ETHOS URBAN

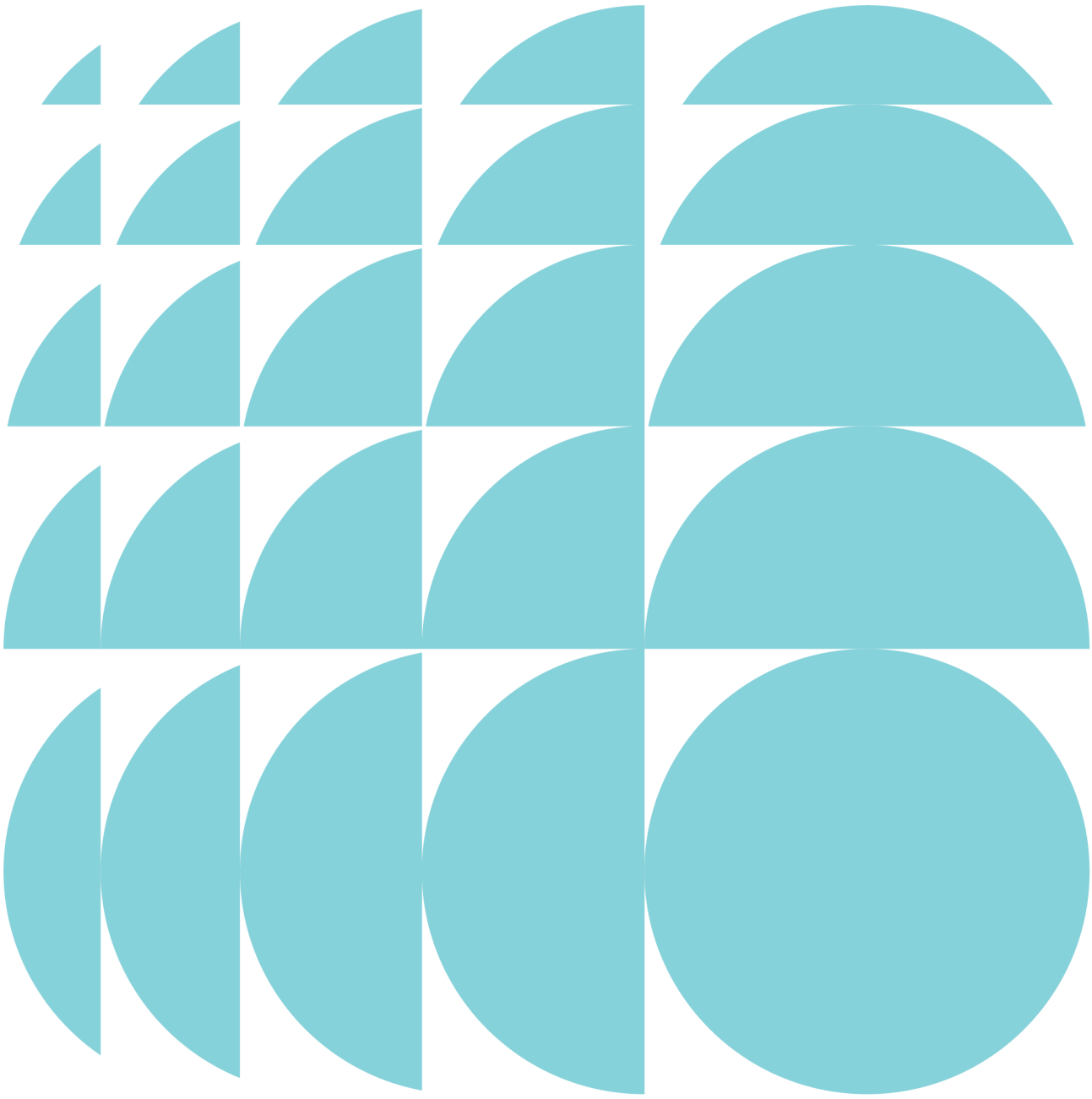
Environmental Impact Statement

794-796 New South Head Road, Rose Bay
Kambala Sport Wellbeing and Senior Learning Precinct

Submitted to Department of Planning Industry and Environment

On behalf of Kambala

20 October 2020 | 2190171



CONTACT

Gordon Kirkby	Director	gkirkby@ethosurban.com	0448 476 754

This document has been prepared by:		This document has been reviewed by:	
			
Ella Coleman	20 October 2020	Jim Murray/Gordon Kirkby	20 October 2020

VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY

Ethos Urban Pty Ltd
ABN 13 615 087 931.
www.ethosurban.com
173 Sussex Street, Sydney
NSW 2000 t 61 2 9956 6952

Contents

Contents

Figures

Contents

Tables

Appendices

Contents

Contents

Statement of Validity

Development Application Details	
Applicant name	Kambala School
Applicant address	794-796 New South Head Road, Rose Bay
Land to be developed	Kambala School 794-796 New South Head Road, Roase Bay Lot 67, DP 2538 Lot C, DP 310074 Lot 1, DP 1089403 Lot 1 to Lot 12, DP 1116858
Proposed development	Development of a Sport, Wellbeing and Senior Learning Precinct.
Prepared by	
Name	Gordon Kirkby
Qualifications	BEc Dip URP MPIA
Address	173 Sussex Street, Sydney
In respect of	State Significant Development - Development Application
Certification	
	I certify that I have prepared the content of this EIS and to the best of my knowledge: it is in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000; all available information that is relevant to the environmental assessment of the development to which the statement relates; and the information contained in the statement is neither false nor misleading.
Signature	
Name	Gordon Kirkby
Date	20/10/2020

Executive Summary

Purpose of this Report

This submission to the Department of Planning, Industry and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This State Significant Development Application (SSDA) relates to the Kambala Sport, Wellbeing and Senior Learning Precinct at Kambala, 794-796 New South Head Road, Rose Bay.

The application is based on the design report and detailed design drawings prepared by Allen Jack and Cottier Architects (AJ&C) (**Appendix A** and **B**) and the technical consultant reports outlined at **Table of Contents**.

The proposed development at Kambala is identified as a State Significant Development (SSD) in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Development of educational establishments for the purpose of alterations or additions to an existing school with a capital investment value of more than $20 million is SSD for the purposes of the EP&A Act. As the proposed development will have a capital investment value of $59,700,000 it is deemed SSD. A QS Report is provided under separate cover.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was sought on 21 October 2019. Accordingly, the SEARs were issued on 25 November 2019. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs.

Overview of the Project

The Development Application (DA) seeks approval for the construction of a Sport, Wellbeing and Senior Learning Precinct. The proposal also seeks to reconcile the school student numbers and to increase the capacity of the school from the permitted number of 950 students to 1020 students, which is an increase of 70 students. The proposed increase in the school capacity will formalise the existing student numbers and will enable the school to continue its existing operation.

A detailed description of the development is provided in **Section 3**.

In summary, approval is sought for:

- Site preparation works including demolition and excavation;
- Construction of new buildings and spectator seating;
- Landscaping; and
- Other associated works including refurbishment works to the Hawthorne Building.

An image of the proposed development is provided at **Figure 1**.

The Site

The site is located at 794 - 796 New South Head Road, Rose Bay and is within the Woollahra Municipal Council Local Government Area (LGA). The site is situated in the eastern suburbs of Sydney and is approximately 8km east of the Sydney CBD. The site is located on New South Head Road which is a classified road connecting the City with the eastern beaches. The School is surrounded by predominantly residential uses.

Planning Context

Section 6.0 of the EIS considers all applicable legislation in detail. The proposal is consistent with the requirements of all relevant State Environmental Planning Policies (SEPPs). The site is zoned SP2 Infrastructure – Educational Establishment under the Woollahra Local Environmental Plan 2014 (WLEP). Educational Establishments are permissible with consent and the proposal meets the objectives of the subject zone. The site has a 9.5m height of buildings development standard but it is not affected by a floor space ratio development standard. The site is locally listed as a heritage item under the WLEP.

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by Kambala to manage and minimise potential impacts arising from the development.

Conclusion and Justification

The EIS addresses the requirements of the SEARs, and the proposal provides for a new Sport, Wellbeing and Senior Learning Precinct with new classroom and group learning facilities, indoor, all weather sports facilities and associated amenity and landscape works.

Importantly, the proposed works result in sustainable and orderly development of the school to provide high quality educational facilities for future students of the school. Importantly, it will sustainably develop the campus by protecting the aesthetically unique and sensitive areas of the campus and intensifying the site's key opportunity areas.

The potential impacts of the development are acceptable and are able to be managed. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Public Spaces

Figure 1 **Proposed internal view of the Sports Precinct.**

Source: *Virtual Ideas*

Figure 2 **Proposed aerial view of the Sports Precinct.**

Source: *Virtual Ideas*

1.0 Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning, Industry and Environment pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for State Significant Development (SSD).

The proposed development at Kambala is identified as a State Significant Development (SSD) in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Development of educational establishments for the purpose of alterations or additions to an existing school with a capital investment value of more than $20 million is SSD for the purposes of the EP&A Act. As the proposed development will have a capital investment value of $59,700,000 it is deemed SSD. A QS Report is provided under separate cover.

The report has been prepared by Ethos Urban on behalf of Kambala , and is based on the Architectural Plans provided by Allen Jack and Cottier Architects (AJ&C) (see **Appendix A**) and other supporting technical information appended to the report (see **Table of Contents**).

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the SEARs for the preparation of the EIS, which are included at **Appendix C.** This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

1.1 Overview of Proposed Development

This SSDA includes detailed plans for a new sport, wellbeing and senior learning precinct. Accordingly, consent is sought for the following:

- **Site preparation, demolition and excavation**
  - Excavation of the existing sports fields to facilitate construction;
  - Removal of the tennis courts on the Music Building roof;
  - The partial demolition of the Hawthorne building;
  - The demolition of the Arts building;
  - Tree removal; and
  - Installation of hydraulic and electrical services.
- **Land use**
  - Use of all buildings for the purpose of a school; and
  - The proposed new works relate mostly to the sport, wellbeing and senior learning precinct.
- **Existing buildings**
  - Following partial demolition of the Hawthorne building, the construction of a new façade, roof and landscaping; and
  - Construction of new facades to adjacent affected buildings following demolition of the Arts building.
- **Construction of new buildings**
  - Construction of a sport, wellbeing and senior learning precinct that includes:
    - Sports facilities including weights room and dance rooms;
    - Indoor multipurpose sports courts for use by up to 1,500 people;
    - Innovative and flexible teaching and learning spaces'
    - Amenities, storeroom, plant, circulation and ancillary spaces;
    - Spectator seating / bleachers; and
    - A wellbeing centre, called the SHINE centre to accommodate staff workstations, meeting areas, staff development workshop rooms and amenities.

- **Landscaping**
  - Reinstatement of the tennis courts, lighting and perimeter fencing on the new roof;
  - A new eastern forecourt for the school, new external landscaped areas and new courtyard;
  - Minor works to the existing music building to facilitate a new connection to the courtyard;
  - Reinstatement of the sports field surface on the roof of the building (sports field and perimeter fencing); and
  - Introduction of five new or upgraded outdoor spaces, including the Entrance Plaza and Covered Outdoor Learning Area, Tivoli Plaza, Northern Courtyard, Café Hub and Southern Lawn and Playfair terraces.
- **Operation**
  - This application does not seek any changes to the number of students currently attending Kambala School. However, this application does seek to reconcile the number of students previously approved under DA387/2005/1 versus those currently attending Kambala. Therefore, 1,020 students currently attend Kamabla School and this application seeks to increase the approved cap of students from 950 students to 1,020 students.
  - This application seeks approval for the new buildings to operate between 7:30am and 4:30pm on Monday – Friday. This is not outside the existing operating hours currently approved for the school.

1.2 Background to the Development

Kambala is an independent, Anglican day and boarding school for girls from Preparation (Kindergarten) to year 12. Kambala also has an early learning centre cares for approximately 100 girls and boys aged between 6 months and 4 years. The school was established in the late 1800s and moved to the current campus in 1913 and has evolved in an organic and ad-hoc manner across the span of 120 years.

A new campus wide planning approach offers the opportunity to strategically review and plan for the campus' future in a sustainable and efficient manner such that the campus' unique aesthetic and heritage values are best preserved.

The proposed development at Kambala has been considered for a number of years, in response to key drivers:

- **Asset condition**: Generally, the facilities are not compatible with modern teaching practices and significant works are required to provide functional and safe learning areas for students. The existing open space is dysfunctional and below desired areas.
- **Precinct opportunities**: The site is relatively isolated due to New South Head Road. There is an opportunity to better integrate the school with the remainder of the campus and to acknowledge its history by using its unique location and context to enhance environmental teaching.

These drivers have led to the current proposal to formally increase the capacity of Kambala from 950 students to a maximum of 1020 students within the scope of this SSD DA. The project has been supported by a strong intent from the School Council to develop the site, given the increasing student demand and the prominence of the site. The preparation of a campus wide development approach is also consistent with the School's 2019 - 2023 Strategic Plan which identified the need for a broader strategic plan to coordinate renewal and orderly development in a feasible and staged manner.

1.3 Objectives of the Development

The objectives of the Kambala Sport, Wellbeing and Senior Learning Precinct are to:

- Unlock the potential of the site and value of land by building under the existing sports field;
- Explore a flexible and future proof design for the teaching and learning areas;
- Develop the site in line with the Kambala Strategic Plan 2018-2023, in an orderly and organised matter;
- Protect, preserve and retain areas of unique heritage and aesthetic values, whilst delivering additional educational facilities in key areas that can accommodate it;
- Upgrade and improve student and staff learning/teaching facilities on the campus; and

- Holistically review opportunities to improve connectivity, accessibility and legibility across the existing campus.

1.4 Analysis of Alternatives

Strategic need for the proposal

As discussed in **Section 1.2**, the school is in need of redevelopment to improve the out-dated and inefficient teaching spaces and sports facilities, provide improved learning facilities and spaces that reflect contemporary learning models and improve connectivity and accessibility within the existing campus.

The proposed development will enable Kambala to continue to provide high standards of education for young women and provide world class education that complements the Kambala strategic vision.

Three options are available to Kambala in responding to the redevelopment of their facilities. These are discussed in the sections below.

Alternative Options

Option 1 – The proposal

Option 1 involves undertaking the proposed development as outlined in this SSDA (refer to **Section 3.0** and **4.0** of this report). The proposal includes a sport, wellbeing and senior learning precinct that involves major upgrades to current facilities and ancillary landscaping works. This will improve connectivity and access within the campus, provide additional education floor space in line with the School's strategic plan and protect heritage, ecology and aesthetically significant qualities of the campus.

Option 1 is consistent with the strategic planning directions of the Greater Sydney Regional Plan, A Metropolis of Three Cities and the Eastern City District Plan, which do not identify significant growth in student-aged children in Woollahra. Therefore, this proposal does not intend to increase the capacity of the school rather reconcile the existing student numbers. Instead this proposal seeks to provide improved schooling facilities for future students.

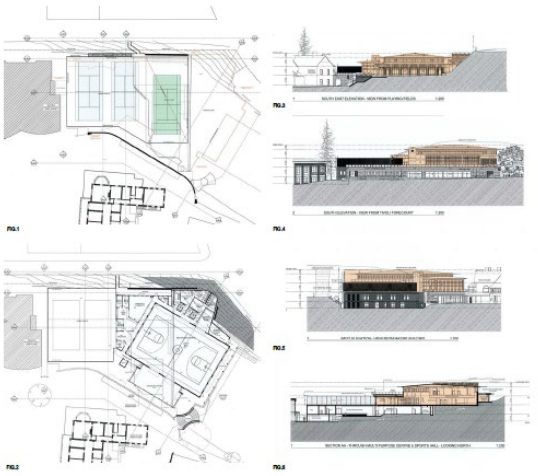
Option 2 – Do Nothing

Under the 'Do Nothing' scenario, no additional facilities or spaces are provided, and the campus operates in a business as usual scenario. This option does not provide a desirable outcome as it fails to adequately plan for future educational needs. It also contradicts the aims and objectives of the School's Strategic Plan that seeks to strategically plan for future students, and provide innovative new spaces, contemporary learning facilities and improved campus environments for students and staff.

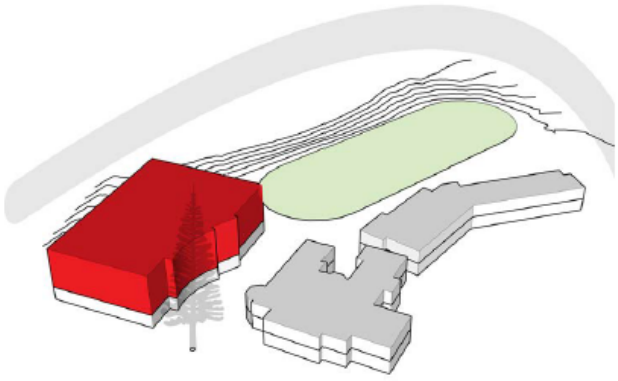
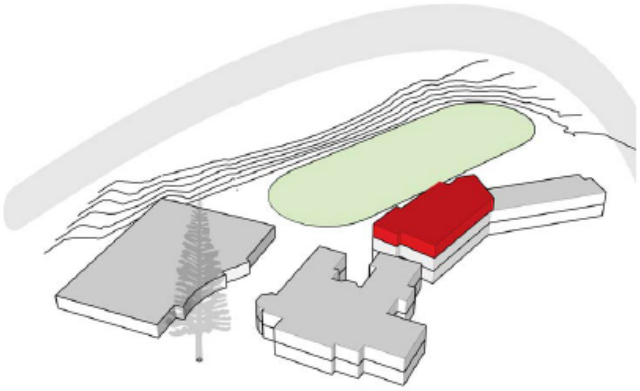
While the do nothing/base case had a low capital cost, it would not meet demand and would result in reduced learning outcomes due to overcrowding and not being able to utilise modern sporting facilities and teaching practices. Further, it would result in reduced amenity, safety and accessibility, as well as increased maintenance costs. This option has been discounted.

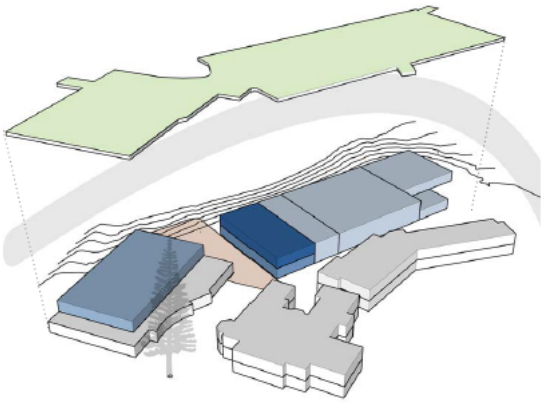
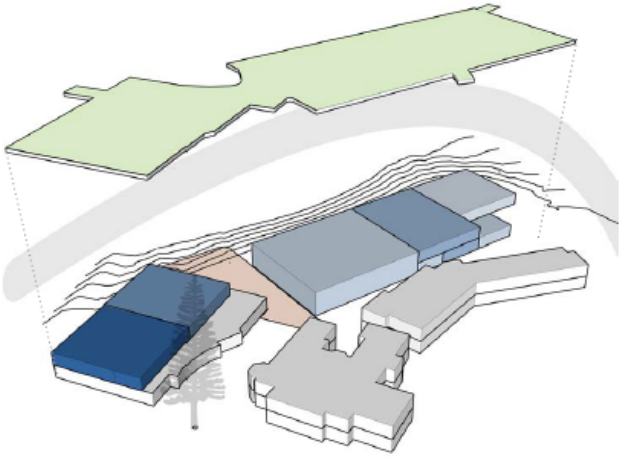
Option 3 – Alternative Designs

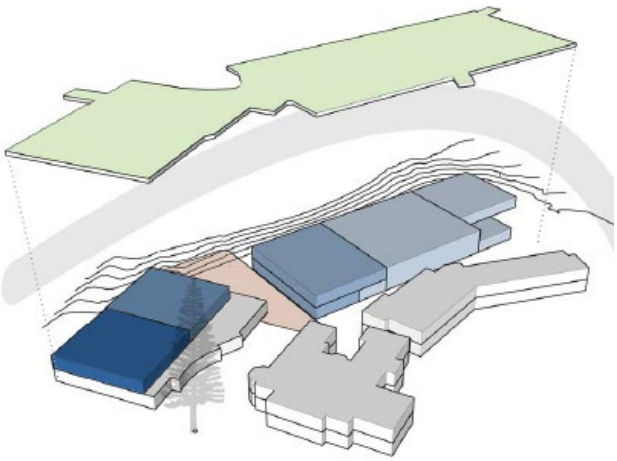
A number of schemes have been tested on the site, as well as various massing options tested during the development of the proposed scheme. These are outlined below.

Scheme	Design	Graphics
"Previously approved DA"	In 2004, a Development Application (511/2004) by Gardner Wetherill and Associates was submitted to Woollahra Municipal Council, seeking approval to construct a new Performing Arts Centre and Music Building at Kambala. This application was approved. A subsequent modification was lodged and approved which proposed the construction of a gym, sports hall, change room, offices and performing arts centre. Kambala constructed the Anne and John Lewis Music Building in line with this application, located beneath the existing tennis courts, however the proposed gym and sports hall were never constructed on top of the Music Building. This proposal would have significantly impacted access to harbour views from neighbouring dwellings.	
Durbach Bloch Jaggers	In 2018, Kambala requested Durbach Bloch Jaggers Architect to prepare a feasibility study for the Hawthorne Building. The feasibility proposed an Amphitheatre to Level 3, lifts to all levels, refurbishment of levels 3 and 4 and importantly, an additional fifth level on top of the existing four storey building. The feasibility also proposed a new amenity block to be located underneath the existing sports fields. This iteration resulted in significant impact on solar access on buildings and open spaces to the south, site lines to heritage and would block harbour views from neighbouring homes.	

In order to settle on the design proposed in this SEE, the following schemes were tested by AJ+C.

Option	Design	Graphics
AJ&C Option 1: Sports Hall Above Music	This scheme tested a double height sports hall above the existing music building, resulting in significant overshadowing to the campus and impacts on harbour views for neighbours, and site lines to Tivoli House lost.	 OPTION 1 - SPORTS HALL ABOVE MUSIC
Option 2 – Additional Level to Hawthorne	This scheme added group learning areas above the existing Hawthorne Building, which resulted in overshadowing to southern courtyards and buildings, and reduced site lines to the heritage listed Tivoli House. Additionally, minimal GFA would result from this extension.	 OPTION 2 - ADDITIONAL LEVEL TO HAWTHORNE

Option	Design	Graphics
Option 3 – Group Learning Areas Above Music	This scheme proposed a single story of group learning area's above the music building, with terraces to the north-west and south. Compared with Option 1, a single storey would reduce the height and view impact to neighbours, however the existing building structure would reduce the flexibility of teaching and learning spaces.	 OPTION 3 - GLA'S ABOVE MUSIC
Option 4 – Sports Hall to Courtyard	This scheme proposed the Sports Hall to interface with the north facing courtyard. This provides the potential for indoor/outdoor sporting activities. This location of Sports Hall is offers significant natural light and ventilation however considerable sun shading would be required to reduce the glare in the hall. This arrangement also results in little to no natural light to group learning areas which are buried in the centre of the volume.	 OPTION 4 - SPORTS HALL TO COURTYARD

Option	Design	Graphics
Option 5 – Preferred Scheme	This scheme is the one proposed in this EIS. This scheme meets the objectives and addresses the needs which Kambala School identified. The advantages of this scheme provides flexible spaces and the possibility of a variety of uses into the future, whilst also being of efficient design. The proposed scheme also provides high amenity and comfort for students, as well as fewer impacts on surrounding neighbours. Therefore, this scheme is best outcome of those considered.	 OPTION 5 - PREFERRED SCHEME

1.5 Secretary's Requirements

In accordance with section 4.39 of the EP&A Act, the Secretary of the Department of Planning, Industry and Environment issued the requirements for the preparation of the EIS on 9 January 2020. A copy of the Secretary's Environmental Assessment Requirements (SEARs), and a detailed summary of the individual matters listed in the SEARs and where each of these requirements has been addressed in this report and the accompanying technical studies and this proposal's compliance with it, is included at **Appendix C**.

2.0 Site Analysis

2.1 Site Location and Context

The site is located at 794-796 New South Head Road, Rose Bay within the Woollahra Municipal Council Local Government Area (LGA). Situated in the eastern suburbs of Sydney, the site is approximately 8km east of the Sydney CBD. The site is located on New South Head Road, which is a classified road connecting the City with the eastern beaches .The site is also bound by Bayview Hill Road to the north, and Tivoli Avenue to the south and west. The is surrounded by predominantly residential uses.

The site's locational context is shown at **Figure 3** and an aerial photo of the site is shown at **Figure 4**.

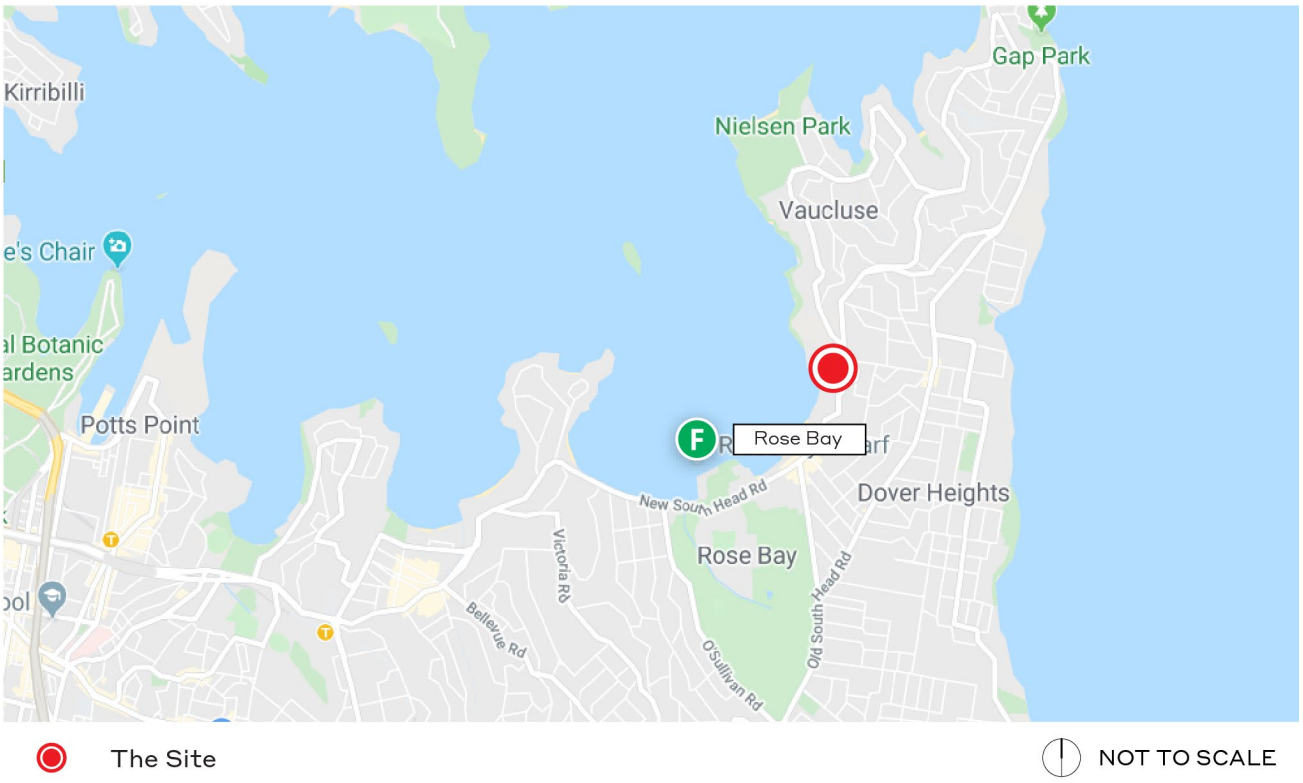


Figure 3 Locational context plan

Source: Google Maps and Ethos Urban

Figure 4 Aerial Map

Source: Nearmap and Ethos Urban

2.2 Site Description

Kambala School comprises seven (7) lots and has an area of 22,511m^2, the legal descriptions of which are outlined in **Table 1** below and in a survey plan at **Appendix BB**. The site is irregular in shape. The site in its entirety is owned by Kambala. It is noted that the works proposed in this SSDA only relate to lots at the address 794-796 New South Head Road.

Table 1 Legal Description

Address	Lot	Plan
794-796 New South Head Road	Lot 67	DP 2538
	Lot C	DP 210074
	Lot 1	DP 1089403
	Lot 1	DP 1116858
	Lot 2	DP 1116858
	Lot 3	DP 1116858
	Lot 4	DP 1116858
	Lot 5	DP 1116858
	Lot 6	DP 1116858
	Lot 7	DP 1116858
	Lot 8	DP 1116858
	Lot 9	DP 1116858
	Lot 10	DP 1116858
	Lot 11	DP 1116858

Address	Lot	Plan
	Lot 12	DP 1116858
3 Tivoli Avenue	Null	SP 64653
3 Bayview Hill Road	Lot 1	DP 175832
1A Bayview Hill Road	Lot 45	DP 2538
1 Bayview Hill Road	Lot 46	DP 2538

2.2.1 Existing Development

Kambala is an independent Anglican early learning, primary and secondary day and boarding school for girls. The site comprises the existing campus grounds of the Kambala School at 794-796 New South Head Road, Rose Bay. The northern portion of the site to the north of Bayview Hill Road is currently occupied by two two-storey brick residences which forms Fernbank Boarding houses for school, while the north western corner of the main site is occupied by an early learning centre and a contemporary school building. The south western portion of the site is occupied by an additional four contemporary schooling buildings, a pool and library and the heritage listed Tivoli Building. Further south is another brick residence composed of three storeys.

A map of the existing development is shown at **Figure 5**.

Figure 5 Existing development on the site.

Source: AJ+C

2.2.2 Existing School Capacity and Operation

The formal school hours are 8:20am to 3:20pm, Monday to Friday, with some senior classes conducted before school from 7:30am and after school until 4:30pm. The campus remains open outside of these hours for sport and extra-curricular activities and for boarders and staff living on campus (the existing boarding school is open 24 hours

/ 7 days a week) during term time. The school is generally closed on weekends with the exception for the boarding school (during the school term), some sporting facilities used for Saturday and Sunday sport as required.

The school currently accommodates day students from pre-school to year 12, as well as boarding students from year 7 to 12. The number of enrolments for 2020 was 1020, and this proposal seeks to reconcile the school student numbers and to increase the approved capacity of the school from the permitted number of 950 students to 1020 students, which is an increase of 70 students. To support the operation of the school, there are currently 230 teaching and support staff employed at the school.

It is noted that the current approved student population is 950 students under Condition 3 in DA387/2005/1 for proposed the construction of a Gym, Sports Hall, Change Room, Offices and Performing Arts Centre.

2.2.3 Heritage

The Kambala School building known as Tivoli House, and its interiors, gateposts, gates and flanking walls with rail facing Tivoli Avenue, is listed as an item of local heritage under the Woollahra Local Environmental Plan 2014. Two Norfolk Island Pines adjacent to Tivoli House are also listed heritage items.

Heritage items in the vicinity of the school campus include the locally significant Kincoppal School and Roman Catholic Convent of the Sacred Heart, and Hermit Bay slipway and landing adjacent to Kincoppal School. A map of the adjacent heritage items is shown in **Figure 6**.

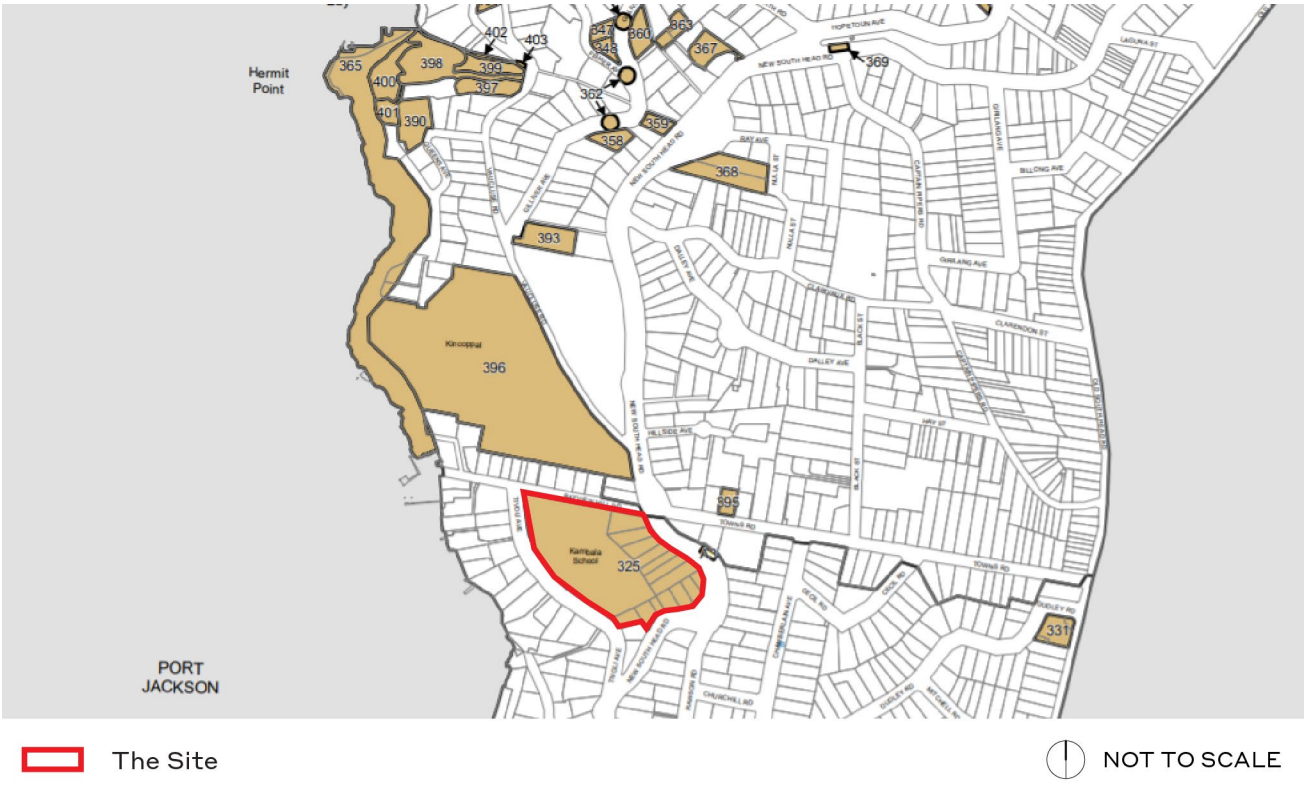


Figure 6 Heritage context

Source: Woollahra Local Environmental Plan 2014

2.2.4 Aboriginal Archaeology

The site generally has low potential for Aboriginal archaeological deposits due to high levels of historical disturbance.

An assessment of Aboriginal Cultural Heritage is provided in the Aboriginal Cultural Heritage Assessment Report at **Appendix P** and at **Section 5.8**.

2.2.5 Topography and Vegetation

The school grounds slope down from New South Head Road in the east to the west. New South Head Road itself slopes steeply upwards to the north.

There is limited vegetation on the site, as much of the site comprises of buildings and sports facilities such as an oval, tennis court and grass courts. As discussed above, there are two Norfolk Pines of heritage significance adjacent to Tivoli House.

2.3 Geotechnical Conditions

The 1:100,000 Geological Map of Sydney indicates the site is underlain by Hawkesbury Sandstone comprising of medium to coarse-grained quartz sandstone, very minor shale and laminate lenses. A variable groundwater table has also been identified in some areas of the site. Refer to the Geotechnical Report, prepared PSM Consulting *at* **Appendix MM**.

2.4 Pedestrian and Vehicular Site Access and Parking

The site is accessible via a variety of pedestrian access gates. The main entrance from New South Head Road is the main gate accessed by students and visitors, who are required to visit reception before their visit. The car park entrance, accessed via Tivoli Avenue to the west of the site, provides vehicular access to the car park, in which staff can park. There are several pedestrian entrances on Bayview Hill Road, however these are gated entrances that require an authorised pass to enter. This is particularly in relation to the preschool Hampshire House. A map of the entrances is provided at **Figure 7**.

There are existing two drop-off zones, one on Tivoli Avenue and another on Bayview Hill Road, where drop-off and pick-up of children is staggered to ease congestion where possible. These will remain in place following the proposed development.

Figure 7 Pedestrian and vehicular access to the site

Source: AJ+C

2.4.1 Public Transport

The site is moderately serviced by public transport. Buses are the only form of transport within 800 metres of the site. Key bus routes serving the site include:

- 323 – North Bondi to Edgecliff via New South Head Road;
- 324 – Watsons Bay to City Walsh Bay via Old South Head Road;
- 325 – Watsons Bay to City Walsh Bay via Vaucluse Road;
- 386 – Vaucluse to Bondi Junction via New South Head Road;
- 323 – North Bondi to Edgecliff via New South Head Road;
- L24 – Vaucluse to City Wynyard (limited stops);
- 380 – Watsons Bay to Bondi Junction via Bondi Beach; and
- 387 – South Head Cemetery to Bondi Junction.

The site is also serviced by a number of public school buses which provide public transport access to the school via a dedicated student only school bus.

There are no other forms of transport within walking distance of the site. Rose Bay Ferry Wharf is approximately one kilometre from the site, which provides access to Watsons Bay and Circular Quay. No trains or light rails are accessible from the site.

2.4.2 Flooding

The site is partially identified as a Flood Planning Area under the WLEP. The Stormwater Management Report at **Appendix U**, confirms the impact of the development on flood conditions will maintain the stormwater system capacity due to increased pipe capacity during the 1% Annual Exceedance Probability (AEP) (1 in 100 year) flood event.

2.4.3 Surrounding Development

The surrounding land uses are generally characterised by low density residential, some medium to high density apartment buildings clustered on New South Head Road, and other school uses. Specifically, the surrounding development includes the following:

To the north

Kincoppal-Rose Bay School which is a coeducational Catholic independent day and boarding school. This site is also listed as a heritage item under the Woollahra Local Environmental Plan 2014.

To the east, south and west

Low density residential houses characterise the areas.

Further south

The Rose Bay Ferry Wharf, which provides access to Double Bay, Darling Point, Watson Bay and Circular Quay.

Further west

Sydney Harbour.

Refer to **Figures 8 – 11** for images of the surrounding development.

Figure 8 Kincoppal School to the north of the Kambala Boarding Houses (forefront)

Source: Ethos Urban

Figure 9 New South Head Road to the east of the site

Source: Ethos Urban

Figure 10 Low density residential on Bayview Hill Road to the north of the site

Source: Ethos Urban

Figure 11 Sydney Harbour to the west of the site

Source: Ethos Urban

3.0 Description of the Development

This Section of the report provides a detailed description of the proposed development. Architectural drawings prepared by AJ&C are included at **Appendix A.**

This application seeks approval for the construction of a sport precinct , consent is sought for the following:

- **Site preparation, demolition and excavation**
  - Excavation of the existing sports fields to facilitate construction;
  - Removal of the tennis courts on the Music building roof;
  - The partial demolition of the Hawthorne building;
  - The demolition of the Arts building;
  - Tree removal; and
  - Installation of hydraulic and electrical services.
- **Land use**
  - Use of all buildings for the purpose of a school; and
  - The proposed new works relate mostly to the sport, wellbeing and senior learning precinct.
- **Existing buildings**
  - Following partial demolition of the Hawthorne building, the construction of a new façade, roof and landscaping; and
  - Construction of new facades to adjacent affected buildings following demolition of the Arts building.
- **Construction of new buildings**
  - Construction of a sport, wellbeing and senior learning precinct that includes:
    - Sports facilities including weights room and dance rooms;
    - Indoor multipurpose sports courts for use by up to 1,500 people;
    - Innovative and flexible teaching and learning spaces'
    - Amenities, store room, plant, circulation and ancillary spaces;
    - Spectator seating / bleachers; and
    - A wellbeing centre, called the SHINE centre to accommodate staff workstations, meeting areas, staff development workshop rooms and amenities.
- **Landscaping**
  - Reinstatement of the tennis courts, lighting and perimeter fencing on the new roof;
  - A new eastern forecourt for the school, new external landscaped areas and new courtyard;
  - Minor works to the existing music building to facilitate a new connection to the courtyard;
  - Reinstatement of the sports field surface on the roof (sports field and perimeter fencing); and
  - Introduction of five new or upgraded outdoor spaces, including the Entrance Plaza and Covered Outdoor Learning Area, Tivoli Plaza, Northern Courtyard, Café Hub and Southern Lawn and Playfair terraces.
- **Operation**
  - This application does not seek any changes to the number of students currently attending Kambala School. However, this application does seek to reconcile the number of students previously approved under DA387/2005/1 versus those currently attending Kambala. Therefore, 1,020 students currently attend Kamabla School and this application seeks to increase the approved cap of students from 950 students to 1,020 students.

- This application seeks approval for the new buildings to operate between 7:30am and 4:30pm on Monday – Friday. This is not outside the existing operating hours currently approved for the school.

A photomontage of the proposed development is shown at **Figure 12.**

Figure 12 Photomontage of the proposed development
Source: Virtual Ideas

3.1 Development/Urban Design Principles

A set of development and urban design principles have been prepared by AJ&C to guide development at the site. The principles have considered the Environmental Design in Schools and the Design Quality Principles of the Education SEPP and Kambala's Strategic Plan (2019-2023). The planning and design principles adopted for the proposed development of the site are as follows:

- **Creativity**: The project delivers a totally new and unexpected way of accommodating additional GFA and quality learning facilities on a highly physically constrained campus. Using the existing site fall to raise and expand the sports fields and build a new senior learning precinct beneath will unlock the vast potential of the site which harmonises with Kambala's Strategic Plan (2019-2023) and maximises land value.
- **Sustainability:** Taking a holistic view of sustainability for the project and for the school operations means looking beyond materials, energy and water consumption to community, wellness and the future-proofing of the campus.
- **Innovation**: Design that explores flexible teaching and learning spaces and utilises the cantilevered sports field for innovative strategies around insulation, ventilation, air flow and natural lighting to the brand-new learning commons below.

3.2 Numerical Overview

The key numeric development information is summarised in **Table 2** below.

Table 2 Key development information

Component	Proposal
Site area	22,511m^2 (whole school)
GFA	19,717m^2 (existing GFA is 14,824m^2)

Component	Proposal
Maximum Height	Roof height: RL 43.85 (8.2 metres above ground level) Fence Height: RL 47.77 (12.2 metres above ground level) Lift shaft: 48.15 (12.5 metres above ground level)
Car spaces	123 car parking spaces. This proposal does not seek to increase this amount.
Landscaped Area	Additional Planting: 460m^2 Additional Lawn: 370m^2 New trees: 21
Number of Staff	230 (no increase to existing)
Number of Students	1020 (increase on existing cap of 950, however there are already 1,020 students attending Kambala, so this change is merely administrational).
Core Hours of Operation	The formal school hours are 8:20am to 3:20pm, Monday to Friday (as per existing operation), with some senior classes run 7:30am to 4:30pm.
Boarding School Hours of Operation	The campus remains open outside of core hours for boarders and staff living on campus (the existing boarding school is open 24 hours / 7 days a week) during term time (as per existing operation).
Extra Curricula Hours of Operation	5:30am-6:15pm Monday to Friday (as per existing operation).
Activities run by the school on weekends	7:30am-1:00pm Saturdays.
Community Hours of Operation	Community users use some facilities, such as the pool, on a user pays basis between 5:30am-8:00am and 3:30pm-6:15pm. This operates 48 weeks a year.

3.3 Demolition / Site Preparation / Bulk Earthworks / Remediation

In order to accommodate the proposal, partial demolition of some buildings and removal of some trees is required. Partial demolition of the Hawthorne Building to accommodate a new façade, roof and landscaping and the demolition of the Arts building and construction of new facades to adjacent affected buildings be required. Further small scale demolition of the sheds currently located on the site of the new sport precinct will be demolished to allow the works to commence. In addition to this, 16 trees will need to be removed to accommodate the proposal. Some of the demolition works proposed are shown at **Figure 13**.

Further to this, excavation of part of the existing sports field to facilitate the construction of the sport facilities and learning spaces will be required. All excavation work will take place using large excavation plant and equipment with excess soil transported off site. The duration to undertake these excavation works will be approximately 20 weeks.

Figure 13 Demolition plan for level 2.

Source: AJ+C

3.4 Sports Precinct

The Sport, Wellbeing and Senior Learning Precinct involves a number of components. Firstly, the existing sports oval on the eastern portion of the site will be excavated to create a sports hall, as well as a teaching and learning block at the ground level.

The sports hall will be double height above the indoor courts, with office, learning and dance spaces available on a partial second level. The sports hall will accommodate two fully compliant basketball courts and a netball court, as well as associated spectator seating. This hall will also be able to accommodate multi-purpose events, such as assemblies, exams, conference-type events, performances and the like. The hall is anticipated to accommodate approximately 1,500 people. This hall is primarily required to enhance sporting facilities.

Above this will be the external rooftop which will contain the following a football field with five netball courts marked over the top. Adjacent to this will be four tennis courts, with two basketball courts marked over the top.

This sport precinct will have a maximum height of 12.5 metres. A computer generated image of the sports hall is shown at **Figure 14**.

Figure 14 A photomontage of the sports hall.

Source: Virtual Ideas

3.5 Music and SHINE Centre

To the north west of the current sports field is the existing Anne and John Lewis Music Building, which is currently a part one / part two storey building with tennis courts located on the roof. These tennis courts are at the same level of the existing sports oval and are accessed via this oval.

It is proposed that the tennis courts will be removed to allow for an additional level to be constructed above the music building. This additional level will house a new wellbeing centre, called the SHINE centre, to accommodate the Kambala SHINE program, and a new staff facility called the KITE centre, to accommodate staff workstations, meeting area and amenities. The SHINE Centre will bring together the currently fragmented facilities which focus on social, emotional, physical and mental health care on campus.

The SHINE centre will deliver rooms for counselling services, career advisors and other student services. A new reception area will also be located in this block. A variety of wellbeing spaces will also be provided in this building, such as a weights room and a multipurpose room for yoga and the like.

The existing music facilities on the ground floor will be upgraded, with new bathrooms and practice spaces provided.

3.6 Landscaping

The landscaping component of the project is critical in delivering the school a campus wide uplift in functional, flexible and fit for purpose outdoor spaces. Working in tandem with existing and proposed forms on site, the landscape proposal will deliver a network of diverse spaces ranging in scale, material application, spatial composition and amenity which caters to the broad cross section of ages and abilities.

Landscaping upgrades are proposed in the following areas:

- Entry Plaza and Covered Outdoor Learning Area (COLA);
- Pedestrian Axis;
- Tivoli Plaza;
- Northern Courtyard;

- Café Hub;
- Southern Lawn and Playfair Terraces; and
- Sports Fields.

Entrance Plaza and COLA

A variety of landscaping changes are proposed to delineate safe and well-designed open spaces for the students. The Entrance Plaza is located directly in front of the Minter Building and is accessed directly from the heavily utilised New South Head Road. It is expected that students will be able to occupy the newly greened space to socialise during recess and lunchtime. This plaza proposes a simple, clear landscape space to complement the Centenary Gates and provide significant improvement to the entrance experience, wayfinding and legibility of the campus. A plan of the Entrance Plaza is provided at **Figure 15**

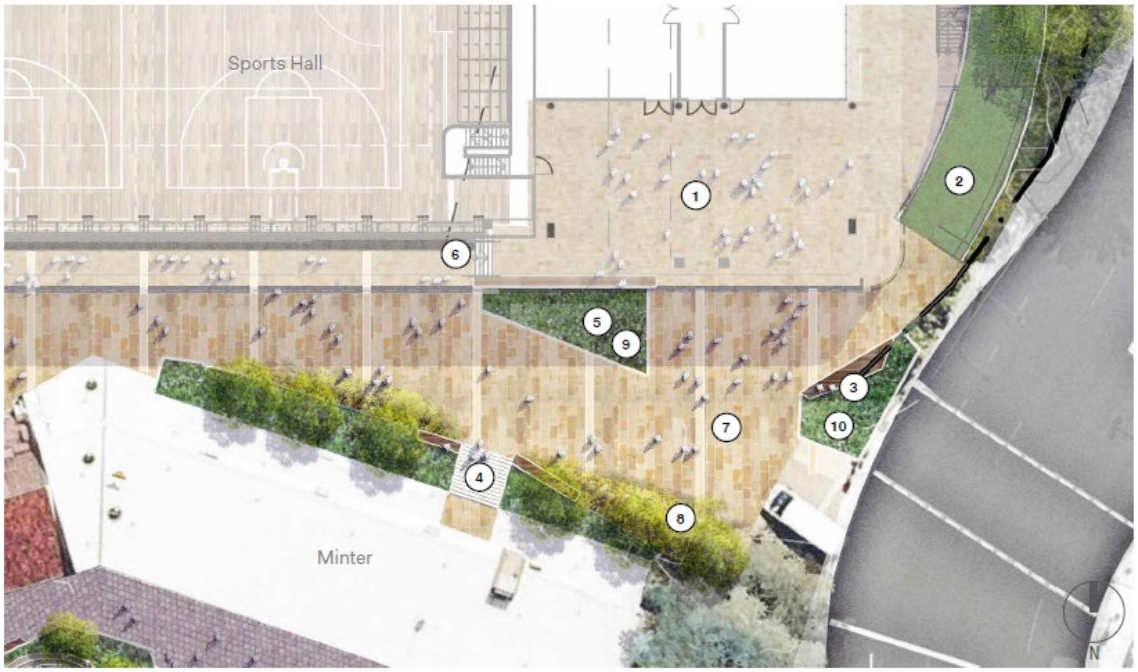


Figure 15 Entrance Plaza

Source: Oculus

Transition Space

The transition space from the Entrance Plaza to the remainder of the school is to be upgraded. Trees are proposed to line the pedestrian axis increasing canopy cover and pedestrian amenity. There is opportunity deep soil zones, soft landscaping and permeable paving. A plan of this pedestrian axis is provided at **Figure 16**.

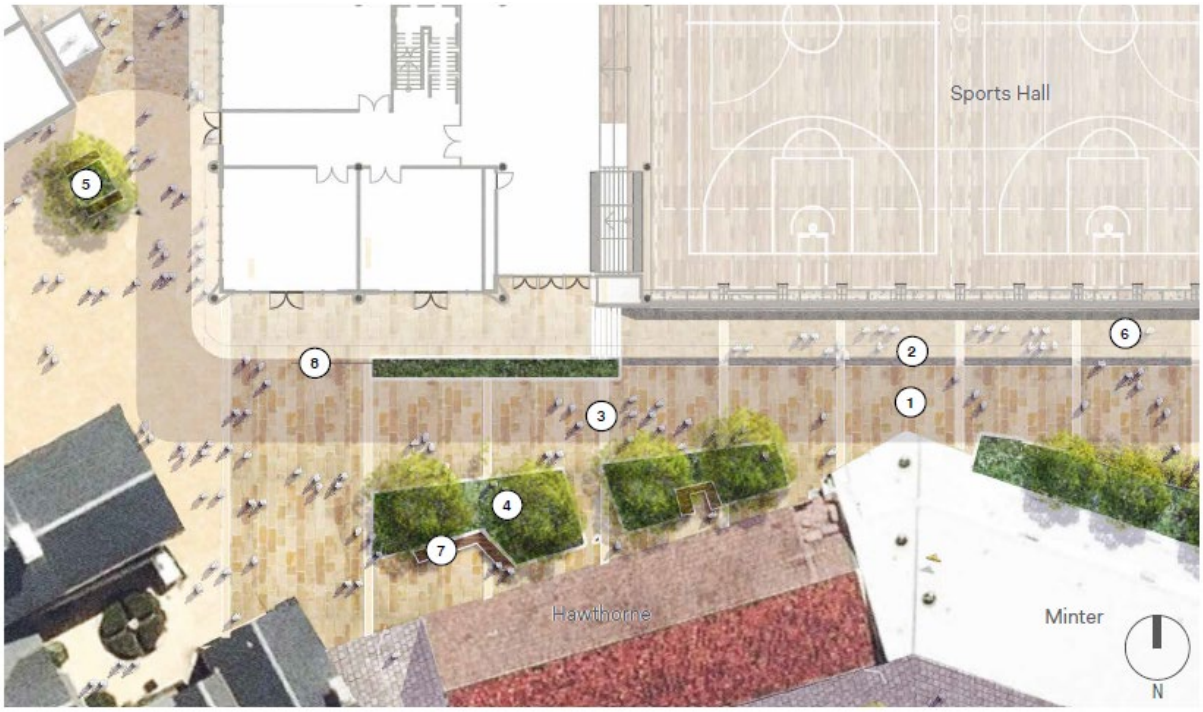


Figure 16 Transition Space

Source: Oculus

Tivoli Plaza

Upgrades to Tivoli Plaza are proposed outside the heritage listed Tivoli building. The plaza will have adequate curtilage to Tivoli House, and improved paving and sympathetic planting are proposed in order to reduce glare and heat island effect in the large hardscape area.

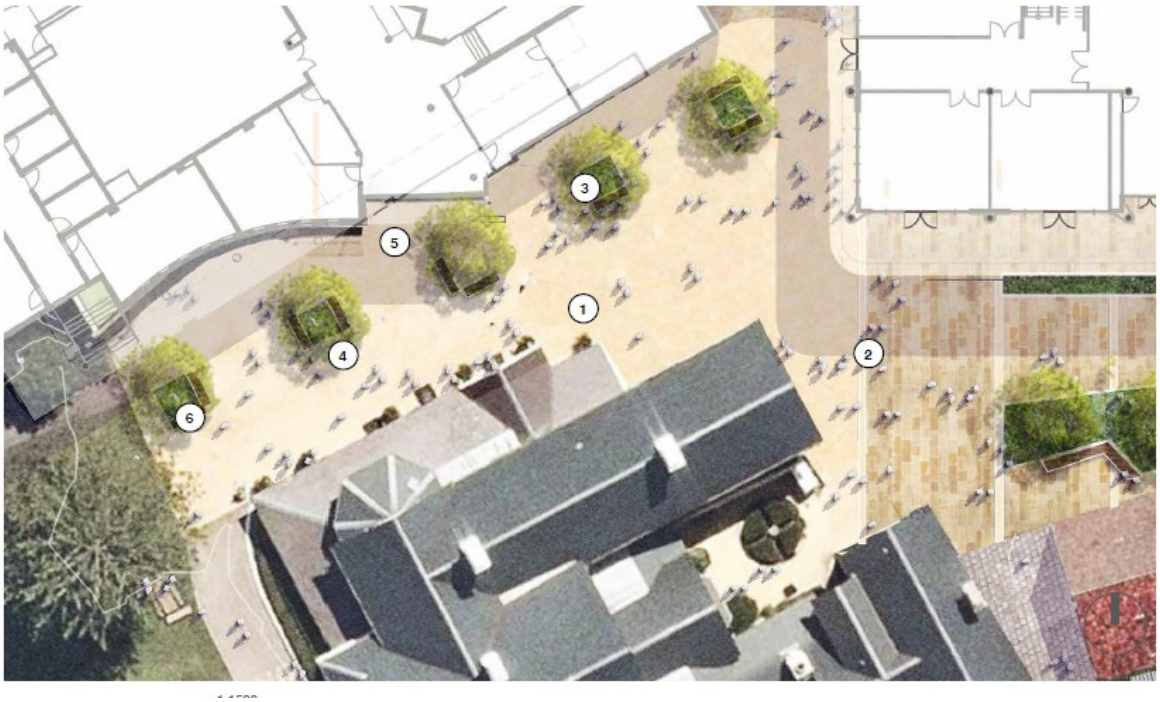


Figure 17 Tivoli Plaza

Source: Oculus

Northern Courtyard

As part of the Sport, Wellbeing and Senior Learning Precinct, a new Northern Courtyard is proposed to be centrally located between the Music Building and the Senior Learning Precinct. The courtyard provides heavily planted terraces and vertical greening. The terraces can be flexibly used to cater to individuals, small groups or class room sizes, or together can be used as amphitheatre seating for larger groups. The Northern Courtyard is shown at **Figure 18**.

Figure 18 The Northern Courtyard

Source: Oculus

Café Hub

The Café Hub will be located adjacent to the Tivoli Building on the southern side. The café hub allows for flexible outdoor seating opportunities, outdoor umbrella and linear benches complimented by mass planting. This increases the area of outdoor spaces available for students, for breakout use or for a modern, functional and flexible learning environment. The Café Hub is shown at **Figure 19**.

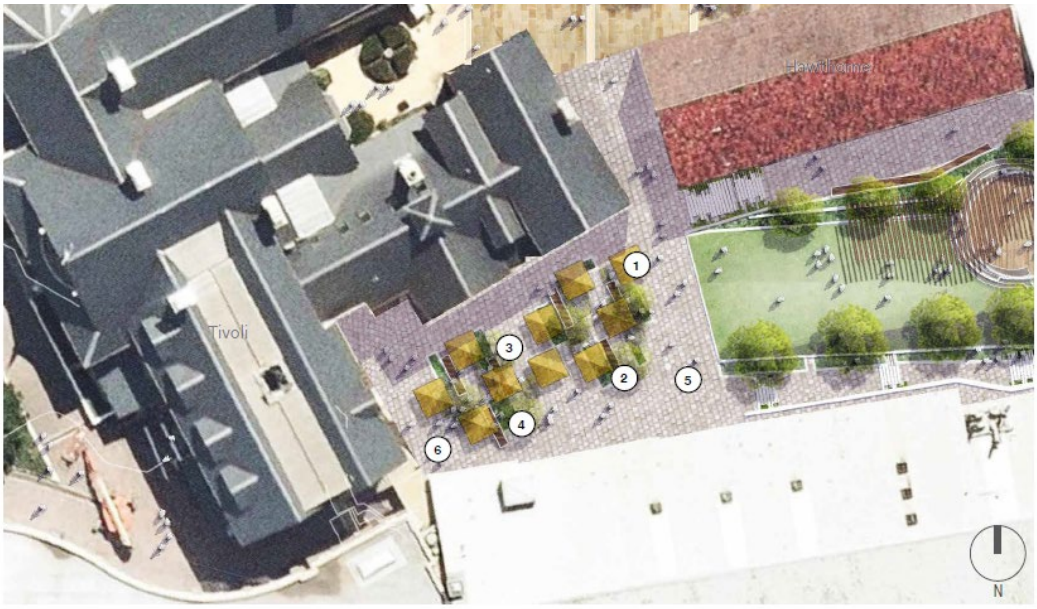


Figure 19 Café Hub

Source: Oculus

Southern Lawn and Playfair Terraces

An expansive lawn lined with mature trees and extensive planting is proposed on the southern side of the Hawthorne and Minter buildings. Cascading planting terraces with integrated seating and planted areas increase canopy coverage, low level planting, seating and enhance pedestrian movements. The Southern Lawn and Playfair Terrace is shown at **Figure 20**.

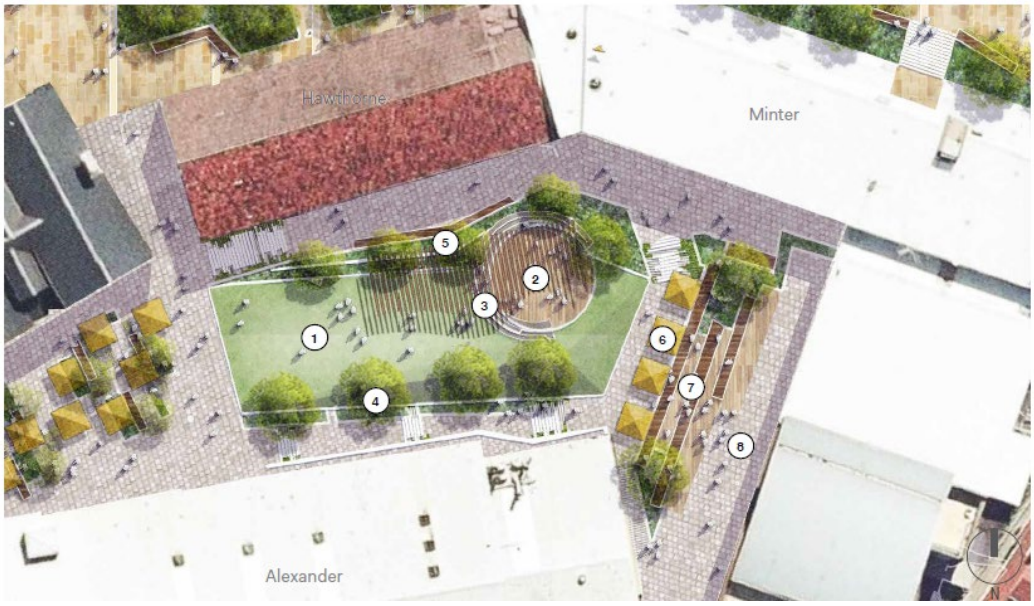


Figure 20 Southern Lawn and Playfair Terrace

Source: Oculus

3.7 Heritage Works

There are a number of works proposed to the heritage buildings on the site, which seek to reinstate the heritage importance of Tivoli House. As the site is listed as a local heritage item under the Woollahra LEP 2014, this design intends to protect and promote its heritage significance. This application proposes demolition of contemporary additions and structures to the rear of the Tivoli Building, part of the Hawthorne Building and the Arts Building, which

will recapture open space surrounding the heritage listed Tivoli building and Improve the building's setting and curtilage.

3.8 Building Setbacks

Due to the physical constraints of the site, particularly its circular nature and being bound on all sides by roads, there is no existing streetscape character or consistent arrangement of setbacks and built form. The existing buildings are scattered throughout the site.

The proposal retains the existing heritage listed Tivoli House building, with new buildings being designed with appropriate internal building separations/connections. The new buildings continue the generally orthogonal arrangement of the existing site and are built approximately to the site boundary on the eastern sides of the site, with perimeter landscaping along the site boundary. An assessment of the built form and urban design is provided at **Section 5.2**.

3.9 External Materials and Finishes

The building finishes for the proposal have been selected to maintain an aesthetic which is complementary to the siting and local context, while addressing issues of life cycle and budget. Where appropriate, low maintenance natural materials have been sought.

The aesthetic of the proposed building will defer to Tivoli House and subtly reference its colour, line and decorative motifs. In this way, the new architectural language offers subtlety that will be barely perceptible once finished and viewed from most vantage points. The facades are simple and streamlined, adopting a regular grid, expressing their structural intent. The façades typically have a high window to wall ratio for an increased connection between indoors and outdoors.

Facades will use durable materials including sandstone, marine ply, off form concrete and high-performance glass. The marine ply lining to the main external cornered walkway is curved, and reflects the arched geometry of Tivoli House, as well as the original façade of Hawthorne. This repetitive segmental arch motif becomes a unifying element for Tivoli, Hawthorne and the new building.

The fencing around the rooftop sports field will be made of transparent stainless steel tensile webnet fencing, which will be up to a height of RL 47.77. The transparent nature of this fencing will mean that no views are obstructed.

The landscape palette is similar, with a mixture of natural stone paving, concrete, sandstone, steel edging and seasoned hardwood. The landscape design includes large areas of soft landscaping, deep soil zones and permeable paving, to maximise reabsorption of water into the ground.

An indicative palette of the external materials and finishes is shown at **Figure 21**.

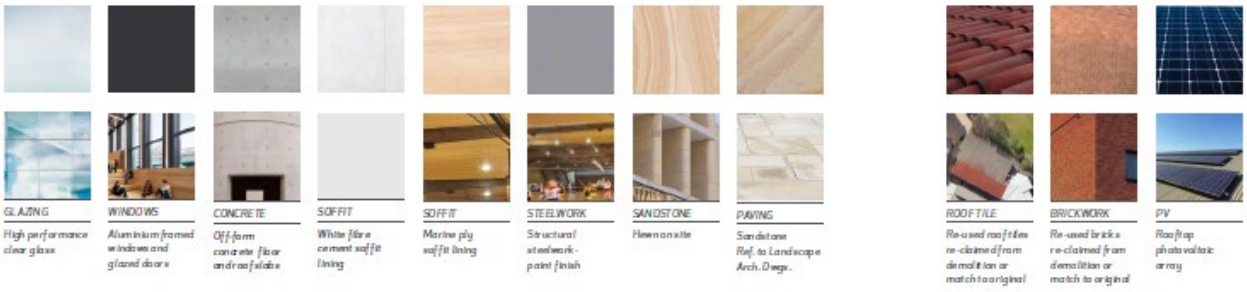


Figure 21 External materials and finishes.

Source: AJC

3.10 Increase in student numbers

This application does not propose any additional students to the amount that are currently attending the school. However, under Condition 3 in DA387/2005/1 for proposed the construction of a Gym, Sports Hall, Change Room, Offices and Performing Arts Centre, it notes that the maximum student numbers for Kambala shall not exceed 950 students.

Since this consent, enrolment has increased to 1,020 students. Therefore, this application seeks to increase the current maximum number of students to 1,020 to accurately reflect the correct number of students on campus. This increase does not reflect an increase in student numbers overall, rather a reconciliation of the existing student numbers.

3.11 Hours of Operation

The school will operate between the hours of 8:20am to 3:20pm, Monday to Friday. Extra-curricular activities will occur between 5:30am and 8:20am in the morning and between 3:20pm and 6:15pm in the afternoon. Before School approximately 25 - 35% of students take part in outside school hours activities. After school approximately 35 - 45% of students take part in outside school hours activities.

3.12 Community Use of School Facilities

Selected facilities, including but not necessarily limited to the Sports and Seniors Learning Precinct, may be operated outside of standard school hours on a 'user pays' basis. It is anticipated that the hours of operation for the new KSWSLP will generally be limited as follows:

- 6.00am and 9.00pm on school days;
- 7.00am and 7.00pm on Saturdays;
- Limited use on Sundays and school holidays;
- Occasional evening use (maximum 12 times per year) up until 10.00pm.

The pool is also currently available for community use on a 'user pays' basis between 5:30am-8:00am and 3:30pm – 6:15pm Monday to Friday, 48 weeks a year. This application does not propose any changes to this.

3.13 Pedestrian and Bicycle Access

There are no changes proposed to the pedestrian access to the Kambala site. The Sports and Seniors Learning Precinct will be accessible via the central courtyard, as well as from the entrance to the school from New South Head Road. The accessibility of these new pedestrian circulation ways is discussed further at **Section 5.20**.

Bicycle parking is also proposed. This is discussed further at **Section 5.9**.

3.14 Vehicular Access and Parking

At present, vehicular access and parking on the school grounds is provided from Tivoli Avenue, where a carpark accommodates 123 car spaces, including:

- 100 staff car spaces;
- 12 childcare centre car spaces;
- Three accessible car spaces; and
- Eight visitor car spaces.

There are existing two drop-off zones, one on Tivoli Avenue and another on Bayview Hill Road, where drop-off and pick-up of children is staggered to ease congestion where possible. These will remain in place following the proposed development.

The proposed development does not increase student or staff numbers to a degree which requires additional parking or traffic arrangements to be made. Therefore, no changes to parking or vehicular access will be required (**Appendix J**).

Emergency and service vehicle access is currently provided via the main gates on New South Head Road. This access point will continue to service the school following the proposed development, with an additional service ramp provided from the ground level to level 3 of the sports field to accommodate small rigid vehicle access for maintenance and service of the sports fields and the RMS embankment.

3.15 Ecologically Sustainable Development

An Environmentally Sustainable Development report has been prepared by LCI Australia and is provided at **Appendix K**. This report outlines the strategies adopted to ensure the proposal is of high environmental performance and minimal ecological impact. The key ESD strategies are as follows:

- **Passive cooling and heating design:** The design adopts a passive cooling and heating design principles to reduce the building's reliance on mechanical air conditioning and artificial lighting, therefore reducing energy consumption. This involves implementing an extensive external shading to limit solar penetration in summer and utilisation of cross flow ventilation to provide adequate thermal comfort.
- **Mechanical services:** All building services will be designed to achieve a high level of energy efficiency to achieve a 10% or more improvement on National Construction Code requirements.
- **Electrical services:** The building will have electrical services that assist in energy efficient operation, including long-life LED lighting, energy efficient electrical equipment, sub-metering of major energy uses, solar photovoltaic panels and energy and water monitoring in accessible locations.
- **Hydraulic services:** The adoption of efficient potable water fixtures, rainwater harvesting and reuse and sub-metering of potable water will ensure the efficient use of water throughout the proposed building.
- **Sustainable materials and waste reduction:** The proposed building will implement sustainable strategies regarding materiality, waste reduction and use of sustainable and low carbon materials. This includes the use of local materials where possible, efficient selection of materials during construction to reduce wastage, promotion of off-site prefabrication to limit construction waste and considering the life cycle of materials.

The full ESD strategy is provided at **Appendix K** and discussed more at **Section 8.3**.

3.16 Infrastructure and Services

An Infrastructure Management Report has been prepared LCI (**Appendix S**). LCI has determined that there is an existing network of services running to and surrounding the site, including:

- Electrical Power Services – The Kambala School site is serviced by three kiosk transformers on the site, two of which service the school. It is not anticipated that any modifications to this network will be required as a result of this development.
- Water – The school is currently connected to the Sydney Water Infrastructure, and the Dial Before You Dig data shows an existing main reticulating on the Western side of Tivoli Avenue. No additional infrastructure will be required.
- Sewer – DBYD data shows an existing sewer main reticulating on the western side of Tivoli Avenue. It is proposed that any levels higher than the levels of the existing authority main will be connected by gravity and sewerage from the lower levels will be pumped out towards the gravity lines.
- Natural Gas – The school precinct is currently connected to the Jemena's gas network. It is not anticipated that the proposed development will require any additional/new gas connections. However, if required, the existing connection will be upgraded to meet the needs of the proposed development.

3.17 Water Cycle Management

An Integrated Water Management Plan has been prepared by LCI (refer to **Appendix T**) which outlines the likely water use as a result of the proposed works, and recommends strategies to ensure sustainability and low water usage. It is expected that the Sport and Senior Learning Precinct will have an approximate water demand of 5kL per day for combined irrigation and toilet flushing usage.

A 90,000 litre tank is recommended as it can provide 92% of the daily water needs for both irrigation and toilets. This provides the best outcome in relation to sustainable water use. Further details of a water harvesting system will be developed as the detailed design is progressed.

3.18 Waste Management

A Construction Waste Management Plan and an Operational Waste Management Plan has been prepared by WasteAudit (**Appendix X** and **Appendix Y**), which outlines the management of waste during the operation of the proposed development.

It is estimated that the precinct will generate an additional 2,540L per week as a result of the operation of the completed Sport, Wellbeing and Senior Learning Precinct. To accommodate this additional waste generation, 5.03m^2 of supplementary bin storage area will be required. These additional bins and recycling bales can be easily accommodated within the existing loading dock storage area, and therefore the proposed development will not require any new waste storage facilities or equipment.

Staff and students will be involved in the required managing of general waste and recycling generated from the operation of the proposed development. Maintenance staff, cleaners and the Facility Manager will continue to be responsible for the undertaking of the operational waste management and meeting its targets and objectives.

This is further discussed at **Section 5.18**.

3.19 Construction Hours of Work

To mitigate impacts on the surrounding school and neighbours, the Construction Management Plan (**Appendix G**) proposes work hours to provide the greatest opportunity for the most efficient construction program as well as mitigating traffic impacts. The hours proposed are:

- 7:00am to 6:00pm Monday to Friday;
- 7:00am to 5:00pm Saturdays; and
- No work on Sundays or Public Holidays.

3.20 Construction Staging

It is proposed that the development will be constructed in four stages, with Stage 2 separated into four substages, to minimise construction impacts to the operation of the school. The stages are outlined in **Table 3** below, and the indicative timeframes of these stages are as follows:

- Stage 1 and Stage 2 (including 2A, 2B, 2C and 2D) – November 2021 to June 2023;
- Stage 3 – budget dependent and timing of which is to be confirmed at a later stage; and
- Stage 4 – budget dependent and timing of which is to be confirmed at a later stage.

Table 3 Proposed construction staging

Stage	Proposed works
Stage 1 -	• Lookout at level 3 lift landing • Level 2 – glass wall to hall • Portion of level 3 slab above foyer and change rooms • Temporary hoarding wall to portion of level 2 slab • Sports hall – full fit out (wall and ceiling linings, sports flooring, sports equipment etc.) • Temporary hoarding wall; • COLA – West (Cold shell only) • Metal shed to be demolished • External lift and stairs connecting all 3 levels • New basic façade to exposed wall of music building and new connection to courtyard • New stairs to access existing tennis courts • Grandstand and shading structure • Vehicle ramp to sports field

Stage	Proposed works
	• Multi-sports field and perimeter fencing • Ceiling and services to sports hall • Plant room and store (including temporary wall to COLA) • Lift and stairs from level 2 to sports field • COLA – East (cold shell only) • Stormwater pipe and easement realignment • PV array on existing roof
Stage 2A	• Demolition of temporary hoarding walls and level 2 • Glass façade to perimeter • Construction of new slab at level 2 and full fit out of level 2 seniors learning precinct. Includes level 2 bridge over courtyard • Construction of lift • Demolition of temporary hoarding walls at level 1 • Glass façade to perimeter and full fit out of group learning areas and “Lite SHINE” Centre on level 1 • South east corner of music building to be demolished and facades made good
Stage 2B	• Remove temporary wall to plant/store room • Glass façade to perimeter • Full fit out of east end including dance rooms, weights room, PDHPE office and store • Full fit out of COLA
Stage 2C	• Partial demolition of Hawthorne building, new façade, new landscape to Hawthorne footprint • Original pitch and extent of Hawthorne roof to be reinstated • Landscape to forecourt and all along main spine.
Stage 2D	• New landscaping between music building and Tivoli.
Stage 3	• Portion of arts building to be demolished • Portion of Tivoli building to be demolished • New works to all building facades once attached to the demolished buildings • New landscaped areas • Portion of arts building containing stairs to be retained
Stage 4	• Path at level 3 to Bayview Hill Road • New multisport courts, perimeter fence and lighting

Stage	Proposed works
	• Path at level 3 t Bayview Hill Road • Building additions including full SHINE and KITE centre • Demolition of lookout at level 3 and make good landing • Replace “Lite SHINE” at level 1 with new group learning areas • Demolition of existing tennis courts and lighting • New stormwater retention tank • Bridge from sports field to Minter Level 3

3.21 Contributions

As per the Section 94A Woollahra Development Contributions Plan 2011, Section 7.11 contributions are applicable to school developments in the Woollahra Local Government Area. A 1% levy is applied to developments with a cost of more than $200,000, and therefore it is estimated that the contributions cost for this development would be approximately $597,000.

This application seeks an exemption from the payment of development contributions given that there is no increase in staff or actual student numbers as part of this DA and therefore will not create additional impact or demand on surrounding public services or facilities. In addition to this, the school currently provides a variety of facilities on site, including parking, libraries, ovals, open space and a pool, as well as the future sports facilities proposed in this application, and therefore will not result in additional demand for Council’s facilities.

In addition to this, as outlined in **Section 3.12,** the facilities will be able to be used by community users, meaning that these facilities will contribute to lessening the demand on Council facilities. Therefore, a dispensation of development contributions is considered appropriate in this circumstance.

3.22 Signage

Site-specific signage will also be developed during the detailed design stage to deliver a high degree of campus legibility and identity. Any future signage proposed will be subject to a DA at Council.

3.23 Lighting

An external lighting strategy has been prepared by LCI, refer to **Appendix MM**. To reduce lighting spill, it is proposed that the courts on the western portion of the rooftop will be used for after-hours training, but the courts on the eastern end will not. This will reduce the impact of light spill on surrounding properties. The remainder of the site will not be lit after hours, with the exception of designated pathways.

Circulation lighting will be controlled by a timer and will turn off at 9pm, which will provide lighting to pathways and key entrances around the school for boarding students and staff members. These lights are minor in nature and do not relate to the lighting of the sports field. Additional lighting outside of the circulation lighting is to be provided for security purposes and will operate between dusk and dawn. It is noted that this proposal will not extend any lighting hours beyond those that are currently utilised.

Sports lighting will be manually operated when required, however a time limit must be provided so that lighting cannot operate an hour outside council curfew hours. This will be confirmed during detailed design.

4.0 Consultation

In accordance with the SEARs issued for this project, consultation was undertaken with key stakeholders, relevant public authorities, the community and Council. An Engagement and Communications Strategy and Outcomes Report, prepared by Urbis Engagement has been provided at **Appendix Z** and **Appendix AA**.

A summary of the consultation undertaken to-date with key stakeholders, Council, the community and relevant agencies is provided below. Several consultants have undertaken additional consultation with relevant parties during the preparation of their reports.

4.1 Public Authority

In preparation of the proposal and the accompanying EIS, the following stakeholders have been consulted:

- Government Architect NSW;
- Department of Planning, Industry and Environment;
- Woollahra Municipal Council;
- Roads and Maritime Services;
- Transport for NSW;
- Local Aboriginal Community; and
- Local Community.

As outlined above, the project team engaged with Woollahra Municipal Council, RMS and the NSW Government Architect Office throughout the early stages of the project in November 2019. Most recently the NSW Government Architect Office reviewed the KSWSLP drawing package dated March 27, 2020 which included detailed architectural and landscape documentation prepared by AJ+C Architects and OCULUS Studio.

Two (2) separate meetings were held with the State Design Review Panel in accordance with the GANSW requirement. The following comments were provided in support of the project:

- Development of the project since the last presentation to GANSW is positive and delivers on the promise seen in the strong concept design.
- The resolution of levels and equitable circulation around the school campus appears simple in diagram and clear in resolution and is commended.
- The design is supported, and we look forward to seeing further development.

4.2 Community Consultation

Urbis has outlined the following engagement principles which have defined the engagement process undertaken. These principles are as follows:

- Respectful;
- Inclusive;
- Transparent;
- Accessible;
- Timely;
- Evidence-based;
- Respectful;

4.3 Community notification of site works

Two notifications of site works undertaken to support the preparation of this EIS were issued to neighbours during the engagement period. These letters informed neighbours of Kambala's intention to undertake traffic and acoustic

studies to support the proposal and provided a high level outline of the proposed works. This letter also provided a dedicated phone number an email for residents to make enquiries.

4.4 Factsheet Distribution

A fact sheet was prepared to outline key features of the proposal and direct people to a dedicated phone number and email address for people to provide feedback. This fact sheet was distributed to approximately 300 neighbours around the site.

4.5 Door knocks

A door knock of neighbouring residents located at 899 New South Head Road, 10 Tivoli Avenue and 3 Tivoli Avenue were conducted on the 20 February 2020 to supply information about the proposal and request access from the residents to install noise loggers at their properties.

Another door knock was also undertaken of residents in close proximity to the school in July 2020. This door knock captured 32 neighbouring residents who will overlook the proposal. Overall, eight residents were spoken with and 24 newsletters and cards providing Urbis' contact details were left under doors or in letterboxes where individual homes could not be reached. The feedback from this door knock was neutral-positive. Residents who were aware of the previously approved DA for Kambala were supportive of this application replacing it because the view impacts were significantly reduced.

4.6 Media Release

A media release was prepared by Urbis and released on the 14th February 2020 to the Wentworth Courier, which outlined the proposal.

4.7 A dedicated project email and 1800 number

A dedicated project email and 1800 number was established as a direct feedback channel. The email and phone number were advertised in the letters on the 15 February, 20 April, 3 July 2020 and remain active for the duration of the project. At the time the Engagement Report was prepared, no feedback has been recorded through this channel.

4.8 Post Lodgement

The proposed development will be placed on public exhibition for 28 days in accordance with clause 83 of the *Environmental Planning and Assessment Regulation 2000*. During the public exhibition period Council, State agencies and the public will have an opportunity to make submissions on the project.

Following lodgement of this application, Urbis will undertake a number of additional consultation activities, including:

- School community consultation sessions;
- Project information website;
- Media releases;
- Letters to school communities; and
- Project fact sheets.

5.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed DA. It addresses the matters for consideration set out in the SEARs (see **Appendix C**). The Mitigation Measures at **Section 7.0** complement the findings of this section.

5.1 Relevant Strategies, Policies and Guidelines

The relevant strategies, environmental planning instruments, policies and guidelines as set out in the SEARs are addressed in **Table 4**.

Table 4 Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW State Priorities	NSW State Priorities are twelve high-level priorities for the State, being: • Creating jobs; • Delivering infrastructure; • Driving public sector diversity; • Improving education results; • Improving government services; • Improving service levels in hospitals; • Keeping our environment clean; • Making houses more affordable; • Protecting our kids; • Reducing domestic violence reoffending; • Reducing youth homelessness; and • Tackling childhood obesity. The proposal seeks to redevelop an existing school in eastern Sydney. The proposal will therefore contribute to the provision of infrastructure, as well as creating jobs and improving education results, thereby contributing to strengthening the local and regional economy.
A Metropolis of Three Cities – the Greater Sydney Region Plan	The Greater Sydney Region Plan is the current metropolitan planning strategy that establishes a vision for the future growth of Sydney to 2056. The proposed works broadly support the ten directions outlined in the strategy in that it: • ***Direction 1: A city supported by infrastructure*** This proposal aims to deliver additional educational floor spaces within the existing school campus. This is consistent with Direction 1, as it strategically upgrades the school to ensure that the school facilities are of high quality and can provide substantial education opportunities for future students. • ***Direction 3: A city for people*** Deliver an upgraded campus that retains unique aesthetic and environmental qualities of the 120-year-old campus, while upgrading and delivering additional density within key opportunity areas of the campus. • ***Direction 5: A city of great places*** The proposal will facilitate necessary renewal and upgrade of the existing school facilities on campus. It will improve connectivity, permeability and efficiency of the campus. It will deliver modern facilities and enable the school to respond to contemporary educational needs. • ***Direction 7: Jobs and skills for the city*** In the short term, the development will supply additional construction jobs. In the long term, the proposal will ensure the ongoing employment of 230 teaching, support and operational jobs within the school. • ***Direction 8: A city in its landscape*** Due consideration is given to retain the unique setting of the campus. The proposal has been designed to consider the maintenance of sightlines to the harbour from the school grounds and neighbouring properties, as well as to respond to the steep terrain that the school. The proposal has been designed to respond to these challenges, as well as create an outcome that is the most appropriate for the setting.

Instrument/Strategy	Comments
Eastern City District Plan	The Greater Sydney Regional Plan comprises of five districts. The District Plans identify the overarching strategic directions and goals for each of the five districts. The site is located within the Eastern City District, which is expected to have an additional 40,000 students by 2036. However, growth in Woollahra is estimated to be approximately 10%, a small portion of the growth expected. Accordingly, this proposal does not intend to create additional capacity within the school but improve existing facilities for future students.
Future Transport Strategy 2056	The Future Transport Strategy is an update of the 2012 Long Term Transport Master Plan for NSW. It provides a 40 year strategy for NSW's transport system. The proposed development is consistent with Strategy in that it aims to intensify the use of the existing school campus in proximity to existing bus infrastructure. The proposal does not increase available car parking and a Green Travel Plan has been prepared that encourages use of public transport, which will assist in improving the modal split between cars and public transport.
Woollahra Local Strategic Planning Strategy	The draft Local Strategic Planning Statement sets out the 20-year vision for land use planning in the Woollahra Council Area. This plan intends to enhance the local community by providing enhanced environmental health, conserve heritage and green space, provide affordable housing and support local businesses and local transport options. Specifically, the draft LSPS focuses on improving the local environment in areas of infrastructure and collaboration, liveability, productivity and sustainability. This proposal meets the objectives of the LSPS, by conserving heritage, delivering community infrastructure and making great places.
State Infrastructure Strategy 2018-2038 Building Momentum	The Strategy outlines a 20 year strategy for infrastructure development in NSW in order to address a number of key challenges and opportunities, including population growth, demographic change, climate change and an emerging fiscal gap. The Strategy identifies that the NSW economy is expected to grow from $539 million to $1.4 trillion over the next 40 years. The projected economic growth will increase the demand for economic and social infrastructure. The proposal will enable the school to improve its facilities to deliver an improved education experience for future students on the site. In this regard, the proposal is consistent with the strategy and provides improved social infrastructure in line with the expected growth in the area.
Sydney's Walking Future 2013	The proposal rethinks the overall campus layout to improve connectivity, accessibility and permeability within the campus. Further, a Green Travel Plan has been prepared as part of this application which outlines measures that aim to promote sustainable modes of travel including walking to nearby transport nodes.
Sydney's Cycling Future 2013	The school is supportive of students and staff using bikes as a mode of transport. The school's commitment to promote sustainable travel modes to access the campus, including cycling, is outlined in the Green Travel Plan provided at **Appendix J** of this application.
Sydney's Bus Future 2013	The school is supportive of students and staff using bikes as a mode of transport. The school will continue to encourage public transport use to access the school over private vehicle use. This is evidenced in the measures outlined in the Green Travel Plan prepared for the school (**Appendix J**).
CPTED Principles	CPTED Principles are a set of best practice guidelines that aim to promote safety within the built environment, through good environmental design practices that discourage opportunities for crime. The design of the proposal is designed in line with these principles. Further to this, an assessment of the proposal against these CPTED Principles is provided at **Appendix CC**.
Healthy Urban Development Checklist, NSW Health	The Healthy Urban Development Checklist provides guidelines to design healthy built environments that promote physical advocates for transport and physical connectivity, access to social infrastructure and social equity of development. This proposal is in accordance with the policy as it aims to design a proposal that will facilitate the delivery of a well-designed, safe, healthy, well connected, equitably accessible social infrastructure within the Rose Bay locality. As demonstrated by the Green Travel Plan submitted with this application, the proposal also encourages the reliance of sustainable travel modes to access the site, given the proximity to existing bus infrastructure.
Better Placed: An integrated design policy for the built environment of NSW	The objectives of Better Placed have been considered and responded to in the proposed design. The Architectural Design Report at **Appendix B** outlines how each objective has been addressed.
Draft Greener Places Policy	The Draft Greener Places Policy aims to establish and communicate a clear NSW Government position on green infrastructure by establishing benchmarks for the future of our built environment. The design framework will expand awareness of green infrastructure

<table>
<tr><th>Instrument/Strategy</th><th>Comments</th></tr>
<tr><td></td><td>principles and encourage discussion of the public benefits. Some of the objectives include protecting, conserving and enhancing NSW's network of green and open natural spaces and delivering a network of high quality, high-performing, and well-designed green space, establishing a crucial component of urban infrastructure to address the environmental challenges of the 21st century

The proposal is consistent with the objects of the policy as it seeks to remove the ad hoc building additions. This creates the opportunity to provide three new discrete green spaces in addition to the sports fields, including a landscaped forecourt at the New South Head Road gates.

The greening of the campus restores historic curtilage around the heritage-listed Tivoli House, re-establishing its presence at the centre of Kambala's prominent harbour-side campus.</td></tr>
<tr><td colspan="2">State Legislation</td></tr>
<tr><td>Biodiversity Conservation Act 2016</td><td>An assessment of Biodiversity impacts is provided at Section 5.12. A Biodiversity Development Assessment Report is provided at Appendix V.</td></tr>
<tr><td>EP&A Act</td><td>The proposed development is consistent with the objects of the EP&A Act, in particular:
• It promotes the social welfare of the community;
• It allows for the orderly and economic development of land;
• It promotes the sustainable management of built and cultural heritage (including Aboriginal cultural heritage);
• It promotes good design and amenity of the built environment; and
• It is development for public purposes and will facilitate the delivery of community services.

The proposed development is consistent with Division 4.7 of the EP&A Act, particularly for the following reasons:
• The development is declared to be of state significance in accordance with SEPP (State and Regional Development) 2011;
• The development is not prohibited by an environmental planning instrument;
• The development promotes education services and stimulates social welfare of the community; and
• The development has been evaluated and assessed against the relevant heads of consideration under section 4.15(1) of the EP&A Act.</td></tr>
<tr><td>EP&A Regulations</td><td>The EIS has addressed the specification criteria within clause 6 and clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (see Section 8.3).

As required by clause 7(1)(d)(v) of Schedule 2, the following additional approvals are not applicable to the development.
<table>
<tr><th>Act</th><th>Approval Required</th></tr>
<tr><td colspan="2">Legislation that does not apply to State Significant Development</td></tr>
<tr><td>Coastal Protection Act 1979</td><td>N/A</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>N/A</td></tr>
<tr><td>Heritage Act 1977</td><td>N/A</td></tr>
<tr><td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr>
<tr><td>Native Vegetation Act 2003</td><td>N/A</td></tr>
<tr><td>Rural Fires Act 1997</td><td>N/A</td></tr>
<tr><td>Water Management Act 2000</td><td>N/A</td></tr>
<tr><td colspan="2">Legislation that must be applied consistently</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>No</td></tr>
<tr><td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr>
</table></td></tr>
</table>

Instrument/Strategy	Comments
	Mining Act 1992 — No Petroleum (Onshore) Act 1991 — No Protection of the Environment Operations Act 1997 — No Roads Act 1993 — No Pipelines Act 1967 — No
SEPP 55	The Phase I Environmental Site Assessment prepared for the site (see **Appendix R**) demonstrates the site is suitable for the proposed development.
SEPP (Infrastructure)	Provisions of the SEPP (Infrastructure) relating to Education have since been transferred to the Education SEPP as of 2017. The aim of this SEPP is to facilitate the effective delivery of infrastructure across the State, including providing for consultation with relevant public authorities about certain development during the assessment process. The site has direct street frontage to New South Head Road, which experiences approximately 70,000 daily vehicle trips. Clause 102 considers the potential impacts of road noise or vibration from major road corridors on education facilities. Therefore, an assessment of the development against the *Development Near Rail Corridors and Busy Roads – Interim Guidelines* is provided below.
SEPP (State and Regional Development)	Under Schedule 1, Development for educational establishments with a capital investment value of more than $20 million is SSD. As the proposed development will have a capital investment value of approximately $59,700,000 (see **Appendix D**) it is defined as SSD.
SEPP 33 – Hazardous and Offensive Development	The proposed development is not identified as a potentially hazardous industry or a potentially offensive industry as described under this SEPP or relevant guidelines. Therefore, the preparation of a preliminary hazard analysis is not warranted for this development.
SEPP 64 – Advertising and Signage	No consent is sought for installation or display of external signage under this application.
SEPP (Educational Establishments and Child Care Facilities 2017)	This SEPP seeks to assist with the efficient delivery of high quality education facilities across NSW. The proposed development is consistent with the aims of the SEPP for the following reasons: • The proposal aims to improve the overall efficiency of the existing school campus, identifying additional development opportunities to accommodate improved facilities and learning experiences within opportunity areas of the school site; • The proposal seeks to improve connectivity, legibility, and accessibility across the campus and between existing and future buildings; • Opportunities for consultation with all relevant public authorities have been provided; • Consistent with the school's strategic plan that aims to renew and rejuvenate the existing facilities, develop key learning precinct and sports facility. • The proposal is consistent with the Schedule 4 design quality principles under the SEPP. Refer to **Appendix B.**
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	The proposal will not have any impact on the hydrological, ecological and geomorphological processes of the land located within the Sydney Harbour catchment as identified in the SREP. It will not have any impact on any wetlands or watercourses.
Draft State Environmental Planning Policy (Environment)	No proposed draft policies apply to the proposal.
Local Planning Instruments and Controls	
Woollahra Local Environmental Plan 2014	
Clause 2.2 – Land use zones	The site is zoned SP2 under the WLEP 2014. The use of the site for the purpose of an educational establishment is permitted within this zone, as it is marked as an educational establishment on the land zoning map.
Clause 4.3 – Height of Buildings	The maximum building height on the site is 9.5m. The proposed maximum building height is 12.5m.

Instrument/Strategy	Comments
	A variation request pursuant to clause 4.6 of the LEP has been subsequently prepared to justify the contravention to the Height of Buildings development standard attached at **Appendix LL.** Despite the 9.5m LEP 2014 height standard, SEPP Education permits development consent to be granted for development for the purpose of a school that is State significant development even though the development would contravene a development standard imposed by this or any other environmental planning instrument under which the consent is granted. The Education SEPP provides for buildings up to a height of 22m to be undertaken as complying development. .
Clause 4.4 – Floor Space Ratio	No maximum floor space control applies
Clause 5.10 – Heritage Conservation	The Tivoli building, several gateposts, gates and flanking walls, as well as two Norfolk Pines on the site are listed as items of local heritage significance under Schedule 5 of the WLEP 2014. Accordingly, a Heritage Impact Statement, prepared by Urbis, is provided at **Appendix L.** A Conservation Management Plan is provided at **Appendix N**.
Clause 6.1 – Acid Suflate Soils	Class 5 — A review of the Department of Land and Water Conservation map of Sydney Heads indicates that there no known occurrence of acid sulfate soils (ASS) in the vicinity of the site. Given the site elevation and geology, and based on observations in previous assessments, ASS are considered unlikely to be encountered at the site. This is discussed further at **Appendix DD**.
Clause 6.2 – Earthworks	Excavation of the existing sports field is proposed to accommodate the development. In order to mitigate the effects on drainage patterns, soil stability, stormwater and surrounding waterways, Civil plans have been provided at **Appendix W**, which outlines the management of stormwater, sediment and erosion during excavation and construction. There is a low likelihood of disturbing relics, as addressed in the Aboriginal Cultural Heritage Report (**Appendix P**). The fill materials currently present under the existing sports field is of potential contamination. However, the Detailed Site Investigation prepared at **Appendix R** provides measures to remediate the fill and ensure contamination and potential hazards are mitigated and removed effectively.
Clause 6.3 – Flood Planning	Land identified as 'flood planning area'. The Stormwater Management Plan at **Appendix W** concludes that upgrades to the existing stormwater pipe network would be required and following these upgrades, negligible changes for predicted for flood behaviour during a 1-in-100 year event.
Woollahra Development Control Plan 2015	
It is noted that Development Control Plans are not a matter for consideration in the assessment of SSDAs by virtue of Clause 11 of SEPP SRD, which states that "Development control plans…do not apply to…state significant development". Notwithstanding, the application is generally consistent with the relevant controls contained the Woollahra DCP. A general assessment against the key objectives of this part is discussed within this table below.	
Chapter E – General Controls for All Development	
E1 – Parking and Access	A traffic report has been prepared at **Appendix J**, which outlines provision of car parking and bicycle parking, loading and access and active transport. This is discussed further at **Section 5.9.**
E2 – Stormwater and Flood Risk Management	A Stormwater Management Plan has been provided at **Appendix U,** which outlines the required upgrades to the stormwater network. This is discussed further at **Section 5.17**.
Chapter E3 – Tree Management	All trees that are to be removed are identified in **Appendix EE**. The Arboricultural Assessment identifies 35 trees on site, which are of varying quality and health. Of the 35, 15 are identified as being of low significance or value, 16 of medium significance, and four of high significance. 16 of the trees are to be removed, while the remaining trees are proposed to be retained and protected. This is discussed further at **Section 5.13** and **Appendix EE**.

Instrument/Strategy	Comments
	Further to this, biodiversity credits require the appropriate reinstatement of certain vegetation that is removed. This is discussed at **Section 5.12** and **Appendix V**.
Chapter E4 – Contaminated Land	A Detailed Site Investigation has been prepared by JBS&G (**Appendix R**) and is discussed at **Section 5.15**. This report concludes that the site is capable of being remediated to an appropriate degree.
Chapter E5 – Waste Management	A Waste Management Plan has been prepared by WasteAudit for construction and operation (**Appendix X** and **Appendix Y**). This is discussed further at **Section 5.18**.
Chapter F2 – Educational Establishments	
Chapter F2.2 – Building and Urban Design	AJC have designed the precinct to respond to the existing site context and relationship with the heritage fabric of the site, as well as the required future uses. Sustainable design has been incorporated through a range of measures, as discussed at **Section 3.15**.
Chapter F2.3 – Siting of the development	The buildings have been designed to be low scale within the site to respond to the surrounding low residential neighbourhood and to ensure the provision of views by all neighbours. No works are proposed in close proximity to adjacent neighbours.
Chapter F2.4 – Heritage Conservation	The proposed works are designed to provide curtilage to the various heritage items on the site and respond sympathetically to the heritage significance of the items in terms of colour, materials, proportions, scale and landscaping.
Chapter F2.5 – Open Space	This proposal is for the improvement of existing sports facilities and open space facilities. Existing open spaces are retained and improved where appropriate.
Chapter F2.6 – Traffic, parking and access	This proposal increases the student capacity of the school marginally and therefore does the increase in students does not result in a significant impact on the traffic generated by the school's operation. Pedestrian access has been improved in a number of locations through upgrades to landscaping and equitable access is provided at all relevant entry points. There are no proposed changes to the existing car parking arrangements accessed from Tivoli Avenue or the existing pick up and drop off arrangements currently in place. No changes are proposed to existing bicycle parking provision.
Chapter F2.7 – Planting, fencing and hard surfaces	A Landscape Report has been prepared by Oculus and is provided at **Appendix E.** This report outlines the upgrade to existing spaces or introduction of several new spaces, including the Entry Plaza, the Transition Space, the Northern Courtyard., Southern Lawn and Playfair Terraces, as well as the sports grounds and general pedestrian thoroughfares.
Chapter F2.8 – Community Uses	The proposed works have been designed to incorporate a mix of potential uses and has been designed in line with the CPTED principles to ensure safe use by the school and wider community (**Appendix CC**). Community uses are proposed on a user pays basis, which will be managed through the existing CPTED principles and management of community-student interactions by the school. The school will continue to be used out of school hours for extra-curricular school related activities, such as sports.

5.2 Built Form Urban and Design

The bulk, density and scale of the proposal has been informed by the scale of the existing heritage buildings on the site, being Tivoli House. Several design concepts are also guiding the design of the development. These include:

- Greening the campus;
- Maximising and maintaining views;
- Unlocking campus levels;
- Increasing sporting amenities; and,
- Increasing available GFA.

The proposal is considered an appropriate built form for the following reasons:

- The overall bulk and scale of the development is largely reflective of the scale of the existing heritage building that has been maintained;
- Each individual building component has been carefully designed to respond to any datum set by the existing buildings, as well as any gaps or separation created by the layout of the existing buildings;

- Although there has been a height increase across parts of the site, no building exceeds the height of the 2015 DA approval and the development does not represent a significant change to the scale of development on the site;
- Despite the 9.5m LEP 2014 height standard, and the proposed 12.5m height above ground level, the SEPP Education permits development consent to be granted for development for the purpose of a school that is State significant development even though the development would contravene a development standard imposed by this or any other environmental planning instrument under which the consent is granted. The Education SEPP provides for buildings up to a height of 22m to be undertaken as complying development.
- The majority of the building will be below the height limit, with the rooftop playing field at approximately 8.8 metres above ground level (RL 43.85). However, the transparent tensile webnet fencing comes to a height of 12.3 metres above ground level (RL 47.77), and a small portion of the lift overrun comes to 12.5 metres above ground level (RL 48.15). Therefore, whilst the maximum height of the proposed building is 12.5 metres above ground level, the overall average height is 8.8 metres above ground level.
- It is important to note that New South Head Road rises 7-9 meters to the north, this height difference between the road and the playing fields is embraced by an embankment which runs along the site boundary. This unique topography significantly conceals the development, which is further hidden by the proposed synthetic grass roof, resulting in minor visual impacts to the New South Head Road and its neighbours.
- The location of the proposed built form has responded directly to feedback from the State Design Review Panel.
- Although, the overall density of the site has increased, the height of the proposed buildings do not fundamentally change the scale of the site – the school still maintains a low-scale and distributed built form.
- In terms of setbacks, the new buildings respect the curtilage of the existing heritage building on site by maintaining a physical gap.
- Furthermore, with respect to setbacks from the edge of the site, it is noted that the site is already built adjacent to the New South Head Road boundary and the proposal remains consistent with this approach.

5.3 Environmental Amenity

5.3.1 Solar Access and Overshadowing

Due to the size, shape and orientation of the site, the majority of the existing shadows fall within the site or adjoining road reserves of Tivoli Avenue and New South Head Road. The proposed works do not impact this fact.

The majority of shadows resulting from the proposed Sport and Senior Learning Precinct fall within the site, with a small portion of shadow falling onto New South Head Road at 3:00pm. No adjoining residential properties will experience additional overshadowing as a result of this proposal. The existing overshadowing versus the proposed is shown in **Figure 22** – **Figure 24**.

Figure 22 Overshadowing as a result of the proposed works from 9:00am – 11:00am.

Source: AJC

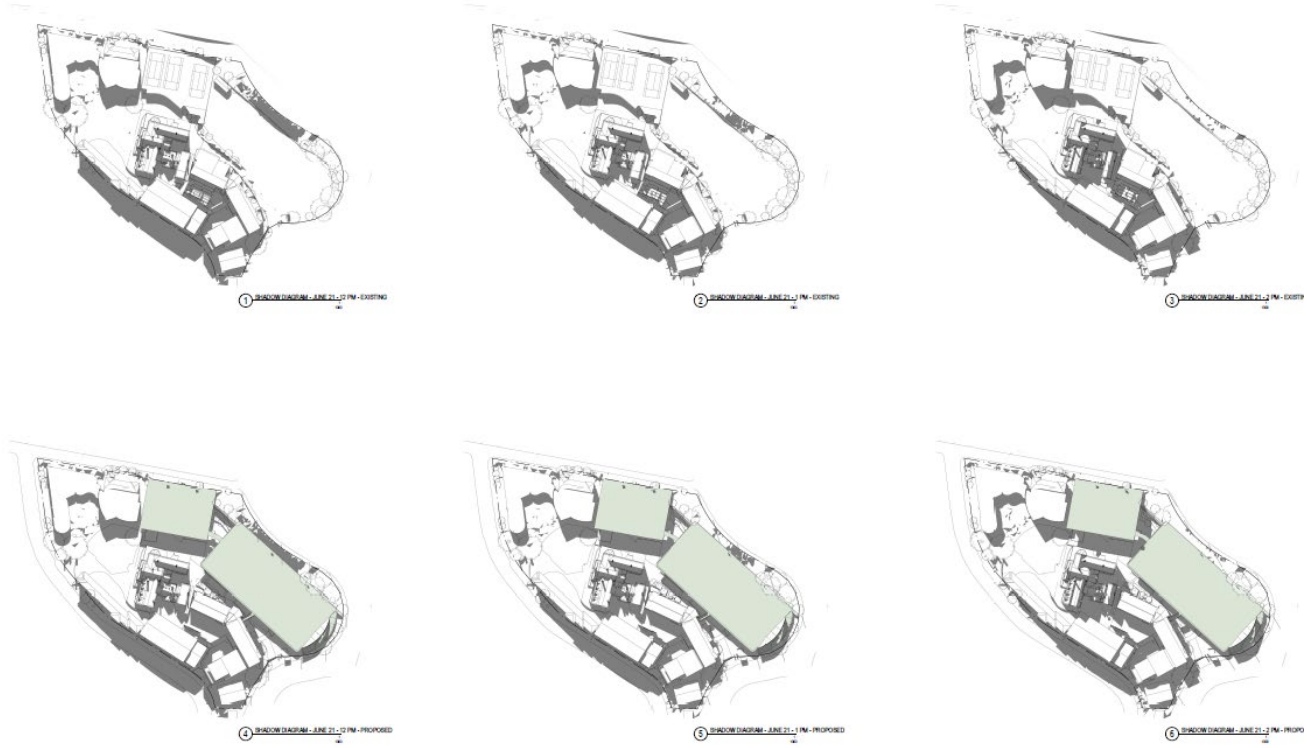


Figure 23 Overshadowing as a result of the proposed works from 12:00pm – 1:00pm

Source: AJC

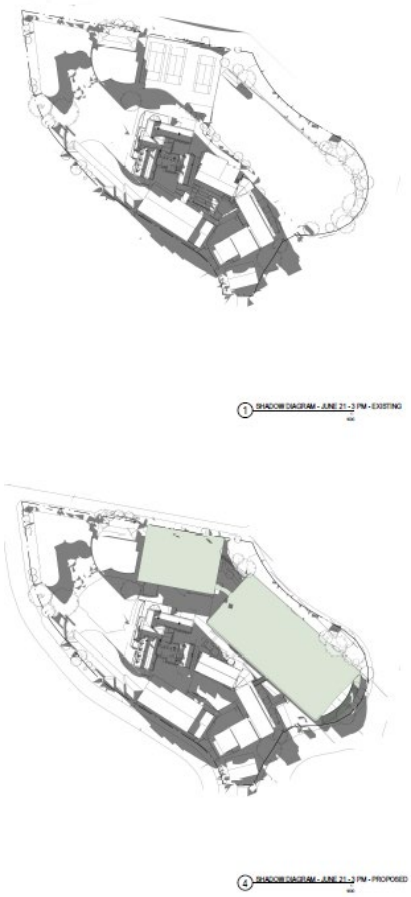


Figure 24 Overshadowing as a result of the proposed works at 3:00pm.

Source: AJC

5.3.2 View Impact and Visual Privacy

A View Analysis of the proposed development has been prepared by Richard Lamb and Associates (**Appendix H**) and a Visual Impact Assessment has been prepared by Urbis (**Appendix I**). These assessments includes a comprehensive evaluation and assessment of any potential impacts on views enjoyed by surrounding residents due to the design of the development. Overall view impact of the proposed sport, wellbeing and senior learning precinct and associated landscaping is reasonable on the basis that:

- The existing playing fields and buildings on the School site are generally below the main view lines from the east and north, and are either not significantly visible or do not cause interruption to the extensive views south over the remainder of the School and Rose Bay, or West over Sydney Harbour. The proposed development would largely be below the existing view lines, hidden by existing development or only have minor effects on existing future views over and beyond the development site;
- A variety of already approved but yet to be constructed developments would cause greater change to the composition of views than the development proposed in some cases;
- The built form is similar in form and character to the existing buildings on the site, and therefore are unlikely to significantly decrease view access from the public domain;
- The built form will not cause any overlooking and will not pose any risks to surrounding neighbours in relation to visual privacy.

For all of the above reasons, it is concluded that the proposed development will not result in significant view loss.

In addition to the above, the design, bulk and scale of the development will be compatible with the surrounding land uses, as:

- The visual compatibility of the development is rated as high, as its long, low form is similar in character to exiting buildings within the school site and others that are visible within the surrounding context;

- The proposed development will not result in blocking any highly visible heritage features, including the north facing and eastern gable elevation of the north wing, which is the most visible and easily identifiable feature of the heritage item; and
- The proposed development has high visual absorption capacity, meaning it has the ability to absorb, block or hide the majority of the built form proposed.

Mitigation Measures

Any potential visual impacts can be overcome by the application of fine-grain architectural detail, the use of semi-translucent sports fencing and implementation of the Landscape Plan (**Appendix E**) including the strategic framework planting and under-storey planting immediately around the under croft of the proposed sports fields.

5.3.3 Operational Impacts

The main operational hours of the school are 8:20am to 3:20pm. After hours use (between 7:00am and 9:00pm on weekdays and 7:00am and 7:00pm on Saturdays) of the Sport, Wellbeing and Senior Learning Precinct will be generally limited to staff and students. It is noted that this proposal will not extend any operating hours beyond those that are currently utilised.

The proposed new precinct will not accommodate any new uses other than those currently already operating on the site. No adverse operational impacts or environmental amenity impacts are anticipated given the synonymous nature of the current operations on the remainder of the site, and the surrounding high traffic corridor of New South Head Road located adjacent to the development site.

It is expected that the school will continue to operate whilst construction is undertaken. The Construction Management Plan at **Appendix G** outlines that there will be minimal impact to normal school operations. Departments and activities currently located in buildings being demolished and/or relocated into the new facilities upon completion. Fencing and barricades will be provided to segregate the construction works from active school areas, and signage will be provided to clearly identify any changes to pedestrian access during each stage of works. Appropriate security measures will be provided to deter and prevent access to the construction areas.

The potential noise impact of the operation of the development is discussed at **Section 5.11.2** and **Appendix Q**.

5.4 Heritage Impacts

A Heritage Impact Assessment (HIA) and a Historical Archaeological Assessment (HAA) have been prepared by Urbis and are provided at **Appendix L** and **Appendix M** respectively.

5.4.1 Heritage

There are no proposed physical interventions to any significant fabric within the heritage listed elements on the site. No changes are proposed to the Tivoli Building or any of its associated heritage listed fabrics. The report at **Appendix L** notes that the changes are only proposed to later, already modified elements within the broader Kambala School site, including the sports field and later sporting facilities. There are no heritage impacts as a result of the modifications to the existing sports field, which is not an original or significant element to the place.

There is some demolition proposed of later contemporary additions and structures to the rear of Tivoli, part of the Hawthorne Building and the Arts Building will recapture open space surrounding the heritage listed Tivoli building and improve the building's setting and curtilage. Views along the entrance driveway from New South Head Road towards the rear elevation of Tivoli will be improved specifically through the removal of later additions to Hawthorne Building and will provide Tivoli Building with a sense of space and identity.

Views towards the principal elevation of Tivoli will not be significantly impacted views towards all of the heritage listed elements on the site will be retained and will not be obscured. It is noted that already approved development which will be undertaken in the future will provide for a greater alteration of the existing setting and views than that which would be added through the subject proposal

Overall, this report concludes that the proposal will have no detrimental impacts on any heritage items or conservation areas located within the vicinity of the site. This is discussed further at **Appendix L**.

Mitigation Measures

While inward views towards the campus and the immediate visual setting of Tivoli will be altered as a result of the proposal, these potential impacts have been mitigated through the provision of generous physical setbacks from the heritage building. The overall benefit of the proposal from an educational and use perspective outweighs the potential heritage impact from minor alterations to existing views towards Tivoli, which it is noted, sits within and already highly modified setting and landscape.

5.4.2 Archaeological Impact

The site has a been in use since the early settlement of the eastern suburbs of Sydney, and due to its historic connections, there is a small likelihood that some archaeological material related to convict settlement may be present on the site. However, the site has been subject to significant disturbance associated with the construction and demolition of school infrastructure. Therefore, on this basis Urbis concludes that the archaeological potential of the subject area is low-moderate on the basis of the assessment of historical land-use and disturbance. A map of the potential areas of archaeological significance is at **Figure 25**.

Figure 25 Areas of potential archaeological significance.

Source: Urbis

Mitigation Measures

The HAA at **Appendix M** concludes with three key recommendations to ensure that any archaeological items found are managed appropriately. These recommendations are as follows:

- **Recommendation 1 – Section 139 and monitoring**: In the areas identified as having moderate archaeological potential, a Section 139 excavation exemption permit application should be submitted with NSW Heritage as defined under the *Heritage Act 1977*. Archaeological monitoring of works should be undertaken in the area defined as containing moderate potential to ensure no relics are harmed during the works.

- **Recommendation 2 – Archaeological chance find procedure:** Despite the low archaeological chance, the following steps should be followed if any archaeological deposits are found:
  - All work stops in the vicinity of the find, and the find should not be moved prior to the following steps;
  - The project archaeologist should be contacted immediately, and a preliminary assessment of significance needs to be undertaken;
  - Depending on the significance, reassessment of the archaeological potential of the subject area and application for relevant permit may be required; and
  - Works in the vicinity of the find can only recommence upon relevant approvals from DPIE.
- **Recommendation 3 – Human Remains Procedure:** In the unlikely event that human remains are found, all work must stop and NSW Police and DPIE must be contacted immediately. Assessment must be undertaken by NSW Police and work may not recommence until the find has been appropriately managed.

5.5 Social Impact

A Social Impact Assessment has been prepared by Ethos Urban and is provided at **Appendix O**. An assessment of the social impact categories, as defined within the *Social Impact Assessment Guidelines (DPIE, 2017),* has been undertaken with consideration to the issues identified through the baseline analysis.

Each category of impact is appraised with a significant of the impact based on likelihood, consequence and social risk rating. Overall, the level of impacts range from being low to moderate, with no major negative impacts identified in relation to the proposal.

Key challenges identified with the proposal relate to:

- The importance of heritage within the Woollahra LGA and the school community's sense of ownership over the site's heritage. Changes to the site via the redevelopment may disrupt the community's connection to the site, but only temporarily. Whilst the site is likely to protect the heritage on site by conserving and enriching the school's operation, it is important the development is mindful of the local community aspirations and values.
- The project may have some amenity impacts on surrounding residents, students, staff and visitors during construction. There may be some potential short term changes to sense of place in the local area during the construction phase associated with an increased construction workforce, resulting in unfamiliar visitors in the area.
- Construction impacts may have a slight impact on the health and wellbeing of students and staff, where there may be added pressures on access to education spaces and outdoor space, where not appropriately managed.
- There is a risk that stakeholder expectation may not be met as a result of the redevelopment. Fears may arise with concerns about safety for families and children during the construction period, particularly in relation to traffic and personal safety with external construction workers visiting the site. However, it is envisaged these can be managed with the implementation of appropriate construction management and safety management plans.

The most significant social benefits of the proposal relate to:

- The ability for Kambala School to continue to provide high standards of education for young women and provide world class education that complements the Kambala strategic vision. The redevelopment of the site will also align with policy direction to meet the needs for innovative, flexible and adaptive learning spaces.
- The strengthening of the school community, the connection between boarders, day girls, old girls, staff and the greater community.
- The project will cater for the provision of learning, sport and wellness education opportunities that may cater for day students in the local area, noted to have a small growth in young persons over the next 20 years.
- The project will provide a positive contribution to the high expectations of the community for quality education and emphasis on student wellbeing. The redevelopment of the campus will see a significant increase in green spaces with additional canopy cover provided.

Mitigation Measures

In order to effectively manage the potential impacts discussed above, the SIA recommends that they be monitored and managed through collaboration with key stakeholders to effectively address them if of when they arise. It is noted that any potential construction impacts are to be managed through compliance with a comprehensive Construction Management Plan (**Appendix G**), with a communication plan to be developed to ensure all neighbours and relevant parties are informed about the development.

5.6 Geotechnical Assessment

PSM Consult have prepared a Geotechnical Investigation (**Appendix GG**) to obtain geotechnical information on the topographic, surface drainage and geological conditions of the site and its immediate environs. The 1:100,000 Geological Map of Sydney indicates the site is underlain by Hawkesbury Sandstone comprising of medium to coarse-grained quartz sandstone, very minor shale and laminate lenses.

The groundwater table was encountered towards the end of each bore hole sample. This suggests that there may be a perched ground water table between 0.8 metres and 5.2 metres. Previous geotechnical studies done on site have not identified this feature, which suggests that there is a degree of variability of the groundwater conditions on the site.

Based on the result of the site investigations, the report provides general advice on the geotechnical aspects of the proposed civil and structural design. These recommendations relate to earthworks, excavation, impacts on adjacent structures and vibration.

Mitigation Measures

A number of recommendations and mitigation measures are proposed in the geotechnical report to manage the potential impacts of the development on any geotechnical elements. This involves conditions in relation to bulk excavation, site classification, batters, retention of fill and foundations. The implementation of these conditions will ensure the management of any issues arising.

5.7 Structural Assessment

A Structural Schematic Design Report has been prepared by Taylor Thomson Whitting and is provided at **Appendix HH**. This report outlines that the designed structure is very simple, and from a structural perspective, the majority of the work can be broken into separate buildings and built individually. The staging is proposed has no effect on the structural element of the buildings. All structural details will be finalised in future detailed design.

Mitigation Measures

In order to ensure that the proposed works are structurally sound, the Structural Design Report outlines that all new structures should have a design life of at least 50 years and will need to be of a structural importance level 3. Further to this, all loads and load combinations for the building will comply with the relevant Australian Standards for load reductions. These are discussed further at **Appendix HH**.

5.8 Aboriginal Archaeology

An Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Ecological Australia and is provided at **Appendix P**. The report undertakes an assessment of the site for potential Aboriginal heritage in accordance with the Office of Environment and Heritage's (OEH) 'Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (DECC, 2011). Aboriginal community consultation, in accordance with the Department of Environment, Climate Change and Water's 'Aboriginal cultural heritage consultation requirements for proponents 2010' (DECCW 2010) has also been undertaken for the project and informed the ACHAR findings. A summary of the key findings of the ACHAR is provided below:

- There are no registered Aboriginal Heritage Information Management System (AHIMS) sites located within the site boundary (refer to **Figure 26**) and there is low to nil potential for further archaeological material to be located/harmed within the study area.
- Site inspection revealed a high degree of disturbance across the entirety of the study areas, associated with the early urban development of Sydney. Based on the intactness, representativeness and research potential, the site is determined to have nil to low archaeological significance.

- Further investigation of the area would not contribute to our understanding of Aboriginal landscape use in the area.

On this basis, the ACHAR confirms that no Aboriginal heritage sites will be harmed and no Aboriginal Heritage Impact Permit (AHIP) or approval is necessary under the *National Parks and Wildlife Act 1974*.

In accordance with the OEH 'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011), the ACHAR should be submitted for registration on the SHIMS register within three months of completion of the report.

Mitigation Measures

The following general recommendations are proposed to manage any unlikely or unexpected finds:

- If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease in the affected area and an archaeologist must be called in to assess the finds.
- If the finds are found to be Aboriginal objects, the DPIE must be notified under section 89A of the NPW Act. Appropriate management and avoidance or approval under a section 90 AHIP should be sought if Aboriginal objects are to be moved or harmed.
- In the extremely unlikely event that human remains are found, work should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the PIE may also be contacted at this time to assist in determining appropriate management.

Figure 26 Location of Aboriginal Artefacts in relation to the School

Source: Ecological Australia

5.9 Parking, Traffic and Servicing

Parking, traffic and servicing impacts associated with the Concept Proposal is outlined under the detailed Traffic Impact Assessment prepared by the Transport Planning Partnership (**Appendix J**). Impacts on parking and traffic are discussed below.

Parking

The existing development accommodates 123 car spaces, including:

- 100 staff car spaces;
- 12 childcare centre car spaces;
- Three accessible car spaces; and
- Eight visitor car spaces.

As the proposed development does not increase the number of students or staff, the TIA concludes that it is not necessary to increase the school's parking provisions.

Traffic

A summary of the traffic impacts associated with the proposed development is discussed below:

- Travel surveys have been conducted determine the existing staff and student modal split. Based on the survey findings, 51% of students drive or are driven to school, and 35% are picked up or drive home from school. The remaining students rely on the school bus, public transport or walk to and from school.
- There is an expected increase of 16 vehicles during both the morning and afternoon road network peak hour resulting from the development. Noting that student traffic generation involves drop off and pick up activities as opposed to long term stays, vehicles are anticipated to arrive and depart in the same hour. Therefore, this equates to 32 two-way vehicle movements per hour in both the AM and PM peak.
- Almost half of the additional vehicle movements will occur on Tivoli Avenue, while Bayview and Rawson Road will also experience additional vehicle movements.
- The proposed increase of 32 vehicle movements per hour equates to an increase of one vehicle every two minutes and is considered to be a negligible increase in traffic. SIDRA modelling has been done based on these increases to ensure that the level of service of the surrounding intersections are capable of servicing the additional traffic. This modelling concludes that the additional vehicle movements will not impact the existing level of service of all surrounding intersections.
- The provision of a Green Travel Plan is proposed to assist with the management of travel demand and minimise its impact on the surrounding road network. This will include carpool systems, public transport facilitation, walking and cycling groups, bicycling confidence lessons and other activities to promote active and public transport utilisation.
- The existing parking will be open for parents and visitors utilising the sport precinct on weekends as well, to ensure that no on street parking is affected by the proposal on weekends.

Therefore, the proposed development will not result in any adverse traffic impacts on the surrounding road network or the availability of on street parking.

Mitigation Measures

Regular management and extensive education and consultation with key stakeholders of the school, including staff and parents, would need to be conducted to ensure the success of the proposed mitigation measures and green travel strategies and initiatives.

5.10 Construction Management

A Construction Management Plan has been prepared by Buildcorp (**Appendix G**) and a Construction Traffic Management Plan have been prepared by TTPP (**Appendix II**), which both outline the procedures for construction and management of the short term impacts that will be caused by the construction of the proposed works.

These reports outlines the relevant details with regard to site establishment, project staging, construction materials logistics, construction traffic management, construction waste management and construction noise management. Due to the school's key operating hours being between 8:00am and 4:00pm, construction will need to adapt to the circumstances of the school.

To mitigate impacts on the surrounding school and neighbours, the proposed work hours provide the greatest opportunity for the most efficient construction program as well as mitigating traffic impacts. Further consultation with the key stakeholders will occur prior to commencement to ensure minimal or nil impact is made to the school's operating hours to allow the appropriate project planning and programming if required. The preferred working hours of the site are:

- 7:00am – 6:00pm Monday to Friday;
- 7:00am – 5:00pm Saturday; and
- No work on Sundays and Public Holidays.

This will avoid conflicting the afternoon peak school traffic volume.

Mitigation Measures

Compliance with both the Construction Management Plan and the Construction Traffic Management Plan will minimise any impacts that may arise during the construction process.

5.11 Noise and Vibration Impacts

A Noise and Vibration Impact Assessment has been prepared by Wilkinson Murray (**Appendix Q**) to assess the noise and vibration generating sources during operation of the proposed Sport, Wellbeing and Senior Learning Precinct and recommend any mitigation measures to minimise potential noise impacts on surrounding occupiers of land.

In order to quantify the existing noise environment, long term ambient noise levels were monitored at four locations surrounding the site, in locations selected to cover the range of ambient noise environments surrounding the site.

5.11.1 Construction Noise and Vibration

As there is no detailed construction plan available at this stage of the project, the prediction of construction noise is indicative at this stage. Nearby residential receivers are likely to experience significant noise impacts associated with site preparation, excavation and demolition, and less noise during building construction. Therefore, during general construction works, noise measures should generally comply.

Vibration impacts are unlikely given the distance between surrounding receivers.

5.11.2 Operational Noise

The report identifies the following facilities and activities that may generate operational noise:

- Mechanical services plant;
- Teaching and practical activities, particularly performing arts based;
- School announcements and bells;
- Sporting events and concerts in the Sports Hall; and
- Sporting activities on the courts and sporting fields.

Through a review of the potential noise operational noise sources, this assessment has determined that the noise form the outdoor activities on the new sporting fields are expected to generally achieve an appropriate background noise level, while the tennis courts will likely continue to emit a similar noise level to the courts currently on the site.

Mitigation Measures

A Construction Noise Management Plan should be prepared and implemented by the contractor. This plan should clearly identify strategies to be put in place to minimise potentially adverse noise impacts upon the surrounding

community. In relation to the operation noise impacts, the proposed buildings have been designed to minimise noise impact on surrounding residences during operation. Further detailed assessment should be carried out when detailed mechanical services design and plant selection becomes available.

5.12 Biodiversity

A Biodiversity Development Assessment Report has been prepared by Ecological Australia (**Appendix V**) using the Biodiversity Assessment Method (BAM) as established under Section 6.7 of the *Biodiversity Conservation Act 2016* (BC Act). The report outlines key findings of the overall biodiversity assessment, and provides measures to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the campus.

Key findings of the BDAR are summarised below:

- The vegetation of the site is highly disturbed with scattered planting of mature native species which have been incorporated into horticultural landscaped gardens. Based on the soil profile and feel validation of remnant vegetation retained within the development site, it was determined that the planted native vegetation retained with site is most similar to the coastal sandstone foreshore plant communities. The vegetation does not correspond to a threatened ecological community under the BC Act or any Commonwealth legislation;
- No threatened flora or fauna species were recorded within the development site. There is potential that highly mobile threatened species such as the Grey-headed Flying-fox may utilise the vegetation for foraging resources on occasion;
- There are no flora or fauna communities on the site which are likely to experience serious or irreversible impacts as a result of the development;

Mitigation Measures

A number of mitigation measures are proposed to manage impacts prior to and during construction, as well as during operation. Where residual, unavoidable impacts are observed, biodiversity offset credits need to be purchased. As identified under the BDAR report, one (1) ecosystem credit is required to offset the 0.9ha of Coastal Sandstone Foreshore plant community necessary for removal.

5.13 Tree Removal and Protection

An Arboricultural Impact Assessment has been prepared by Arborlogix and is provided at **Appendix EE**. This report addresses the potential impact the proposal will have on existing trees on site and recommends mitigation measures to protect and offset impacts on species of high importance.

The Arboricultural Assessment identifies 35 trees on site, which are of varying quality and health. Of the 35, 15 are identified as being of low significance or value, 16 of medium significance, and four of high significance. 16 of the trees are to be removed, while the remaining trees are proposed to be retained and protected.

Of the 19 trees to be retained across the site, six of them are to have tree protection zones (TPZ) of varying size. The report outlines key protection measures such as access, excavation in the TPZ, root protection and monitoring. Some canopy pruning may be required of those trees retained to accommodate the development.

There are 16 trees proposed to be removed as a result of the proposal. Of these, 11 are of low significance, four are of medium significance, and one is of high significance. The majority of these trees are being removed due to a locational conflict with the development, or an inability to integrate the tree with the new design. All trees being removed will be replaced by an appropriate species in a more suitable location.

Mitigation Measures

It is recommended that construction proceeds in accordance with the Australian Standard and the specific additional tree protection measures recommended by the arborist implemented.

5.14 Hazardous Materials Assessment

A Hazardous Materials Assessment has been prepared by JBS&G and is provided at **Appendix JJ**. An assessment of the potential hazardous materials was undertaken across the existing sports field and structures on the sports

field, as well as the Hawthorne Building to the south of the sports field, which will be partially demolished to accommodate the proposal.

A small portion of the Hawthorne Building was identified as possibly containing non-friable asbestos, which will be required to be removed prior to demolition under controlled conditions. No other asbestos was identified on site.

Lead containing dust was identified in the roof of the Hawthorn Building at slightly above acceptable levels. Therefore, to take a conservative approach, a suitably qualified hazardous materials removalist should be engaged to remove any potential dust prior to demolition. General access to the roof should be restricted until such time that the dust is removed.

Some lead-based paints have also been identified within the site. Any paints that are peeling or flaking from existing structures should be removed by a qualified contractor prior to demolition, however paints that are suitably adhered to structures can remain on the structures and be removed during demolition processes.

Some synthetic mineral fibres were identified within the site, however all samples identified were contained and deemed to be low risk. These fibres can be removed with the building and demolition waste with care taken to not generate fibres. Appropriate personal protection equipment is required.

Mitigation measures

Any materials deemed to be consistent with those detailed in the Hazardous Materials Register that have not been previously identified should be assumed to have the same content and be treated accordingly.

Should any additional suspected hazardous materials be observed during or prior to demolition works, works should cease until a suitably qualified occupational hygienist can assess the suspected hazardous material and provide appropriate recommendations for management and/or removal.

5.15 Contamination

A Preliminary Site Investigation (PSI) and Detailed Site Investigation has been undertaken by JBS&G. The findings of the site investigation are outlined in the Detailed Site Investigation Report (**Appendix R**). This investigation analysed soil to identify potential contaminant risks to human and biological health present on site. This DSI found whilst there was some soil contamination issues and a small portion of hazardous materials, there is no unacceptable risk to users of the playing field areas as the contamination in this area was at depth where there is no existing pathway whereby site users come into contact with these soils under normal surface usage. Impacted soils within the embankments are not considered to be regularly occupied by site users other than gardeners and/or maintenance works, and COPC concentrations in this area do not pose a risk under a commercial worker scenario.

The DSI concludes that the site can be made suitable for the proposed redevelopment subject to the following actions:

- Interim environmental management plan controls are developed and implemented to mitigate potential risks to site maintenance workers, should removal of existing ground covers (mulch and grass) be required in the embankment and oval areas prior to redevelopment works;
- A Remediation Action Plan is prepared, including an unexpected finds protocol.

Following this advice, a Remediation Action Plan has been prepared and is provided at **Appendix NN**.

Mitigation Measures

The preparation of a RAP will be required, which will evaluate and determine the preferred approach to remediation and/or management of identified impacts where required, to make the site suitable for the proposed development and use. The RAP will also detail any management requirements based on assessment results to ensure potential health and ecological risks identified are appropriately removed or managed.

5.16 Water Cycle Management

An Integrated Water Management Plan has been prepared LCI (refer to **Appendix T**), which outlines the likely water use as a result of the proposed works, and recommends strategies to ensure sustainability and low water

usage. It is expected that the Sport and Senior Learning Precinct will have an approximate water demand of 5kL per day for combined irrigation and toilet flushing usage.

Mitigation Measures

The report provides three options for managing water use in the new precinct:

- A 30,000 litre tank is recommended for to manage approximately 98% of the irrigation needs of the proposal;
- A 40,000 litre tank is recommended to provide 85% of the water needs for the toilets; or
- A 90,000 litre tank is recommended as it can provide 92% of the daily water needs for both irrigation and toilets.

LCI recommend in this report that the third option provides the best outcome in relation to sustainable water use. Further details of a water harvesting system will be developed as the detailed design is progressed.

5.17 Flooding and Stormwater Management

A Stormwater Management Plan has been prepared by Taylor Thomson Whiting and is provided at **Appendix U**. The purpose of this stormwater management plan is to identify the potential for diversion of stormwater pipes and easement across the Kambala School and design an appropriate stormwater system for the school.

This report found that significant overflow would occur on New South Head Road as a result of the proposal during a 1 in 100-year event of about 10.7m^3/s.

Mitigation Measures

To maintain the stormwater system capacity under the proposed building, it is proposed that the existing stormwater pipe size is increased and the easement relocated. Two on-site stormwater detentions will be included in the construction of the development, with Catchment 1 located on the eastern side of the site, and Catchment 2 on the western side of the site (see **Figure 27**).

In addition to this, stormwater will undergo treatment to ensure it aligns with Council's stormwater quality requirements.

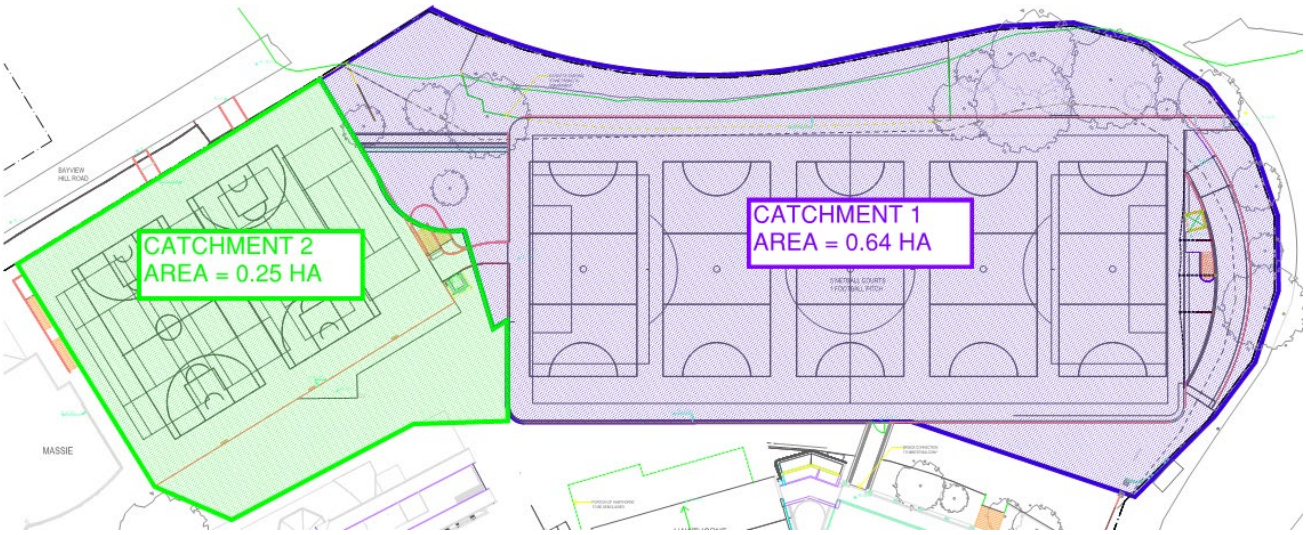


Figure 27 Proposed OSD locations

Source: TTW

5.18 Sediment and Erosion Control

A Sediment and Erosion Control Plan has been prepared by TTW. A copy of the plan is provided as part of the Civil Works package at **Appendix W**. The proposed control measures will prevent sediment laden stormwater from flowing into adjoining land and roadways during the construction phase of the development. Proposed measures include a sedimentation trap, catch drains, silt fence, sandbag sediment traps and geotextile filter around existing stormwater pits. The plan has been prepared in accordance with the relevant provisions of the Woollahra DCP.

5.19 Waste Management

The likely waste generated from demolition, construction and operation, as well as the removal and storage necessary are discussed below.

5.19.1 Construction Waste Management

Management of construction and demolition waste streams generated during the development has been addressed in the Demolition and Construction Waste Management Plan prepared by Waste Audit & Consultancy Services (**Appendix X**) This report sets out the estimated volume each waste stream is likely to be generated during the demolition and construction phase, as well as the proposed waste management strategy to reduce, reuse and recycle waste.

Refer to the WMP (**Appendix X**) for the quantity of each waste stream that is proposed to be either reused or recycled and the respective on-site or off-site recycling systems.

All waste and recycling materials will be stored in bins provided by the appointed contractors. These bins will be appropriately coloured and signed to indicate what materials are to be deposited in them.

Mitigation Measures

In order to manage waste during the construction phase, a work plan should be prepared to outline the proposed demolition methods, estimated time for work to be completed, sediment control measures and site access to assist in the management of waste. In addition to this, all contractors should be trained and educated in the correct waste management measures used on the site.

5.19.2 Operational Waste Management

The likely operational waste generated as a result of the proposal, and the storage and removal processes required are outlined in the Operational Waste Management Plan prepared by Waste Audit (**Appendix Y**).

This report approximates a 2,540L per week increase in waste generated as a result of the operation of the completed Sport, Wellbeing and Senior Learning Precinct. To accommodate this additional waste generation, 5.03m^2 of supplementary bin storage area will be required. These additional bins and recycling bales can be easily accommodated within the existing loading dock storage area, and therefore the proposed development will not require any new waste storage facilities or equipment.

Further discussion of the management of operational waste is provided at **Appendix Y**.

Mitigation Measures

Staff and students will be involved in the required managing of general waste and recycling generated from the operation of the proposed development. Maintenance staff, cleaners and the Facility Manager will continue to be responsible for the undertaking of the operational waste management and meeting its targets and objectives.

5.20 Access

An Access Review has been prepared by Funktion and is provided at **Appendix FF**. This report outlines the proposed development's compliance with the relevant legislation and aims to ensure that an accessible path of travel is provided from the main points of pedestrian entry from the boundary, from other buildings, parking and other areas generally used by occupants.

Having reviewed the architectural drawings and design, Funktion conclude that the proposed building is capable of complying with relevant access requirements and are accessible by people with physical and sensory disabilities

Mitigation Measures

During the detailed design and construction of the precinct, all relevant standards and compliance measures outlined in the Funktion report should be applied and to ensure accessibility will be provided.

5.21 BCA and Fire Safety

A BCA Capability Statement has been prepared by Blackett Maguire Goldsmith (**Appendix KK**), which finds that compliance with the BCA will be achieved through a combination of compliance with Deemed-to-Satisfy provisions and alternative performance-based solutions. Further BCA compliance measures will be reviewed and implemented throughout the detailed design and construction of the building.

Mitigation Measures

Prior to issue of Construction Certificates, review and update plans as necessary to achieve compliance or develop suitable alternative performance solutions as identified in the BCA report.

5.22 Crime Prevention Through Environmental Design

The principles of Crime Prevention Through Environmental Design (CPTED) have been implemented within the proposed works in accordance with the Department of Planning guideline titled Crime Prevention and the Assessment of Development Applications (2001) as follows:

Surveillance

Good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance.

The proposed Sport and Senior Learning Precinct at Kambala School will provide high levels of natural surveillance over majority of the school and promote long site lines to the western and lower portions of the school. The development site is also afforded with natural surveillance from New South Head Road, which is at a significantly higher elevation to the north, and therefore provides uninterrupted views to the existing sporting fields.

Where natural surveillance is not easily provided, CCTV is suggested to ensure that all areas have some sort of surveillance available. Further to this, it is critical to ensure that key site lines are protected, including from the Minter Building to the main front entrance and future entrance to the sports precinct and from Tivoli House, the Music Building and future sports precinct into the northern courtyard.

Lighting and Technical Supervision

Effective lighting can reduce fear, increase community activity, improve visibility and increase the likelihood of offenders being detected. All lighting within the proposed school should met the minimum Australian Standards. Further to this, lighting uniformity and motion sensor lighting is recommended, particularly where CCTV is located to ensure adequate lighting is provided at all times. The CPTED report also recommends that a qualified lighting engineer and a security consultant are engaged to ensure that lighting and security measures are addressed appropriately.

Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. Generally, people are more comfortable in and are more likely to visit places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

The CPTED report recommends that wayfinding and signage be enhanced to show which of the parts of the school are open after hours, including entrances and use of sporting fields. Further to this, all existing perimeter fencing should be maintained to prevent degradation, and secure fencing and signage should delineate any publicly accessible portions of the site from the core of the school.

Space Management

Space management refers to providing attractive, well maintained and well used spaces. Space management strategies include site cleanliness, rapid repair of vandalism and graffiti and removal of damaged physical elements.

The school will continually be maintained, and the sporting fields should be similarly managed and controlled to ensure that use after hours and on weekends does not create an unsafe environment. Formal management of the sport precinct, including a security service and ongoing viewing of CCTV is recommended.

Access Control

In order to manage who is using the site, a number of access control measures are recommended. This includes limiting vehicular access at the main New South Head Road gate to only maintenance and emergency vehicles when required. Securing after-hours access to the proposed building is also recommended, through the utilisation of swipe access cards where necessary, or lockable gates. Fire exits are for emergency use only and should be alarmed to alert security.

5.23 Site Suitability and Public Interest

The site is suitable for the proposed development given that:

- The site has been historically used as a school campus for over 100 years and currently accommodates educational facilities and buildings of a similar scale to that proposed under the concept proposal;
- The concept proposal for the school is permissible within the zone;
- The proposal is consistent with the objectives of the zone as it provides a complementary facility and service that meets the day to day needs of the school;
- The slope and orientation of the site means it is able to accommodate a design that does not impact upon views or create additional overshadowing; and
- As demonstrated by this EIS, the concept proposal considers and minimises any adverse environmental impacts on the site and surrounds.

The site is in the public interest given that the proposal:

- Will facilitate necessary renewal of out of date educational facilities and provide contemporary learning environments for future generations;
- Respect the ecological, heritage and aesthetic features of the school campus;
- Will create additional jobs, during the construction phase and represents an investment in the local economy; and
- Will deliver a high landscape and design quality outcome.

6.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the Kambala Sport, Wellbeing and Senior Learning Precinct has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- the adequacy of baseline data;
- the potential cumulative impacts arising from other developments in the vicinity of the Site; and
- measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 28 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- the receiving environment;
- the level of understanding of the type and extent of impacts; and
- the likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 28 Risk Assessment Matrix

Table 5 Mitigation Measures

				Risk Assessment		
Item	**Phase**	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Heritage Impact	O	Impact heritage significant fabric	• No works are proposed for the heritage listed buildings, and the design intends to provide appropriate curtilage to ensure that heritage fabric is protected and respected.	1	1	2 (low)
Traffic Impact	C	Construction traffic impact	• Construction traffic and pedestrian interaction is to be managed in accordance with the management measures outlined under the CTMP provided at **Appendix II** and includes: – Traffic control; – Potential haulage routes; and – Entry / exit points.	2	2	4 (low/medium)
Contamination Impact	C	Exposure to contaminants during construction.	• A Remediation Action Plan is to be carried out for any future subsequent detailed design development applications. In this instance, the proposal does not relate to a change of use. On this basis, it is recommended that contamination matters be managed by way of a suitable condition of consent.	2	1	3 (low)
Biodiversity	C	Loss of biodiversity	• There is no significant threat to any flora or fauna as a result of this proposal.	1	1	2 (low)
Flood	O	Risk of flooding	• As per the Stormwater Management Report at **Appendix U**, the impact of the development on flood conditions is likely to be negligible. However, OSD catchment measures are proposed to ensure that any stormwater caused by the additional impervious surfaces are managed.	2	1	3 (low)
Construction Noise		Exposure to construction noise in exceedance of the noise criteria	• Preparation of a Construction Noise and Vibration Management Plan that sets out specific management measures to reduce and manage construction noise exceedances prior to commencing construction activities.	3	2	5 (low/medium)

7.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 6** below. These measures have been derived from the previous assessment in Section 5.0 and those detailed in appended consultants' reports.

Table 6 Mitigation Measures

Mitigation Measures
Visual Impact • Any potential visual impacts can be overcome by the application of fine-grain architectural detail, the use of semi-translucent sports fencing and implementation of the Landscape Plan (**Appendix E**) including the strategic framework planting and under-storey planting immediately around the undercroft of the proposed sports fields.
Heritage Impact • While inward views towards the campus and the immediate visual setting of Tivoli will be altered as a result of the proposal, these potential impacts have been mitigated through the provision of generous physical setbacks from the heritage building. The overall benefit of the proposal from an educational and use perspective outweighs the potential heritage impact from minor alterations to existing views towards Tivoli, which it is noted, sits within and already highly modified setting and landscape. • If any unexpected archaelogical items are found, procedures in the HAA (**Appendix M**) should be followed.
Social Impact • In order to effectively manage the potential impacts discussed above, the SIA recommends that they be monitored and managed through collaboration with key stakeholders to effectively address them if of when they arise. It is noted that any potential construction impacts are to be managed through compliance with a comprehensive Construction Management Plan (**Appendix G**), with a communication plan to be developed to ensure all neighbours and relevant parties are informed about the development.
Geotechnical Impact • A number of recommendations and mitigation measures are proposed in the geotechnical report to manage the potential impacts of the development on any geotechnical elements. This involves conditions in relation to bulk excavation, site classification, batters, retention of fill and foundations. The implementation of these conditions will ensure the management of any issues arising.
Structural Impact • In order to ensure that the proposed works are structurally sound, the Structural Design Report outlines that all new structures should have a design life of at least 50 years and will need to be of a structural importance level 3. Further to this, all loads and load combinations for the building will comply with the relevant Australian Standards for load reductions. These are discussed further at **Appendix HH**.
Aboriginal Archaeology • If any unexpected archaeological items are found, the procedures in the Aboriginal Heritage Impact Statement should be followed.
Traffic Impacts • Regular management and extensive education and consultation with key stakeholders of the school, including staff and parents, would need to be conducted to ensure the success of the proposed mitigation measures and green travel strategies and initiatives.
Construction Impacts • Compliance with both the Construction Management Plan and the Construction Traffic Management Plan will minimise any impacts that may arise during the construction process.
Noise Impacts • A Construction Noise Management Plan should be prepared and implemented by the contractor. This plan should clearly identify strategies to be put in place to minimise potentially adverse noise impacts upon the surrounding community. In relation to the operation noise impacts, further detailed assessment should be carried out when detailed mechanical services design and plant selection becomes available.
Biodiversity Impacts • A number of mitigation measures are proposed to manage impacts prior to and during construction, as well as during operation. Where residual, unavoidable impacts are observed, biodiversity offset credits need to be purchased. As identified under the BDAR report, one (1) ecosystem credit is required to offset the 0.9ha of Coastal Sandstone Foreshore plant community necessary for removal.

Mitigation Measures
Tree Removal • It is recommended that construction proceeds in accordance with the Australian Standard and the specific additional tree protection measures recommended by the arborist implemented.
Hazardous Materials • Any materials deemed to be consistent with those detailed in the Hazardous Materials Register that have not been previously identified should be assumed to have the same content and be treated accordingly. • Should any additional suspected hazardous materials be observed during or prior to demolition works, works should cease until a suitably qualified occupational hygienist can assess the suspected hazardous material and provide appropriate recommendations for management and/or removal.
Contamination • The preparation of a RAP will be required, which will evaluate and determine the preferred approach to remediation and/or management of identified impacts where required, to make the site suitable for the proposed development and use. The RAP will also detail any management requirements based on assessment results to ensure potential health and ecological risks identified are appropriately removed or managed.
Water Cycle Management • A 90,000 litre tank is recommended as it can provide 92% of the daily water needs for both irrigation and toilets. This option provides the best outcome in relation to sustainable water use. Further details of a water harvesting system will be developed as the detailed design is progressed. • To maintain the stormwater system capacity under the proposed building, it is proposed that the existing stormwater pipe size is increased and the easement relocated.
Waste • In order to manage waste during the construction phase, a work plan should be prepared to outline the proposed demolition methods, estimated time for work to be completed, sediment control measures and site access to assist in the management of waste. In addition to this, all contractors should be trained and educated in the correct waste management measures used on the site. • Staff and students will be involved in the required managing of general waste and recycling generated from the operation of the proposed development. Maintenance staff, cleaners and the Facility Manager will continue to be responsible for the undertaking of the operational waste management and meeting its targets and objectives.
Access • Prior to issue of Construction Certificates, review and update plans as necessary to achieve compliance or develop suitable alternative performance solutions as identified in the BCA report.
BCA and Fire Safety • Prior to issue of Construction Certificates, review and update plans as necessary to achieve compliance or develop suitable alternative performance solutions as identified in the BCA report.

8.0 Justification of the Proposal

In general, investment in major projects can only be justified if the benefits of doing so exceed the costs. Such an assessment must consider all costs and benefits, and not simply those that can be easily quantified. As a result, the EP&A Act specifies that such a justification must be made having regard to biophysical, economic and social considerations and the principles of ecologically sustainable development.

This means that the decision on whether a project can proceed or not needs to be made in the full knowledge of its effects, both positive and negative, whether those impacts can be quantified or not.

The proposed development involves the construction of a new sport, wellbeing and senior learning precinct for the existing Kambala School campus. The assessment must therefore focus on the identification and appraisal of the effects of the proposed change over the site's existing condition.

Various components of the biophysical, social and economic environments have been examined in this EIS and are summarised below.

8.1 Social and Economic

Schools are essential pieces of social infrastructure within a community. This proposal will enable the existing school to undergo timely renewal and upgrade to ensure the existing and future generation of students within the locality and broader community have access to high quality education. The proposal will replace out of date facilities with contemporary learning facilities, equipping the younger generation with necessary modern skills and good education.

The proposal seeks to deliver additional school facilities to address the deficiencies in the availability and quality of sporting facilities on the site, as well as change rooms, modern classrooms, all weather surfaces and additional storage space. This proposal also provides Kambala School with the ability to continue to provide high standards of education for young women and provide world class education in line with the Kambala Strategic Plan 2019-2023, providing academic excellence, a place of belonging for students and a caring and supportive school that is reflected in the creation of a dynamic learning experience.

In addition to this, while this proposal will not result in any additional staff members, it will result in jobs during the duration of the construction, and therefore the proposal will have a positive economic impact.

8.2 Biophysical

Section 5.10 of this EIS contains a thorough assessment of the likely biophysical impacts of the proposed development. The environmental risk assessment contained at **Section 6.0** demonstrates that the proposed development will not result in any significant environmental impacts that cannot be appropriately addressed through standard conditions of consent or the current mitigation measures included at **Section 7.0**.

The environmental impact assessment of the proposed development has demonstrated that responsive measures will ensure noise and vibration impacts, construction traffic and pedestrian conflicts are adequately managed during the construction phase. Further, ecological impacts can be appropriately managed through the mitigation measures outlined under **Section 7.0**. On this basis, the development is not anticipated to result in adverse biophysical impacts.

8.3 Ecologically Sustainable Development

The EP&A Regulation lists 4 principles of ecologically sustainable development to be considered in assessing a project. They are:

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles follows.

Precautionary Principle

The precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

The proposed development will be constructed primarily on a pre-existing sports field. During the design and construction phases of the proposed development, the main contractor will implement an Environmental Management Plan (EMP) demonstrating formalised systematic and methodical approach to environmentally friendly construction that answers to site specific environmental risks and hazards. The project will also ensure the design does not incur adverse impacts to the environment by taking consideration of the project specific climate change risks.

Intergenerational Equity

Inter-generational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- Providing ongoing, high quality sports facilities for future Kambala students.
- Minimising the consumption of energy and water resources whilst reducing waste. The ESD principles incorporated into the proposed development facilitates the conservation of energy and water resources through energy and water efficiency measures.

The proposal has integrated short and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long term implications such as waste disposal would be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this EIS and the appended technical reports.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration. This proposal is informed by a detailed BDAR (**Appendix V**), prepared in accordance with the requirements of the BC Act 2016. The findings of the report conclude that the proposal is unlikely to have any significant impact on any flora or fauna on the site, and that any impacts can be offset appropriately. ‘

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reusing, recycling and managing waste during construction and operation would be implemented to ensure resources are used responsibly in the first instance.

Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

9.0 Conclusion

The Environmental Impact Statement (EIS) has been prepared to consider the environmental, social and economic impacts of the proposed Sport, Wellbeing and Senior Learning Precinct at Kambala School. The EIS has addressed the issues outlined in the SEARs (**Appendix C**) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, biodiversity and stormwater impacts.

Having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- The proposal results in state of the art educational facilities for future students and the wider local population, contributing to the delivery of high quality education in the region;
- The proposal is consistent with the objectives of the Kambala Strategic Plan 2018-2023 and provides an overarching strategy to guide delivery of facilities on site;
- The development protects and preserves the heritage significant items, including Tivoli House, as well as the extensive views on campus and surrounds;
- The proposal provides improved amenity, functionality and equitable access of the existing campus;
- The proposal will offer several socio-economic benefits, including an increase in educational spaces as well as the creation of construction job opportunities; and
- The assessment of this proposal has demonstrated that the development will not generate any environmental impacts that cannot be appropriately managed, and is generally consistent with the relevant planning controls for the site.

Given the merits described above it is requested that the application be approved.