URBIS

SIGNPOST

BARKER COLLEGE ALTERATIONS AND ADDITIONS SSD-31822612 ENVIRONMENTAL IMPACT STATEMENT

PREPARED FOR BARKER COLLEGE NOVEMBER 2022

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Peter Strudwick
Senior Consultant	Brigitte Bradley
Project Code	P0023439
Report Number	1

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

© Urbis Pty Ltd 50 105 256 228

All Rights Reserved. No material may be reproduced without prior permission.

You must read the important disclaimer appearing within the body of this report.

urbis.com.au

CONTENTS

Signe	ed Declara	tion	1
Gloss	sary and A	bbreviations	1
Sumn	nary		7
	,	School Vision and Objectives	7
		Feasible Alternatives.	8
		The Proposal	8
		Consultation	10
		Justification of the Project	10
1.	Introdu	uction	12
	1.1.	Applicant Details	
	1.2.	Project Description	
	1.3.	Project Background	
		1.3.1. Existing School Population Cap	
		1.3.2. School Hours	15
2	Strato	aic Contoxt	16
۷.	2 1	Project Justification	16
	2.1.	2 1 1 NSW State Priorities	10
		2.1.1. NSW State Filonities	10
		2.1.2. Greater Sydney 2056: North City District Plan	10
		2.1.3. Our Greater Sydney 2000. North City District Flath	10
		2.1.4. FIOTISDY LOCAL Strategic Flatining Statement	17
		2.1.6. State Infrastructure Strategy 2022 2042	17
		2.1.0. State mildstructure Strategy 2022-2042	17
	2.2	Z. I. 7. Deller Flaceu	/ ۱۱۲ ۱۰
	2.2.	2.2.1 Surrounding Context	10
		2.2.1. Surrounding Bood Network	19
		2.2.2. Suffounding Road Network	
		2.2.2.1. OII Stielet Parking	20
		2.2.2. Public and Active Hansport Infrastructure	20
		2.2.3. Balker College	20
		2.2.4. Topography and Lanuscape	
		2.2.5. Venicle Access Arrangements and Trailic Circulation	23
	0.0	2.2.6. Heritage Conservation	
	2.3.	Development History.	
	2.4.	Cumulative Impacts with Future Projects	
	2 5	2.4.1. Hornsby Town Centre	
	2.3.	reasible Alternatives	
3.	Projec	t Description	29
	3.1.	Project Overview	29
		3.1.1. Concept Development	31
		3.1.2. Stage 1 Works	33
	3.2.	Detailed Description	34
		3.2.1. Concept Works	34
		3.2.2. Site establishment works and Demolition	36
		3.2.3. Improvements to Pedestrian and Vehicle Access	36
		3.2.4. Pick Up/Drop Off Arrangements and On Site Parking	39
		3.2.5. Connecting with Country	41
		3.2.6. Development Timing	42
		3.2.7. Contributions	43
4.	Statuto	ory Context	44
	4.1.	Statutory Requirements	44
	4.2.	Pre-Conditions	45

	4.3.	Mandatory Considerations	45
5.	Comm	unity Engagement	49
	5.1.	Engagement Carried out	49
	5.2.	Community Views	
	5.3.	Government Stakeholder Consultation	
	5.4.	Engagement to be Carried out	53
6.	Asses	sment of Impacts	54
	6.1.	Built Form and Urban Design	54
		6.1.1. Concept Works	54
		6.1.2. Stage 1 Works	
		6.1.3. Accessibility	
	6.2.	Environmental Amenity	
	6.3.	Visual Impact	
		6.3.1. Methodology	
		6.3.2. Assessment	
	6.4.	Trees and Landscaping	
		6.4.1. Methodology	
		6.4.2. Assessment	60
		6.4.3. Management Recommendations and Mitigation Measures	60
	6.5.	Ecologically Sustainable Development	60
		6.5.1. Assessment	61
	6.6.	Traffic, Transport and Accessibility	61
		6.6.1. Traffic Generation	61
		6.6.2. On Site Parking	62
		6.6.3. Travel Demand Mitigation Measures	64
		6.6.4. Construction	64
	6.7.	Biodiversity	65
		6.7.1. Methodology	65
		6.7.2. Assessment	66
	6.8.	Noise and Vibration	66
		6.8.1. Methodology	66
		6.8.2. Construction Noise	68
		6.8.3. Operational Noise	69
	6.9.	Ground and Water Conditions	69
	6.10.	Stormwater and Flooding Risk	70
	6.11.	Contamination and Remediation	70
		6.11.1. Assessment	70
		6.11.2. Management Recommendations and Mitigation Measures	71
	6.12.	Waste Management	71
		6.12.1. Construction Waste	71
		6.12.2. Operational Waste	72
	6.13.	Aboriginal Cultural Heritage	72
		6.13.1.1. Management Recommendations and Mitigation Measures	73
	6.14.	Environmental Heritage	74
		6.14.1.1. Assessment	74
	6.15.	Social Impact	75
	6.16.	Infrastructure Requirements and Utilities	76
		6.16.1. Electrical and Telecommunication Services	76
		6.16.2. Hydraulic Services	76
		6.16.3. Fire Services	76
7.	Justifi	cation of the Project	77
	7.1.	Project Design	77
	7.2.	Strategic Context	77
	7.3.	Statutory Context	77
	7.4.	Community Views	
	7.5.	Likely impacts of the Proposal	
	7.6.	Suitability of the Site	79

7.7.	Public Interest
Disclaimer	

Appendix A	SEARs Table
Appendix B	Architectural Plans
Appendix C	Statutory Compliance Table
Appendix D	Mitigation Measures
Appendix E	Cost Summary Report
Appendix F	Design Report
Appendix G	Landscape Plans
Appendix H	Engagement Outcomes Report
Appendix I	Building Code of Australia Compliance Report
Appendix J	Access Assessment Report
Appendix K	Visual Impact Assessment
Appendix L	Arboricultural Impact Assessment Report
Appendix M	ESD Report
Appendix N	Transport and Accessibility Impact Assessment Report
Appendix O	Green Travel Plan
Appendix P	Construction Traffic Management Plan
Appendix Q	BDAR Waiver
Appendix R	Acoustic Assessment Report
Appendix S	Preliminary (Desktop) Site Investigation
Appendix T	Hazardous Materials Register
Appendix U	Civil Engineering Report
Appendix V	Geotechnical Assessment Report
Appendix W	Waste Management Plan
Appendix X	Aboriginal Cultural Heritage Assessment Report
Appendix Y	Statement of Heritage Impact
Appendix Z	Conservation Management Plan
Appendix AA	Social Impact Assessment
Appendix BB	Infrastructure and Utility Assessment
Appendix CC	Survey Plan

Appendix DD SDRP Meeting Minutes

FIGURES

Figure 1 Site Aerial	7
Figure 2 Proposed Development	9
Figure 3 Site Aerial	18
Figure 4 Existing Campus Map	21
Figure 5 Site Photographs	22
Figure 6 Campus topography and order	23
Figure 7 Existing Vehicle Access and Circulation within the Barker campus	24
Figure 8 Extract of Hornsby LEP Heritage Map	25
Figure 9 Surrounding major projects	27
Figure 10 Proposed Development and Indicative Staging Strategy	29
Figure 11 Proposed Concept Envelopes	33
Figure 12 Proposed Stage 1 works	34
Figure 13 Elevation of Aquatics and Tennis Centre from Clarke Road	35
Figure 14 Aquatics and Tennis Centre landscape plan	35
Figure 15 Section of Co-curricular Performing Arts and Exam Centre (right) and Maintenance building	
(left) from Unwin Road	36
Figure 16 3D render of C-Block walkway	37

Figure 17 The Avenue upgrades Landscape Plan	38
Figure 18 Rosewood Walk Landscape Plan	39
Figure 19 On Site Pick up/Drop off arrangements	40
Figure 20 On Site Parking and Pick up/Drop off arrangements	41
Figure 21 Connecting with Country strategy	42
Figure 22 Stakeholder categorisation	49
Figure 23 Aquatics and Tennis Centre East Elevation	55
Figure 24 North-South Section of the Co-curricular Performing Arts and Exam Centre and Maintenance building	56
Figure 25 East-West Section of the Co-curricular Performing Arts and Exam Centre and Maintenance building	56
Figure 26 Shadow Diagrams (Winter Solstice) for concept building envelopes	57
Figure 27 2026 AM Peak Hour Intersection Analysis Results	61
Figure 28 2026 PM Peak Hour Intersection Analysis Results	62
Figure 29 Surrounding Noise Receivers	67

PICTURES

Picture 1 Core Precinct	22
Picture 2 Hornsby Hundred Building	22
Picture 3 Eastern Precinct	22
Picture 4 Lower Campus	22
Picture 5 Topographical map of the Barker Campus	23
Picture 6 Campus hierarchy	23
Picture 7 Proposed pick up/drop off arrangements	40
Picture 8 Proposed Parking Provisions	41
Picture 9 9.00am shadow diagrams	57
Picture 10 10.00am shadow diagrams	57
Picture 11 11.00am shadow diagrams	57
Picture 12 12.00pm shadow diagrams	57
Picture 13 1.00pm shadow diagrams	58
Picture 14 2.00pm shadow diagrams	58
Picture 15 3.00pm shadow diagrams	58

TABLES

Table 1 Applicant Details	12
Table 2 Project Objectives	13
Table 3 Site Details	18
Table 4 DA History	26
Table 5 Project Alternatives	27
Table 6 Project Details	30
Table 7 Proposed Plans	30
Table 8 Indicative Construction Staging and Duration	43
Table 9 Identification of Statutory Requirements for the Project	44
Table 10 Pre-Conditions	45
Table 11 Mandatory Consideration	45
Table 12 Community Feedback	50
Table 13 Government Agency Feedback	52
Table 14 Current and Proposed Parking Provision	63
Table 15 Predicted Construction Noise	68

SIGNED DECLARATION

Project details		
Project name	Alterations and Additions to Barker College	
Application number	SSD-31822612	
Address of the land in respect of which the development	91 Pacific Highway, Hornsby (Lo	ot 100 DP 1262386)
application is made	27-31 Clarke Road (Lot 1 DP 857049)	
	5 Marillian Avenue (Lot 5 DP226796)	
	7 Marillian Avenue (Lot 12 DP200961)	
	30A Unwin Road (Lot 4 DP236907)	
	32A Unwin Road (Lot 6 DP2369	07)
Applicant details		
Applicant name	The Council of Barker College	
Applicant address	91 Pacific Highway, Hornsby 207	77
Details of people by whom this EIS was prepared		
Names and professional	Peter Strudwick, Director	Brigitte Bradley, Senior Consultant
qualifications	Bachelor of Planning (UNSW)	Bachelor of Planning (UNSW)
Address	Level 8, Angel Place, 123 Pitt St	reet, Sydney NSW 2000

Declaration

The undersigned declares that this EIS:

- has been prepared in accordance with Part 8 of the Environmental Planning and Assessment Regulation 2021;
- contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates;
- does not contain information that is false or misleading;
- contains the information required under the Registered Environmental Assessment Practitioner Guidelines; (refer note below)
- addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project;
- identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments;

- has been prepared having regard to the Department's State Significant Development Guidelines -Preparing an Environmental Impact Statement;
- contains a simple and easy to understand summary of the project as a whole, having regard to the
 economic, environmental and social impacts of the project and the principles of ecologically
 sustainable development;
- contains a consolidated description of the project in a single chapter of the EIS;
- contains an accurate summary of the findings of any community engagement; and
- contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.

Note: As per Planning Circular PS 21-005, while the REAP declaration requirement will take effect on 1 July 2022, a six-month transitional period (up to 31 December 2022) will allow EISs to be submitted to the Department without complying with the new REAP declaration requirements. This transitional period will only apply however if the SEARs for the EIS were issued before 1 July 2022 (which applies in this matter)

Signatures

1. wonduck.

Regradley

Brigitte Bradley, Senior Consultant

Peter Strudwick, Director

Date 1 November 2022

GLOSSARY AND ABBREVIATIONS

Reference	Description
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos Containing Material
AEP	Annual Exceedance Probability
AHD	Australia Height Datum
AHIMS	Aboriginal Heritage Information Management System
AIA	Arboricultural Impact Assessment
ANEF	Australian Noise Exposure Forecast
AQIA	Air Quality Impact Assessment
ARI	Average Recurrence Interval
ASS	Acid Sulphate Soils
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conservation Act 2016
BC Reg	Biodiversity Conservation Regulation 2017
BDAR	Biodiversity Development Assessment Report
CBD	Central Business District
CEEC	Critically Endangered Ecological Community
CDA	Concept Development Application
CEMP	Construction Environmental Management Plan
CIV	Capital Investment Value
CMP	Construction Management Plan
COPC	Contaminants of Potential Concern
CTMP	Construction Traffic Environmental Plan
DCP	Development Control Plan
DP	Deposited Plan
DPE	New South Wales Department of Planning and Environment
DSI	Detailed Site Investigation

Reference	Description
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EIS	Environmental Impact Statement
EPA	New South Wales Environment Protection Authority
EPI	Environmental Planning Instrument
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically Sustainable Development
GANSW	Government Architect New South Wales
GFA	Gross Floor Area
GTP	Green Travel Plan
HIPAP	Hazardous Industry Planning Advisory Paper
HIS	Heritage Impact Statement
LAeq	A frequency-weighted Equivalent Continuous Sound Level
LEC	Land Environment Court New South Wales
LEP	Local Environmental Plan
LGA	Local Government Area
LSPS	Local Strategic Planning Statement
MNES	Matters of National Environmental Significance
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NML	Noise Management Level
NRAR	Natural Resource Access Regulator
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
OEMP	Operational Environmental Management Plan
R&H SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
PAD	Potential Archaeological Deposit

Reference	Description
PBP	Planning for Bushfire Protection
PCT	Plant Community Type
PMF	Probable Maximum Flood
POM	Plan of Management
PSI	Preliminary Site Investigation
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
SAII	Serious and Irreversible Impacts
SARs	Commonwealth Supplementary Assessment Requirements
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIA	Social Impact Assessment
SIDRA	Signalised & Unsignalised Intersection Design and Research Aid
Site	91 Pacific Highway, Hornsby (Lot 100 DP 1262386)
	9 Clarke Road (Lot 100 DP1232343)
	27-31 Clarke Road (Lot 1 DP 857049)
	5 Marillian Avenue (Lot 5 DP226796)
	7 Marillian Avenue (Lot 12 DP200961)
	30A Unwin Road (Lot 4 DP236907)
	32A Unwin Road (Lot 6 DP236907)
SSD	State Significant Development
SSDA	State Significant Development Application
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TfNSW	Transport for New South Wales
TIA	Traffic Impact Assessment
UXO	Unexploded Ordnance
VIA	Visual Impact Assessment
VIS	Vegetation Integrity Score

Reference	Description
WCM	Water Cycle Management
WMP	Waste Management Plan
WSUD	Water Sensitive Urban Design
WWTP	Wastewater Treatment Plant

SUMMARY

This Environmental Impact Statement (**EIS**) has been prepared on behalf of The Council of Barker College (**Barker, the applicant**) in support of a State Significant Development Application (**SSDA**) for the Barker College campus. An aerial photograph of the site is provided at **Figure 1**. Through the SSDA process, Barker seeks to enhance existing conditions on the site as well as improve and plan for amenities and facilities to support the current and future student and staff population.

As the proposal is for the purposes of educational establishment with a capital investment value over \$50 million, it is classified as a State Significant Development (**SSD**) under Clause 15(2) of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (**Planning Systems SEPP**).

Figure 1 Site Aerial



Source: Urbis

School Vision and Objectives

Barker has been located on its current site since 1895 with successive generations of leaders and families who have contributed to the current Barker community and campus.

Across Greater Sydney, there is an ever-increasing demand for high-quality co-education particularly for secondary students. Barker's transition to co-education, which commenced in 1975, has seen demand grow and is one of the few non-government co-educational schools in the North Shore of Sydney. Currently, the School is unable to accommodate around 200 students annually wishing to start their secondary schooling at Barker.

Barker is now taking steps in recognising this increasing historic and future student demand, as well as being a good neighbour. In response to this need, the intended outcomes of this SSDA aim to manage increased student demand by:

- Improving the management of student drop off and pick up and minimising traffic queuing caused by drivers waiting to collect students.
- Ensuring no net loss of parking on campus at any time, including during the construction of new facilities.

 Improving pedestrian safety within the campus and to and from public transport, to encourage its use through the implementation of a Green Travel Plan.

Concurrently, the SSDA proposes the following updates to educational facilities for current and future students including:

- Concept approval for a Co-curricular Performing Arts and Exam Centre on the south-western corner of the Unwin Road and Clarke Road intersection.
- Concept approval for an Aquatics and Tennis Centre on the north-western corner of the Unwin Road and Clarke Road intersection, including an indoor pool and roof-top tennis courts.

Feasible Alternatives

The proposed design responds strongly to the site constraints and opportunities and is considered the best response to both the site and surrounding context.

A 'do nothing' approach

Alternatives to the proposal include the 'do nothing' scenario which would not achieve the project objectives. The consequences of not carrying out the project are far reaching and include:

- Failure to accommodate the growing demand for co-education in the North Shore;
- Failure to create a more accessible campus for staff, pupils, and visitors;
- Failure to better utilise the existing school site and buildings; and
- Increased maintenance costs of sub-standard buildings.

Alternative design approach

To ensure that key elements of the Barker campus including significant heritage fabric and the landscape character of the site are retained, significant master planning has been undertaken to identify the siting of the concept building envelopes within the campus.

The design options have been the subject of discussions and suggestions from the project team, Hornsby Shire Council and State Design Review Panel, which have been implemented to progressively improve the overall built form and urban design outcome of the new buildings and outdoor areas.

The Proposal

This SSDA seeks approval for the staged development of Barker, including:

- Concept Proposal for the provision of new and upgraded facilities, including:
 - A Co-curricular Performing Arts and Exams Centre building and associated basement parking on the south-western corner of Unwin Road and Clarke Road (subject to a further detailed approval)
 - A new Maintenance building and associated parking to the south of the Co-curricular Performing Arts and Exam Centre building (subject to a further detailed approval)
 - An Aquatics and Tennis Centre incorporating an indoor pool and roof-top tennis courts and associated basement parking on the north-western corner of Unwin Road and Clarke Road (subject to a further detailed approval)
- Stage 1 detailed works including:
 - Site establishment works including minor demolition of areas of existing C-Block building and associated structures, site preparation and services augmentation.
 - Construction of a new elevated east-west walkway along the southern edge of C-Block and incorporating spectator viewing to Bowman Field.
 - Construction of a north-south pathway connection linking the Rosewood Centre to the Junior School Campus.
 - Construction of a north-south pathway connection along the western edge of Phipps Taylor Field.

- Updates to the existing pick up/off arrangements including rationalisation of the internal Chapel Drive _ / Robert Bland Drive carriageway and parking area associated with the Junior School and updates to the adjacent footpath to improve the traffic flow and pedestrian safety associated with the internal pick-up and drop off system.
- Landscape works to 'The Avenue' roadway (an internal share way) to create a new Civic space for the School and transitioning to the existing east-west site connection on RB Finlay Walk and toward C-Block.
- Increasing the existing cap that applies to total staff and student numbers, up to a maximum of 2850 . students and 480 (FTE) staff using the campus at any one time.

The proposal will be undertaken in accordance with the Architectural Plans prepared by Neeson Murcutt and Neille Architects (NMN) at Appendix B. The proposed site plan for Concept and Stage 1 works is provided at Figure 2.

Figure 2 Proposed Development



Source: Neeson Murcutt + Neille

STAGE 1

Consultation

Community and stakeholder engagement have been undertaken by Urbis and the Project Team in the preparation of the SSDA. This includes direct engagement and consultation with:

- Adjoining landowners and occupants;
- Government, agency and utility stakeholders including DPE and Transport for NSW;
- State Design Review Panel;
- Hornsby Shire Council; and
- Barker school community.

Since initial engagement with the community in November 2021, the engagement for the Barker proposed masterplan has reached around 2,200 people in the community. A total of only 15 questions and comments were submitted during the general community session.

The outcomes of the community and stakeholder engagement have been incorporated into the proposed development and are discussed in detail at **Section 5** of this EIS.

Justification of the Project

This EIS assesses the development as proposed with regard to relevant planning instruments and policies and outlines the mitigation measures to ensure the project does not result in unreasonable nor adverse environmental effects. Additionally, the proposed development satisfies the Secretary's Environmental Assessment Requirements (SEARs) issued for the project.

The key issues for all components of the project identified in the SEARs have been assessed in detail, with specialist reports underpinning the key findings and recommendations identified in the Assessment of Impacts in **Section 6**. It has been demonstrated that for each of the likely impacts identified in the assessment of the key issues, the impact will either be positive or can be appropriately mitigated.

The proposal represents a positive development outcome for the site and surrounding area for the following reasons:

The proposal is consistent with State and Local strategic planning policies:

The proposal is consistent with the relevant goals and strategies contained in:

- Greater Sydney Region Plan: A Metropolis of Three Cities
- Our Greater Sydney 2056: North City District Plan
- Hornsby Local Strategic Planning Statement (LSPS)
- Future Transport Strategy
- State Infrastructure Strategy 2022-2042
- Better Placed: An integrated design policy for the built environment of NSW
- The proposal satisfies the applicable State and Local development controls:

The proposal is permissible with consent and meets the relevant statutory requirements of the relevant environmental planning instruments, including

- State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)
- State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP)
- State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)
- State Environmental Planning Policy (Industry and Employment) 2021 (Industry and Employment SEPP)

- State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP)
- Hornsby Local Environmental Plan 2012 (HLEP 2013)
- The design responds appropriately to the opportunities and constraints presented by the site:
 - It is acknowledged that the site contains multiples local heritage items under HLEP and is located within a Heritage Conservation Area (HCA). Notwithstanding this heritage listing, the proposed development remains sympathetic to the heritage significance of the site.
 - The benefits associated with improving general learning and extra curriculum teaching facilities for the functional requirements of staff and students;
 - The limited environmental impacts to the sensitive receivers located near the site; and
 - The significant benefits it provides in regard to accessible internal building connections across the campus and connection to adjacent buildings
- The proposal is highly suitable for the site:
 - The site is entirely suitable for the development of the proposal as it continues the use of the site as an educational establishment as identified within Schedule 1 of the Planning System SEPP.
 - The proposal accommodates the School's changing educational needs, providing new educational facilities and improving existing traffic arrangements for current and future students.
 - The site is highly accessible and can be accessed by students, staff and visitors by trains, walking, and buses. The site is located within the public transport catchment and close proximity to two train stations, Hornsby and Waitara. Traffic measures have also been implemented to ensure the proposed increase to current student and staff numbers can be maintained on site with no undue impacts on surrounding residential properties or the surrounding road network.
 - The proposal maintains existing car parking numbers within the campus. Upgrades are also
 proposed to improve existing pick up and drop off infrastructure within the campus.
 - The current traffic modelling indicates that the local road network could accommodate the additional
 post-development traffic volumes associated with the proposed works and increase in students and
 staff. The implementation of the Green Travel Plan and Operational Traffic and Access Management
 Plan will assist in the management of traffic associated with Barker.
- The proposal is in the public interest:
 - The proposal has been prepared having regard to Hornsby Shire Council's planning policies and generally complies with the aims and objectives of the controls for the site.
 - Subject to the various mitigation measures recommended by the specialist consultants as summarised in Appendix D, the proposal does not have any unreasonable environmental or social impacts on adjoining properties or the public domain.
 - The site is well serviced by public transport and various walking routes, provides sufficient staff
 parking and improved pick up and drop off arrangements to improve the overall traffic and parking
 condition of the site and surrounding area.
 - The proposal will result in the development of state of art educational facilities for staff and students.
 - The proposal has been designed to make a positive contribution to the overall built form of the site, having regard to landscaping, streetscape, topography and the heritage significance of the Barker campus.
 - The proposal is sympathetic to the character of the surrounding neighbourhood and respects visual privacy to neighbouring residential dwellings.

In view of the above, it is considered that this SSD Application has significant merit and should be approved subject to the implementation of the mitigation measures described in this report and supporting documents.

1. INTRODUCTION

This section of the report identifies the applicant for the project and describes the site and proposed development. It outlines the site history and feasible alternatives explored in the development of the proposed concept, including key strategies to avoid or minimise potential impacts.

1.1. APPLICANT DETAILS

The applicant details for the proposed development are listed in the following table.

Table 1 Applicant Details

Descriptor	Proponent Details
Full Name(s)	The Council of Barker College
Postal Address	91 Pacific Highway, Hornsby 2077
ABN	18 620 620 356
Nominated Contact	David Porter, Chief Operating Officer – Barker College
	Brigitte Bradley, Senior Consultant – Urbis

1.2. PROJECT DESCRIPTION

This EIS is submitted to the Department of Planning and Environment (**DPE**) on behalf of the Barker and in support of an application for SSD-31822612 for the Barker campus located at 91 Pacific Highway, Hornsby.

The SSDA seeks consent for the staged development of Barker, including:

- Concept Proposal for the provision of new and upgraded facilities, including:
 - A Co-curricular Performing Arts and Exams Centre building and associated basement parking on the south-western corner of Unwin Road and Clarke Road (subject to a further detailed approval)
 - A new maintenance building and associated parking to the south of the Co-curricular Performing Arts and Exam Centre building (subject to a further detailed approval)
 - An Aquatic and Tennis Centre incorporating an indoor pool and roof-top tennis courts and associated basement parking on the north-western corner of Unwin Road and Clarke Road (subject to a further detailed approval)
 - Stage 1 detailed works (as outlined below)
- Stage 1 detailed works including:
 - Site establishment works including minor demolition of areas of existing C-Block building and associated structures, site preparation and services augmentation.
 - Construction of a new elevated east-west walkway along the southern edge of C-Block, incorporating spectator viewing to Bowman Field, and associated works to improve accessibility.
 - Landscape works to 'The Avenue' roadway (an internal share way) to create a new Civic space for the School and transitioning to the existing east-west site connection on RB Finlay Walk and toward C-Block.
 - Construction of a north-south pathway connection linking the Rosewood Centre to the Junior School Campus.
 - Construction of a north-south pathway connection along the western edge of Phipps Taylor Field.
 - Updates to the existing pick up/off arrangements including rationalisation of the internal Chapel Drive / Robert Bland Drive carriageway and parking area associated with the Junior School and updates to

the adjacent footpath to improve the traffic flow and pedestrian safety associated with the internal pick-up and drop off system.

Increasing the existing cap that applies to total staff and student numbers, up to a maximum of 2850 students and 480 (FTE) staff using the campus at any one time.

The key objectives for the proposed development and the way in which these have been achieved are summarised in **Table 2**.

Table 2 Project Objectives

Project Objective	Proposed Development		
Protect and maintain the identified heritage fabric within the site.	The northern frontage of the site along the Pacific Highway is considered the predominant heritage precinct within the Barker campus.		
	The concept design locates the proposed larger scale buildings further away from this finer-grained historic core, hence maintaining the site's heritage significance.		
	 Landscaping is retained where possible with additional landscaping introduced to build positive connections for students, staff and visitors. 		
Improve pedestrian connectivity across the site (given the physical scale of the campus)	Pedestrian connectivity is key to improving the functionality of the Barker campus. Circulation both within buildings as well as between them is critical to campus planning. The steepness of the campus generally, is a challenge to universal access.		
	Overall, interventions have been considered which:		
	 Capitalise on strategic nodes for vertical circulation to improve universal access 		
	 Connect buildings to minimise time spent travelling between classes 		
	 Provide additional weather protection 		
	Recognise circulation as part of the social environment of the school by integrating pathways and providing informal meeting places		
Consolidate sports and 'destinational' activities to the southern portion of the campus	The south-eastern corner of the campus (the Clarke Road / Unwin Road intersection) is currently under-utilised with great potential to improve public address.		
	The travel distance from the core learning areas to the Clarke Road intersections requires any facilities here to be 'destinational'.		
	 Activities, events, visits within the destinational area of the campus are considered special and unique from the standard day-to-day learning experiences on campus. As such, the design of these areas supports co-curricular activities. 		

Project Objective	Proposed Development
Increase the existing student and staff capacity for the Barker Campus.	Current educational facilities on site are considered capable of meeting the increased number of students and staff. To manage the impacts of the increased student demand on the surrounding neighbours, the following measures are proposed:
	 Improve the management of student drop off and pick up and pedestrian safety within the campus.
	 Ensure there is no net loss of parking on the campus at any time, including during the construction of new facilities.
	 Implement a Green Travel Plan.

A map of the site in its regional setting is provided as **Map 1.**

Map 1 Regional Context



Source: Urbis

1.3. PROJECT BACKGROUND

Barker College was founded in 1890 in Kurrajong Heights and relocated to its current Hornsby campus, on the lands of the Dharug people, in 1895. During recent years, Barker has significantly invested in the redevelopment of its Campus to provide the very best facilities for teaching and learning.

1.3.1. Existing School Population Cap

Under the banner of "Inspiring Tomorrow", Barker is continuing to plan for its future with various approvals over the years for upgrades to existing buildings to provide modern teaching facilities.

A major constraint to the future growth of Barker is a student and staff capacity limit introduced in 2017 as part DA/1194/2016. This DA (approved by Hornsby Council) was for the establishment of the Prep School and was described as the; '*Demolition of basketball and tennis courts and construction of an educational establishment and child care centre in two stages*'.

Specifically Condition 60 of DA/1194/2016 identified the following student and staff capacity:

A maximum of 2,420 students are to be enrolled at Barker College and a maximum of 339 equivalent full time staff are to be employed at Barker College. This includes a child care centre (Pre Kindergarten) which must accommodate a maximum of 40 children at any one time. Any increase to these student or staff numbers is not to occur without prior development consent.

As part of the assessment of this application, Hornsby Shire Council requested confirmation of student numbers. In its response Barker confirmed that the enrolled student numbers in 2017 were approximately 2,150. Barker further confirmed at the time that the projected student increase (due to the move to full co-education and through general demand from within the community) was proposed to rise to approximately 3,100 over the next 10 years.

Given the lack of co-educational independent schools in the locality (and indeed the broader metropolitan area) and the strong demand associated with quality education offered at Barker. Barker is now taking steps in harmonising their student and teacher cap numbers that recognise both recent growth as well as growth projected beyond 2022. It is important to note that this increased figure will involve 2,850 students (not the 3,100, as Barker initially advised Council).

1.3.2. School Hours

The current School bell times are staggered and split into the following three groups:

- Pre-K to Year 2: 8:25am to 2:45pm
- Years 3 to 6: 8:30am to 3:00pm
- Years 7 to 12: 8:20am to 3:20pm

This approach aims to stagger traffic flow during peak pick up and drop off periods.

2. STRATEGIC CONTEXT

This section of the EIS describes the way in which the proposal addresses the strategic planning policies relevant to the site. It identifies the key strategic issues relevant to the assessment and evaluation of the project, each of which are addressed in further detail in **Section 7** of this EIS.

2.1. PROJECT JUSTIFICATION

The proposed development is aligned with the State, District and Local strategic plans and policies applying to the site as outlined below.

2.1.1. NSW State Priorities

In June 2019, the NSW State Priorities were replaced with 14 Premier's Priorities, which represent the Government's commitment to making a significant difference to enhance the quality of life of the people of NSW. The proposed development of Barker aligns with the following priorities:

Lifting education standards – bumping up education results for children

The proposal will provide state-of-the-art educational facilities which will contribute to the improvement of educational results for Barker students and therefore contribute to State-wide improvement of educational standards.

2.1.2. Greater Sydney Region Plan: A Metropolis of Three Cities

The *Greater Sydney Region Plan* (**Region Plan**) provides the overarching strategic plan for growth and change in Sydney. It is a 20-year plan with a 40-year vision that seeks to transform Greater Sydney into a metropolis of three cities - the Western Parkland City, Central River City and Eastern Harbour City. It identifies key challenges facing Sydney including increasing the population to eight million by 2056, 817,000 new jobs and a requirement of 725,000 new homes by 2036.

The Region Plan includes objectives and strategies for infrastructure and collaboration, liveability, productivity and sustainability. As mentioned in other parts of the EIS, temporary jobs will be provided in manufacturing and construction particularly over the construction period with additional permanent jobs associated with the additional staff at Barker. The new School facilities will also provide improved amenity for existing and future School staff.

A key objective of the Region Plan is creating 30-minute cities within Greater Sydney, by increasing access through different modes of transport and providing a rich mix of uses and amenities across the metropolitan area. Education facilities are considered as vital infrastructure in the city. The proposal seeks to improve the facilities of an existing school within an established neighbourhood. By doing so, the proposal will continue to contribute to this vibrant mix of people and activities within Hornsby, as well as enhance this piece of social infrastructure.

2.1.3. Our Greater Sydney 2056: North City District Plan

The *North District Plan* (**District Plan**) is a 20-year plan to manage growth in the context of economic, social and environmental matters to implement the objectives of the Greater Sydney Region Plan. The intent of the District Plan is to inform Local strategic planning statements and Local environmental plans, guiding the planning and support for growth and change across the district.

The District Plan contains strategic directions, planning priorities and actions that seek to implement the objectives and strategies within the Region Plan at the district-level. The Structure Plan identifies the key centres, economic and employment locations, land release and urban renewal areas and existing and future transport infrastructure to deliver growth aspirations.

The planning priorities and actions likely to have implications for the proposed development are listed and discussed below:

- Planning Priority 1: Planning for a city supported by infrastructure.
- Planning Priority 3: Providing services and social infrastructure to meet people's changing needs.
- Planning Priority 4: Fostering healthy, creative, culturally rich and socially connected communities.

- Planning Priority 6: Creating and renewing great places and local centres and respecting the District's heritage.
- Planning Priority 18: Delivering high quality open space.

The proposal will support the ongoing operation of Barker and provide high quality facilities for the use of staff, students and the local community.

2.1.4. Hornsby Local Strategic Planning Statement

The *Hornsby Local Strategic Planning Statement* (LSPS) sets out a 20-year vision for land use; the special character and values that are to be preserved; shared community values; and how Hornsby Shire Council will manage growth and change.

Education and Training is one of the three largest industry sectors in the Hornsby Shire. A key aim of the LSPS is to ensure that health and education services within Hornsby continue to adequately serve the Community into the future and are a catalyst for local employment growth.

The LSPS also identifies the opportunity to improve public accessibility to school halls, performing arts centres and other facilities throughout the Shire.

The proposal will improve physical access across the campus for all users. It also provides facilities that respond to the emerging and future needs of the School as well as opportunities for community use. Further, the construction of these works provides opportunities for local employment.

2.1.5. Future Transport Strategy

The *Future Transport Strategy 2061* (**Transport Strategy**), prepared by TfNSW, sets out a transport vision, directions and outcomes framework for NSW to guide transport investment and policy.

The aim of Transport Strategy is to connect customers and communities with a safe, reliable, sustainable and integrated transport system. The Future Transport Strategy was developed with a strong focus on financial sustainability and greater emphasis on strategic direction rather than delivering an updated infrastructure list.

The subject site benefits from being near the two train stations (Hornsby and Waitara) and bus stops, which are within five to ten minutes' walk of the site, as well as the School's private bus services. The site is located within a highly accessible location and is well serviced by public transport. As such, the proposal will assist in TfNSW's vision to optimise the use and efficiency of existing infrastructure and encourage the use of public transport to access employment, education, social and leisure activities.

2.1.6. State Infrastructure Strategy 2022-2042

State Infrastructure Strategy 2022-2042 (**Infrastructure Strategy**) sets out Infrastructure NSW's independent advice on the current state of NSW's infrastructure and the needs and priorities over the next 20 years. It looks beyond the current projects and identifies policies and strategies needed to provide infrastructure that meets the needs of a growing population and a growing economy.

The Infrastructure Strategy acknowledges that access to a skilled and healthy workforce through the provision of education and health services is essential for industry to attract and retain the right talent. The proposed development reflects the aims of the Infrastructure Strategy by improving the Barker's existing facilities and outdoor play areas, enabling the school to provide a better learning environment for its pupils.

2.1.7. Better Placed

In August 2017, the Government Architect for NSW (**GANSW**) released *Better Placed* which seeks to establish priorities and objectives that shape design to create well-designed built environments. It presents a collection of priorities and objectives that aspire to shape design that addresses key challenges and directions and creates good design outcomes for NSW.

The Design Report prepared by Neeson Murcutt + Neille (**Appendix F**) responds to the Design Guide for School and discuss how the proposal has adopted the seven objectives into the design process.

By adopting the objectives of the Better Placed policy, the development responds to the key challenges and directions for NSW.

2.2. KEY FEATURES OF SITE AND SURROUNDS

The site is located at 91 Pacific Highway, Hornsby within the Hornsby local government area (LGA). As illustrated in **Figure 3** the site incorporates multiple lots which are identified in **Table 3** below.

Figure 3 Site Aerial



Source: Urbis

Table 3 Site Details

Descriptor	Site Details
Street Address	91 Pacific Highway, Hornsby (Lot 100 DP 1262386)
	9 Clarke Road (Lot 100 DP1232343)
	27-31 Clarke Road (Lot 1 DP 857049) 5 Marillian Avenue (Lot 5 DP226796)
	7 Marillian Avenue (Lot 12 DP200961)
	30A Unwin Road (Lot 4 DP236907)
	32A Unwin Road (Lot 6 DP236907)
Site Area	168,462sqm

2.2.1. Surrounding Context

The context of the surrounding area is characterised by:

- North: The site is bounded to the north by the Pacific Highway, which includes a mix of fine grain heritage buildings and light industrial development located along the southern frontage and additional commercial uses and access to Waitara Station to the north-east. Further north is Hornsby Station which is located within the Hornsby town centre.
- East: The site is bounded by Unwin Road to the east which is characterised by low density residential development with pockets of medium density residential development and commercial development towards the Pacific Highway. St Leo's Catholic College is located on the south-east boundary of the site consisting of more significantly scaled institutional buildings.
- **South:** Clarke Road forms the southern boundary of the main campus with the former Preparatory School located on the southern street frontage. Beyond the school buildings, the area is characterised by low density residential dwellings.
- West: The site is bounded to the west by College Crescent which provides access to internal roadways within the campus. The road generally runs parallel to the Northern Rail line with pockets of higher density residential in the intersection between the rail line to the west, College Crescent to the east and the Pacific Highway to the north.

2.2.2. Surrounding Road Network

The site is surrounded by a network of State, Regional and Local roads, including Pacific Highway, College Crescent, Unwin Road and Clarke Road.

Pacific Highway

Pacific Highway is a State road, aligned generally in the north-south direction along the central east coast of Australia. This road travels along the northern boundary of the site. It is generally configured as a two-way road with six travel lanes. Kerbside parking is permitted on some sections of both sides of the road, across a 17.1m wide road carriageway (kerb to kerb).

The road has a posted speed limit of 60km/h, with 40km/h school zone restrictions that apply between 8:00am and 9:30am and between 2:30pm and 4:00pm Monday to Friday.

College Crescent

College Crescent is a Regional road, aligned in the north-south direction between Pacific Highway and Clarke Road. This road travels along the western boundary of the site. It is generally configured as a twoway road with two travel lanes and two kerbside parking lanes, across a 11.4m wide road carriageway (kerb to kerb). College Crescent provides access to Robert Bland Drive and Chapel Drive, an internal road network used for current pick up/drop off arrangements within the campus.

No speed limit signage is provided along College Crescent, which indicates a default speed limit of 50 km/h. A 40km/h school zone restriction applies between 8:00am and 9:30am and between 2:30pm and 4:00pm Monday to Friday.

Unwin Road

Unwin Road is a Local road, aligned in the north-south direction between Pacific Highway and Edwards Road. This road travels along the eastern boundary of the site. It is generally configured as a two-way road with two travel lanes and two kerbside parking lanes, across an 8.8m wide road carriageway (kerb to kerb).

The road has a posted speed limit of 50km/h, with 40km/h school zone restrictions that apply between 8:00am and 9:30am and between 2:30pm and 4:00pm Monday to Friday.

Clarke Road

Clarke Road is a Local road, aligned in the east-west direction between Yardley Avenue and a cul-de-sac. This road divides the site into two sections. It is generally configured as a two-way road with two travel lanes. Kerbside parking permitted on some sections of both sides of the road, across a 7.9m wide road carriageway (kerb to kerb).

The road has a posted speed limit of 50km/h, with 40km/h school zone restrictions that apply between 8:00am and 9:30am and between 2:30pm and 4:00pm Monday to Friday.

2.2.2.1. On Street Parking

On-street parking is present on all surrounding roads within the vicinity of the site. The majority of the onstreet parking are unrestricted throughout the day, whilst some of the areas have no stopping restrictions during specific time periods particularly along the Pacific Highway.

The site is also highly serviced by car share providers with multiple pods located within close proximity of the campus.

2.2.2.2. Public and Active Transport Infrastructure

The site is generally served by bus services operated by Sydney Buses and two local train stations. The nearest railway station is Waitara Station which is located approximately 450 metres north-east of the site, and Hornsby Station which is approximately 800 metres north of the site. Both train stations are located on the North Shore line. Multiple bus stops are also located on Pacific Highway, Yardley Avenue, College Crescent, Neutral Road and Pretoria Parade, within in a 400 metre radius from the school.

Well established pedestrian facilities are provided within the immediate vicinity of the site. Sealed pedestrian footpaths are provided along all site frontages, with dedicated pedestrian facilities provided along Pacific Highway, Unwin Road, College Crescent and Clarke Road. Signalised crossings, refuge islands and pedestrian (zebra) crossings are present within the site vicinity with a signalised pedestrian crossing at the intersections of Pacific Highway/College Crescent and Pacific Highway/Unwin Road predominantly used during school peak drop-off and pick-up times. Partial off-road cycle routes are also located along College Crescent and Yardley Avenue but are not well connected to a larger cycle network.

2.2.3. Barker College

The campus has two distinct parts – north and south of Clarke Road – and the opportunity for strong presence on Clarke Road. The main campus to the north occupies almost a complete block. It includes The Avenue, recently purchased from Hornsby Shire Council, and enjoys unbroken frontages to Unwin Road, Clarke Road and College Crescent. The School's primary and historic frontage is to the Pacific Highway and is referenced as the heritage precinct.

The campus south of Clarke Road accommodates the former Preparatory School, several houses occupied for school and residential purposes as well as a Maintenance building. The Preparatory School has been relocated to the northern portion of the site. Its distance from the main campus and location across a road have identified the potential use as support and 'destinational' functions rather than primary classroom spaces.

Figure 4 Existing Campus Map



Source: Neeson Murcutt + Neille

Figure 5 Site Photographs



Picture 1 Core Precinct



Picture 2 Hornsby Hundred Building



Picture 3 Eastern Precinct

2.2.4. Topography and Landscape

Topography and landscaped character are both defining characteristics of the Barker campus. The site is significantly sloped with an overall 25 metre fall from the north-west to south-east corner of the main Campus block, and over 10m fall south of Clarke Road. This is illustrated in **Figure 6** below.

The current landscaped character of the campus has clear connections to its topography, in particular the main historic precinct to the north and associated formal gardens and courtyards, and the vast green spaces and sports fields – Barker War Memorial Oval, Phipps Field, Peter Taylor Field, Rosewood Field – benched into the hillside through the centre of the site, creating distinction between an upper and lower Campus.

Given the scale and topography of the site, the main campus has an essential order – a green cruciform that defines the four precincts and four primary public entry points:

- Northern entry (Pacific Highway) also known as the heritage precinct, represents longevity, dependability and tradition. The proposed concept design protects the fine grain heritage zone of the campus.
- Eastern entry (Unwin Road) is the new face defined by the Rosewood Centre
- Western entry (College Crescent) is significant as the daily entry for pick-up and drop-off arrangements
- Southern entry (College Crescent / Clarke Road) addresses the Junior School. Given its distance from core learning areas, future development within the southern portion of the campus should consider 'destinational' facilities to improve student movement across the campus.

The steepness of the Campus is an acknowledged challenge to providing universal access. A key priority for Barker is to provide safe, comfortable and convenient pedestrian movement across the Campus while safely and effectively managing the vehicular drop-off and pick-up of students.



Picture 4 Lower Campus

Figure 6 Campus topography and order



Picture 5 Topographical map of the Barker Campus

Picture 6 Campus hierarchy

Source: Neeson Murcutt + Neille

2.2.5. Vehicle Access Arrangements and Traffic Circulation

The campus currently provides ten vehicle access points which are located off College Crescent, Pacific Highway, Unwin Road, and Clarke Road. The locations of existing vehicle access gates are shown in **Figure 7** and further described below.

The two driveways located off College Crescent (D3 – Centenary Gate and D4 – Aquatic Gate) provide access for School drop-off and pickup activities along Robert Bland Drive and Chapel Drive, located within the School site.

During the drop-off and pick-up times, entry via D3 is closed off, allowing only one-way circulation from D4 (entry) to D3 (exit). Robert Bland Drive and Chapel Drive are both divided into two lanes, to one lane for Primary and Preparatory School drop-off / pick-up and one lane for Senior School drop-off / pick-up. Traffic cones are provided to separate the two circulation lanes during drop-off and pick up times. On approach to the Junior School drop off the two lanes merge into one lane due to the placement of a boom gate and associated infrastructure which reduces the available road width and impacts the functionality of the current pick up/drop off arrangements.

The remaining driveways generally serve as access points for on-site parking areas which are mainly provided for staff use. The site currently provides a total of 487 car parking spaces. On-site parking facilities are mainly for staff use with no dedicated student parking facilities located within the campus.

Dedicated access is provided to the Maintenance facility located along Unwin Road. This facility is used as a central delivery area for the campus, which are then distributed to School staff, as necessary.

Figure 7 Existing Vehicle Access and Circulation within the Barker campus



Source: TTPP

2.2.6. Heritage Conservation

The subject property contains a number of items listed as being of local heritage significance on Schedule 5 of the *Hornsby Local Environmental Plan 2013* (refer to **Figure 8**), including:

- Item 465 Barker College Junior School, College Crescent, Hornsby
- Item 501 Barker College group of buildings, grounds and gate, 91 Pacific Highway, Hornsby
- Item 782 Barker College Centenary Design Centre, McCaskill Music Centre and Development Office, 91 Pacific Highway, Hornsby (2, 4, 6 and 8-10 The Avenue and 2-6 Unwin Road, Hornsby)

The subject site is also located within the 'Barker College Heritage Conservation Area' (Item C1).

The NSW Heritage Database contains the following Statement of Significance for the Barker College Heritage Conservation Area:

'Group of mostly Inter-War period brick school buildings. Distinguished by unity achieved through consistent scale style and use of materials. Of interest also as individual examples of period architecture. Social and historical significance as a record of Barker College's development at Hornsby. Conservation plan should be prepared for the whole group.'

Given the heritage significance of the site, multiple Conservation Management Plans have been prepared for the site including:

- Conservation Management Plan prepared by Paul Davies Pty Ltd in October 2015
- Conservation Management Plan prepared by Meredith Walker (Heritage Futures), Barbara van den Broek (Landscape Architect) and Katrina Proust (Historian and Heritage Consultant), in 1998

As part of the SSDA assessment, NBRS have prepared an updated and comprehensive history of the site and prepared a holistic Conservation Management Plan (**Appendix Z**) which has been considered in the development of the current proposal.

The Barker campus is also located in the vicinity of a number of other listed items, including:

- Item 778 House, 1A Clarke Road, Waitara
- Item 779 House and garden, 27-31 Clarke Road, Hornsby

Figure 8 Extract of Hornsby LEP Heritage Map



Source: Urbis

2.3. DEVELOPMENT HISTORY

The recent planning history for the site as identified by the Hornsby Council's DA tracker is detailed in **Table 4**.

Table 4 DA History

DA Reference	Description of Development	Decision
DA/1194/2016	Demolition of basketball and tennis courts and construction of an educational establishment and childcare centre in two stages. This project has been fully developed.	Approved by Hornsby Shire Council
DA/1015/2020	Extension of the approved cafeteria development involving the construction of 2 storeys above the level 1 cafeteria for the purpose of providing a general maths and student hub for students and staff. Construction of the project has begun and is due for completion in early 2023.	Approved by the Sydney North Planning Panel

2.4. CUMULATIVE IMPACTS WITH FUTURE PROJECTS

The site is located within the suburb on Hornsby. In close proximity to the site are multiple other schools including St Leo's Catholic College, Hornsby Girls High School, Hornsby South Public School and Our Lady of the Rosary Catholic Primary School.

At the time of preparing the EIS, there were no other approved or likely future development applications (local or SSD) or State Significant Infrastructure (SSI) projects which may be relevant in the cumulative impact assessment. It is noted an SSDA for Hornsby Hospital Redevelopment (SSD-8647) was approved by DPE on 30 May 2018. The location of the Hornsby Hospital is shown in in **Figure 9**.

Given the Hospital and Barker College are distinctly separated in distance (by approximately 2 kilometres), and by significant barriers such as the Pacific Highway and main Northern Rail line; and also that each site does not rely upon common local access roads, it is considered that any cumulative impacts associated with the future redevelopment of Hornsby Hospital together with the Barker Project, will be minimal.

2.4.1. Hornsby Town Centre

Hornsby Shire Council are currently undertaking a master planning process and traffic and transport analysis to facilitate the revitalisation of the Hornsby Town Centre to make it a more liveable, green and accessible centre for the community.

This project involves strengthening of economic, employment and housing capacities of the town centre and enhancing and enhance its public domain, liveability, accessibility, safety, environmental sustainability and visual appeal through quality design and landscape outcomes. The scope of this project is shown in **Figure 9**.

At time of preparation of this EIS, the draft Hornsby Town Centre Masterplan was on public exhibition until 30 September 2022. The project is likely to result in positive outcomes for the town centre and the surrounding community including Barker. Specifically, the project includes the following recommendations which may influence the traffic and transport operations of Barker:

- A new pedestrian connection across the rail link providing additional access to the northern end of Hornsby Station,
- Reconfiguration of the existing bus interchange to improve access on both sides of the rail line
- Enhancements to the public domain and new pedestrian and cycling connections

Figure 9 Surrounding major projects



Source: Urbis

The potential cumulative impacts of the project are addressed in **Section 6** of the EIS in accordance with the DPE *Assessing Cumulative Impacts* guidelines.

2.5. FEASIBLE ALTERNATIVES

Clause 192(c) of the *Environmental Planning and Assessment Regulation 2021* (the Regulation) requires an analysis of any feasible alternatives to the proposed development, including the consequences of not carrying out the development.

Barker identified three project alternatives which were considered in respect to the identified need for the to the proposed development, including the consequences of not carrying out the development. Each of these options is listed and discussed in the following table.

Table 5 Project Alternatives

Option	Assessment
Option 1 – Do Nothing	Alternatives to the proposed concept plan include the 'do nothing' scenario which would not achieve the project objectives. The consequences of not carrying out the project are far reaching and include:
	 Failure to create a more accessible campus for staff, pupils, and visitors;
	 Failure to better utilise the existing school site and buildings;

Option	Assessment		
	 Increased maintenance costs of degraded sub-standard buildings; and 		
	 Failure to accommodate the growing demand for co-educational Secondary School in the Hornsby LGA. 		
Option 2 – Alternative	The proposed development remains within the existing Barker campus which has been located on its current site since 1895.		
Location	The Barker campus is a locally listed heritage item and is also located within a Heritage Conservation Area. Site masterplanning has been carried out to ensure that buildings with heritage significance are retained. To maintain the heritage character of the site, contemporary buildings are recommended to be located along the eastern and southern site boundaries.		
	Updates to pedestrian and vehicle access improve existing facilities on site including pick up and drop off arrangements and can be taken as discrete packages of work to minimise impacts on the operation of the School. An alternative location for pick up/drop off would result in a major disruption of existing arrangements on site and the surrounding road network.		
	Given the destinational quality of both the Co-curricular Performing Arts and Exam Centre and the Aquatic and Tennis Centre, the new facilities have also been located away from key learning facilities. An alternative location on campus is also likely to result in the loss of existing educational facilities or sports fields.		
	The location of the new Aquatic and Tennis Centre retains the current use of tennis courts and replaces an existing facility located in a more constrained location to create a sports precinct with connections to both the Rosewood Centre and adjacent sports fields. While there is an existing Aquatic Centre within the Barker campus, this facility has reached the end of its useful life and does not include facilities for learning to swim or aquatic activities such as water polo. Consideration of the refurbishment of this facility was given, however the current location is within a constrained area of the site which would function better for teaching spaces.		
	The location of the new Co-curricular Performing Arts and Exam Centre replaces houses which do not meet the emerging and future needs of the School, as well as the former Preparatory School which has since been relocated into the Junior School, north of Clarke Road. This location also allows upgrades to occur to the existing maintenance facility to improve the relationship with neighbouring properties to the south.		
Option 3 – Alternative	The current design has been proposed to meet the specific needs of Barker as described in Section 3.2 of this report.		
Design	The design has been the subject of discussions and suggestions from the project team, Hornsby Shire Council and State Design Review Panel, which have been implemented to progressively improve the future built form, connectivity and overall urban design outcome of the Campus.		

3. **PROJECT DESCRIPTION**

The following sections of the EIS summarise the key numeric components of the proposed development and describe the demolition, site preparation, construction and operational phases in further detail.

3.1. **PROJECT OVERVIEW**

The proposal is lodged as a concept development application under the provisions of Division 4.4 of the Environmental Planning and Assessment Act and seeks for consent for various concept proposals across the site. The proposal also includes detailed development proposals forming the first stage of the development. A site plan identifying the proposed location of both concept and Stage 1 works is provided below in **Figure 10**.

Figure 10 Proposed Development and Indicative Staging Strategy



Source: Neeson Murcutt + Neille

Table 6 Project Details

Descriptor	Project Details
Project Area	The site has a total area of 168,462sqm.
Site Description	 91 Pacific Highway, Hornsby (Lot 100 DP 1262386) 9 Clarke Road (Lot 100 DP1232343) 27-31 Clarke Road (Lot 1 DP 857049) 5 Marillian Avenue (Lot 5 DP226796) 7 Marillian Avenue (Lot 12 DP200961) 30A Unwin Road (Lot 4 DP236907) 32A Unwin Road (Lot 6 DP236907)
Capital Investment Value (CIV)	\$121,480,394 (excl. GST)
Student and Staff Capacity	The proposal seeks to increase the current student capacity to 2850 students and 480 FTE staff using the campus at any one time.
Construction Hours	 Construction activities will be carried out in accordance with the following work hours: Monday to Friday: 7.00am to 5.00pm Saturday: 7.00am to 5.00pm Sunday and Public Holidays: No work
Jobs	 Concept Works: 85 construction jobs and no change to operational jobs Stage 1: 25 construction jobs and no change to operational jobs

A copy of the architectural drawings prepared by Neeson, Murcutt + Neille is provided as **Appendix B** and has been split into Concept Plans and Stage 1 Plans.

The Architectural Plans provide indicative reference schemes for the concept envelopes. Consent is specifically sought for the following drawings outlined in **Table 7** below.

Table 7 Proposed Plans

Drawing No.	Drawing Title	Rev
Stage 1 works		
DA1.01	Cover Sheet + Site Plan	01
DA1.02	Circulation Diagram	01
Drawing No.	Drawing Title	Rev
---------------	-------------------------	-----
DA2.01	Level 1 Demolition Plan	01
DA2.02	Level 2 Demolition Plan	01
DA2.03	Level 3 Demolition Plan	01
DA2.11	Level 1 Plan	01
DA2.12	Level 2 Plan	01
DA2.13	Level 3 Plan	01
DA3.01	Elevation + Sections	01
DA4.01	Materials	01
Concept Works		
DA11.01	Concept Envelopes	01
DA11.02	Concept Elevations – AQ	01
DA11.03	Concept Elevations – AQ	01
DA11.04	Concept Elevations – PA	01
DA11.05	Concept Elevations – PA	01

3.1.1. Concept Development

Through the SSDA process, Barker seeks to invest in, enhance and expand existing amenities and facilities to support the current and future student population. The concept proposal sets out the maximum building envelopes for future facilities within the Barker campus. The concept proposal will establish the planning and development framework from which any future development application will be assessed against.

Pursuant to Section 4.22(1) of Division 4.4 of the EP&A Act, the proposal seeks consent for:

A Co-curricular Performing Arts and Exams Centre and associated basement parking on the south-western corner of Unwin Road and Clarke Road.

Barker has a vibrant and diverse music culture, but a critical shortage of spaces for tuition, rehearsal and performance across the campus. A new facility is proposed on the south-western corner of Unwin Road and Clarke Road to accommodate a range of ensembles, bands and dance groups as well as performances. The indicative reference scheme incorporates a 750-person capacity recital chamber, with a variety of rehearsal rooms and support spaces for school events. The centre will also be used as an exam centre throughout the school year including NAPLAN and HSC exams.

This building's size is defined by the particular size of student cohorts as well as the necessary spatial characteristics of the 750-person capacity recital chamber. Its size poses constraints in terms of its potential location and given that it is destinational in nature, rather than a highly and regularly frequented building that requires more immediate access within the day's timetable, it is more appropriately located toward the southern end of the Campus.

The plans for approval (refer extract in **Figure 11**) identify an appropriate building envelope that accommodates the building form and associated facilities considered within the indicative reference scheme. This envelope has considered the provision of landscape setbacks to both Clarke Road and Unwin Road. It defines the roof height (in RL terms) of the building form at its outer edges as well as the upper height of the central roof form (again in RL terms) required to accommodate the necessary

acoustic functions of the building and roof-top plant. This elevated roof form has purposefully been located within the central area of the building to mitigate impacts associated with building bulk at the street-front edges.

A Maintenance building and associated parking to the south of the Co-curricular Performing Arts and Exam Centre.

To reflect the proposed location of the Co-curricular Performing Arts and Exam Centre, a new maintenance building (which involves the demolition of the existing maintenance building) is proposed toward the southern site boundary. This relocated facility creates a 'bookend' to the southern campus.

The plans for approval (refer extract in **Figure 11**) identify an appropriate building envelope for the Maintenance building that provides a transitional height form between the lower scale residential area to the south and the proposed Co-curricular Performing Arts and Exam Centre and Aquatics and Tennis Centre to the north (on the Clare Road and Unwin Road corner). This envelope has considered the provision of a landscape setback to the adjoining residential properties to the south. It provides for a variation in building height (expressed in RL terms) sloping from the north, down to the south. It also provides for access to Unwin Road (and associated vehicle/loading/service access and activity) between the Maintenance building and the Co-curricular Performing Arts and Exam Centre, rather than directly adjoining the residential properties, as is currently the case.

An Aquatics and Tennis Centre incorporating an indoor pool and roof-top tennis courts and associated basement parking on the north-western corner of Unwin Road and Clarke Road

The existing Aquatics facility is located along the western site boundary, to the south of the heritage precinct. This facility includes a 25m pool and is nearing its serviceable lifespan. It is constrained by existing facilities within the immediate precinct and has limited space to expand. Rather than significantly upgrade the existing pool, a new contemporary facility is proposed (including a 50m pool) on the northwest corner of Unwin Road and Clarke Road. This facility will better service the emerging and future needs of the School, also offering the potential for a learn-to-swim facility accessible to the local community. The existing outdoor tennis courts (currently at grade) will be relocated in a contemporary format on the roof of the proposed Aquatics building.

This is also a destinational facility and is more appropriately located toward the southern end of the campus, effectively consolidating a sporting precinct with Rosewood Field. Importantly, this also allows the area accommodating the existing Aquatics facility to be repurposed or developed in the future for education facilities which are better located within a more convenient area of the School.

The plans for approval (refer extract in **Figure 11**) identify an appropriate building envelope that accommodates the building form and associated facilities considered within the indicative reference scheme. This envelope has considered the provision of landscape setbacks to both Clarke Road and Unwin Road. It defines the roof height (in RL terms) of the building form at its outer edges – this level corresponds with the surface of the tennis courts. Other RLs identified on this plan which are included for approval include the roof parapet of a pavilion structure (a small rectangular area adjacent to the 'show courts' and overlooking Rosewood Field, located inboard within the site); the upper height of a light-weight shade structure over these 'show courts'; and also the upper height of the light-weight perimeter tennis court fencing.

Figure 11 Proposed Concept Envelopes



Source: Neeson Murcutt + Neille

3.1.2. Stage 1 Works

The proposed Stage 1 works aim to provide an improved pedestrian environment to facilitate safer, more equitable and more legible movement across the main campus. The proposed works will also ensure that on-campus pick up and drop off arrangements can be maintained with the additional student population on site.

Development consent is sought under Section 4.22(4)(b) of the EP&A Act for the following development (Section 4.22(4)(b) works) without the need for a further development consent. These works are likely to be constructed in various works packages (not necessary 'all at once') and include:

- Site establishment works including demolition of areas of existing C-Block building and associated structures, site preparation and services augmentation.
- Construction of a new elevated east-west walkway along the southern edge of C-Block and incorporating spectator viewing to Bowman Field (referred to as S1.1 in Figure 12) and associated works to improve accessibility.
- Landscape works to 'The Avenue' roadway (an internal share way) to create a new Civic space for the School and transitioning to the existing east-west site connection on RB Finlay Walk and toward C-Block (referred to as S1.2 in Figure 12).
- Construction of a north-south pathway connection linking the Rosewood Centre to the Junior School campus (referred to as S1.3 in Figure 12).
- Updates to the existing pick up/off arrangements (referred to as S1.4 in Figure 12) including
 rationalisation of the internal Robert Bland Drive / Chapel Drive carriageway and parking area associated
 with the Junior School to improve the traffic flow and pedestrian safety associated with the internal pickup and drop off system. The proposed updates will also incorporate updates to the adjacent footpath on
 Phipps Taylor walk.
- Increasing the existing cap that applies to total staff and student numbers, up to a maximum of 2850 students and 480 (FTE) staff using the campus at any one time.

Figure 12 Proposed Stage 1 works



Source: Neeson Murcutt + Neille

3.2. DETAILED DESCRIPTION

3.2.1. Concept Works

This application seeks concept approval of building envelopes. As noted in **Section 3.1**, reference schemes have been prepared by Neeson Murcutt + Neille and are included in the Architectural Plans (**Appendix B**).

The proposed building envelopes for the Aquatics and Tennis Centre and the Co-curricular Performing Arts and Exam Centre will generally define the Barker street frontage along Clarke Road. The detailed building design will be subject to future detailed development applications.

The future detailed development applications will include detail regarding façade design, articulation, roof design, materials, finishes, colours any signage, integration of services and the principles of Crime Prevention Through Environmental Design as well as operational details including hours of operation.

Aquatics and Tennis Centre

The Aquatics and Tennis Centre consolidates the south-eastern precinct of the Barker campus for sports and recreational purposes. Given the nature of the building's use for the school and local community, the corner of Unwin Road and Clarke Road has been identified as an ideal site, with an appropriate public presence. The proposed envelope has been informed by the indicative reference scheme and allows for a two-storey structure with a single level of basement accessible via Clarke Road as well as associated landscape works. The facility introduces an important vertical circulation node and builds a new public interface for the School.

The reference design incorporates a 51.5m x 25m pool which can be converted into 2 x 10 lane 25m pools, with bleacher seating. The indicative reference also incorporates a 10m x 18m learn-to-swim pool and associated services. Existing on-grade tennis courts are to be relocated to the roof-top of the proposed building envelope. A pavilion structure is also contemplated within the indicative reference scheme, located on the northern side of the 'show courts' (ie inbound within the site). This pavilion is intended to accommodate a viewing platform to Rosewood Field to the north as well as amenities to service the tennis courts, including change rooms, staff rooms, and a seminar room. A light-weight retractable shade structure has also included within the scheme, as well as standard light-weight tennis court fencing around the perimeter of the roof-top courts.

The proposed envelope retains a 6m setback to both Unwin Road and Clarke Road reflecting the existing tennis court and parking structure on site. Pedestrian access to site will be associated with proposed works outlined within the Stage 1 works, with additional an entry forecourt connecting Rosewood Field to Clarke Road (refer to **Figure 14**). Vehicular access to site will be available via Clarke Street with 35 car parking spaces located within the basement of site and a separated service entrance also located on Clarke Road (refer to **Figure 13**).

Construction would require the demolition of the existing carpark and rooftop tennis courts.

Figure 13 Elevation of Aquatics and Tennis Centre from Clarke Road



Source: Neeson Murcutt + Neille



Figure 14 Aquatics and Tennis Centre landscape plan

Source: 360 Degrees Landscape

Co-curricular Performing Arts & Exam Centre

The Co-Curricular Performing Arts and Exam Centre optimises the 'destinational' potential south of Clarke Road. The location at the southern intersection of Unwin Road and Clarke Road provides a location which is publicly visibility and also maintains connection to the main campus east of the Junior School. The proposed envelope incorporates a two-storey built form with basement parking and rooftop plant.

The reference scheme indicates the proposed building envelope can accommodate a 750-seat double height recital hall (incorporating the necessary volume for internal acoustic performance) as well as the provision for practice rooms, congregating areas and other ancillary facilities. Access to the site will primarily be associated with existing pedestrian infrastructure associated within Clarke Road and Unwin Road as well as additional paths internal to site. Vehicular access will be available via the Unwin Road frontage with 90 car parking spaces being allowed for within a proposed basement level.

Construction would require the demolition of five houses, the current Maintenance building and the former Preparatory School buildings.

Figure 15 Section of Co-curricular Performing Arts and Exam Centre (right) and Maintenance building (left) from Unwin Road



Source: Neeson Murcutt + Neille

Maintenance building

The proposed new Maintenance building is directly south of the proposed Co-curricular Performing Arts and Exam Centre. The one storey envelope provides a transition in scale between the Co-curricular Performing Arts and Exam Centre and the residential dwellings to the south. A 3-metre setback is proposed within the southern boundary of the campus. This setback provides for generous landscaping between the Maintenance Facility and adjoining dwellings. The existing higher boundary fence along this southern property boundary is also proposed to be retained.

The combination of the 3-metre setback and the proposed building envelope means that the adjoining dwelling will maintain current levels of solar access to its side and rear yard. The reference scheme identifies that parking and loading access servicing both the Maintenance building and the Co-curricular Performing Arts and Exam Centre will be provided in-between these buildings, accessed from the Unwin Road frontage. This arrangement ensures that any noise associated with the new Maintenance building is mitigated to residential dwellings to the south.

3.2.2. Site establishment works and Demolition

Partial demolition of existing external landscape features directly to the south of C Block, Leslie Hall and Science Building, including retaining walls, walkways and awnings will be required to undertake the proposed Stage 1 works. The proposed works result in the removal of 11 trees. Demolition Plans have been prepared by Neeson Murcutt + Neille and are incorporated in the Architectural Plans enclosed in **Appendix B**. A tree removal plan has been included in the Stage 1 Landscape Works prepared by 360 Degrees Landscape (**Appendix G1**).

3.2.3. Improvements to Pedestrian and Vehicle Access

The proposed Stage 1 works aim to provide an improved pedestrian environment to facilitate safer, more equitable and more legible movement across the main campus. The proposed works will also ensure that on-campus pick up and drop off arrangements can be maintained with the additional student population on site.

C-Block Walk

A new walkway is proposed to provide a significant transformation of the current east-west movement paths through the campus.

New lift and stair connections will provide equitable access across three levels, connecting to seven buildings (C Block, Leslie Hall, Hornsby Hundred Building, Library, Maths and Senior School Offices) and the Bowman Field. A new elevated walkway will be introduced along the southern elevation of C-block, mediating the various levels and offering safe, equitable and sheltered circulation. The walkway will also allow direct access to the canteen and various courtyards associated with the central precinct of Barker Senior School.

Consent is specifically sought for the following upgrades to improve accessibility:

 Relocation of a number of windows and doors and introduction of screening along the southern elevations of C-Block and Leslie Hall to improve natural ventilation and amenity to students;

- Introduction a new raised walkway with an associated awning structure and seating areas along the entire length of the southern elevations of C-Block and Leslie Hall;
- Introduction of lifts providing access to C-Block and Leslie Hall
- Replacement of the existing stairs located between C-Block and Leslie Hall;
- Introduction of a bridge connection and new stairs, providing access to the raised walkway from Chapel Drive; and
- New mechanical plant and additional toilet facilities for Leslie Hall.

The new walkway will have a secondary purpose of providing spectator viewing to Bowman Field during sports events.

Figure 16 3D render of C-Block walkway



Source: Neeson Murcutt + Neille

Overall, the improvements to the C-Block Walk will:

- Strengthen east-west campus connections;
- Significantly improve safe and efficient pedestrian movement within the northern portion of the Barker campus;
- Provide DDA compliance access;
- Provide spectator viewing to Bowman Field;
- Provide areas for respite and create social places at key nodes; and
- Provide connection to key buildings and amenities within the campus.

The Avenue

The proposed development will transform the existing vehicular access point into a pedestrian-focussed landscape space on campus. This new civic space will also function as a shared accessway and will allow for service vehicle entry into the northern portion of the campus.

Alterations to The Avenue are to ensure pedestrian pathways are DDA compliant while accommodating a smooth transition to the RB Finlay Walk. Landscape works will respond to the immediate built context and provide a gathering place at the entry points to the Rosewood Centre and the Centenary Design Centre. ESD principals will guide the design including the selection of plant species and materials for seating and pavements.

Overall, the improvements to The Avenue will:

Function as a shared accessway and provide a new civic space for Barker;

- Strengthen east-west campus connections;
- Retain and augment existing planting;
- Upgrade existing hard surfaces with more appropriate heat reflective paving;
- Accommodate a DDA compliant pedestrian pathway between RB Finlay Walk, Rosewood Centre and the Centenary Design Centre; and
- Rationalise service infrastructure.

Figure 17 The Avenue upgrades Landscape Plan



Source: 360 Degrees Landscape

Rosewood Walk

A new pedestrian path is proposed along the western edge of the existing Rosewood field. The introduction of the new pathway will provide a vital connection between the Rosewood Centre and Maths Building to the north, and the Junior School on the southern side of the campus. The new pedestrian link anticipates a future stair and lift extending the route from the Rosewood Field to Junior School buildings, the future Aquatics and Tennis Centre and future Co-Curricular Performing Arts and Exam Centre south of Clarke Road.

Overall, the introduction of the Rosewood Walk will:

- Strengthen north-south campus connections;
- Accommodate seating for students during lunchtime and spectators during sports events; and
- Retain existing trees within the campus.

Figure 18 Rosewood Walk Landscape Plan



Source: 360 Degrees Landscape (Note: West is facing up the page)

3.2.4. Pick Up/Drop Off Arrangements and On Site Parking

Pedestrian safety and an improved flow of vehicles during pick-up and drop-off hours is an important objective in this overall project. The proposed development includes improvements to the existing on-site drop off and pick up arrangements, and subsequently seeks to improv the efficiency of on-site circulation.

The proposed upgrades include:

- Relocation of the existing boom gate to enable two traffic lanes along the entire internal road network used for pick-up and drop-off. This. The resulting arrangement will prevent the need for approaching traffic to merge into one lane and ensure that primary and prep school drop-off/pick-up is completely separated from high school drop-off/pick-up.
- Enforcement of a one-way circulation flow for prep and primary school pick up/drop off, which is separated from the high school flow. Primary school (Years 3 to 6) traffic will continue through the pre-school car park and past the drop off area to prevent Years 3 to 6 from merging with Years 7 to 12 and thereby minimising the number of merge points prior to the exit.
- Introduction of a pedestrian path along the western edge of Phipps Taylor field along Robert Bland Drive to provide connection between the northern campus and the Junior School to the south, creating a safe pedestrian link separate from vehicle traffic.

As illustrated in **Figure 19**, the proposed arrangements will result in two ultimate lanes of traffic which will merge at the exit point to College Crescent.

Figure 19 On Site Pick up/Drop off arrangements



Picture 7 Proposed pick up/drop off arrangements

Source: TTPP

The proposed redevelopment will involve the removal of parking associated with the existing tennis courts and the former Preparatory School accessed off Unwin Road. Car parking associated with existing facilities is proposed to be replaced and incorporated into the concept development with 32 spaces associated with the Aquatics and Tennis Centre and 90 spaces associated with the Co-curricular Performing Arts and Exam Centre (refer to **Figure 20**). The overall car parking provision on-site of 487 spaces is to be retained.

Figure 20 On Site Parking and Pick up/Drop off arrangements



Picture 8 Proposed Parking Provisions

Source: Neeson Murcutt + Neille

3.2.5. Connecting with Country

The Barker community is grateful for the contributions of Indigenous people to Australian society, past and present. As part of the proposed development, a cultural narrative is being initiated with Alison Page and Dr Christine Evans who both sit on the School's Indigenous Education Advisory Board, that will inform development of continuing Connection with Country strategies.

As a starting point, a series of nodes are being identified within the landscape across the campus. These will be developed for place-based, narrative-driven, visualised learning – integrating First Nations' story-telling and supporting Aboriginal ways of learning within a broader curriculum.

A framework is being developed to connect these nodes via a series of 'storylines' that will support learning in the landscape through walking on Country. The landscape design will enhance this experience through

the creation of yarning circles, landscapes for learning, materiality and form that speak to traditional knowledges and story as well as activation through ceremonial / reflection spaces. The Connecting with Country strategy and the creation of these 'storylines' will be developed in consultation with Traditional Owner groups as well as the Barker teaching staff.

Figure 21 Connecting with Country strategy



Possible Nodes include:

- Mint Gates primary Barker address on Pacific Highway: ancient Aboriginal track
- 2. Chapel forecourt: spiritual centre of Barker College
- Western end of new C-Block walk: new landscape space at intersection of primary north-south + east-west pathways
- 4. Eastern end of new C-Block walk: new landscape space
- 5. The OBA Sound Stage: a loved school community meeting place
- 6. Front of McCaskill Music Centre: new landscape space
- 7. Front of Maths: new landscape space
- The Avenue between main entries to Rosewood + Centenary Design Centre: top of the ridge
- 9. Rosewood Fields: new landscape space
- 10. War Memorial Oval: a loved school community space
- 11. Chapel Drive south: within landscape looking north
- 12. Aquatics forecourt: on lower part of core campus
- 13. Co-curricular and Performing Arts and Exam Centre forecourt: South of Clarke Road arrival space

Source: Neeson Murcutt + Neille and 360 Degrees Landscape

Although recently constrained by the impact of Covid-19, engagement with Elders is being sought through the AECG (**Aboriginal Education Consultative Group**) The intention is to extend an invitation to Elders to walk Country at Barker to begin to understand the landscape at a deeper level.

3.2.6. Development Timing

The construction works for the proposed development are expected to commence in mid-2023 and be completed by Quarter 1 2029. The indicative staging and duration of work activities are summarised in Table 3 overleaf (subject to future approval of concept stages).

Table 8 Indicative Construction Staging and Duration

Stage	Start Date	Approximate Duration
Stage 1 works (Pedestrian improvements)	Mid 2023	12 months
Aquatic and Tennis Centre (subject to future approval)	Q1 2027	24 months
Co-curricular Performing Arts and Exam Centre (subject to future approval)	Q1 2029	24 months

3.2.7. Contributions

Hornsby Shire Council Section 7.12 Development Contributions Plan 2019 – 2029 (Hornsby Contributions **Plan**) is the relevant Contributions Plan that applies to the proposal, it being noted that Clause 1.5 of this Plan refers to 'educational establishments'.

As identified in Section 3.1 of this report, various Stage 1 works are proposed together with concept proposals for which subsequent detailed applications will be submitted for approval. As the concept proposals essentially seeks an envelope approval to inform these subsequent applications (and not actual building works), the application of the relevant Section 7.12 levy applying to these works would be applied at the detailed DA stage.

We also note that Clause 1.5 of the Hornsby Contributions Plan does not apply to 'development for the purpose of disabled access'. This is also reflected in the exemptions to the Plan under Clause 2.8.

The development cost of the Stage 1 works, excluding those for the purposes of disabled access (being \$2,617,609.00 associated with the C-Block works as shown in the QS Report provided in **Appendix E**, is \$3,981,059.54 (excluding GST). Based upon the applicable rate of 1% for development over \$200,000, the applicable Section 7.12 levy would be \$39,810.60.

4. STATUTORY CONTEXT

This section of the report provides an overview of the key statutory requirements relevant to the site and the project, including:

- NSW Biodiversity Act 2016 (BC Act)
- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Environmental Planning Assessment Regulation 2021 (the Regulations)
- State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP)
- State Environmental Planning Policy (Resilience and Hazards) 2021 (R&H SEPP)
- State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP)
- Hornsby Local Environmental Plan 2013 (HLEP 2013)

It identifies the key statutory matters which are addressed in detail within the EIS, including the power to grant consent, permissibility, other approvals, pre-conditions and mandatory considerations.

4.1. STATUTORY REQUIREMENTS

Table 7 categorises and summarises the relevant requirements in accordance with the DPE *State Significant Development Guidelines*. A detailed statutory compliance table for the project is provided at **Appendix C**.

Table 9 Identification of Statutory Requirements for the Project

Statutory Relevance	Action	
Power to grant approval	In accordance with Schedule 1 of the Planning Systems SEPP, development that has a CIV of more than \$50 million for the purpose of development at an existing school are classified as SSD:	
	15 Educational establishments	
	(2) Development for the purposes of the erection of a building, or alterations or additions to an existing building, at an existing school that has a capital investment value of more than \$50 million.	
	The proposed works have an estimated CIV over \$50 million (refer Appendix E) and accordingly, the proposal is SSD. As the proposed development will exceed \$50 million CIV, the Minister is the consent authority for this SSDA .	
Permissibility Barker College is within the R2 Low Density Residential zone and B6 Business Enterprise zone. The proposal, being for the purposes of an <i>'educational</i> <i>establishment'</i> is permissible with development consent under the provisions of the HLEP 2013.		
	Further, the R2 and B6 zones are identified as <i>'prescribed zone(s)'</i> pursuant to Clause 3.36(1) of the Transport and Infrastructure SEPP. Consequently, development for the purposes of <i>an 'educational establishment'</i> is also permissible with consent under the T&I SEPP.	
Other approvals		
No requirements for other approvals have been identified at this stage.		

4.2. **PRE-CONDITIONS**

Table 8 outlines the pre-conditions to exercising the power to grant approval which are relevant to the project and the section where these matters are addressed within the EIS.

Table 10 Pre-Conditions

Statutory Reference	Pre-condition	Relevance	Section in EIS
State Environmental Planning Policy (Resilience and Hazards) 2021 Clause 4.6(1)	A consent authority must be satisfied that the land is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out.	A Preliminary Investigation has been undertaken by JKE (Appendix S) which confirms that potential sources of contamination exist at the site but are not expected to preclude the proposed development of the site. Further assessment is provided in Section 6.11.	Section 6.11

4.3. MANDATORY CONSIDERATIONS

Table 9 outlines the relevant mandatory considerations to exercising the power to grant approval and the section where these matters are addressed within the EIS

Table 11 Mandatory Consideration

Statutory Reference	Mandatory Consideration	Section in EIS
Consideration und	der the EP&A Act and Regulation	
Section 1.3	ion 1.3 Relevant objects of the EP&A Act Appendix C	
Section 4.15	Relevant environmental planning instruments	
	 State Environmental Planning Policy (Resilience and Hazards) 2021 	Appendix C
	 State Environmental Planning Policy (Planning Systems) 2021 	Appendix C
	 State Environmental Planning Policy (Transport and Infrastructure) 2021 	Appendix C
	 State Environmental Planning Policy (Biodiversity and Conservation) 2021 	Appendix C
	 Hornsby Local Environmental Plan 2013 (HLEP) 	Appendix C
	No draft environmental planning instruments are relevant to the Proposal	N/A

StatutoryMandatory ConsiderationReference		Section in EIS
	No planning agreement or draft planning agreement are relevant to the Proposal	N/A
	Development control plans	Appendix C
	Clause 2.10 of the Planning Systems SEPP states that development control plans (DCP) (whether made before or after the commencement of this Policy) do not apply to SSD.	
	As such, there is no requirement for assessment of the proposal against the DCP for this SSDA.	
	Notwithstanding this, consideration has been given to the Hornsby Development Control Plan in particular to parking rates and heritage conservation.	
	The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.	Section 6
	The suitability of the site for the development	Section 7.6 of the EIS
	The public interest	Section 7.7 of the EIS
Mandatory releva	ant considerations under EPIs	
State Environmental	Clause 2.121 applies to traffic generating developments as specified under schedule 3 of the	Section 6 Appendix C
(Transport and	 new premises of the relevant size or capacity or 	Appendix N
Infrastructure) 2021 (Transport and Infrastructure	 an enlargement or extension of existing premises, being an alteration or addition of the relevant size or capacity. 	
SLFF)	The proposed development fronts the Pacific Highway – a State road. Therefore the development is considered to be a traffic generating development and requires written notice of the application to TfNSW within 7 days after the application is made.	
	Clause 3.36 of the Transport and Infrastructure SEPP identifies School specific development controls, which needs to be addressed for School development permitted with consent. Clause 3.36 also requires the consent authority to	The proposal has been assessed against the relevant provisions of Clause 3.36 within Appendix C
	consider the design quality principles set out in Schedule 8 of the Transport and Infrastructure SEPP.	Detailed response to Design Quality Principles are

Statutory Reference	Mandatory Consideration	Section in EIS
	Clause 3.43 states that development consent may 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.	contained within the Design Report prepared by Neeson Murcutt +Neille enclosed in Appendix F. The proposed envelopes relating to both the Co- curricular Performing Arts and Exam Centre and Aquatics and Tennis Building exceed the 8.5 metre height development standard within the portion of the top floor levels and the roof top plant. Pursuant to Clause 3.43 of the Transport and Infrastructure SEPP, development consent may still be granted, without the need for variation to height development standard under Clause 4.6. However, height non- compliance is discussed and justified within Appendix C.
Hornsby Local Environmental	 Objectives and land uses for R2 Low Density Residential Zone and B6 Enterprise Corridor 	Appendix C
Plan 2013 (HLEP 2013)	 Part 4 – Principal development standards 	concept works exceeds the
· · · · · ·	 Part 5 – Miscellaneous provisions 	8.5 metre height of buildings development standard
	 Part 7 – Additional local provisions 	under the HLEP 2013. An assessment of the proposal is incorporated in Appendix C . Nevertheless, Clause 3.43 of the Transport and Infrastructure SEPP allows the proposal to contravene a development standard imposed by the Transport and Infrastructure SEPP or any other environmental planning instrument under

Statutory Reference	Mandatory Consideration	Section in EIS
		which the consent is granted.
Considerations u	Inder other legislation	
BC Act – section 7.14	The likely impact of the proposed development on biodiversity values as assessed in the Biodiversity Development Assessment Report (BDAR). The Minister for Planning may (but is not required to) further consider under that BC Act the likely impact of the proposed development on biodiversity values.	A BDAR wavier has been prepared by Cumberland Ecology (refer to Appendix Q in accordance with Section 7.9 of the BC Act. The report confirms that the development is not likely to have any significant impact on biodiversity values. The application, therefore, does not need to be accompanied by a BDAR. Refer to Section 6.7 for further assessment.
Development Co	ntrol Plans	
Hornsby DCP	 Clause 2.10 of the Planning Systems SEPP states that development control plans (whether made before or after the commencement of this Policy) do not apply to SSD. As such, there is no requirement for assessment of the proposal against the Hornsby DCP for this SSDA. Notwithstanding this, consideration has been given to the following provisions: Part 1 – General Part 7 – Community Part 9 – Heritage 	Appendix C

5. COMMUNITY ENGAGEMENT

The following sections of the report describe the engagement activities that have been undertaken during the preparation of the EIS and the community engagement which will be carried out if the project is approved.

5.1. ENGAGEMENT CARRIED OUT

Community and stakeholder engagement has been undertaken by the Project Team in the preparation of the SSDA. This included direct engagement and consultation with the following stakeholders identified in **Figure 22.**

Figure 22 Stakeholder categorisation



The following actions were taken to inform the community regarding the project and seek feedback regarding the proposal:

Community Newsletter

A community newsletter outlining key features of the project was distributed on Monday, 1 November 2021 by letterbox drop to 2,200 residents and businesses surrounding the site. The newsletter included details of the project email and phone number to answer questions and collect feedback. The newsletter also invited the community to attend an online information session to meet with the project team, ask questions and provide feedback.

Community Information Sessions

Two direct 'near neighbour' letters were sent to homes and businesses directly surrounding the site to invite the community to attend an online information session to meet with the project team, ask questions and provide feedback.

- Letter 1 was distributed on 1 November 2021 to 500 homes and businesses to inform them about plans for the site. The letter included details of the project email and phone number managed by Urbis Engagement and the online information sessions.
- Letter 2 was sent on 12 November 2021 as a reminder to register for the community information session to the same 500 homes and businesses surrounding the site.

Two information sessions were held to inform the community of the proposed plans for Barker. The purpose of the sessions was to inform the community and stakeholders about the project and allow them to provide feedback and ask questions. The project team was available to answer specific questions on the proposal. Due to Covid-19 restrictions at the time of the information sessions being held, they were hosted online via Zoom.

- Session 1: Barker community information session was held on Monday, 15 November 2021 from 5.30 7.00pm. 39 attendees from the School community attended session 1.
- Session 2: General community information session was held on Thursday, 18 November 2021 from 6.00 – 7.30pm. Eight attendees from the general community attended session #2.

During the session, the community were invited to ask questions and provide their views on the Proposal. They were also encouraged to submit questions ahead of time via the project email address provided to ensure the key information attendees were seeking would be covered in more detail during the presentation.

A total of 15 questions and comments were submitted during the general community session and eight during the School community session.

Website

As part of the engagement process and to ensure access to detailed information regarding the proposal, a dedicated project information landing page was developed as part of the Barker website and published on 1 November 2021 (in line with the distribution of the community newsletter).

The website (<u>https://www.barker.college/about-barker/our-master-plan</u>) provides information about the proposal, the School and community benefits, the planning process, and project contact information. The website will continue to be updated at key project milestones, to ensure the community and stakeholders have access to the most up to date information.

Consultation was also undertaken with the certain stakeholders to inform the detailed assessment of key matters including:

- Hornsby Shire Council
- DPE Planning and Assessment Team
- Government Architect of NSW through the SDRP process
- Transport for NSW

This engagement was consistent with the community participation objectives in the 'Undertaking Engagement Guidelines for State Significant Projects 'and complied with the community engagement requirements in the SEARs.

In accordance with the Regulations, the EIS will be placed on formal public exhibition once DPIE has reviewed the EIS and deemed it 'adequate' for this purpose. Following this exhibition period, the applicant will respond to any matters raised by notified parties.

5.2. COMMUNITY VIEWS

Since 1 November 2021 (initial engagement with the community), the engagement for the Barker proposed masterplan has reached around 2,200 people in the community. As identified above, a total of only 15 questions and comments were submitted during the general community session.

The key issues raised by the community and key stakeholders are summarised in the table below. A detailed community engagement table is provided as **Appendix H** which details the way in which these issues have been addressed in the EIS.

Table 12 Community Feedback

Ke	ey Issue	Applicant Response
Built form and landscape, specifically:		The overall proposal have been carefully
•	Intended landscaping for the School and	considered to ensure all new buildings are set back
	Rosewood Centre.	to retain the mature trees surrounding the campus

Key Issue	Applicant Response
 Setback requirements from near neighbours. Plans for current gym and swimming pool building. 	and maintain a landscaped buffer along streets as noted in both the Architectural Plans (Appendix B) and Landscape Plans (Appendix G). The proposed development includes substantial landscaping and tree planting around the edges of the campus augmenting existing landscaping. This measure seeks to provide a landscaped outlook for residents and screening and softening of school buildings. The concept proposal also seeks to align the two proposed new facilities with the existing Rosewood Centre to create a sport and movement precinct via a pedestrian link through the Junior School. The future use of the existing gym and swimming pool buildings on the western side of the campus have not been determined at this stage, however represent a future opportunity of refurbishment and/or new building work for education uses within the education core of the campus. Any future works in this area would be the subject of a separate application process.
 Traffic management and parking, specifically: Traffic mitigation and management plans (including investigation into a roundabout at Clarke Road and Unwin Road intersection). Parking associated with the new facilities. Requirement for students to be dropped off and picked up on the School campus to minimise impacts on local streets. Private vs public transport discussions. 	A key focus of the SSDA is improving the management of student pick up and drop off, ensuring no net loss of parking on campus at any time, including during the construction of the new facilities. Specific basement parking is allocated to each of the new facilities. The proposal seeks to minimise traffic queueing associated with student drop off and pick up, improve pedestrian safety to and from public transport, and encourage the use of public transport. All detail of changes to traffic conditions in and around the school were outlined in the community newsletter and further explained during the information session by the traffic engineer. Barker is committed to keeping the community informed at each stage of the proposal and will continue to share updates regarding traffic. A Green Travel Plan has also been prepared by TTPP (Appendix O) to ensure sustainable measures of transport are encouraged by Barker.
Enquiries regarding current works underway at the School on the new site where a sports pavilion and multi-level carpark were constructed recently.	Barker have committed to maintaining contact with the community throughout the approval process to keep them informed of any updates and changes to the proposal.

Key Issue	Applicant Response
	Current works that have recently taken place on site were approved as part of a separate approval process and were explained to the community via direct communications via the School.

5.3. GOVERNMENT STAKEHOLDER CONSULTATION

Specific consultation was undertaken with relevant government agencies. The key issues raised by the relevant Government agencies are summarised in the table below.

Table 13 Government Agency Feedback

Government Agency	Applicant Response
Hornsby Council	
Barker sent Hornsby Shire Council a scope briefing agenda and drawings on 12 November 2021 to coordinate a meeting. Hornsby Shire Council confirmed in February 2022 that a meeting was not necessary and that responses had been provided to SEARs.	Barker will continue to consult with the Hornsby Shire Council throughout the approval process to keep them informed of any updates and changes to the proposal.
Transport for NSW	
A Traffic Impact Assessment was submitted to Transport for NSW (TfNSW) on 6 March 2022. A briefing was then held on 22 March 2022 with TfNSW and the project traffic consultant regarding the project. No significant concerns with traffic impact assessment or analysis raised by TfNSW but it was requested a copy of the Green Travel Plan is to be submitted with EIS.	A Green Travel Plan prepared by TTPP is enclosed in Appendix O .
State Design Review Panel	
The design team met with the State Design Review Panel (SDRP) on 27 October 2021 (first review) and 2 March 2022 (second review) In summary, the advice and recommendations from the SDRP were positive on both occasions. Following the first review, the SDRP provided formalised feedback via an email on 8 November. All feedback was addressed by the design team in the second SDRP review. Following the second review, the SDRP provided formalised feedback via email on 10 March. The design team was commended for a comprehensive	Specific responses to SDRP comments have been incorporated into the Architectural Plans (Appendix B) and Design Report (Appendix F) prepared by Neeson Murcutt + Neille. A copy of minutes received are enclosed in Appendix DD .

Government Agency	Applicant Response
presentation and well considered design response to feedback from the first review.	
The masterplan and the key architectural and landscape principles established by the masterplan were supported and commended, as were the beginnings of the Developed Design for the Stage 1 projects.	

5.4. ENGAGEMENT TO BE CARRIED OUT

Barker welcome ongoing feedback on the proposal. They will continue to keep stakeholders and the community informed of the project through the exhibition and determination phases through:

- Continuing to engage with the community about the project, its impacts, and the approval process
- Providing information on how the community's views have been addressed in the EIS
- Enabling the community to seek clarification about the project through the two-way communication channels.

6. ASSESSMENT OF IMPACTS

This section describes the way in which the key issues identified in the SEARs have been assessed. It provides a comprehensive description of the specialist technical studies undertaken regarding the potential impacts of the proposed development and recommended mitigation, minimisation and management measures to avoid unacceptable impacts. Further detailed information is appended to the EIS, including:

- SEARs compliance table identifying where the SEARs have been addressed in the EIS (Appendix A).
- Statutory compliance table identifying where the relevant statutory requirements have been addressed (Appendix C).
- Community engagement table identifying where the issues raised by the community during engagement have been addressed (**Appendix D**).
- Proposed mitigation measures for the project which are additional to the measures built into the physical layout and design of the project (Appendix D).

The detailed technical reports and plans prepared by specialists and appended to the EIS are individually referenced within the following sections.

6.1. BUILT FORM AND URBAN DESIGN

6.1.1. Concept Works

The height, bulk, and scale of each future stage of the proposal has been considered in detail in the Design Report at **Appendix F**. Overall, the design team has responded to the existing built form and operational layers of the campus, the character of Unwin Road and Clarke Road, the site topography and heritage character to devise building envelopes that respond positively to the site context and topography. Most importantly, the built form and current building envelopes have been located and designed to meet the educational needs of Barker.

Aquatics and Tennis Centre

The proposed envelope for the Aquatics and Tennis Centre allows for a two-storey structure with associated basement parking accessible via Clarke Road. The overall envelope has been designed to optimise the steep topography of the site and orients the pool directly north into a landscaped embankment, creating a sense of 'swimming in the landscape' (refer to **Figure 23**). As the envelope is built into the existing slope, the overall bulk of the new building is reduced and is read as a one storey element from the north and a two-storey element from both Unwin Road and Clarke Road. The proposed building envelope has a maximum height of 11.75 metres which is in keeping with the height of other school buildings, particularly those which adjoin the new Aquatics and Tennis Centre directly to the west.

The reference scheme has incorporated additional features on the roof level including a tennis pavilion which provides storage and amenities space as well as a viewing platform for Rosewood Fields to the north. This element of the reference scheme has a maximum height of 10.425 metres and sits within the School site away from street setbacks and is generally located behind substantial tree coverage. As such, the pavilion integrates into the overall campus.

To maintain the functionality of the roof-top tennis courts, the reference scheme also incorporates a lightweight shade structure above the 'show courts' and fencing around the roof-top perimeter. These elements sit above the proposed building envelope with the shade structure and fencing of the 'show courts' resulting in a maximum height of 14.4 metres at the Clarke Road frontage, and the fencing enclosing the 'club courts' resulting in a maximum height of 17.95 metres at the corner of Clarke Road and Unwin Road. Overall, these lightweight and transparent elements do not add to the bulk and scale of the building as they are permeable elements. They are nevertheless an essential component of the functionality of the building and therefore reference to them have been incorporated within the plans for approval.

The proposed envelope retains a 6-metre setback to both Unwin Road and Clarke Road to retain and supplement tree planting to campus edges including the significant mature blue gums on campus. The proposed landscaping also softens the scale of the building and contributes to the overall character of the campus. Overall, the proposed bulk and scale maintains a consistent streetscape with other contemporary School buildings along Clarke Road.

Figure 23 Aquatics and Tennis Centre East Elevation



Source: Neeson Murcutt + Neille

Co-curricular Performing Arts and Exam Centre and Maintenance building

The site topography has also been integrated into the design of both the Co-curricular Performing Arts and Exam Centre and Maintenance building with servicing and underground parking accessible along Unwin Road between the new centre and Maintenance building to minimise cut and fill.

The Co-curricular Performing Arts and Exam Centre has an overall maximum height of 17.3 metres to the top of the proposed rooftop plant. As illustrated in **Figure 24** and **Figure 25**, the current reference scheme ensures that the rooftop plant is not a visible element from either Unwin Road or Clarke Road and the overall built form presents as a maximum two storey building.

The overall building envelope has been designed to ensure the proposed floor-to-ceiling height can facilitate the 750-seat recital hall. The main entrance on the Clarke Road frontage incorporates a street-wall height of 6.4 metres but presents as a one storey element. From Unwin Road, the Co-curricular Performing Arts and Exam Centre building envelope presents as a two-storey building with a maximum street wall height of 13.1 metres at the south-eastern corner of the building.

The proposed envelope for the Co-curricular Performing Arts and Exam Centre is set back 9 metres from both Clarke Road and Unwin Road to retain and supplement tree planting to campus edges, providing landscape screening, increased tree canopy and urban cooling. Overall, the proposed envelope provides a front setback to neighbouring properties which is greater than or equal to existing development site.

From Unwin Road, the Maintenance building presents as a one storey element to reflect the height of the current Maintenance building. Overall, the proposed envelopes ensure that new built form will not overpower the reading of more historic dwellings in the surrounding streetscape and steps down towards residential development to the south. Overall, the proposed buildings' envelopes maintain a similar built form and height to other School buildings, particularly those directly to the north on the opposite side of Clarke Road, as well as the height of the existing Maintenance building and former Preparatory building.

The proposed Maintenance building provides a 3-metre side landscaped setback to residential dwellings to the south of the site, in particular 30 and 30a Unwin Road. In addition, the existing higher boundary fencing along this southern property boundary will be retained.

While the proposed Maintenance building is closer to the boundary than the existing Maintenance building, the combination of this 3-metre landscaped setback, retained boundary fencing and the proposed building envelope means that the adjoining dwellings will maintain current levels of solar access to their side and rear yards. The reference scheme identifies that parking and loading access servicing both the Maintenance building and the Co-curricular Performing Arts and Exam Centre will be provided in-between these buildings, accessed from the Unwin Road frontage. This arrangement ensures that any noise associated with the new Maintenance building is mitigated to residential dwellings to the south.

Figure 24 North-South Section of the Co-curricular Performing Arts and Exam Centre and Maintenance building



Source: Neeson Murcutt + Neille

Figure 25 East-West Section of the Co-curricular Performing Arts and Exam Centre and Maintenance building



Source: Neeson Murcutt + Neille

As the proposed development seeks consent for the building envelopes, further detailed assessment will form part of future detailed DAs. The future detailed development applications will include consideration of façade design, articulation, roof design, materials, finishes, colours, any signage, integration of services, and the principles of Crime Prevention through Environmental Design.

6.1.2. Stage 1 Works

The proposed physical works associated with Stage 1 of the SSDA have been considered in detail in the Design Report at **Appendix F**. In building form terms, these proposed works primarily involve access facilities of minor scale that do not propose significant changes to the existing built form across the Barker campus.

6.1.3. Accessibility

An Accessibility Assessment Report has been prepared by BCA Access (**Appendix J**) in relation to the Concept and Stage 1 Works. Under the provisions of Parts A6 of BCA2019 and Part A4 of the Access Code, the building has been classified as follows:

- Aquatics and Tennis Centre Class 7a (car park), 9b (sporting and recreation purposes) and 10b (swimming pool)
- Co-curricular Performing Arts and Exam Centre and Maintenance building Class 7a and 7b (car park and storage), 8 (workshop and maintenance) and 9b (educational purposes)
- C-Block upgrades Class 5 (office and administration), 7b (storage) and 9b (educational purposes).

The development has been reviewed to ensure that paths of travel, parking, accessible facilities, wheelchair seating spaces can comply with relevant statutory guidelines. This assessment has addressed compliance with the Disability Discrimination Act 1992 (DDA); Disability Access to Premises Standards 2010 (Premises Standards); Building Code of Australia 2019 (BCA2019) Volume 1 Amendment 1 – Part D3 and Clauses E3.6 and F2.4; and Applicable Australian Standards.

The assessment confirms the proposal complies or is capable of complying, for the purposes of a Development Application.

6.2. ENVIRONMENTAL AMENITY

Analysis on the potential overshadowing associated with the proposed concept building envelopes has been prepared by Neeson Murcutt + Neille and is contained within the Design Report enclosed in **Appendix F**. Shadow diagrams have been provided for every hour of summer and winter solstices from 9am to 3pm and differentiate the shadow from the existing built form and the proposed built form.

The proposed building envelopes have carefully considered the potential impacts on neighbours. As illustrated in **Figure 26**, the proposed envelopes result in minor overshadowing during the winter solstice (ie worst case scenario). The concept envelopes do not result in any additional overshadowing on surrounding residential dwellings to the south with a majority of additional shadow impacts falling within the campus and onto Clarke Road. Minor additional overshadowing occurs within the front setback on the eastern frontage of Unwin Road (31 and 33 Unwin Road) between 2.00pm and 3.00pm. Similarly, the pocket park on the south-eastern corner of Unwin Road and Clarke Road would also receive some shadow to its western extremity from 2.30pm onwards, however otherwise enjoys direct sunlight during all other periods. In this context, the concept proposal is considered satisfactory, noting detailed shadow diagrams would be required as part of any future detailed DA for these buildings.

Figure 26 Shadow Diagrams (Winter Solstice) for concept building envelopes



Picture 11 11.00am shadow diagrams

Picture 12 12.00pm shadow diagrams



Picture 15 3.00pm shadow diagrams

It is also acknowledged that further analysis will be required during the detailed assessment of concept works to address a range of matters including lighting impacts which will inform the detailed design.

The proposed Stage 1 works aim to provide an improved pedestrian environment within the campus and are considered to have minimal impact on surrounding residential dwellings for the following reasons:

- The new elevated east-west walkway along the southern edge of C-Block and viewing platform overlooks the Bowman Field which is located approximately 50 metres from the closest street frontage (College Crescent) and is shielded by existing School buildings. Given its location away from any surrounding uses, it is perceived as part of existing built form within the campus and has no impacts on surrounding residential dwellings.
- Landscape works to 'The Avenue' roadway replace an existing access way to the site with a shared accessway. The proposed works will increase landscaping along the Unwin Road frontage and create an improved interface to surrounding dwellings including supplementary planting and a DDA compliant entrance to the campus.
- Construction of a north-south pathway connection linking the Rosewood Centre to the Junior School campus replaces an informal pathway adjacent to the Rosewood Fields and does not result in additional built form on campus. The works are internal to the site and have no perceivable impacts on surrounding uses.
- Updates to the existing pick up/off arrangements including rationalisation of the internal Robert Bland Drive / Chapel Drive carriageway and parking area associated with the Junior School and updates to the adjacent footpath to improve the traffic flow and pedestrian safety associated with the internal pick-up

and drop off system. All changes are internal to the site and result in minor updates to the built form which are unlikely to be perceivable from street frontages or surrounding residential dwellings.

In summary, the Stage 1 improvements to the campus have no perceived impacts on surrounding residential dwellings, and in some cases improve the interface of the campus with the surrounding development.

6.3. VISUAL IMPACT

A Visual Impact Assessment has been prepared by Urbis (**Appendix K**) to assess the visual changes and impacts of the proposed built form associated with the concept proposal on the Barker campus and its surrounds.

6.3.1. Methodology

The methodology employed for this VIA is based on a combination of established methods used in NSW including the '*Guideline for landscape character and visual impact assessment' Practice note EIA -NO4* prepared by the TfNSW in December 2020 and well-established best-practice methods. The process is generally accepted as appropriate for visual impact assessment in NSW.

Prior to undertaking fieldwork, Urbis staff undertook a desktop review of all relevant statutory and nonstatutory documents, an analysis of aerial imagery and topography and LiDAR data to establish the potential visual catchment and to inform fieldwork inspections. Following fieldwork undertaken by Urbis in October 2021, Urbis selected and recommended 11 view places for further analysis via the use of objective visual aids.

6.3.2. Assessment

The height, form and scale of existing buildings on the site vary and are typical of school sites with overall built form dictated by function. The Rosewood Centre is a recent purpose built building located along Unwin Road but is significantly spatially separated from both concept building envelopes. The south side of Clarke Road opposite the School is predominantly characterised by individual residential dwellings set within ornamental gardens. St Leo's Catholic School is also located directly east of the campus and includes built form similar in height and scale to the proposed building envelopes.

Overall, the proposed building envelopes associated with the Co-curricular Performing Arts and Exam Centre and the Aquatics and Tennis Centre are considered to result in a low visual effect on the base line factors such as visual character, scenic quality, and view place sensitivity from public domain views.

Of the eight views analysed by Urbis, the overall visual impacts are rated from nil to low (six viewpoints) with two viewpoints having a medium visual impact. Overall, the proposed works are considered compatible with the existing urban character for the following reasons:

- The scale, height and character of the proposed built form is not dissimilar to existing examples in the surrounding landscape including the Rosewood Centre to the north and buildings associated with St Leo's Catholic College to the east.
- The surrounding topography and level of mature vegetation in the adjacent streetscapes highly filters or entirely obstructs views of the proposed works, generally limiting the visual catchment to immediately adjacent streets and within close proximity.

Based on the likely view impacts to the immediate and wider area based on the representative modelled views and the overall low view impact ratings, the view impacts associated with the concept envelopes are considered acceptable.

6.4. TREES AND LANDSCAPING

An Arboricultural Impact Assessment report has been prepared by Civica (**Appendix L**) to review the impacts of the proposed tree removal on site associated with both concept and Stage 1 works and provide mitigation measures to minimise the impact on native vegetation. The concept envelopes have been designed to minimise impacts on native vegetation and maintain significant trees on site.

6.4.1. Methodology

A Visual Tree Assessment (VTA) and site inspections were undertaken in November 2021 to determine the impact of the proposed development on tree species. A total of 393 trees were assessed by Civica during

their site inspections. Pursuant to the Hornsby DCP, a tree is defined as 'a long live woody perennial plant with one or relatively few main stems with the potential to grow to a <u>height greater than 3 metres</u>' (emphasis added).

The retention value of each tree was determined using the TreeAZ assessment system. The rating relates to the significance and estimated life expectancy of the tree prior to the start of any development:

- Category 'A' trees (high retention value) are important trees with an estimated remaining life expectancy
 of at least 25 years.
- Category 'B' trees (moderate retention value) are of moderate quality with an estimated life expectancy
 of 15-25 years
- Category 'C' (low retention value) trees are of a low quality with an estimated life expectancy of 5-15
- Category 'U' trees are found in such a condition they cannot realistically be retained as viable trees in the context of the current land use for longer than five years.

6.4.2. Assessment

Across the site, approximately one third of trees identified are exotic species with two thirds native Australian species. A desktop review of the *Central Resource for Sharing and Enabling Environmental Data in NSW* (**SEED**) by Civica also identified several mapped areas of Blue Gum forest, a threatened ecological community with or adjacent to the subject site. Thirty (30) trees were identified within the campus as *Eucalyptus saligna* (Sydney blue gum) or *Angophora costata* (Sydney red gum).

Based on the proposed works (including Stage 1 and Concept building envelopes), sixty-six (66) trees would require removal to facilitate the proposed works, including:

- Removal of four (4) category A trees: (Trees 665, 667, 668 and 675)
- Removal of eight (8) category B trees: (Trees 302, 303, 317, 613, 657, 666, 1027 and 1030)
- Removal of 47 category C trees
- Removal of seven (7) category U trees: (Trees 625, 712, 779, 1007, 1009, 1091 and 1099) which would require removal irrespective of the proposed development.

The proposed development will also retain 268 trees including 42 Category A, 54 Category B and 159 Category C trees. The proposal specifically retains all identified blue gums within the campus.

Overall, the proposed tree removal has minimal impact on the overall landscape character of the site. An extensive landscaping strategy has been prepared by 360 Landscape Architects (enclosed in **Appendix G**) which aims to maintain the character of the site and minimise the impacts of the proposed tree removal.

6.4.3. Management Recommendations and Mitigation Measures

In order to successfully retain trees that have been identified for retention as part of the Stage 1 works, Civica have outlined a specific protection measures for nine (9) trees located along The Avenue. Kerb demolition within the Tree Protection Zone (**TPZ**) of these trees is to be carried out under direct arborist supervision.

Protection and reporting measures for all other trees proposed for retention include restricting construction activities within the relevant TPZs, adequate signage on site and the introduction of protective fencing. A project arborist should be commissioned to oversee tree protection, any works within TPZs and complete regular monitoring.

6.5. ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The EP&A Act adopts the definition of ecologically sustainable development (ESD) from section 6(2) of the Protection of the Environment Administration Act 1991. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) The precautionary principle
- (b) Intergenerational Equity

- (c) Conservation of biological diversity and ecological integrity
- (d) Improved valuation, pricing and incentive mechanisms

An Environmentally Sustainable Development (ESD) Report has been prepared by Steensen Varming (**Appendix M**) for the proposed concept works, in response to SEARs. The report identifies design initiatives and features of the proposed development that hold the potential to reduce the overall environmental impact.

6.5.1. Assessment

The proposal will target a 4 Star Green Star Building Rating using the Design and As-built V1.3 rating tool in aligning with 'Australian Excellence' and targeting initiatives that exceed relevant sustainability performance standards, such as the National Construction Code 2019 Section J Energy Efficiency Provisions. The Green Star Design and As-built rating system provides a framework to assess how a building reduces its impact on the environment while meeting the economic and social needs for its occupants and surrounding communities. Green Star's goal is to 'lead the sustainable transformation of the built environment' by encouraging practices that:

- Reduce the impact of climate change.
- Enhance the health and quality of life of inhabitants and the sustainability of the built environment.
- Restore and protect the planet's biodiversity and ecosystems.
- Ensure the ongoing optimum operational performance of buildings.
- Contribute to market transformation and a sustainable economy.

6.6. TRAFFIC, TRANSPORT AND ACCESSIBILITY

A Transport Impact Assessment (**TIA**) has been prepared by The Transport Planning Partnership (TTPP), enclosed in **Appendix N** to assess the anticipated transport implications of the proposal during operational and construction stages of both the concept works and Stage 1 works.

6.6.1. Traffic Generation

The proposal proposes to increase the current student capacity 2850 students and 480 FTE staff. The TIA has utilised the existing school population as the baseline for the increase in traffic generation resulting from the proposed capacity increase.

A comparison between the modelling results of Year 2026 with and without the proposed development scenarios during the AM and PM peaks has been prepared by TTPP is provided in **Figure 27** and **Figure 28** below.

	Control	Year 2026 Future Base			Year 2026 Future Base + Development		
Intersection		Ave Delay (s)	LoS	95 th %ile Queue Length (m)	Ave Delay (s)	LoS	95 th %ile Queue Length (m)
Pacific Hwy-College Cres-Pretoria Pde	Signals	42	С	183	42	С	183
Pacific Hwy-Unwin Rd-Romsey St	Signals	106	F	219	124	F	223
Unwin Rd-The Avenue	Priority	6	А	90	6	А	90
Unwin Rd-Clarke Rd	Priority	22	В	35	24	В	47
Clarke Rd-College Cres	Roundabout	57	E	149	100	F	149

Figure 27 2026 AM Peak Hour Intersection Analysis Results

Source: TTPP

	Control	Year 2026 Future Base			Year 2026 Future Base + Development		
Intersection		Ave Delay (s)	LoS	95 th %ile Queue Length (m)	Ave Delay (s)	LoS	95 th %ile Queue Length (m)
Pacific Hwy-College Cres-Pretoria Pde	Signals	39	С	265	39	С	272
Pacific Hwy-Unwin Rd-Romsey St	Signals	52	D	237	61	E	267
Unwin Rd-The Avenue	Priority	6	А	4	6	А	38
Unwin Rd-Clarke Rd	Priority	12	А	10	12	А	11
Clarke Rd-College Cres	Roundabout	15	В	69	16	В	82

Figure 28 2026 PM Peak Hour Intersection Analysis Results

Source: TTPP

Analysis prepared by TTPP indicates that the surrounding network would generally operate well by the year 2026, except for the intersections of Pacific Highway – Unwin Road – Romsey Street and Clarke Road – College Crescent. Both these intersections would be at capacity from background traffic growth alone.

Based on discussions between TfNSW and TTPP, the significant growth in background traffic is likely related to the development NorthConnex, which has an interchange approximately 1.5 kilometres south-east of the Barker Campus. The current traffic generation is considered a conservative approach, given the uncertainty around regional modelling associated with NorthConnex. Nevertheless, the proposed development of the site and associated increase in students and staff would have a relatively minor impact on the road network compared to background traffic increases associated with regional road infrastructure.

Internal improvements to current drop and pick up arrangements are also proposed to improve the efficiency of on-site circulation. These interventions have been designed with inputs from TTPP. The proposed arrangements aim to ensure that site traffic queues are retained on-site and off the roads.

In addition to the proposed works, the proposed management strategies are to be investigated by Barker:

- Opening the School gates earlier to enable parents who arrive early, to park/ queue onsite rather than on-street
- Further staggering School starting and finishing times. Currently there is a 5- minute stagger between the start times of Year K-2, 3-6 and 7-12. Consideration will be given to further staggering the Junior School years which generate greater traffic.
- For the pick-up period, place student's name plates on car windows, to allow staff to position the relevant student at the pick-up point, for efficient pick up and flow.

6.6.2. On Site Parking

Car Parking

The campus currently provides a total of 487 car parking spaces. On-site parking facilities are mainly for staff use. There are currently no student parking facilities located within the campus.

TTPP has commissioned a parking inventory and demand survey on Thursday 4 February 2021 between 7.00am and 6.00pm and Saturday 6 February 2021 between 9.00am to 5.00pm.

Based on the survey results, on-site parking is highly utilised during the school week. Approximately 81-85% of the total parking supply is occupied (306 spaces) during the busiest period (12.00pm-1.00pm). This translates to a vacancy of 70 car parking spaces. Lower parking utilisation was observed from the Saturday survey results. The highest parking demand on Saturday was recorded from 11.00am-12.00pm, with approximately 38% of parking spaces occupied, with 235 spare car parking spaces.

Hornsby DCP stipulates the following parking rates for educational establishments:

- 1 space per full time teacher
- 1 space per 2 students of driving age

Based on the proposed student and staff numbers for Barker, 427 car spaces would be required within the campus. The site currently accommodates 487 spaces including parking that was unavailable at the time of the traffic survey due to current construction works. Allowing for these spaces to be reinstated, the site has sufficient parking to accommodate existing and proposed parking requirements.

The proposed concept works would involve the removal of parking associated with the existing tennis courts and the former Preparatory School accessed off Unwin Road. These two sites would be replaced by new buildings and car parking. The ultimate car parking provision on-site is to be retained as per the existing supply of parking on site. As such, the site maintains sufficient parking to accommodate existing and proposed parking requirements.

Car Parking Location	Existing Supply	Parking on site (Following completion of Co- curricular Performing Arts Centre and Aquatics and Tennis Centre)
Parking (not impacted by SSDA works)	365	365
Parking to be removed	122	-122
Tennis Courts	78	-78
Barker Pre-School	44	-44
Concept Works	0	122
Co-curricular Performing Arts and Exam Centre	0	94
Aquatics and Tennis Centre	0	28
Total	487	487

Table 14 Current and Proposed Parking Provision

Bicycle Parking

Hornsby DCP stipulates the following bicycle parking rates for educational establishments:

- 5 racks per class between Years 5 to 12
- 1 rack per 20 full time staff or part equivalent.

Based on the proposed student and staff numbers for Barker, 54 bicycle spaces would be required within the campus. The site currently accommodates bicycle racks across the campus which could accommodate additional demand. In accordance with the DCP, end of trip facilities are provided in multiple locations across the campus providing showers and lockers for the use of staff.

6.6.3. Travel Demand Mitigation Measures

Travel demand management is a term for strategies to encourage a modal shift from single occupant private vehicle trips and influence the way people move to/from a site to deliver better environmental outcomes to encourage sustainable travel and reduce traffic and parking impacts within communities.

A key element of travel demand management is the preparation of a Green Travel Plan (GTP). The primary purpose of GTPs at schools is to encapsulate a strategy for managing travel demand that embraces the principles of sustainable transport whilst recognising the unique context of travel planning at education facilities. In its simplest form, GTPs encourage travel using transport modes that have low environmental impacts, for example active transport modes including walking, cycling, public transport, and encourages better management of car use.

In the case of GTPs for schools, this is of vital importance as schools are often located in local residential areas which can negatively impact local traffic and parking amenity during the concentrated peak periods of school pick up and drop off times. Furthermore, on-site car parking is often a luxury as schools cannot afford to apportion limited land resources due to teaching space and play space requirements.

Therefore, the implementation of a GTP would assist to manage travel demand at the School, particularly with consideration to the future expansion of the School. It is expected that the GTP document would target staff and parents at the School.

A Green Travel Plan (**GTP**) has been prepared by TTPP (**Appendix O**). The GTP is to be implemented onsite with an aim to reduce car share as a mode of travel. A 5% shift in mode is proposed from car to sustainable transport modes such as public transport, walking and cycling. The following general travel strategies have been considered for implementation in the GTP to encourage more sustainable travel:

- Limit car parking provision on-site to reduce the opportunity and convenience of driving
- Organise a carpool system/registry to assist staff and parents
- Organise walking/ cycling groups to promote those living near each other's to walk and cycle together
- Organise cycling classes to teach road safety and safe on-road cycling practices
- Encourage the use of secure bicycle parking facilities and end of trip facilities currently on site
- Develop or use a mobile application which can be used as platform to communicate with parents and students regarding changes in travel plans and conditions.

6.6.4. Construction

Construction vehicles likely to be generated by the proposed construction activities include:

- 6.4m small rigid vehicles (SRV), vans and utility type vehicles for small deliveries.
- 8.8m medium rigid vehicles (MRV)
- 12.5m heavy rigid vehicles (HRV).
- HRVs would be the largest vehicle to access the site.

The preliminary Construction Traffic Management Plan (**CTMP**) prepared by TTPP (**Appendix P**) addresses the proposed staged development. It discusses the management of construction vehicles and activities, and an investigation of the local traffic and safety conditions throughout the construction process.

The final CTMP will be prepared by the builder with consideration of all final design selections.

Construction Site Access and Work Zones

All construction vehicles are to enter and exit the site or works zone in a forward movement. Site personnel are to assist construction vehicles with entry and exit and manage interactions with pedestrians. Additionally, no construction truck movements to/from the site will be permitted during School peak drop off and pick up times (i.e. between 8:00am and 9:30am and between 2:30pm and 4:00pm), to minimise impact to traffic flows along the adjoining road network.

The following site access requirements relate to specific works on site:

- Site access to The Avenue works is to be obtained via the existing access off Unwin Road, including both ingress and egress movements. All loading activities will be undertaken on site
- Site access to the walkway south on C-Block is to be obtained via the existing access off College Crescent (i.e. Robert Bland Drive) for ingress movements and the existing access off Pacific Highway (i.e. Chapel Drive) for egress movements. All loading activities will be undertaken on site
- Site access during the construction of the Aquatics and Tennis Centre is to be obtained via the existing entry and exit driveways off Clarke Road, during the early demolition and excavation stages. During the construction of the structure and internal fit-out works, loading activities would be undertaken via a works zone.
- Site access during the construction of the Co-curricular Performing Arts and Exam Centre is to be obtained via separate entry and exit driveways off Unwin Road. The existing driveways are anticipated to be used for access during demolition and excavation stages. At the remaining stages, loading is to be undertaken via work zones along the western side of Unwin Road and the southern side of Clarke Road.

Construction Worker Parking

No on-site construction staff parking will be provided. All construction staff would be advised to utilise public transport when travelling to and from the site. The following measures would be implemented to encourage staff to utilise public transport:

- Provision of a secure tool storage facility on-site to allow tradespeople to safely store tools required for the project.
- During the site induction phase and regular management meetings, contractors would be instructed to
 use public transport when travelling to the site.

Contractors would also be informed of restricted parking conditions on-site and the surrounding road network.

Construction Vehicle Routes

Dedicated construction vehicle routes have been identified in the CTMP to provide the shortest distances to/from the arterial road network, whilst minimising the impact of construction traffic on local streets within the vicinity of the site. All truck drivers will be advised of the designated routes to/from the site.

6.7. **BIODIVERSITY**

A Biodiversity Development Assessment Report Waiver Request (**Appendix Q**) has been prepared by Cumberland Ecology for the approval of a waiver for the requirement that a Biodiversity Development Assessment Report (BDAR) be submitted with the SSD.

6.7.1. Methodology

For the purpose of the waiver, the study area comprises the entire Barker campus. A botanist and ecologist surveyed the subject site on 18 November 2021. The subject site was inspected by traversing all vegetated areas of the subject site to verify existing vegetation mapping, with reference to Plant Community Types (**PCTs**) and potential threatened ecological communities (**TECs**) known to occur within the locality.

The assessment considered the ecological impacts of the proposed development footprint on threatened species, populations and communities listed under the NSW Biodiversity Conservation Act 2016 (BC Act), and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) that occur within the study area.

Section 7.9 of the BC Act indicates that there are some circumstances in which the Planning Agency Head and the Environment Agency Head may determine that a proposed development is not likely to have a significant impact on biodiversity values and as such, a BDAR is not required to be prepared. Based on the biodiversity values defined under the BC Act and the Biodiversity Conservation Regulation 2017 (BC Regulation).

6.7.2. Assessment

Based on the biodiversity values, a BDAR waiver has been considered appropriate for the following reasons:

- The subject site has been largely cleared and is predominately comprised of plantings of exotic, nonendemic natives and planted local endemics. All trees to be removed comprise planted individuals.
 Furthermore, the subject site is located in a highly modified/urbanised area.
- It is anticipated that the project will result in the impact of approximately 0.18 ha of planted native vegetation that does not show any structural/compositional features of a naturally occurring PCT and 0.05 ha of exotic vegetation, in an urban/landscaped setting.
- While there are patches of vegetation across the subject site which include the locally endemic blue gums, the vegetation across the subject site has been significantly altered from its original state and the majority of the trees found within the subject site are either exotic, non-endemic natives or planted local endemics.
- Future landscaping will result in replacement planting for the trees to be removed. Therefore, the connectivity for native species with the locality will remain consistent with current conditions.
- The proposed development is not located within the riparian corridor for Waitara Creek and is not expected to impact on the ecological function of the watercourse.

Overall, the proposed development is considered highly unlikely to have significant impacts upon defined biodiversity values as impacts are limited to highly modified areas.

6.8. NOISE AND VIBRATION

An Acoustic Assessment has been prepared by Acoustic Logic (**Appendix R**) in relation to the construction and operational noise associated with the concept and Stage 1 works.

The nearest noise sensitive receivers surrounding Barker College have been identified in **Figure 29** below which include:

- R1: Residential Receiver 1 Residential development to the north (65 Pacific Highway)
- R2: Residential Receiver 2 Residential development to the east (7-33 Unwin Road and 2A-26 Yardley Avenue)
- R3: Residential Receiver 3 Residential development to the south (30 Unwin Road)
- R4: Residential Receiver 4 Residential development to the south (31-31A Clarke Road and 4-12 Marillian Avenue)
- R5: Residential Receiver 5 Residential development to the west (14-26 College Crescent)
- C1: Commercial Receiver 1 Commercial development to the north along Pacific Highway
- C2: Commercial Receiver 2 Commercial development to the east (1A Clarke Road)
- E1: Educational/active recreation receiver 1 Unwin Park and St Leo's College Recreation Centre (1 Clarke Road and 37-63 Unwin Road)

6.8.1. Methodology

Unattended noise monitoring was conducted by Acoustic Logic from Tuesday 10 May 2022 to Wednesday 25 May 2022. Attended noise measurements were also undertaken on Wednesday 30 June 2021 between 4:30 and 5:30pm. Unattended noise monitors were located around the potentially more noise affected residents including:

- On the eastern boundary of the current tennis courts opposite residents at Residential Receiver 2
- On the southern boundary of Barker College near Residential Receiver 3
- Within the Barker Junior School on the corner of Clarke Road and College Crescent near Residential Receiver 4
Figure 29 Surrounding Noise Receivers



Source: Acoustic Logic

6.8.2. Construction Noise

An assessment of construction and vibration noise has been undertaken in relation to both Stage 1 and concept works.

Noise associated with construction activities on site has been assessed against the NSW DECC *Interim Construction Noise Guidelines* (2009), and the relevant Australian Standards in **Table 15** below.

Residential Receiver	Predicted Noise Generation
R1: Residential development to the north (65 Pacific Highway)	Construction works exceed the 54db(A) noise management level when working close to the northern boundary but remain under 75db(A) Highly Noise Affected level.
	Jackhammers during demolition may exceed the 75db(A) Highly Noise Affected level.
R2: Residential development to the east (7-33 Unwin Road and 2A-26 Yardley Avenue)	Construction works exceed the 54db(A) noise management level when working close to the eastern boundary but remain under 75db(A) Highly Noise Affected level.
	Jackhammers and concrete saws during demolition may exceed the 75db(A) Highly Noise Affected level when working close to the eastern boundary.
R3: Residential development to the south (30 Unwin Road)	Construction works exceed the 54db(A) noise management level when working close to the southern boundary but remain under 75db(A) Highly Noise Affected level.
	Jackhammers and concrete saws during demolition may exceed the 75db(A) Highly Noise Affected level when working close to the southern boundary.
R4: Residential development to the south (31-31A Clarke Road and 4-12 Marillian Avenue)	Construction works remain below the 61db(A) noise management level. Demolition and excavation works may exceed the 61db(A) noise management level when working close to the southern boundary but remain under 75db(A) Highly Noise Affected level.
R5: Residential development to the west (14-26 College Crescent)	Construction works remain below the 61db(A) noise management level. Demolition and excavation works may exceed the 61db(A) noise management level when working close to the western boundary but remain under 75db(A) Highly Noise Affected level.
C1: Commercial development to the north along Pacific Highway	Construction works remain below the 70db(A) noise management level. Demolition works may exceed the 70db(A) noise management level when working close to the northern boundary.
C2: Commercial development to the east (1A Clarke Road)	Construction works remain below the 70db(A) noise management level. Demolition works may exceed the 61db(A) noise management level when working close to the northern boundary.
E1: Unwin Park and St Leo's	In a worst case scenario:
College Recreation Centre (1 Clarke Road and 37-63 Unwin Road)	 Demolition works will exceed the 45db(A) noise management level Excavation works will exceed the 45db(A) noise management level when working close to the southern boundary
	 Electric hand tools remain below the 45db(A) noise management level
	With closed windows/façade noise can be reduced by 20-30db(A)

Table 15 Predicted Construction Noise

Given the noise levels associated with construction works, particularly close to residential dwellings, the following recommendations are proposed during construction works:

- Notification of works prior to the beginning of construction should occur for all residents within 100m of construction works and the Barker campus.
- To protect the amenity of nearby residential receivers, respite periods should be implemented where construction activities exceed the 'highly noise affected level' (ie. jackhammers hydraulic drills, excavation works)
- In the event of ongoing complaints, noise and/or vibration monitoring in to be implements along property boundaries closest to impacts noise receivers to ascertain whether noise parameters are above reasonable levels.
- A copy of the Construction Noise and Vibration Management Plan is to be available to all contractors and form part of site induction.

6.8.3. Operational Noise

An in-principle assessment of operational noise emissions associated with the operation of future concept works has been prepared as part of the Acoustic Assessment.

Noise emissions from the Aquatics and Tennis Centre will be primarily dominated by usage of the pool and tennis courts. It is noted that the pool area is enclosed, therefore noise emissions can be readily controlled through the appropriate selection of construction materials.

The reference scheme identifies the show courts will partially enclosed, however the club courts will remain as external tennis courts enclosed by perimeter fencing. The Acoustic Assessment notes that noise associated with use the courts relative to the existing courts is likely to be reduced given the elevation above ground level.

Noise emissions from the Co-curricular Performing Arts and Exam Centre will be primarily dominated by the use of the practice rooms and recital hall. The recital hall is enclosed and located within the centre of the current structure therefore noise emissions will be readily controlled through multiple layers of the building and appropriate selection of construction materials. Practice rooms can emit higher noise levels, therefore appropriate selection of construction materials including appropriate glazing should be investigated as part of a future detailed application.

On this basis, Acoustic Logic confirm that noise associated with the operation of new facilities can be justified, noting a detailed review of noise emissions associated with both facilities including the proposed hours of operation should be undertaken as part of future detailed applications.

6.9. GROUND AND WATER CONDITIONS

A review of hydrogeological information was undertaken by JKE as part of the Preliminary (Stage 1) Site Investigation (**Appendix S**).

Based on the local topography and surrounding land features, it is anticipated that groundwater flows towards the south-west. The nearest surface water body is Waitara Creek located approximately 295m to the south-west and down gradient of site. Waitara Creek is considered to be a potential receptor, although it is a reasonable distance from the site and the potential for direct migration of groundwater contamination from the site and into this receptor is unlikely to occur.

There were three registered bores within 2km of the site including:

- The nearest registered bore was located approximately 1.06km to the east of the site. This was utilised for recreation purposes;
- There were no nearby bores (i.e. within 2km) registered for domestic or irrigation uses; and
- The drillers log information from the closest registered bores typically identified fill and/or clay soil to depths of 5-11m below ground level, underlain by sandstone bedrock.

Based on this information, there are not considered to be any groundwater 'users' (e.g. use for drinking or irrigation) within 2km radius of the site and subsurface conditions at the site are likely to consist of relatively

low permeability (residual) soils overlying shallow bedrock. As such, the potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low.

6.10. STORMWATER AND FLOODING RISK

A Civil Engineering Report has been prepared by TTW (**Appendix U**). The report outlines the proposed stormwater quantity and quality as well flood risks associated with the proposed concept works.

Stormwater is to be designed in accordance with Section 1C.1.2 – Stormwater Management of the Hornsby DCP. Further assessment during the detailed approval phase will be required to ensure:

- All new stormwater is to be conveyed by gravity as discharge from site via Hornsby Shire Council's existing drainage system. Existing catchment conditions should be maintained where practical.
- Roof catchments will be collected in roof gutters and conveyed by downpipes to an in-ground pipe system.
- Surface stormwater flows will be conveyed by site grading and collected by Surface Inlet Pits (SIP).
- Where required, in-ground stormwater is to be connected to Onsite Stormwater Detention and water quality treatment devices.

Although the site is not identified as a Flood Planning Area within the Hornsby Council LEP mapping, sections of site have been outlined as Low Hazard zones within the Hornsby Floodplain Risk Management Study and Plan 2015. Flooding is primarily associated with the western and southern boundaries of site (where concept approval is sought), with portions of surrounding roadways subject to high hazard levels during the 1% AEP.

In accordance with Council DCP requirements, the current building envelopes have been designed to allow for the following Flood Planning Levels are to be adopted for design of site:

- All habitable floor levels are to be a minimum of 0.5m above the 1:100 ARI flood level, and
- All garages or basement ramps should be 0.3m above the 1:100 ARI flood level.

Future detailed approval of the Aquatics and Tennis Centre and Co-curricular Performing Arts and Exam Centre will be required as part of any future detailed development application to ensure the final design does not result in any adverse impacts on the Barker campus and adjacent sites.

6.11. CONTAMINATION AND REMEDIATION

A Preliminary (Stage 1) Site Investigation (**PSI**) prepared by JK Environments (**JKE**) is enclosed in **Appendix S**.

JKE have previously undertaken several phases of investigation at the wider college campus including the following:

- Preliminary Contamination and Waste Classification Screening (Junior School Investigation)
- Preliminary Desktop Site Assessment (Proposed Cafeteria Building); and
- Preliminary Intrusive Investigation (Proposed Cafeteria and Administration Building)

A preliminary Hazardous Materials Register has also been prepared by JKE and is enclosed in **Appendix T**.

6.11.1. Assessment

A walkover inspection of the site was undertaken by on 22 April 2022. The findings of the site visit were generally similar to the findings of previously site investigations across with campus, with key observations summarised below:

- Minimal evidence of erosion was observed in areas of landscaping, with the exception of playing fields due to use and the interface between hardstand and soft scaping;
- Cut and fill was evident at the site based on the levels observed and the wider campus topography. Fill
 material (inclusions of igneous gravels) was observed at the interface soft scaping and hardstand in the

Rosewood Walk, Chapel Drive drop off and pick up, and landscaped areas of the Co-Curricular Performing Arts and Exam Centre, and Maintenance building;

- No visible or olfactory indicators of contamination were observed during the site inspection;
- Drainage across the site would expect to flow in sympathy with the overall topography of the campus and site, in a south direction. A number of onsite stormwater drains were observed throughout the campus, these would be expected to discharge into the regional stormwater system; and
- A majority of the site was paved, with the exception of Rosewood Walk and Chapel Drive drop off and pick up, and landscaped areas of the Co-Curricular Performing Arts and Exam Centre, and Maintenance building which were grass covered. No visible signs of plant stress or dieback were observed during the site inspection. No visible signs of plant stress were observed in the landscaped or vegetated areas of the College outside of the site.

Soil sampling was also undertaken with 17 boreholes introduced across the site. The boreholes generally encountered fill material to depths of approximately 0.15m to 0.7m below ground level. The fill typically comprised silty sandy clay with inclusions of ironstone, sandstone, igneous and quartz gravel, building rubble (plastic, ceramic, glass metal and concrete fragments), ash, root fibres and organic matter. While sampling from boreholes did not find any asbestos in fill, it is acknowledged in the PSI that asbestos has previously been encountered in fill material on the wider Barker campus and in close proximity to the site.

Based on the results of the PSI, JKE did not identify contamination that would preclude the proposed development of the site including Stage 1 works.

6.11.2. Management Recommendations and Mitigation Measures

The following recommendations were provided by JKE in relation to the concept works which should be undertaken as part of a future detailed assessment:

- 1. Undertake a DSI to better assess the extent of contamination. A Sampling Analysis Quality Plan (SAQP) is to be prepared prior to commencement of the DSI; 2.
- 2. Develop and implement a Remediation Action Plan (RAP), utilising the PSI and DSI datasets;
- 3. A hazardous building materials survey is undertaken to confirm the presence of any hazardous building materials (i.e. asbestos) prior to demolition of the existing buildings and structures within the site. Where hazardous building materials are identified, and following removal, a clearance certificate should be provided to reduce the risk of potential contamination from poor demolition practices; and
- 4. Prepare a site validation assessment report for the remediation works undertaken at the site.

6.12. WASTE MANAGEMENT

A Waste Management Plan (**WMP**) has been prepared by MRA Consulting Group (Appendix **W**) which assesses the construction and operational waste associated with concept and Stage 1 works. This WMP considered the requirements of the Hornsby DCP *Waste Minimisation and Management Guide* (**WMMG**) 2003, NSW Department of Education *Education Facilities Standards and Guidelines* (**EFSG**) and NSW EPA (2019) '*Better Practice Guide for Resource Recovery in Residential Developments*'.

6.12.1. Construction Waste

Demolition works at the site will include the removal of various structures as indicated on the demolition plans in **Appendix B**.

Construction activities at the site will generate a range of construction and demolition (**C&D**) wastes across the various stages of development. Throughout the development process, all materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage during construction operations will involve some stockpiling of reusable material, as well as placement of skip bins for the separation of construction materials for recycling. Waste storage for residual waste or contaminated material will also be made available at the site for disposal where necessary. Skip bins and material stockpiles will require alternative placement across construction and demolition operations

to facilitate the safe and efficient storage of materials as development progresses and will be retained within property boundaries to avoid illegal dumping.

An active waste storage area shall be designated by the C&D contractor according to location of works and stage of development. Waste storage shall be sufficient to store the various waste streams expected during operations. Waste storage areas will be kept clear to maintain vehicular access and shall also be kept tidy to encourage separation of waste materials and for WHS reasons. Waste management principles, management measures and facilities in use on the site shall be included as part of the site induction for all personnel working on the site.

This WMP will be retained on-site during the excavation and construction phases of all stages of the development, along with other waste management documentation (ie. contracts with waste service providers). Responsibility for the WMP, waste documentation and processes during the excavation and construction phases will be with the site manager or builder.

6.12.2. Operational Waste

Barker currently provide the following bins which are distributed throughout the school for daily collection (during the school week):

- 70 x 120L general waste bins collected daily and transferred to the general waste compactor for decanting;
- 40 x 120L comingled recycling bins collected daily and transferred to 12 x 660L comingled recycling bins for regular truck collection by an external contractor; and
- 8 x 660L paper and cardboard bins that are collected when full and transferred to the cardboard compactor. Both compactors are emptied fortnightly by Veolia.

An additional 70 x 240L paper and cardboard bins are distributed throughout the school and collected by an external contractor weekly. Current loading and servicing are managed to ensure pick up does not occur during peak pick up and drop off times.

The site retains an existing maintenance area situated at 28 Unwin Road. This area is utilised for the storage of full and empty bins, including compactor units for general waste and recycling which are serviced on a regular basis. The maintenance area is suitably sized to accommodate waste collection vehicles to enter the site, service waste and exit the site in a forward-facing direction. The existing maintenance area will continue to be utilised through Stage 1 of the development in the same way as current operations. The current operational waste management systems on campus are considered suitable for the ongoing management on site and provide suitable waste management to accommodate additional students and staff associated with the Stage 1 works.

The concept works include the replacement of the existing Maintenance building with a new Co-curricular Performing Arts and Exam Centre and Maintenance building. The current operational waste systems can remain in place with future and interim loading and servicing to be addressed as part of future detailed approvals. The current reference scheme for the Maintenance building provides sufficient storage space for waste management requirements and maintains the forward in - forward out access for service and waste vehicles including medium rigid vehicles.

6.13. ABORIGINAL CULTURAL HERITAGE

Aboriginal Cultural Heritage Assessment (**ACHA**) (refer to **Appendix X**) has been undertaken by Extent Heritage to identify any potential Aboriginal objects and other cultural heritage values within the study area.

For the purposes of the ACHA, the study area comprises the entire Barker campus. The study area is located within the territory of the Eora Nation and is located on the lands of the Dharug people.

This assessment has been carried out in accordance with the following guidelines:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).

Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (the Code of Practice).

As part of the ACHA, contact was made with the relevant Registered Aboriginal Parties (RAPs) to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area. During the design development process, the RAPs were invited to comment on draft plans and attend site inspections to discuss the site and the project. This process provided the opportunity for comments regarding cultural heritage to be heard and received.

One response was received during the report review period from the Kamilaroi Yankuntjatjara Working Group. This response emphasised the significance of the study area for local flora and fauna due to its location on the Georges River. This is presumably an error, given that the study area is over 22km northeast of the Georges River. The email outlines the use of the sky for navigation, and the waterways as cultural areas and resource gathering areas. The email recommended interpretation be implemented within the development, suggesting 3D imagery of the identified sites to be impacted. No sites were previously registered or identified during the field survey. KYWG disagrees with the recommendations of the report due to the 75 AHIMS sites with 82km2 surrounding the study area. Monitoring of the development was also recommended by KYWG.

A site visit of the study area was completed on 20 October 2021 with the aim of understanding the landscape features and potential for subsurface Aboriginal archaeological remains to be present. The site visit did not identify any Aboriginal sites or areas of archaeological potential. Given the significant ground disturbance observed during field survey and the limited depths of the mapped soil landscapes, there remains low potential for subsurface Aboriginal objects and sites in the form of buried artefacts. Additionally, there is low potential for culturally modified trees due to the widespread clearing of a majority of the remnant vegetation. In summary:

- No Aboriginal sites were identified within the study area.
- All sections of the study area have been subjected to high levels of ground disturbance.
- All sections of the study area were found to have a nil low archaeological potential.
- No direct impacts from the project on Aboriginal cultural heritage have been identified.

6.13.1.1. Management Recommendations and Mitigation Measures

Based on the findings of the ACHAR, no further assessment is required as no known Aboriginal objects or Potential Archaeological Deposits (**PADs**) will be impacted by the project.

Based on the above conclusions, to appropriately manage Aboriginal cultural heritage during the proposed works, the following recommendations have been provided:

- A copy of this ACHAR report should be lodged with the AHIMS Sites Registrar and provided to each of the Registered Aboriginal Parties (RAPs).
- If any element of the development is relocated outside the area assessed in this study, or if any alteration to the development plan is proposed that could result in additional impact, a new Aboriginal heritage due diligence assessment should be undertaken by a suitably qualified heritage consultancy to identify whether any further Aboriginal heritage assessment is required in accordance with the risk management process set out in the Code of Practice
- The proponent should ensure that all relevant personnel and contractors involved in the development works are aware of all relevant Aboriginal heritage legislative requirements, including any conditions of approval made by DPIE with respect to Aboriginal heritage protection and management.
- If Aboriginal objects are uncovered during construction, work should cease, and an archaeologist, Heritage NSW – DPC and the Metropolitan Aboriginal Land Council should be informed.
- If human skeletal material is identified at any time during development works, all works in the vicinity of the discovery should cease immediately and the NSW Police, the NSW Coroner's Office and Heritage NSW should be contacted for advice about how to proceed. Human skeletal remains are protected under the provisions of the Coroners Act 2009 (remains that are less than 100 years old) and the National Parks and Wildlife Act 1974 (traditional Aboriginal burials).

6.14. ENVIRONMENTAL HERITAGE

As indicated previously at **Section 2.2** of this report, the whole of Barker campus, is listed as a locally significant heritage item under the Hornsby LEP (Item 501). The School also includes two additional locally listed heritage items – Barker College Junior School (Item 465) and Barker College - Centenary Design Centre, McCaskill Music Centre and Development Office (Item 782).

The site is also located within the Barker College Heritage Conservation Area (Item C1) and in close proximity to a number of other locally listed heritage items within the Hornsby Local Government Area. As such, a Heritage Impact Statement (**HIS**) has been prepared by NBRS to assess the impact of the proposed works on the identified heritage significance of the site and surrounds (refer to **Appendix Y**).

Given the heritage significance of the site, and in response to comments from the SDRP, a draft Conservation Management Plan (**CMP**) was prepared by NBRS in May 2022 (refer to **Appendix Z**). An earlier CMP for Barker College was prepared by Paul Davies Pty Ltd, dated October 2015.

6.14.1.1. Assessment

The HIS has been prepared in accordance with the NSW Heritage Division guidelines 'Assessing Heritage Significance', 'Altering Heritage Assets and Statements of Heritage Impact', the Hornsby LEP and the Hornsby DCP. This report also assesses the proposal against the policies established in the draft CMP.

The proposal involves alterations to fabric of moderate significance, in order to ensure the ongoing use of the place. The HIS confirms that the overall significance of Barker will not be diminished by these alterations. It is also noted that the advice of NBRS Heritage Consultants were sought during the concept design process.

The key aspects of the proposal assessment are summarised below:

- The proposed development retains exterior form of all buildings identified as being of high significance within the draft CMP including Stokesleigh, the Careers and Counselling Centre, Carter House, the Main Reception and Administration, the Health Centre, Plume House, the Dining Hall, Boyce Hall, the West Wing, the War Memorial Chapel, Leslie Hall and the Mothers' War Memorial Pavilion.
- The replacement of stairs between C-block and Leslie Hall is considered to have an acceptable heritage impact as it involves the removal of non-significant fabric. The proposed works are necessary to improve accessibility on site and will be located in the same location of the existing stairs with a similar design to ensure that new works do not detract from the heritage significance of Leslie Hall. The new lift is also located in a location which does not contain any significant heritage fabric.
- The demolition of the existing tennis courts and construction of a new Aquatics and Tennis Centre in the place of the existing open-air tennis courts to the south-east corner of the main School campus site is considered to have an **acceptable heritage impact**. Due to the distance between the 'Heritage Precinct' located within the northwest corner of the main school campus, and the location of the proposed new Aquatics and Tennis Centre towards the south-east corner of the main School campus, there will be no physical or visual impacts which will alter the appreciation of the character and significance of the buildings and landscape features on the site which have been identified as being of High significance within the draft CMP.
- The demolition of the existing Maintenance building, existing Former Barker College Pre-School building and Prep School carpark and construction of a new Maintenance building and Co-Curricular Performing Arts and Exam Centre is considered to have an **acceptable heritage impact**, as it involves the removal of non-significant, later fabric.

NBRS also recommend that built form associated with the concept envelopes should be identifiably contemporary to ensure the significant features associated with the original and early significant buildings on the site, remain legible.

Overall, the proposed works are considered to align with the relevant policies of the draft CMP, including:

- The design of the new buildings on the site have been developed by Neeson Murcutt + Neille, and are of a high architectural quality to meet the high architectural standard set by the design of the existing buildings.
- The buildings which are of high significance, which make an important contribution to an understanding
 of the significance of the place, will be retained.

- New buildings are proposed to be located to the south-east corner of the main School campus site and to the south of Clarke Road, well away from significant heritage buildings. As such, due to the distance between these buildings of high significance and the new buildings on the site, as well as due to the height of the new buildings, the significant elevations of the buildings of high significance, will remain visible.
- Views to and from buildings of high significance will be retained. The proposal does not include the addition of any structures or landscape features which will alter views to or from the building.
- New additions which are required in order to meet compliance with the DDA will not have an adverse impact on significant fabric.
- Significant landscape areas will be retained, and new landscape works have been located within other, less significant areas of the site.
- New additions to the site will be identifiable as new construction through the use of contemporary materials and detailing.

Overall, the proposed development will respect the heritage significance of the campus and will have an acceptable impact upon the significance of the heritage items on the site. The legibility, visibility and amenity of the surrounding Conservation Area and heritage items in the vicinity, will also be retained.

6.15. SOCIAL IMPACT

A Social Impact Assessment (SIA) was prepared by Urbis in relation to the concept proposal and Stage 1 works and is enclosed in **Appendix AA**. A SIA is a specialist technical study which identifies and analyses the potential positive and negative social impacts associated with a proposal. According to the DPE's *SIA Guideline for State Significant Projects (*2021), social impacts are the consequences that people experience when a new project brings change. For the purposes of an SIA, 'people' can be individuals, households, groups, communities, businesses or organisations.

Based on the assessment in this report, the key social impacts of this proposal are:

- Targeted access to high quality education facilities: Increasing the student enrolment cap is likely to generate a medium positive impact on future students accessing the school.
- Reduced access to the local area: Increased traffic and parking challenges associated with the increase in student and staff numbers will likely have a medium negative impact on surrounding residents' way of life and ability to access service and facilities. This impact can be reduced by implementing the recommendations in the Transport Impact Assessment (TIA) prepared by TTPP outlined in Section 6.6 of this EIS.
- Pressure on open space and recreation facilities: it is likely that access to open space due to this
 proposal will have a low negative impact on the community's access to recreation facilities. The proposal
 introduces future publicly accessible recreation facilities including a learn to swim centre.
- Increased local employment: The increased availability of ongoing operational jobs and short-term construction jobs as a result of the proposal is likely to have a medium positive impact on people working in education and construction in the Hornsby Shire.

Overall, the proposal is likely to have a low, positive impact on the community, primarily by providing targeted access to high quality education facilities and increasing local employment. The overall impact of the proposal could be further enhanced through the implementation of the following recommendations addressing access to the local area and community access to open space and recreation facilities:

- Continue to consult with TfNSW on upgrades to the surrounding road network
- During future development stages provide secure bicycle parking space and end of trip facilities onsite in line with the rates recommended by the TIA. This will also support the objectives of the GTP.
- Clearly and widely communicate the purpose of the TIA and GTP with stakeholders and the community to address fears of a worsened traffic and parking as a result of the proposal.
- Engage with Hornsby Shire Council to develop an agreed approach to the Barker's use of Hornsby Shire Council managed open space, and the future community use of the Aquatics and Tennis Centre and/or Cocurricular Performing Arts and Exam Centre.

6.16. INFRASTRUCTURE REQUIREMENTS AND UTILITIES

Steensen Varming have prepared an Infrastructure Requirements and Utility Assessment Report (**Appendix BB**) to identify the infrastructure requirements related to the proposed concept works. The report includes assessment by Warren Smith Consulting Engineers (WSCE) in relation to hydraulic and fire services.

6.16.1. Electrical and Telecommunication Services

A preliminary maximum demand calculation has been completed for both the Aquatics and Tennis Centre and the Co-curricular Performing Arts and Exam Centre to determine the electrical requirements of each intended building. The calculations provided below indicate the following preliminary maximum demands:

- Co-curricular Performing Arts and Exam Centre and Maintenance building 883kVA (1226A)
- Aquatics and Tennis Centre 803kVA (1116A)

Given the anticipated loads, from an electrical supply perspective it appears that both buildings will require their own dedicated kiosk transformers. This is likely to be incorporated into future detailed DAs for both buildings. In order to provide a supply to the proposed buildings, if capacity permits they could both be connected to the blue high voltage feeder on Clarke Road or have the yellow feeder extended down Unwin Road to connect the Aquatics and Tennis Centre to the network.

There are three telecommunications authorities in the vicinity of the Barker campus - NBN, Telstra and Optus. Services are located within the Clarke Road and Unwin Road reserves. There are no telecommunication services which will be impacted by the proposed building envelopes associated with the concept works.

6.16.2. Hydraulic Services

There are several water mains available adjacent to the Barker which may be available for connection as part of future detailed DAs. The table below summarises the water mains available, but any future connections are subject to Section 73 applications:

- 100mm Clarke Road main (2514080)
- 100mm Unwin Road main (2514244)

Should a standalone potable connection to the current main not be preferable, there is also the potential to connect to existing site infrastructure within the Barker campus.

6.16.3. Fire Services

As part of future detailed design, a Combined Fire Sprinkler/Hydrant system shall be provided in accordance with the relevant Australian Standards and BCA requirements. A fire hydrant service shall be provided to the new buildings with hydrants provided externally and internally as required to satisfy hydrant coverage to all internal floor areas. Hydrants will be located within fire stairs with on-floor access, and on floor adjacent to fire compartments with fire hose reels as required. Temporary Fire Hydrants shall be provided during construction and staged to suit the construction sequence.

The fire services for the Aquatics and Tennis Centre are proposed to be supplied from existing services within the Barker campus. The fire water services for the Co-curricular Performing Arts and Exam Centre are proposed to be connected to the same main as the potable water supply. The hydrant is proposed to be mains fed with the sprinkler system supplemented by a tank supply.

7. JUSTIFICATION OF THE PROJECT

This section of the report provides a comprehensive evaluation of the project having regard to its economic, environmental and social impacts, including the principles of ecologically sustainable development.

It assesses the potential benefits and impacts of the proposed development, considering the interaction between the findings in the detailed assessments and the compliance of the proposal within the relevant controls and policies.

This section of the report provides a comprehensive evaluation of the project having regard to its economic, environmental and social impacts, including the principles of ecologically sustainable development.

It assesses the potential benefits and impacts of the proposed development, considering the interaction between the findings in the detailed assessments and the compliance of the proposal within the relevant controls and policies.

7.1. PROJECT DESIGN

The proposal will result in the development of a high-quality educational environment for staff and students that:

- Enables an excellent academic programme;
- Supports a fulfilling and diverse extra-curricular experience;
- Provides efficient and environmentally sustainable facilities.

The design of the proposal respects the heritage significance of the Barker campus and responds to the streetscape character and landscape context, which represents a positive urban design outcome for the site.

7.2. STRATEGIC CONTEXT

Strategic context and policy have been assessed in **Section 2** of this EIS. The proposal will contribute to the achievement of planning objectives of the Region Plan, District Plan and Hornsby LSPS.

7.3. STATUTORY CONTEXT

The relevant State and Local environmental planning instruments are listed in **Section 4** and assessed in **Appendix C**. The assessment concludes that the proposal complies with the relevant provisions within the relevant instruments as summarised below:

- The proposed development has been assessed and designed in respect to the relevant objects of the EP&A Act as defined in Section 1.3 the Act and addressed in Appendix C.
- This EIS has been prepared in accordance with the SEARs as required by Schedule 2 of the EP&A Regulations.
- Consideration is given to the relevant matters for consideration as required under the BC Act and the SSD is not likely to have any significant impact on biodiversity values, and therefore the SSDA is not required to be accompanied by a Biodiversity Development Assessment Report (BDAR).
- This SSDA pathway has been undertaken in accordance with the Planning System SEPP as the proposed development is classified as SSD.
- The land is zoned 'R2 Low Density Residential' under the Hornsby LEP, which is a prescribed zone for the purposes of the Transport and Infrastructure SEPP. The proposed development is permissible with consent and consistent with the land use objectives of R2 zoning. The proposal generally complies with the relevant provisions under the Hornsby LEP 2012 as detailed in **Appendix C**
- The proposal exceeds the height development standards for the site, with the area of non-compliance allowing for a two-storey building envelope and associated basement parking. As described in Section 6.1 and Appendix C, the proposed envelope generally remains compliant with the height control along the street wall along Clarke Road, however due to the steep topography of the site along Unwin Road, as the land falls, there is a non-compliance along the street wall façade. The proposed encroachment is the direct result of achieving a higher floor to ceiling height to provide building servicing requirements for the

Co-curricular Performing Arts and Exam Centre. Overall, the height non-compliance is acceptable in its context and results in minimal environmental and amenity impact (including impacts relating to privacy, visual amenity, overshadowing and heritage character).

- The proposed development is consistent with the relevant objectives of the R2 zone.
- The proposed development has been assessed in accordance with Resilience and Hazards SEPP. The proposed development complies with the relevant clauses of these SEPPs.
- The proposal generally accords with the relevant provisions of the Hornsby DCP as outlined in Appendix C.

7.4. COMMUNITY VIEWS

Since initial engagement with the community in November 2021, the engagement for the Barker proposed masterplan has reached around 2,200 people in the community. A total of only 15 questions and comments were submitted during the general community session. Public submissions will be considered following exhibition of the application.

Barker will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:

- Continuing to engage with the community about the project, its impacts, and the approval process
- Further updates in School newsletters
- Providing information on how the community's views have been addressed on the school website
- Enabling the community to seek clarification about the project through the two-way communication channels

7.5. LIKELY IMPACTS OF THE PROPOSAL

The proposed development has been assessed considering the potential environmental, economic and social impacts as outlined below:

- Natural Environment: the proposal addresses the principles of ecologically sustainable development (ESD) in accordance with the requirements at Clause 193 of the Regulations and will target a 4 Star Green Star Building Rating. Conservation of biological diversity and ecological integrity has also been considered as part of the proposal. While tree removal is considered as part of the proposed development, the subject site has been largely cleared and is predominately comprised of plantings of exotic, nonendemic natives and planted local endemics. As such, the proposal does not impact the ecological integrity of the site.
- Built Environment: The proposal has been designed to respond to the heritage, design principles, landscaping and the existing campus character. The proposal is sympathetic to the heritage significance of site and the streetscape character of Unwin Road and Clarke Road. Concept building envelopes have been designed to provide sympathetic to the heritage significance of site and the streetscape character of Unwin Road and Clarke Road. The overall built form has been designed to remain compatible with other contemporary School buildings within the Junior School and along Clarke Road.
- Social: The proposal continues the educational use of the site and provides upgraded educational
 facilities which for the benefit of the current and future students. The increase to the existing student
 capacity will contribute towards meeting the growing need for school places in the North District and will
 accommodate these places within existing and proposed high quality, fit for purpose spaces and
 facilities.
- **Economic:** The proposal will generate full-time construction jobs and additional FTE staff jobs, therefore contributing to the employment opportunities in the Hornsby LGA.

The potential impacts can be mitigated, minimised or managed through the measures discussed in detail within **Section 6** and as summarised in **Appendix D** to this EIS.

7.6. SUITABILITY OF THE SITE

The site is considered highly suitable for the proposed development for the following reasons:

- The site is entirely suitable for the development of the proposal as it continues the use of the site as an educational establishment.
- Barker has a historical association with the site having been located on the current Campus since 1895. The proposal is therefore highly suitable for the site to maintain the ongoing presence of the School in the area.
- The site is capable of accommodating upgraded educational buildings and additional students and staff with no undue impacts on surrounding residential properties or the surrounding road network.
- Residential amenity and privacy to adjacent properties will be respected through proposed landscaping.
- The proposal has site specific merit as demonstrated by site analysis and various site investigations, including geotechnical, site contamination and flora and fauna.
- The site is well serviced by public transport.
- The proposal maintains existing car parking numbers within the campus. Upgrades are also proposed to improve existing pick up and drop off infrastructure within the campus.
- The current traffic modelling indicates that the local road network could accommodate the additional post-development traffic volumes associated with the proposed works and increase in students and staff. The implementation of the GTP and Operational Traffic and Access Management Plan will assist in the management of traffic associated with Barker.

7.7. PUBLIC INTEREST

The proposed development is considered in the public interest for the following reasons:

- The proposal has been prepared having regard to Council's planning policies and generally complies with the aims and objectives of the controls for the site.
- Subject to the various mitigation measures recommended by the specialist consultants as summarised in Appendix D of this EIS, the proposal does not have any unreasonable environmental or social impacts on adjoining properties or the public domain.
- The proposal will provide improved onsite drop-off/pick-up arrangements for students to reduce traffic impacts on the surrounding road network.
- The proposal will result in the development of a high-quality educational environment for staff and students that supports a fulfilling and diverse extra-curricular experience and provides efficient and environmentally sustainable facilities.
- The proposal has been designed to make a positive contribution to the overall built form of the site, having regard to the streetscape, the landscaping setting and the heritage significance of the campus.
- The proposal is sympathetic to the character of the surrounding neighbourhood and respects visual privacy from neighbouring residential dwellings.
- The proposal will contribute positively to energy efficiency and environmental sustainability. The design has incorporated many ESD features to reduce energy consumption during the life of the proposed development

Having considered all relevant matters, we conclude that the proposed development is appropriate for the site and approval is recommended, subject to appropriate conditions of consent.

DISCLAIMER

This report is dated 14 October 2022 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Barker **(Instructing Party)** for the purpose of State Significant Development **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.



SEARS TABLE



ARCHITECTURAL PLANS



STATUTORY COMPLIANCE TABLE



MITIGATION MEASURES

APPENDIX E

COST SUMMARY REPORT

APPENDIX F

DESIGN REPORT



LANDSCAPE PLANS

APPENDIX H

ENGAGEMENT OUTCOMES REPORT

APPENDIX I

BUILDING CODE OF AUSTRALIA COMPLIANCE REPORT



ACCESS ASSESSMENT REPORT

APPENDIX K

VISUAL IMPACT ASSESSMENT

APPENDIX L

ARBORICULTURAL IMPACT ASSESSMENT REPORT



ESD REPORT

APPENDIX N

TRANSPORT AND ACCESSIBILITY IMPACT ASSESSMENT REPORT



GREEN TRAVEL PLAN

APPENDIX P

CONSTRUCTION TRAFFIC MANAGEMENT PLAN



BDAR WAIVER



ACOUSTIC ASSESSMENT REPORT

APPENDIX S

PRELIMINARY (DESKTOP) SITE INVESTIGATION



HAZARDOUS MATERIALS REGISTER



CIVIL ENGINEERING REPORT



GEOTECHNICAL ASSESSMENT REPORT
APPENDIX W

WASTE MANAGEMENT PLAN

APPENDIX X

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

APPENDIX Y

STATEMENT OF HERITAGE IMPACT

APPENDIX Z

CONSERVATION MANAGEMENT PLAN



SOCIAL IMPACT ASSESSMENT

APPENDIX BB

INFRASTRUCTURE AND UTILITY ASSESSMENT



SURVEY PLAN



SDRP MEETING MINUTES



URBIS.COM.AU