary is protected by fencing and surveillance at entry and exit points. The main access point to the school will remain as the gates on 5 Victoria Road which will have CCTV cameras for surveillance and clearly delineate the public from private domain to discourage access by non school staff, students and parents.

The orientation of the new buildings allow natural surveillance on each level with the planning limiting ‘dead end spaces’ or blind spots which minimises the risk of crime and maximises the opportunities for passers-by and users to observe what happens in an area. Areas which the school deem as higher risk locations will also have surveillance from CCTV camera which should link directly into the existing security system.

The school is very well maintained with full time staff looking after the landscaped areas, the built form and the general upkeep of the site which reinforces the requirement of respect for the territory by others. The new development shall increase the amount of new lawn, paving and landscaping which will further reinforce the pride in which the campus is held. Way finding signage will be introduced with the new development to ensure the campus is understood and avoids people loitering in unintended places.

The full-time maintenance staff ensure that the school is appropriately utilised and cared for. Activities or events are fully coordinated with a specific management plan for the way different types of activities are carried out.



2.13 Benchmark Schools

It was important that the proposed development was benchmarked against local and international schools of similar standing to Cranbrook. Architectus arranged a series of benchmark tours to local schools which the design team and the client undertook to understand the quality of similar schools and foster agreement from the school and community on the preferred pedagogical approach and brief.

The benchmark process ensured the brief for the Hordern Precinct Development was robustly tested, taken apart and re assessed to develop a clear set of values and design objectives which learn from the example of other school models.

Architectus produced a benchmarking report which was issued to the client and used to inform the design of the school's facilities. This document facilitated the evolving requirements of the theatrical stage requirements and helped refine the requirements of the Aquatic and Fitness Centre based on the learnings gained on the site visits.

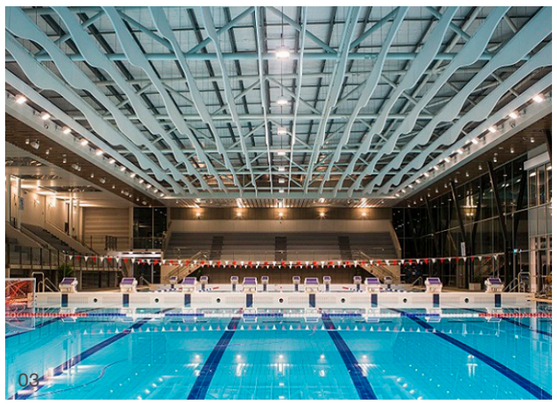

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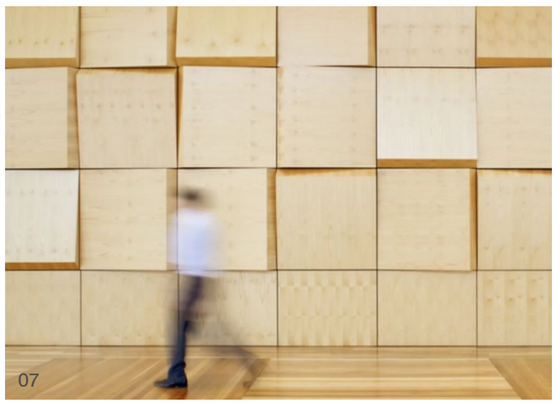

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01 Star of the Sea Performing Arts Centre by Architectus
02 Sydney Church of England Grammar School
03 Pymble Ladies College Aquatic Centre
04 Pymble Ladies College Theatre
05 The Gipson Commons by Architectus
06 Knox Grammar School Assembly Hall
07 Knox Grammar School Assembly Hall


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2.14 Accessibility Strategy

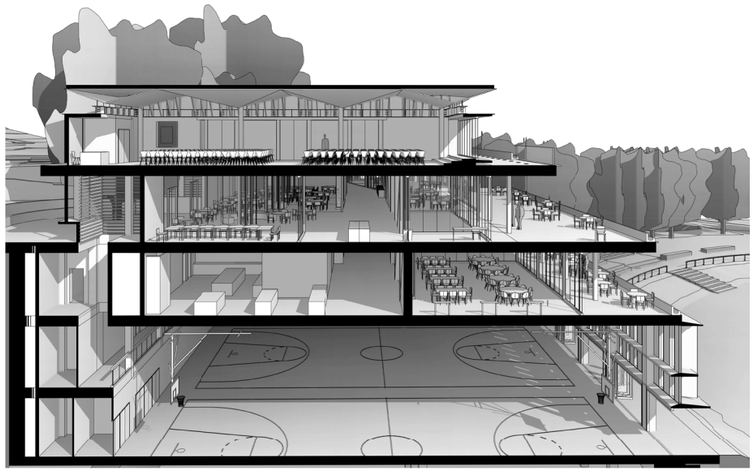
The vision and design brief for new development at Cranbrook engages students, educators and the community and provides a diverse, attractive, and accessible range of spaces to learn, play and socialise.

The existing Campus already encourages accessibility and inclusiveness through multiple welcoming entries and a balance between surveillance and security through CCTV cameras and boundary fences. The accessibility will be enhanced with a new pedestrian gate and entry which will provide direct access to the Heritage Precinct and the new development.

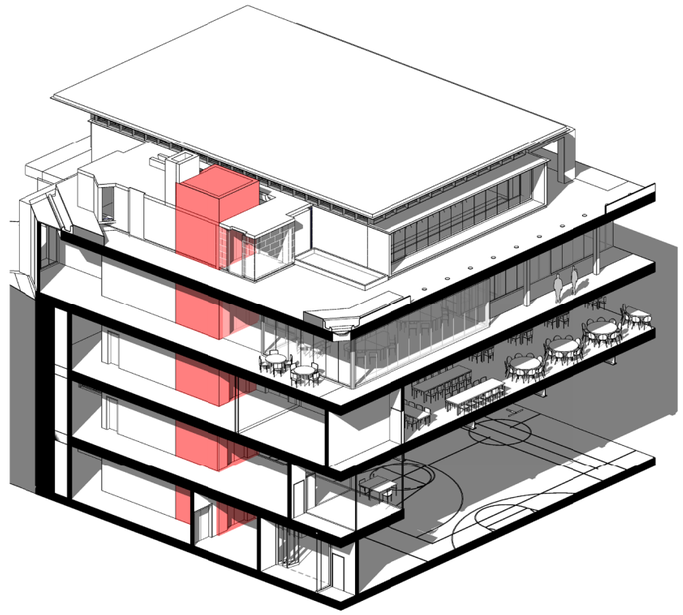
The new development will improve equitable access for all throughout the campus by integrating a lift at the Heritage Precinct level linking through the Centenary Building into the existing levels of the campus. The lift will allow access from the Heritage Precinct, to teaching street, to the new Camellia Court and all the way down to The Oval level. The improved equitable access from street level to every level of the new development promotes a sense of inclusion and community and reaffirms the attachment to place.

The new street frontage to New South Head Road creates access to the Northern end of the Campus which did not previously exist, through the introduction of the Aquatic and Fitness Centre. This connection to the Campus is prominent, highly visible, engaging, and welcoming. The school will actively seek opportunities for the facilities to be shared with the community and accommodate activities outside of school hours.

The design will incorporate clear and logical wayfinding across the school site and between buildings for all users, including afterhours community users, for ease of navigation throughout the Campus.



Centenary Building Sectional Perspective



Lift Core Axonometric

2.15 Occupant Amenity

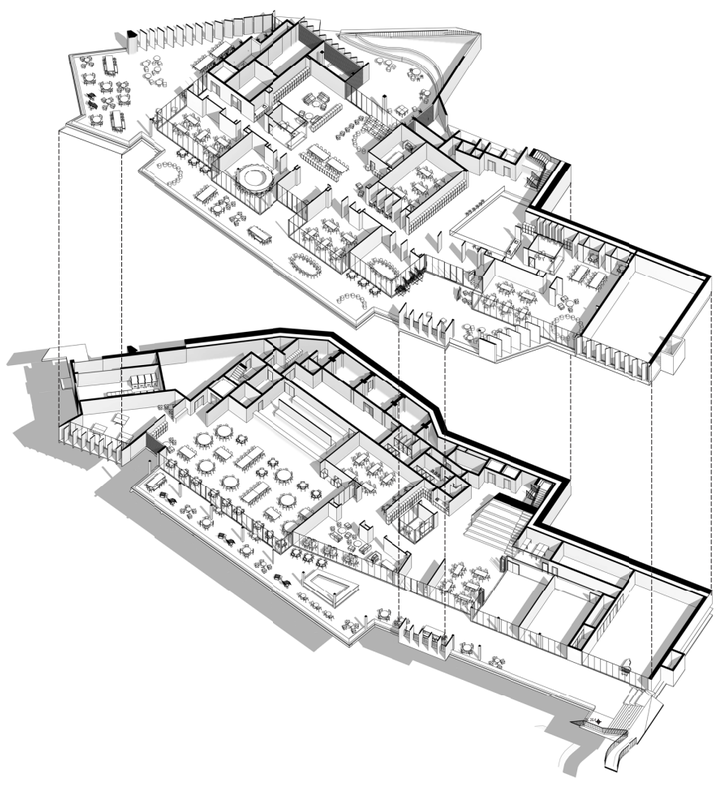
The proposed design for the teaching facilities in the Centenary Building offer modern classrooms which are purposefully designed to provide the pupils with access to natural light, fresh air and thermal comfort. The design of the learning and teaching spaces provides an environmentally sustainable approach and looks to minimise the use of energy and maximise the available comfort levels within the proposed spaces.

The Mechanical reverse brief prepared by DSA Consultants describes a four stage approach will be considered in the design for each individual space. This approach will consider the following:-

- Natural ventilation of the space for compliance with BCA and the use of buoyancy to draw air through a space.
- Mechanically assisted ventilation where the exhaust will be assisted with fans and make up air still drawn through naturally.
- Air conditioning utilising heat recovery heat exchangers built into the air conditioning system
- Direct air conditioning to the space

Generally the air conditioning systems proposed are to be simple and effective minimising complicated systems which are easy to operate. A Building Monitoring and Control System would be provided to automate the control of the mechanical services.

A major initiative to reduce, embodied energy and emissions, through passive design principles is the proposed natural ventilation to the large multi function space which takes advantage of the sites open northerly aspect and the Southernly winds and utilises the stack effect to move the hot air out of the multi function hall and generate cross flow ventilation to cool the space.



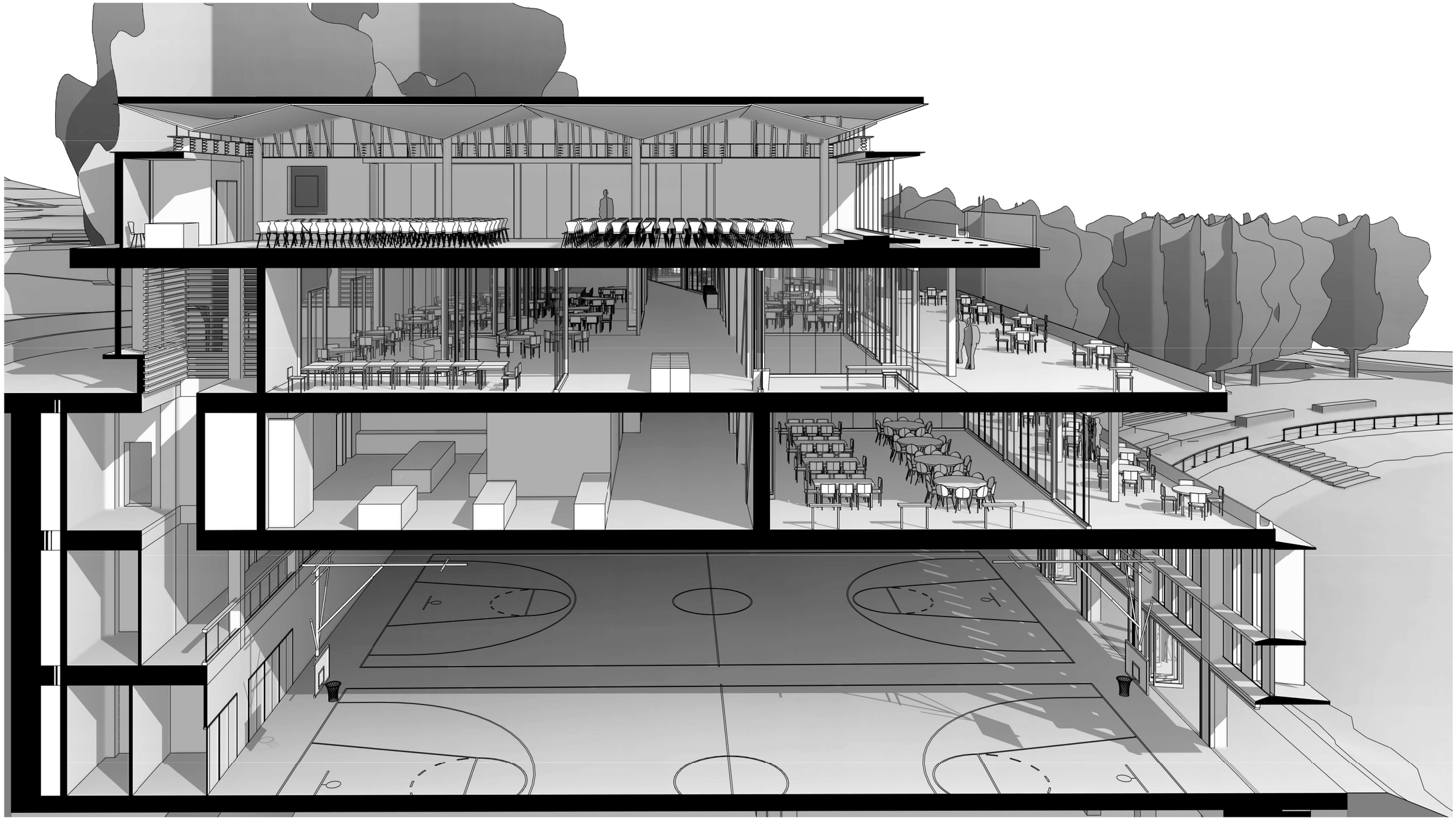
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01 Indicative Internal Learning and Teaching Levels layout
02 Teaching Street
03 Aerial of Centenary building
04 Teaching Street approach from Oval



2.16 ESD Strategy

The school is committed to creating positive environmental, social and economic outcomes through well designed spaces with the objective to minimise the consumption of energy, water and natural resources and reduce waste and encourage recycling. Arup has provided a full ESD report which identifies ESD methods which can be incorporated into the design.

Methods under consideration for achieving this include:

- 5-star Green Star in principle rating.
- Reduce water demand by using rainwater capture and reuse
- Improve urban environment by including extensive planting

The sustainability strategies to be incorporated into Hordern Precinct Development focus on creating a comfortable, flexible and community focussed space providing learning and teaching facilities alongside social study and collaboration spaces which are centred upon the following core principles:

- Comfort and Wellbeing
- Energy and Carbon
- Materials
- Water

Comfort and Wellbeing
The following indoor environment quality strategies are being investigated to achieve sustainability performance in a manner that also improves the occupant experience of the space.

- The air conditioning system will be designed with ducted fresh air which will exceed Australian Standards.
- The acoustic insulation of the building will be designed to provide appropriate and comfortable acoustic conditions for occupants.
- Efficient, flicker free lighting.
- The lighting levels and glare reduction will comply with best practice guidelines.
- Maximise the accessibility to high quality external views.
- Maximise the amount of natural daylight to the building. This provides passive solar heating during winter and increases the solar access to occupants while minimising solar gain during the summer.
- Indoor air quality will be improved by eliminating products, such as paints and carpets that do not meet appropriate minimum VOC standards.
- The building design will promote a high level of thermal comfort for occupants by controlling the envelope gains and designing to best practice HVAC standards.

Energy and Carbon
Energy is a key sustainability driver of the design of Hordern Oval Precinct redevelopment. The overall strategy targets a significant improvement over the DTS Section J requirements and of the development of systems to generate energy onsite.

The fabric performance requirements are addressed in the design by optimising the glazing performance and shading configuration for each orientation. This is to ensure that thermal comfort is achieved, and solar gains moderated. This allows effective application of the mixed mode ventilation strategy, and efficient operation of the mechanical system.

As HVAC systems contribute to a large percentage of overall energy consumption in educational buildings, minimising this is a key principle in the design of Cranbrook School. To address this, the majority of the building is designed to provide the opportunity of mixed mode operation.

The use of waste heat reclaimed from the HVAC system to heat the pool and vice versa for the multipurpose building is being investigated to decrease energy consumption while maintaining comfort for occupants.

Materials
Robust and durable materials shall be selected on the project to ensure longevity whilst the following material selections will be considered to address the consumption of resources within the construction of the building:

- Minimisation of PVC throughout building services
- The use of sustainable timber (FSC timber products) wherever timber is used
- Reduction of non-reused or recycled content in the concrete mixes
- Post-consumer recycled content structural steelwork, reinforcement bars and mesh will be used.
- Low VOC materials will be used for flooring, paint, adhesives and sealants.
- Low formaldehyde emission engineered woods produces will be used throughout.
- All thermal insulants will be selected to avoid the use of ozone depleting substances in both there manufacture and composition.
- The building will aim to reduce to construction waste going to landfill by reducing or recycling building materials. Waste management during construction will ensure an 80% recycling rate during demolition and construction.

Water
The water strategy focuses on; reducing potable water through efficient fixtures and monitoring water use. In addition stormwater runoff from the site will be design to not negatively affect the surrounding habitats by utilising rain gardens or swales at edges.

Rainwater harvesting and reuse will be key to reducing potable water demand in Cranbrook School. A site wide strategy to water is proposed with the aim of a centralised tank to source non-potable water for cooling towers. This will be extended to toilet flushing for Cranbrook School. All fixtures and fittings will be within one star of the highest rating (5A) based on the Water Efficiency Labelling and Standards (WELS) scheme.

2.17 Landscape Design Strategy

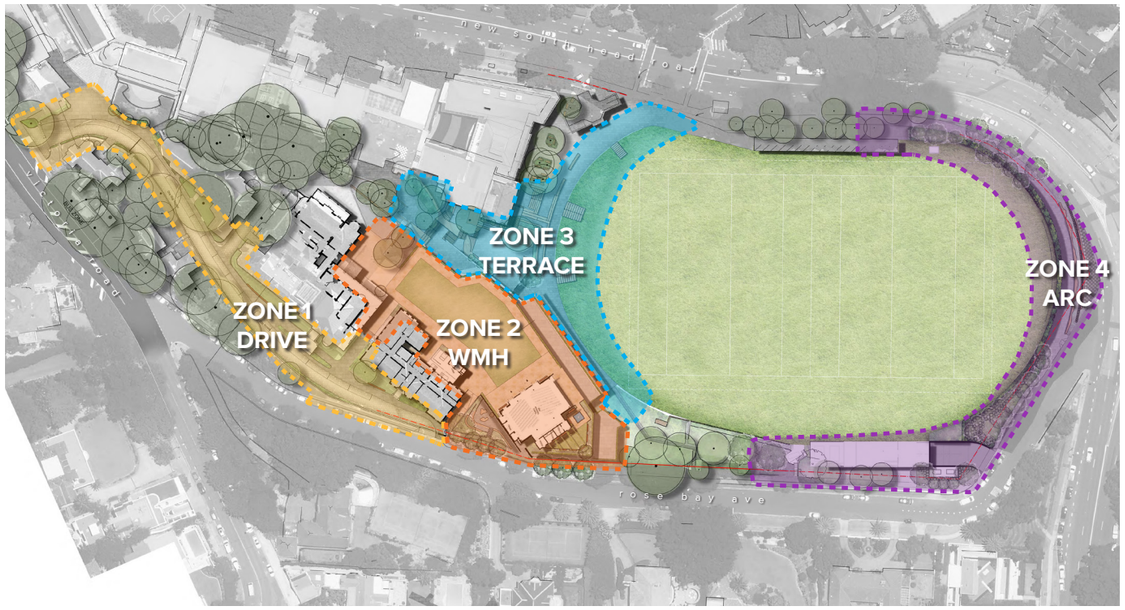
The Landscape design strategy is a direct response to the campus and to it's physical context, natural character, heritage and a response the architectural concept and built form.

The landscape design acutely considers the architectural concept and harmoniously integrates into the overall design of the development integrating the design and enhancing the on-site amenity. Architecturally the building is conceived as a serious of stepping sandstone formations terracing across the existing topology of the campus. The landscape reflects the flora and fauna of coastal typologies found around the Eastern Suburbs coastline.

Arcadia explored the interpretations of these zones through character, use, form and detail but perhaps most importantly, through repetition of material use, reinforcing the coastal significance to the School. Sydney's coastline and harbour represent one of the most beautiful and environmentally diverse attractions in the world and reiterate the schools intention to be a world leading school befitting of its location. The coast features cliffs, beaches and inlets of magnificent beauty unique to the region. The harbour offers iconic headlands, historic sites and national parks which are re interpreted within the school.

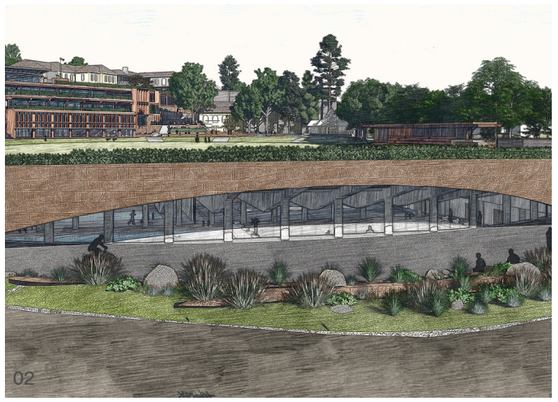
The sensitive design of the heritage lawn, introduction of reflective memorial gardens associated with The Chapel, large expansive teaching terraces and the reimagining of an extended Camellia Court, with a new planting strategy for Camellia trees, for the Centenary Building demonstrate the Landscape Design's response to the campus's natural environment, scenic value, and historical sensitivities.

The integration of the landscape strategy into the public plaza outside the Aquatic and Fitness Centre responds to the architecture and the site, whilst seeking to enhance public facing areas.



Landscape Zones







01 Teaching Street Terrace
02 Aquatic fitness centre facade
03 Centenary building Southern garden

Design Response

Legend

01	Glazing - Windows
02	Timber Battens - Terrace Soffits, Timber Walkway and Maintenance Building Walls
03	Zinc or Similar Roof Profile - Chapel
04	Steel Colour to Match (03) - Maintenance Building Roof
05	Hardwood Soffit - Chapel
06	Powdercoated Aluminium - Glazing Frames and Louvres
07	Copper Coloured Metal - Vertical Fins
08	Extruded Ceramic Tile - Walls
09	Sandstone Cladding - Walls
10	Stone Paver Colour to Match Existing - Terrace Paving



2.18 Architectural Finishes

The materiality of the building is driven by locally sourced materials used in an authentic manner to underpin the School's commitment and investment into enhancing the environment and a pursuit of design excellence to provide a world class teaching facility which can be used as the benchmark for teaching practices at Cranbrook.

The School will be constructed of durable, resilient, and adaptable materials which will evolve over time and have timeless and classic qualities to ensure they knit into the existing fabric of the School. Materials such as Gosford Quarry Sandstone, Copper and Australian Hardwoods achieve a purposeful composition of materials and elements through a rigorous design process to provide a contemporary Architectural solution which references the heritage qualities of the site.

The large volume required for the Basketball court of in the Centenary Building is humanised through architectural techniques which reduce the scale. The Solar shading created through copper fins, will control the solar gain, and offer a sense of permanency, patinating and aging over time as the building settles further into its surroundings. Integrated landscaping strategies soften the architectural composition with planting across each of the terrace levels and enhances the public facing areas.

The Teaching Terraces create engaging and attractive environments to learn outdoors, set back from the boundary with landscaping acting as a buffer to provide privacy and to reduce the impact of new development on the surrounding community whilst allowing for passive and dynamic play of different age groups within the school.

The use of sandstone on the Centenary building helps the new building stich into the existing fabric of the school and is used in direct conversation with the existing sandstone elements of the campus such as the sandstone stairs on teaching street and the heritage buildings on the Heritage Precinct.

The Aquatic and Fitness Centre façade is a sweeping arc which is created in sandstone with a warm aggregate in order to enhance public facing areas and provide an engaging environment for pedestrians visually along the public street frontage and plaza which integrates the landscape design.







01 Aquatic Fitness Centre north facade
02 Chapel
03 Centenary building





2.18.1 Architectural Design Studies

Post design competition the Architectus design team carried out a series of meetings with key stakeholders at the school to ensure a carefully conceived, documented, and thoroughly reviewed set of principles drove a high-quality design outcome.

Through consultation with the school to define a rigorous project brief for the location of the major elements Architectus created a matrix of criteria for each study to be analysed against such as the visual impact, accessibility, sympathy to heritage items and the urban design outcome.

The three studies which will fully taken to their conclusion included:

Study 1 A - The Chapel as a single building on the heritage lawn with the theatre at ground level with a shared foyer to the multipurpose hall on the same level

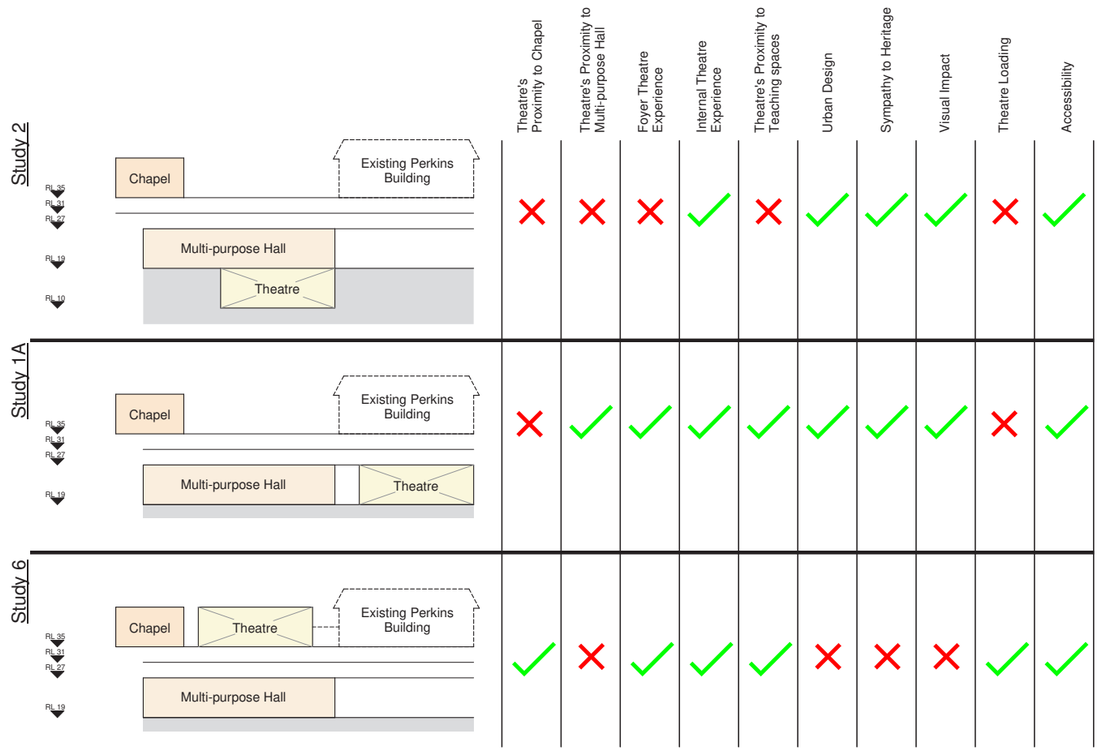
Study 2 - The Chapel as a single building on the heritage lawn with the theatre underground below the multipurpose hall

Study 6- The Chapel and theatre both situated on the heritage lawn

Study 6 provided the theatre with an abundance of natural light and created an arts precinct at street level with music and drama having shared use of The Chapel and theatre. Through thorough testing of the mass of this option it was decided that it was not sympathetic to the heritage context and may also result in a loss of amenity and view of the neighbouring properties.

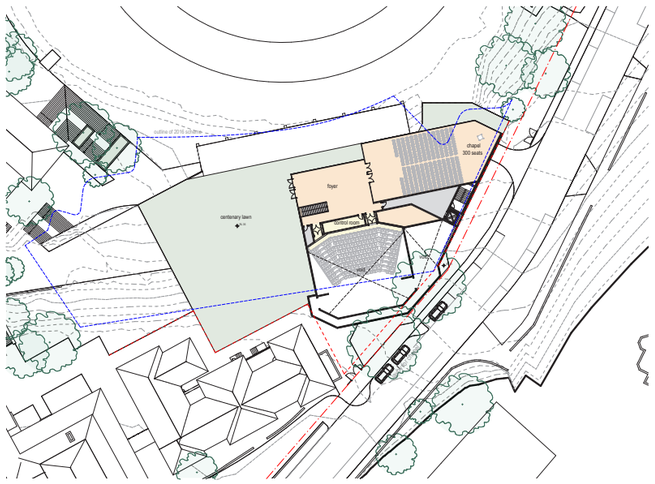
Study 2 was potentially seen as the most cost-effective solution minimising the footprint of excavation and providing a vertical connection down to the theatre. The loss of all opportunity for natural light in the theatre space was seen as the biggest failure of this design option and was disregarded due the substandard amenity provided to the pupils and teachers.

Study 1 A was the preferred option which met the objectives and needs of the project, setting the design ambitions and the pedagogical approach without prescribing a defined solution whilst allowing the flexibility of a range of uses in the future. This scheme was also the most sympathetic to the heritage and the neighbouring context whilst providing the efficiencies of a shared lobby space with Multipurpose Halls and provided a superior entry sequence for pupils, staff and visitors.

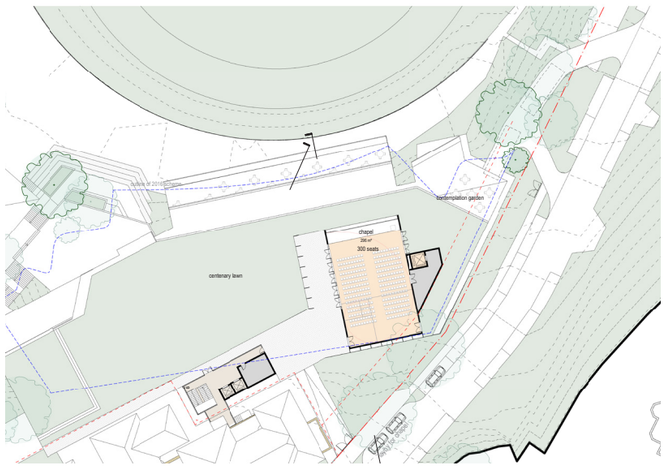


Cranbrook School War Memorial Building Theatre Location Study

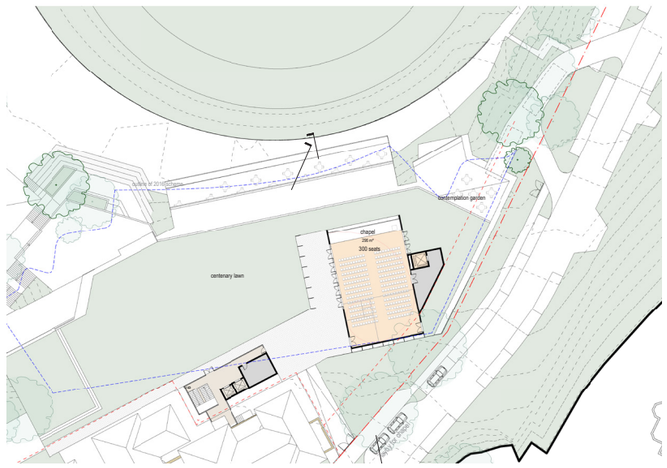
Design Response



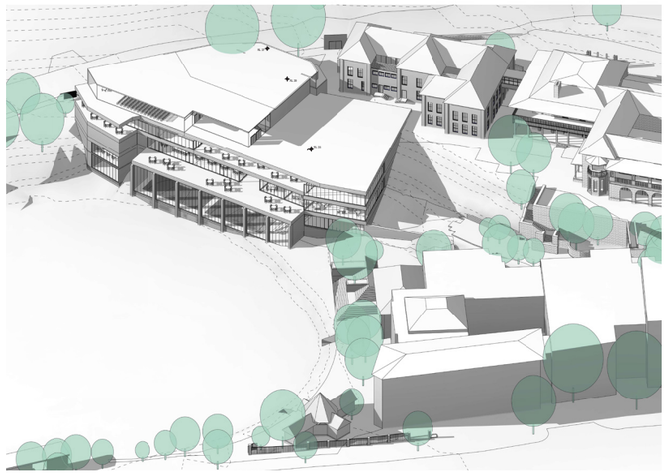
Design option with theatre on upper levels



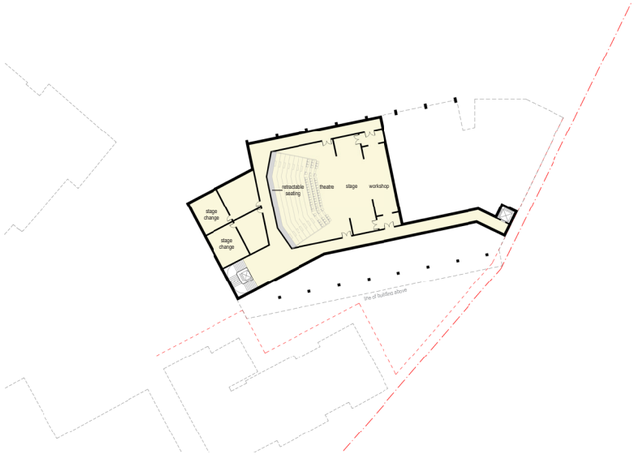
Design option with theatre basement level



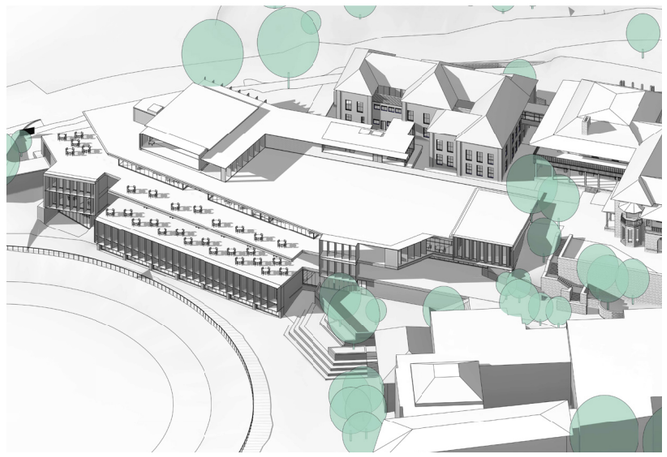
Design option covered canopy between chapel and Perkins building



Design option with theatre on upper levels

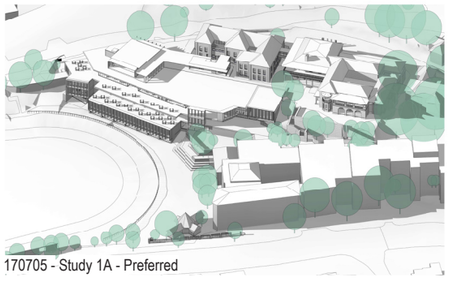


Design option with theatre basement level



Design option covered canopy between chapel and Perkins building

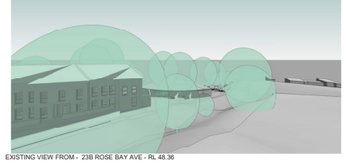
Design Response



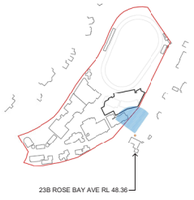
170705 - Study 1A - Preferred

Cranbrook School

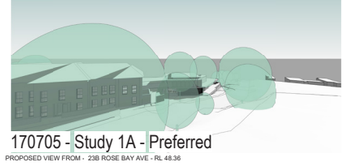
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EXISTING VIEW FROM - 23B ROSE BAY AVE - RL 48.36

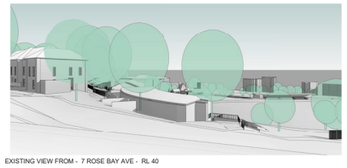


23B ROSE BAY AVE RL 48.36



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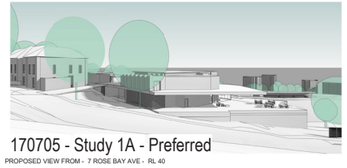
PROPOSED VIEW FROM - 23B ROSE BAY AVE - RL 48.36



EXISTING VIEW FROM - 7 ROSE BAY AVE - RL 40



7 ROSE BAY AVE RL 40

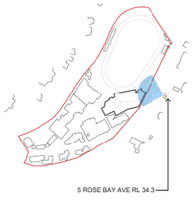


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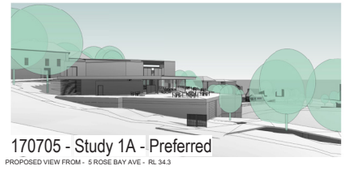
PROPOSED VIEW FROM - 7 ROSE BAY AVE - RL 40



EXISTING VIEW FROM - 5 ROSE BAY AVE - RL 34.3

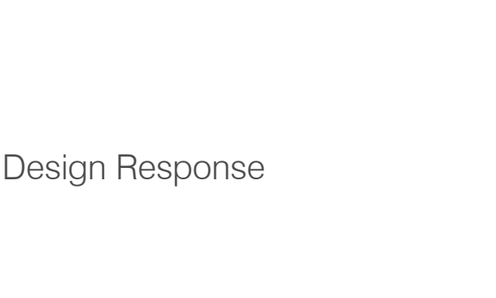


5 ROSE BAY AVE RL 34.3



170705 - Study 1A - Preferred

PROPOSED VIEW FROM - 5 ROSE BAY AVE - RL 34.3



170705 - STUDY 6

Cranbrook School

architectus

EXISTING VIEW FROM - 23B ROSE BAY AVE - RL 48.36

23B ROSE BAY AVE RL 48.36

170705 - STUDY 6

PROPOSED VIEW FROM - 23B ROSE BAY AVE - RL 48.36

EXISTING VIEW FROM - 7 ROSE BAY AVE - RL 40

7 ROSE BAY AVE RL 40

170705 - STUDY 6

PROPOSED VIEW FROM - 7 ROSE BAY AVE - RL 40

EXISTING VIEW FROM - 5 ROSE BAY AVE - RL 34.3

5 ROSE BAY AVE RL 34.3

170705 - STUDY 6

PROPOSED VIEW FROM - 5 ROSE BAY AVE - RL 34.3

2.18.2 Visual Impact Studies
Through rigorous testing of each architectural study we assessed the height, density, bulk and scale and setbacks in relation to the neighbouring buildings, streetscape and existing topography to minimise any negative impacts.

The neighbours which are most likely to have any negative impact were tested these were:

– 23b Rose Bay Avenue
– 7 Rose Bay Avenue
– 5 Rose Bay Avenue

The design response in study 1A achieves a sensitive response to the massing and elevational treatment of the development. The preferred option for the Centenary Building places The Chapel delicately on the Heritage lawn and whilst the bulk of the building utilises the topography to conceal the mass The Chapel is celebrated as a single level pavilion building to be read in conjunction with the existing built form as viewed from the neighbours.

The new development seeks to enhance and celebrate the existing built form within the campus by being sympathetic to the heritage buildings and minimising the impact to the amenity and views of the neighbouring properties.




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3 Community Integration

This Section describes the community consultation process the design team has undertaken so far.

3.1 Community Consulations

As the design has progressed from the competition winning scheme we have developed and refined design which best meets the school communities' needs through consultation with the school stakeholders and council stakeholders. The school community has been regularly updated with project progress, in the form of presentations from the Headmaster, design updates from the Architectus team and through school newsletters

The school has engaged with Woollahra Council throughout the early stages of the project and most recently presented the latest plans to the Council in November 2017 to provide relevant information about the proposal to residents and community stakeholders to create awareness about the proposal and forthcoming SSDA application. This presentation was well received and gained positive feedback, especially in regards to the architectural design and the provision of car parking on the site.

Cranbrook and Architectus also presented the scheme to the Government Architect NSW (GANSW) in order to demonstrate that design excellence will be achieved in accordance with Schedule 4 Schools design quality principles of State Environmental Planning Policy (Education and Child Care Facilities) 2017. Overall, GANSW commended the process which was undertaken to develop the proposal including the preparation of the scheme and the design competition and the supporting letter is attached in Appendix A.

The consultation with GANSW provided the project team with the opportunity to incorporate stakeholder feedback into the design and provide the additional information requested.

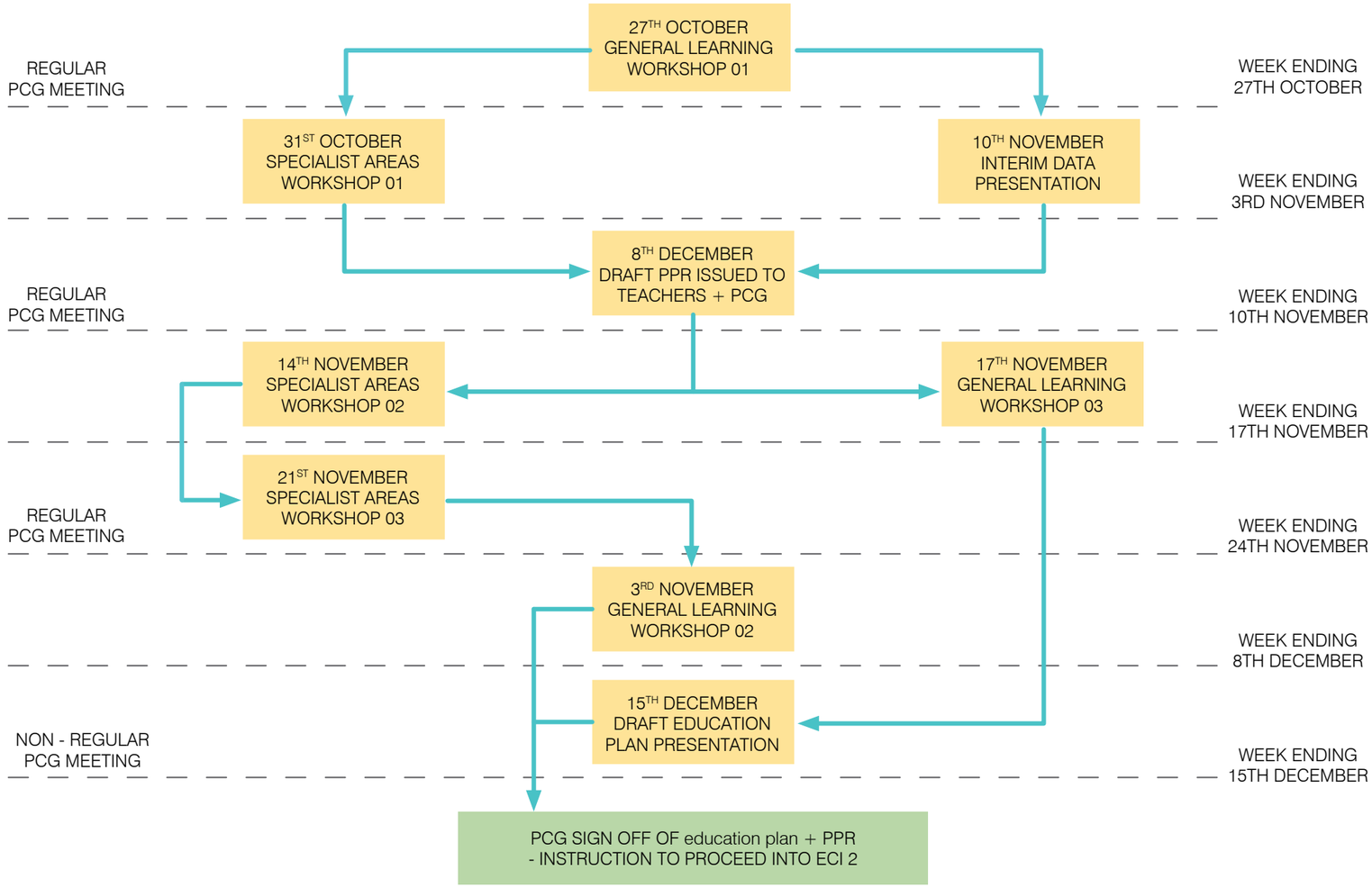
Cranbrook has also engaged in discussion with Transport for NSW and Roads and Maritime Services to inform them of the proposals.



3.2 User group process

A carefully conceived, documented and thoroughly engaging briefing process was established with the key stakeholders at the school to define a pedological vision for the school and a built form to facilitate this vision. The design team nominated ‘Champions of Change’ which included, education policy makers, teachers, students, and the Project Control Group (PCG) to champion and drive a high-quality design outcome to support the pedological vision of the school.

This process was named the ‘Discovery Workshop Process’ and was split into two streams, with three workshops for “Learning and Teaching” and three individual workshops for each of the three “Specialist” spaces. During this process, the findings of these workshops were reported back to the PCG, as shown on the diagram.

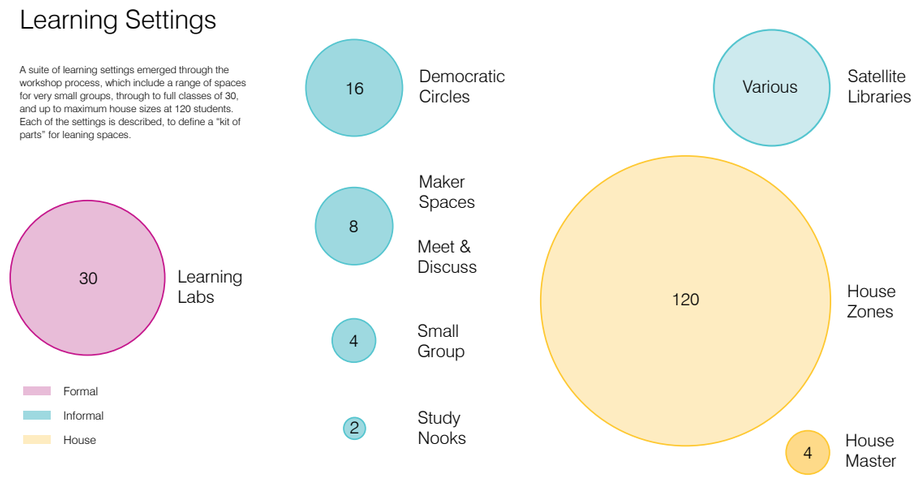


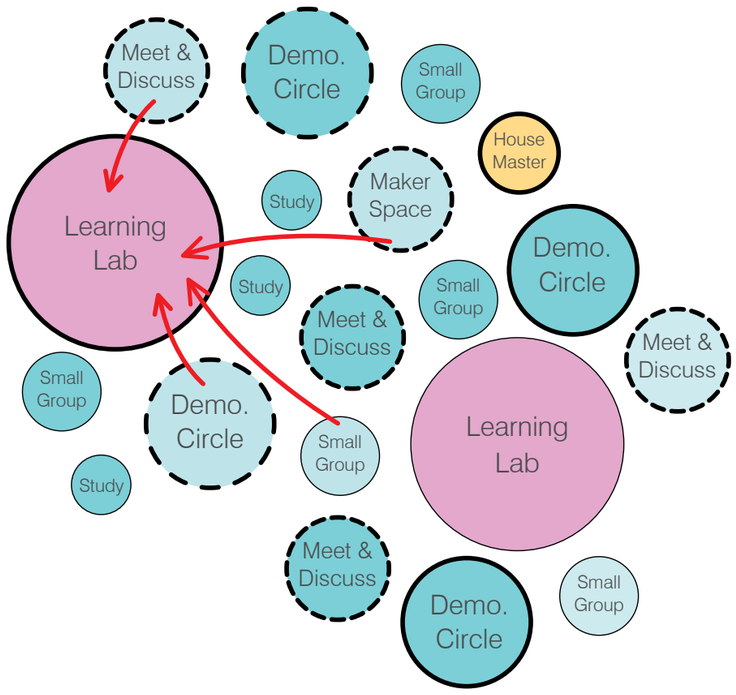
3.3 User group process

By engaging the students, educators, and the school community early in the design process, it allowed the school to determine which teaching style(s) and environment was suitable for them. The teachers and students were engaged in round-table discussions and butchers paper mark-ups. The workshop activities set the students and teachers the task of describing Learning Settings which they aspire to have and then to define diagrams describing the relationships between the Learning Settings.

The major theme arising from this process was the desire for students and teachers to move between formal spaces and larger groups to informal spaces and smaller groups which was described during the discovery process as ‘zooming in and zooming out’. We are exploring the best way to maximise use of space as well as facilitating spontaneous movement between spaces some of the time.

The workshops also repeatedly emphasised how the house system is fundamental to student life at the school. The design team investigated how to create a zone large enough to accommodate one house group to ensure there are enough opportunities for up to eight mentor groups to meet and work concurrently and also function as informal learning zones, within which are embedded the kinds of satellite library resources.





Community Integration





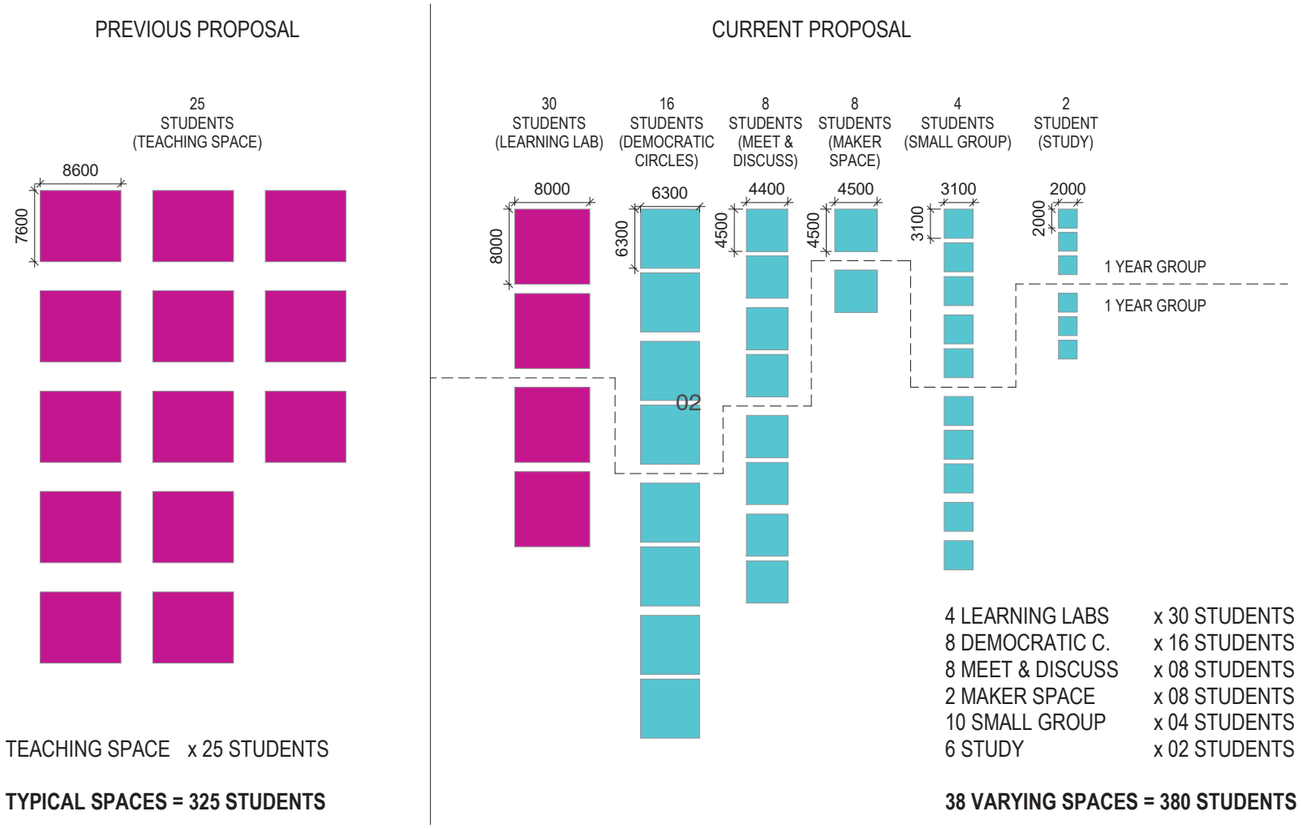


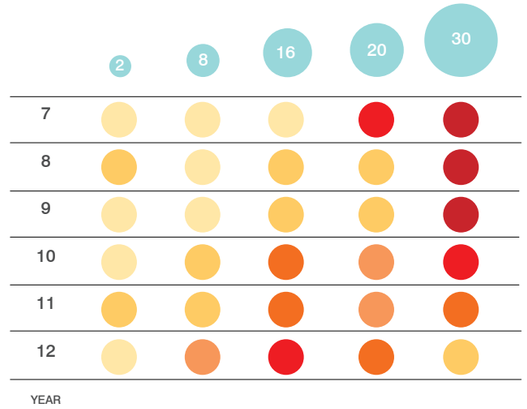


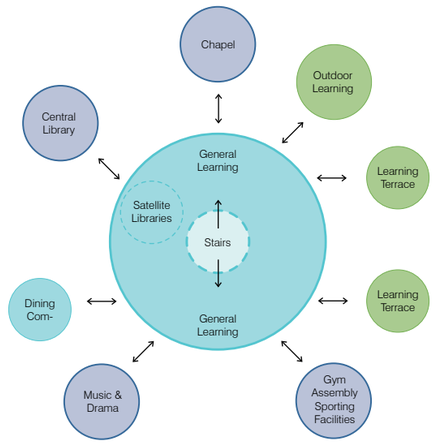


01 School usergrpoup process
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Community Integration







3.4 User group process

During the Discovery Workshops, the design team also engaged with the timetable planning staff to ensure the physical environment which was being developed could support the pedagogical approach, curriculum and class structure proposed for Cranbrook. The feedback was invaluable and identified that the school has a great volume of large rooms but have only partial seat occupancy for many classes. Many of the later years classes are for smaller groups. For example, an existing 30-seat room may be holding a class for 12 students. This is illustrated in the timetable “heat maps” indicated. It was determined that the school’s needs are better met by provision of a variety of spatial sizes, with more smaller spaces to complement the existing suite of mostly large (example 30) person rooms currently available on the campus.

The Hordern Precinct Development is seen as an opportunity to address this imbalance by providing predominantly smaller teaching spaces, whilst maintaining a self-sufficient and balanced mix of spaces in itself. Future stages should also be assessed against the range of sizes required, rather than as a room count based on larger rooms. The space available can be used more effectively through smaller spaces, which will assist in reducing pressure on the decant strategy for future phases.

The inputs and themes from The Discovery Workshops emerged as unique aspirations of the culture and ethos of Cranbrook, to form guiding principles for the development which were encapsulated and incorporated into the design by the design team.





4 Response to Design Quality Principles of the Education SEPP

4.1 Context, Built Form and Landscape

Cranbrook School's Senior School Campus is situated on steeply sloping topography along the northern face of Bellevue Hill. The site's landform has a generally north to north-westerly aspect with significant views in two directions towards the city of Sydney and out towards the Heads of Sydney Harbour. These views are highly valued by the School community for generating a sense of place but also crucially for establishing visual connectivity to and from local and distant communities. The local view is towards the city of Sydney and connects the campus to its place in Sydney. The distant view is towards North and South Head –the "gates" through which ships connected the early colony of Sydney to the outside world. The symbolism of these two views is recognised by the School as it purposefully seeks to be distinctively of its place yet simultaneously connected to a broader global community. This narrative of connectivity is given expression in the architectural and landscape solutions generated for the proposed Hordern Oval Precinct Redevelopment.

Firstly, an elevated platform – to be known as the Centenary Lawn - is proposed to be established at the highest most level of the Centenary Building. This external place will be of ceremonial purpose, connecting the proposed new Chapel with the historic Cranbrook House. Crucially however, it will also generate a gathering space from which both of the important views described above can be seen simultaneously. This will be the first time in the modern era that these views will have been re-established because the development of the War Memorial building, following the second world war, and its associated landscape of tall trees has obscured the view towards the Sydney Heads.

Secondly, the proposed development of the Aquatic and Fitness Centre will reinforce the connection with local community by transforming the northern boundary to New South Head Road from one of visual and physical separation to one of genuine access and community engagement to the facilities available within. This is to be achieved by creating a generous portal along the proposed northern elevation of the Aquatic and Fitness Centre that will for the very first time give the School an actual point of address and access along this prominent interface with the local community. The proposed urban design for this area will improve amenity for pedestrians along this northern boundary as there will be an enhanced zone of pedestrian pavement and a landscape architecture solution that provides a physical and psychological buffer between the pavement and the busy vehicle corridor of New South Head Road.

Bounded by Victoria Road, Rose Bay Avenue and New South Head Road the School campus is characteristically described as being like an island – situated as it is within a distinctly residential community yet standing separate from that community because of its encompassing roads, associated boundary fences and historical difference of activity. Both of the view strategies described above will improve and enhance the School's physical and social relationship to its community.

The geology of the School campus is typical of the eastern suburbs of Sydney, being composed of wind-driven sand over lying bed rock strata of Hawkesbury sandstone. Originally this geology would have supported flora characteristic of the poor soils of the eastern suburbs such as native grasses and coastal Banksias. However the native landscape has been significantly altered by the importation of exotic species during the last 150 years which now characterise the planted context as being one of diverse and exotic origin. The intent with the proposed landscape architecture for the Hordern Oval Precinct Redevelopment is to provide a balanced consideration of native and exotic species that simultaneously give expression to the location's indigenous sense of place while also speaking to the overlay of an English tradition of garden-making.

Once a landscape inhabited by indigenous Cadigal people of the Eora nation, the site for Cranbrook School was formally established as a private estate in 1856 by Robert Tooth. The first and still the most historically significant building on the site was a residence for the Tooth family – now known as Cranbrook House. Built in 1859 Cranbrook House was constructed with sandstone blocks, projecting timber verandas and slate roofing. The House has had several expansions and renovations over time, some of which were undertaken by the highly regarded Architect John Horbury Hunt. Given its originating role in the site's establishment and the valued qualities of its architecture , Cranbrook House is the most significant architectural legacy on the School campus. Its warm coloured and oxidised sandstone exterior contributes much to the School's sense of identity and connection to place. The Cranbrook School community is very conscious of this original legacy of sandstone and recognises that many of the post WW2 campus developments have been unsympathetic to this material heritage. The proposed Hordern Oval Precinct Redevelopment seeks to re-address this approach and to set in place a harmonious palette of building materials for Cranbrook's physical environment as the School looks forward to its second century as a place of education. The majority of the external elevations proposed for both the Centenary Building and the Aquatic Fitness Centre are to be clad in sandstone sourced from the Sydney region. This strategy for external architectural appearance is underpinned by the intent to respect and respond positively to the physical context, character and heritage of Cranbrook while also generating a narrative of built form that responds meaningfully to the sandstone geology of the area – comprising as it does cliffs, headlands and rock platforms of Hawkesbury sandstone. Consistent with this approach, the landscape architecture is proposed to utilise sandstone blocks, wall panels and paving in the formation of seating benches, ground paving and in the cladding of landscape retaining structures.

The architectural built form for the Centenary Building is composed as a series of volumes intersected by planted landscape. This strategy seeks to breakdown the volume of the development and relate it as a series of functional parts that are harmoniously scaled with the neighbouring School buildings in this precinct of the campus. The datum of the ground threshold around Cranbrook House is carried across to this new development, forming the proposed Centenary Lawn with the Chapel as the upper most occupied floor level. With external terraces stepping down towards the Oval, the Centenary Building gives expression to cantilevering rock forms and wind eroded cliffs – a reference to the local geology that is further developed in the form of the Aquatic and Fitness Centre which is conceived of as an undercut headland. The curved form of the Aquatic and Fitness Centre responds to and echoes the sweeping bend of New South Head Road, engaging this new building positively with the predominant geometry of its urban context.

The banks of Hordern Oval are characterised by a singularity of tree species in the form of mature Jacarandas. These trees blossom in November each year and give the Hordern Oval Precinct a distinctive character that is fondly regarded by the School and local external community alike. The ensemble effect of these trees is to be retained with proposed additional planting of Jacarandas along the northern end of the bank and the necessary removal of one Jacaranda tree at its southern end.



4.2 Sustainable, Efficient and Durable

The proposed architecture for the Hordern Oval Precinct Redevelopment is responsive to the local temperate maritime climate of Sydney's eastern suburbs. Oriented mostly towards the north, the proposed built form uses a series of screening devices and projecting balconies to provide deep passive shade to the double-glazed facades in order to minimise direct solar heat gain during the hotter weather seasons. The projecting shading will facilitate solar light transmittance during the cooler weather seasons when the sun's path has a lower angle of incidence.

Natural ventilation to the Centenary Building will draw air through the assembly hall using a stack effect at the southern edge of this space, minimising the reliance on mechanical cooling and limiting energy use.

Masonry construction using sandstone panels on a concrete frame will provide a robust and durable fabric to the proposed Centenary Building and Aquatic and Fitness Centre. Both buildings will be insulated to minimise energy losses and both buildings will have significant areas of turfed roofing that will act as a natural insulator to enhance building performance. Integrated planting is proposed for the terraces of the Centenary Building with deep soil zones proposed around the exterior for ground water recharging and the planting of trees.

Rain water is to be captured in a proposed water storage tank that will be constructed beneath Hordern Oval and used for the irrigation of its turfed playing surface.

It is not currently proposed to install photovoltaic panels on the Hordern Oval Precinct Redevelopment however roof structures on the proposed Centenary Building and field maintenance shed will be designed to support their future installation.

The improved amenity of the proposed forecourt to the Aquatic and Fitness Centre will promote safe walking while bicycle storage facilities within the proposed car park will facilitate opportunities for cycling as a mode of transport. The School has existing bus stops located on Victoria Road and New South Head Road within close pedestrian access to the proposed Hordern Oval Precinct Redevelopment.









4.3 Accessible and Inclusive

The design for the proposed Hordern Oval Precinct Redevelopment addresses the importance of safety and applies the principles of crime prevention through environmental design to ensure that security measures are designed and integrated with the built form. This includes the integration of a new pedestrian gate proposed for Rose Bay Avenue and a new access point for pedestrians and vehicles associated with the proposed Aquatic and Fitness Centre

Currently the northern boundary of the School campus is a high fence that acts as a physical and visual barrier , separating the School from passers-by and the adjacent community. The proposed design of the Aquatic and Fitness Centre will positively transform this condition through an architectural solution for a new portal and inclined elevation that simultaneously eliminates the need for perimeter fencing and establishes a new school frontage that is visible, engaging and welcoming.

As a core component of the architectural engagement the students, educators and local community have been engaged and consulted by the design team in developing the vision and the design brief for the proposed Hordern Oval Precinct Redevelopment. This process is ongoing through the design development phase to refine solutions that will optimise accessibility and inclusiveness of the project, inclusive of the provision of diverse, attractive and accessible places to learn, play and socialise.

The accommodation for the proposed Hordern Oval Precinct Redevelopment is inclusive of a chapel, a drama theatre, an assembly hall with multi-purpose functionality, learning spaces, a fifty metre eight lane swimming pool, a learn-to-swim pool and a gymnasium. All of these facilities have great potential for access by local communities and it is the School's intention to make these available outside of normal school timetabling. Clear and logical wayfinding will be progressed in subsequent stages of design development to facilitate access and orientation through the development for all users including after-hours community users.

An access consultant is engaged on the project team to guide design outcomes that ensure accessibility for all users of the proposed development.

4.4 Health and safety

The proposed Centenary Building is intended to be constructed on steeply sloping land with a predominantly northerly orientation. It is through this northern façade that provision has been made for natural cross ventilation to the assembly hall, facilitated by a stack effect that draws air into and through this large assembly space. Sun shading has been designed for this northern elevation to optimise access for daylighting while ameliorating the impacts of direct solar heat radiation on glass facades.

The proposed Aquatic and Fitness Centre is situated mostly beneath the surface of Hordern Oval however its northern façade is composed of a generous glazed elevation that optimises access to daylighting by positioning the length of the indoor swimming pool parallel to this orientation. Direct summer sun is shaded however the design has been developed such that either side of the winter solstice there will be direct daylighting of the pool's surface.

Pedestrian access has been prioritised over vehicles in the proposed Hordern Oval Precinct Redevelopment with a new pedestrian gate designed for Rose Bay Avenue that will separate pedestrians from vehicles for the first time in this location on the campus. At the proposed Aquatic and Fitness Centre the design provides for clear separation between pedestrian and vehicle access.

Providing covered areas for protection from sun and rain is crucial for school environments. The proposed Centenary Building has been designed with cantilevering external terraces that are sheltered by the level above. These spaces are highly accessible, oriented towards northern light and offer significant protection from direct sunlight and rain.

The proposed Aquatic and Fitness Centre is accessed directly off the adjacent pedestrian path and roadway and has been designed to accommodate the storage of XXX bicycles with associated end of journey facilities.

The design for the proposed Hordern Oval Precinct Development has been developed in accordance with the principles of CPTED to identify and quantify crime risks. Safer by Design principles have been incorporated to minimise the risk of crime and to enhance perceptions of safety.

The orientation and planning of the proposed new facilities is highly transparent and supports passive surveillance opportunities, including through the centralised locations of Housemaster offices in the Centenary Building, the prominent location of the reception and lifeguard facilities in the Aquatic and Fitness Centre, and in the location of toilet and change rooms in both complexes that may have community use outside of school timetabling. Separate toilet and change facilities for students and community have been designed into the proposed Aquatic and Fitness Centre.

After school hours access arrangements to the proposed Hordern Oval Precinct Development will be further developed during the detail design phase to ensure the safety of all users and the security of the School's infrastructure.









4.5 Amenity

The proposed Hordern Oval Precinct Development is embracing of the natural environment with turfed roofs, integrated planting on accessible terraces, deep soil planting on adjacent open space and the inclusion of an external Water Sensitive Urban Design water feature located adjacent to the proposed Chapel. These initiatives have functional and aesthetic drivers that also deliver positive outcomes for learning and play.

The proposed Centenary Building is oriented to the north with excellent access to sunlight and the integrated provision of a natural ventilation strategy. Visual outlook from all levels is focussed on the open space of the Oval with exceptional views of the harbour and distant landscapes available from the upper levels, culminating in the Centenary Lawn which will provide a significant new external and accessible surface of approximately 1000 square metres. This new external space will provide opportunity for passive and dynamic play as well be the focus for formal activities such a Remembrance Day services.

The proposed Aquatic and Fitness Centre is also oriented to the north and, as described previously, will optimise access to daylight into its internal swimming pool environment, with direct sunlight reaching the swimming pool's surface during mid-winter. The restoration of the Hordern Oval turf surface will re-establish this significant outdoor playing field as one of Sydney's best sporting amenities.

The proposed Hordern Oval Precinct Development will incorporate integrated wireless technology to facilitate seamless access to technology and associated flexible learning practices.

The opportunity for the proposed buildings and outdoor spaces to be learning tools themselves has been addressed in the initial design phases with structural clarity and the integration of passive environmental control principles finding expression in the architectural and landscape design solutions. Further development of this approach will enable more detailed elements such as building energy use monitoring stations to be incorporated in the fit-out.

A process of focussed stakeholder engagement comprising Cranbrook School students and educators has informed the development of a suite of learning modalities for the proposed Centenary Building. This diversity of indoor and outdoor spaces will facilitate multiple formal and informal uses of varied population and setting so as to cater for a range of learning styles and group sizes. This process is continuing to undergo refinement in coordination with the School's needs across the whole campus.

The landscape architecture for the proposed Centenary Building includes the integration of buffer planting to reduce the physical impact of the development on its surrounding landscape and to generate a human scale to the multi-storey development. Additionally buffer planting is integrated into the forecourt of the proposed Aquatic and Fitness Centre to provide physical and psychological separation from the busy traffic corridor of New South Head Road with the aim of positively transforming the amenity of this currently underwhelming area of the campus.

Situated on a school campus within a residential context, the proposed Centenary Building is conceived as a series of terraced platforms that follow the topography of the sloping bank to Hordern Oval, stepping down from a single storey at its upper level interface to Rose Bay Avenue the development retains an appropriate height and scale with respect to the residential properties on the opposite side of Rose Bay Avenue. The proposed Centenary Building remains below the parapet level of the adjacent Perkins Building and Cranbrook House.

The proposed Centenary Building accommodates learning spaces and as such is sensitive to acoustic intrusion. Fortunately the building as designed is located on the south-eastern side of Hordern Oval and a significant distance away from the vehicle traffic corridor of New South Head Road. However the building will incorporate significant insulation in its wall fabric, double glazing in its external elevations and a turf roof at its upper level – all of which will contribute positively to its overall acoustic performance and suitability as place for learning.

4.6 Whole of life, flexible and adaptive

The proposed Centenary Building is designed to accommodate future-focussed learning spaces of varied modality. It is expected that as learning and teaching pedagogy evolves to meet a rapidly developing society driven by technological and social change that there will be the need to allow for future adaptation. The structure of the proposed Centenary Building is designed such that the floor levels for the learning spaces can be “churned” over time with the interiors fitted out with non-structural partitions and adapted as educational needs arise. In order to inform the initial fit-out of these spaces a comprehensive stakeholder engagement process has been conducted with the School’s educators and cross-referenced with the School’s timetabling requirements across the whole campus and aligns with the School’s anticipated decanting requirements.

The strategy for specifying building materials is to be supportive of a whole-of lifecycle approach and will be further refined during the design development phase. In principle, low energy embodied materials of robust quality and long life span will be sourced from local suppliers wherever practical.

The proposed Hordern Oval Precinct Development has been subject to intense site appraisal inclusive of extensive geotechnical investigation, sub-surface water monitoring and analysis, arboreal investigation, drainage studies, noise monitoring and traffic studies. The recommendations arising out of these appraisals have and will continue to inform the detailed design of the proposed Hordern Oval Precinct Development.







4.7 Aesthetics

Through analysis and appreciative inquiry the design team has developed a deep understanding of the School's unique social character, its siting, its topographical challenges and opportunities, the heritage-rich nature of the original buildings and associated landscaped grounds, and the aesthetic vision that the Headmaster and Executive has articulated to ensure Cranbrook's vitality and success into its second century of service.

The built solutions proposed for the Hordern Oval Precinct Development are appropriately scaled and articulated to respond positively to the cascading nature of the site, to its immediate context of existing built forms and to the surrounding context of the residential neighbourhood. Materials such as locally sourced Hawkesbury sandstone , sheet copper and high visible light transmittance glass have been selected to be harmonious to the valued legacy of heritage buildings to, be aesthetically and physically enduring and to be environmentally responsible.

Cranbrook's legacy has been shaped by its distinctive landscape setting, its heritage architecture and its enduring values and beliefs.

Landscape
Cranbrook School was founded on Hawkesbury sandstone. A landscape characterised by an underlying geology of silica-rich sedimentary rock that has weathered and oxidised over hundreds of millions of years to form outcrops of stratified bedding planes overlain with sandy deposits. Located on the northern slopes of Bellevue Hill, with both north-westerly and north-easterly aspects over the Harbour, the elevated position of the School occupies a privileged vantage point with spectacular views, favourable orientation to sunlight and cooling summer breezes, and the challenge of a steep fall across its narrower margins. Flora has been selected that is aesthetically pleasing and suited to the free draining sandy soils of the place.

To begin with then, the sloping landscape and its elevated position above the harbour generates a remarkable and distinctive physical legacy for the School.

Architecture
It was perhaps inevitable that this attractive site would be first developed as a significant estate with a correspondingly dignified house designed and built in the Georgian style of the time. Carefully sited with sweeping views towards the colony of Sydney and over Port Jackson towards the Heads - the passage through which all contact with the outside world was initially made - the foundation building of Cranbrook captured in its genesis some of the School's present Vision as a place that is connected with its local community yet is equally engaged with a global context.

At the time of commissioning the original Cranbrook House in 1859 the colony of Sydney had an evolving craft of constructing substantial buildings in "yellow block" sandstone quarried from local sources and erected by workers skilled in the English tradition of masonry architecture. The physical quality of "yellow block" became well regarded for its workability and durability. It was used in the main buildings of the University of Sydney and in the governing administration's significant buildings in Sydney Town. In the eastern suburbs some of the earliest privately developed buildings of merit were constructed in this same material – including the nearby residences of Lindesay(1834) and Carthona (1841).

The use of sandstone in Sydney's built environment has been described as 'a kind of base note, an ever-present reminder of its Georgian beginnings and its more ancient past'.

Cranbrook House is distinguished by its sturdy sandstone base and its finer detailing on its upper level. The building exhibits the characteristics of permanence, calm order, warmth, elegance, human scale, and of belonging to Sydney's sandstone environment. While there are other buildings of heritage merit on the campus, Cranbrook House is the centrepiece of the School's architectural legacy. It is recognised that all future developments on the Bellevue Hill campus are to be progressed in a manner that is respectful of this legacy and that they contribute positively towards a

harmonious sense of architectural continuity across the campus. The materials specified for the Hordern Oval Precinct Development are consistent with this aesthetic intent.

Values and beliefs
Cranbrook School has its origins in its foundations on Protestant beliefs and the values of the Church of England.

As with the School's motto, "Esse Quam Videri", future development of the campus is implicitly understood to be aligned with its values of authenticity and integrity.

The enduring social legacy since its foundations at the conclusion of the First World War has been to foster its responsibilities to the individual and to contribute to the greater good and the social welfare of the wider community.

The School aspires through the redevelopment of the Hordern Oval Precinct to provide for a series of facilities that add to the character and overall beauty of the Cranbrook site, that strive to achieve design excellence and high levels of amenity, and that also functionally provide utility and benefit to the wider community.





5 Appendix A

Supporting Letter

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Appendix A

GANSW

02 February 2018

RECORD OF MEETING NOTES
FOR ATTENDEES:
Archtectus –
Luke Johnson
Gary Henigen
John Whatmore
Cranbrook School -
David Hull
Mark Flanagan
GANSW -
Olivia Hyde
Lee Hillam
Diana Snape
DPE -
Navdeep Singh Shergill

GANSW PRE-LODGEMENT MEETING - 30.01.18
Department of Planning – 320 Pitt St, Sydney

SSD 8812 - CRANBROOK SCHOOL – 5 Victoria Street, Bellevue Hill

The following notes summarise the discussion and comments provided to the project team by GANSW in relation to the preparation of an EIS for the above proposal.

Overall, GANSW commend the process undertaken to develop the proposal which included preparation of a masterplan and a design competition.

In preparation of the EIS submission, in accordance with the SEARs, GANSW note the following should be provided and incorporated into the required design report and structured to respond to the design quality principles of the Education SEPP:

- Further information and drawings that demonstrate an integrated landscape plan
- Further information to demonstrate active transport strategies and linkages with existing, proposed and potential footpaths and bicycle paths and public transport links. GANSW recommend greater emphasis on how the proposal will contribute to future modal shifts in transport options away from private vehicles.
- Site plans and operational statement demonstrating the afterhours and community use strategy including security implications such as fences or other secure lines and whether access is free or paid
- clarification as to material specifications in particular for the blade elements at level one
- further information to demonstrate the anticipated performance of proposed passive thermal control measures and/or hybrid strategy (natural ventilation; potential for photo-voltaic array)

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