GYDE

Environmental Impact Statement

Newcastle Education Campus

25A National Park Street, Newcastle West

Submitted to Department of Planning and Environment
on behalf of NSW Department of Education

28 September 2023

GYDE.COM.AU

This statement was prepared by:

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Project:	P- 22218
Report Version:	Final - Amended post lodgement

Version	Version date	Comment
01	23 June 2023	Final - EIS for lodgement
02	28 September 2023	Final – Amended post lodgement • Replace Figure 20 (Tree Removal Plan) with a new image with updated tree reference numbering. • Amend Table 4 (Alternate Design Options) to correctly identify school design life.

Registered Environmental Assessment Planner Declaration

Project details	
Project name	Newcastle Education Campus
Application number	SSD-41814831
Address	25a National Park Street, Newcastle West

Proponent details	
Proponent name	Department of Education
Proponent address	105 Phillip Street, Parramatta NSW 2150

Details of person by whom this EIS was prepared	
Name	Mark Schofield
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Declaration by registered environmental assessment practitioner	
Name	David Ryan
Registration number	9513
Organisation registered with	Planning Institute of Australia
Declaration	The undersigned declares that this EIS: • has been prepared in accordance with 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; • 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 infrastructure Guidelines - Preparing an Environmental Impact Statement;

Declaration by registered environmental assessment practitioner	
	• 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.
Signed	
Date	23 June 23, 2023

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APPENDIX	DOCUMENT	PREPARED BY
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HH	Visual Impact Assessment	Terras
II	Social Impact Assessment	GYDE
JJ	Capital Investment Value Report	Arcadis
KK	Letter of Structural engineering advice	Stantec
LL	Staging Plan	GYDE

GLOSSARY AND ABBREVIATIONS

TERM/ACRONYM	DESCRIPTION
AS	Australian Standards
BCA	Building Code of Australia
BC Act	Biodiversity Conservation Act 2016
COLA	Covered Outdoor learning Area
Council	City of Newcastle
CPTED	Crime Prevention through Environmental Design
DA	Development Application
DCP	Development Control Plan
DoE	Department of Education
DPE	Department of Planning and Environment
EFSG	Educational Facilities Standards & Guidelines
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
ESD	Ecologically Sustainable Development
GFA	Gross Floor Area
Homebase	A primary school classroom
INP	Industrial Noise Policy
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NCC	National Construction Code
OSHC	Out of school hours care
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State Significant Development
WSUD	Water Sensitive Urban Design

SUMMARY

This Environmental Impact Statement (EIS) has been prepared on behalf of the NSW Department of Education (DoE) in support of State Significant Development Application (SSDA) No. SSD-41814831. The SSDA proposes upgrades to the Newcastle Education Campus – Newcastle High School, at 25a National Park Street, Newcastle West (the site).

This EIS has been prepared pursuant to division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation), having regard for the publication prepared by the Department of Planning and Environment (DPE), *State Significant Development Guidelines – Preparing an Environmental Impact Statement* and addresses the Planning Secretary's Environmental Assessment Requirements (SEARs) for the project.

Project Description

The proposal seeks to upgrade the Newcastle Education Campus to provide improved facilities to meet the educational needs of students. The upgrades will cater for a total student population of 1,420 and include the following works:

- Demolition of eight (8) buildings.
- Construction of a new three (3) storey learning hub on the southwestern corner of the campus, incorporating a new library, canteen, covered outdoor learning area (COLA), support learning unit, general learning spaces, hospitality teaching spaces, and science labs.
- Construction of a new multi-purpose facility on the north-eastern corner of the campus, incorporating a gymnasium, stage, fitness lab, flexible learning spaces, outdoor courts, and end-of-trip (EOT) facilities for staff.
- Internal refurbishment works within the administration building on Parkway Avenue to form a new student hub.
- New student entry from Parkway Avenue.
- Relocation of Block H approximately 50m south.

Ancillary works are also proposed to enable the proposed upgrades and include new civil infrastructure and a comprehensive landscaping strategy. An extract of the proposed site plan is provided in Figure 1 below.

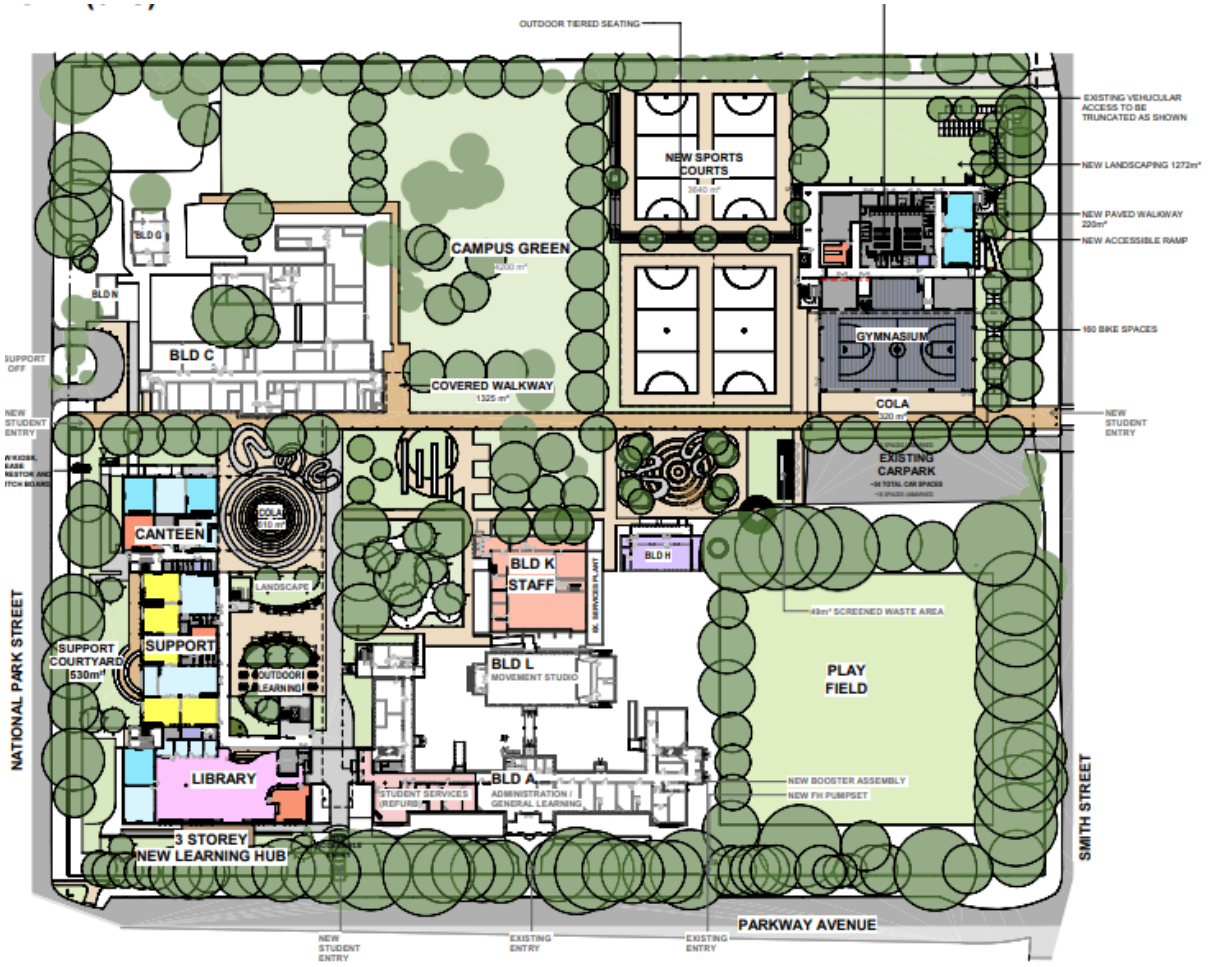


Figure 1: Proposed Site Plan (Source: EJE Architecture)

Design Development

The proposed design demonstrates thorough consideration of the site's heritage and landscape features while maximising connectivity and accessibility. The proposal has been developed with key consideration given to:

- Retention of heritage buildings and landscaping and sympathetic design of new buildings.
- Open space and enhancement of the existing landscape.
- Standard and best practise design principles including the DoE's *Educational Facilities Standards & Guidelines* (EFSG).
- Connection with Country to create a design that reflects and celebrates Aboriginal culture and heritage.
- Reinforcing a relationship with the community.
- Incorporation of the east-west axis from National Park Street to Smith Street and new student entry from Parkway Avenue.
- Schedule 8 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP).

The design has evolved over four (4) major design phases, including master planning, concept design, schematic design, and detailed design. The design was developed by determining the needs of the school based on the spatial requirements, data, site constraints and EFSG. The design focuses on placing buildings, learning spaces, and facilities in the right locations to meet educational and operational needs while maintaining the functional requirements such as pedestrian flow and accessibility throughout the campus.

Justification for the Project

The DoE is responsible for early childhood, primary education, secondary education, adult, migrant and higher education in New South Wales (NSW). DoE is the largest provider of public education in Australia, with responsibility for delivering high-quality public education to two-thirds of the NSW student population.

NSW is facing unprecedented population growth, particularly in children under 15 years of age. By 2031, an additional 269,000 new students will require access to government and non-government schools, of which over 164,000 are expected to enter the government school system. This growth is significantly above historical trends. By law, all school-age children are eligible to attend a government school.

The NSW Government is investing $8.6 billion over the next four (4) years to deliver a program of 215 new and upgraded schools to support communities across NSW. This is the highest investment in public education infrastructure in the history of NSW. Included in this program is the Newcastle Education Campus, which will cater for the growing population of the region. The vision of the program is:

> *"Deliver the very best school infrastructure so that the NSW public education system is one of the finest in the world."*

This is supported by a series of program objectives:

- Facilitate the improvement of educational outcomes.
- Facilitate the successful transition of all students through their educational journey.
- Deliver on commitments to provide education for all students.
- Ensure DoE is maximising value from its current and future physical asset base.

As demonstrated in Section 2 of this EIS, the proposal is consistent with its strategic planning context. The project aligns with the following strategies.

1. NSW Premier's Priorities

   Bumping up education results for children – the proposal is consistent with this priority as it includes new high quality learning spaces and facilities that aim to enhance educational opportunities and learning outcomes.

2. State Infrastructure Strategy 2018 – 2038: Building Momentum

   > ***13. Education***
   > *Strategic Objective: Deliver infrastructure to keep pace with student numbers and provide modern, digitally enabled learning environments for all students.*

The proposal is directly consistent with strategy 13 in the following ways:

- Upgrading an existing school to provide modern and digitally enabled learning environments.
- Delivering infrastructure to accommodate additional student numbers to meet population growth demands.

3. School Assets Strategic Plan

   The Schools Assets Strategic Plan (SASP) establishes a framework to guide DoE to ensure it is able to provide the required educational facilities. It establishes an evidence-based approach to identify need, determine priorities, and allocate funding. The Newcastle Education Campus works upgrades have been identified through the SASP.

4. Newcastle 2040 – Community Strategic Plan

   The Newcastle 2040 – Community Strategic Plan provides a guide to inform policy and action throughout the city. Its vision is that "Newcastle is a liveable, sustainable, inclusive global city".

   The plan identifies low levels of attainment of tertiary qualifications as a challenge for the community, and a barrier to participation in the future economy. The upgrade of the Newcastle Education campus will create an environment where students can develop an interest in learning and obtain foundational skills, and likely create interesting in ongoing learning.

The statutory assessment of this proposal is detailed in section 4 of this EIS. In summary, the proposal complies with the relevant provisions as follows:

- The proposal is consistent with the objects of the *Environmental Planning and Assessment Act, 1979* (EP&A Act).
- The proposed works are permissible with consent under Newcastle Local Environmental Plan 2012 and via State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP).
- The proposal is State Significant Development pursuant to clause 15(2) of schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP).

  Under clause 15(2) of Schedule 1 of Planning Systems SEPP, 'development that has a capital investment value of more than $50 million for the purpose of alterations or additions to an existing school' is categorised as SSD'. The proposal has a CIV of $76,592,528 (Appendix JJ), greater than $50 million and therefore meets the definition of SSD.
- The site can be remediated and made suitable for its ongoing use as an educational establishment.
- The proposal has been designed with thorough engagement with the State Design Review Panel which has informed the detailed design development to produce a high-quality design outcome for the school.
- The proposal is consistent with the relevant controls under the DCP as is discussed in Appendix D.

Potential Environmental Impacts

A full assessment of the potential environmental impacts of the proposal is undertaken in section 6 of this EIS and where necessary management and mitigations measures are proposed. The economic, social and environmental Impacts are summarised below:

- **Economic**–- The proposal will result in positive economic impacts through the creation of approximately 108 jobs through the construction and operational phases.
- **Social**–- the key social impacts of the proposal are:
  - improved access to quality learning spaces and facilities
  - increased green space, increasing opportunities for students to participate in more passive and active recreation activities, and supporting a healthier environment
  - new facilities will make positive, sustainable change to the buildings and running of the school
  - improved amenity and functionality, providing a better learning environment and increasing safety
  - fit for purpose learning environments support the delivery of best practice pedagogies, improving learning outcomes and employment prospects.

  The Social Impact Assessment (SIA) concludes that the proposal will likely have a high positive impact on the community.
- **Built Environment** – The proposed buildings have been sited and designed to minimise adverse impacts on the surrounding streetscapes and adjoining residential dwellings. All heritage buildings are to be maintained as key features of the site and new buildings have been designed to be sympathetic to the heritage significance of the campus and conservation area.
- **Natural Environment** – All significant trees are to be retained and will be protected throughout construction. The proposal will see an increase in canopy coverage from 24% to 31%, providing shade to pedestrian and outdoor play areas.

  The multi-purpose facility is located above the flood planning level and the learning hub is located outside the 1% AEP flood affected area. The proposed works do not result in additional upstream or downstream flooding of adjoining properties. A Flood Emergency Response Plan has been prepared to control risk to life and property during the PMF. The PMF is an existing risk to the site.

  The Biodiversity Assessment Report Waiver identifies that the site contains potential foraging habitat for the Grey Headed flying fox, a vulnerable species. It concludes that the works will have no significant impact on the flying fox as the habitat is of a low quality and is unlikely to be a key resource, and 90% of onsite foraging habitat will be retained.

  External Environment – The proposal maintains all significant trees on the site's perimeter which are a key landscape feature of the surrounding streets and provide a visual buffer to the development. Enhanced kiss and drop facilities and an extended bus zone will improve the movement of traffic around the site in peak periods. The buildings have been carefully designed and are of a bulk, scale and form appropriate to the site and context.

This EIS concludes that the proposal is of an appropriate design, layout and scale for the site, will provide significant public and social benefit, and will not result in any unreasonable environmental impacts. Accordingly, the proposed development, subject to the mitigation measures outlined in **Appendix E**, is a suitable and appropriate development for the site its approval is in the public interest.

1. INTRODUCTION

1.1. Applicant's Details

The applicant details for this SSDA are listed in the following table.

Table 1: Applicant Details

DETAILS	
Applicant Name	NSW Department of Education
Address	105 Phillip Street, Parramatta NSW 2150
Contact Person	David Lewis
Contact Details	david.lewis83@det.nsw.edu.au

1.2. The Site and Regional Setting

The site is located at 25a National Park Street, Newcastle West. A map of the site in its regional setting is provided in Figure 2.

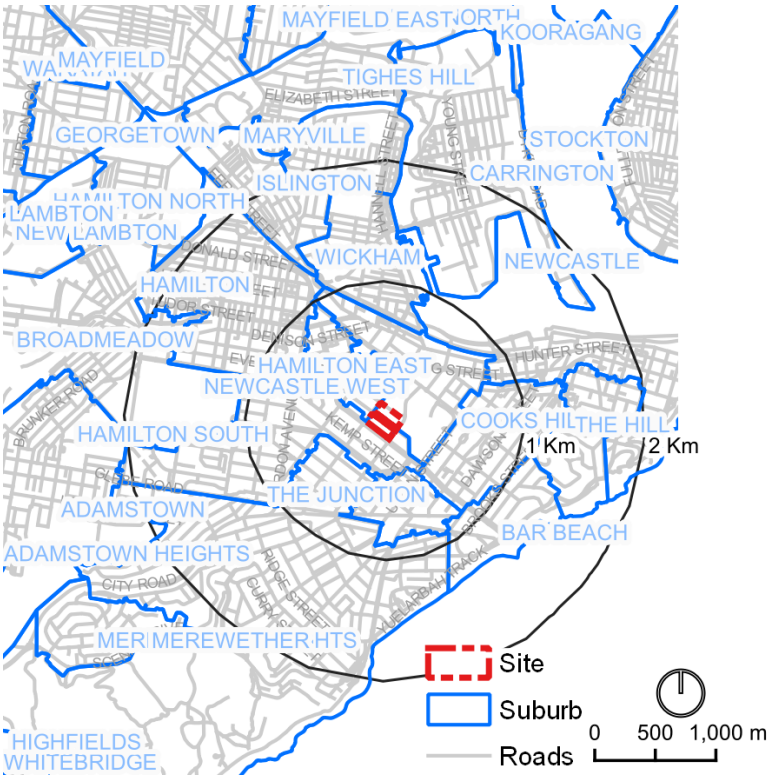


Figure 2: Regional Setting (Source: GYDE)

Off-site works within the surrounding road reserves including Parkway Avenue, National Park Street and Smith Street will be carried out separate to but in association with the proposed development. Council has been consulted on these works, and formal approval from Council as the road authority under the Roads Act, will be sought.

1.3. Description of Project

The proposed development involves upgrades to the Newcastle Education Campus to provide improved facilities to meet the educational needs of staff and students. The upgrades will cater for a total student population for 1,420 (1,227 existing) students and include the following works:

- Demolition of eight (8) existing buildings.
- Construction of a new three (3) storey learning hub on the southwestern corner of the campus, incorporating a new library, canteen, covered outdoor learning area (COLA), support learning unit, general learning spaces, hospitality teaching spaces, and science labs.
- Construction of a new multi-purpose facility located in the north-eastern corner of the campus, incorporating a gymnasium, stage, fitness lab, flexible learning spaces, outdoor courts, and end-of-trip (EOT) facilities for staff.
- Internal refurbishment works within the existing administration building on Parkway Avenue to form a new student hub.
- New student entry from Parkway Avenue.
- Relocation of Block H approximately 50m south.

Ancillary works are also proposed to enable the proposed upgrades and include new civil infrastructure and a comprehensive landscaping strategy.

1.4. Background

The NSW Government is investing $8.6 billion in school infrastructure over the next four years, continuing its program to deliver 215 new and upgraded schools to support communities across NSW. This builds on the more than $9.1 billion invested in projects delivered since 2017, a program of $17.7 billion in public education infrastructure.

The NSW Government allocated funding in the 2019/20 budget for the upgrade of the Newcastle Education Campus.

1.5. Related Development

Under State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP), certain works can be undertaken as exempt development (no planning approval required), complying development (complying development certificate issued for works through a private certifier or Council) or development permitted without consent (Part 5 approval).

Short term portable classrooms will be erected on site as exempt development in accordance with s.3.39 of the T&I SEPP and are excluded from this SSDA.

A 3D text sign is proposed above the covered link between existing Building A and the proposed learning hub. These signs are exempt development in accordance with s.3.39 of the T&I SEPP and Schedule 5 and are excluded from this application.

2. STRATEGIC CONTEXT

2.1. Strategic Plans

The relevant strategies, policies and guidelines are addressed in Table 2.

Table 2: Strategic documents relevant to the proposed development

STRATEGIC PLANS	COMMENTS
NSW Premier's Priorities	The relevant NSW Premier's Priorities include: • Bumping up education results for children – the proposal is consistent with this priority as it includes new high quality learning spaces and facilities aimed at improving educational opportunities and learning outcomes. • Greening our city – The 94 trees lost from the proposed development will be offset by the planting of 112 new trees and provide a significant net gain in tree coverage on the site
State Infrastructure Strategy 2018 – 2038 Building the Momentum	The State Infrastructure Strategy (SIS) is a 20-year infrastructure investment plan for the NSW Government that places strategic fit and economic merit at the centre of investment decisions. The strategy assesses infrastructure problems and solutions and provides recommendations to best grow the State's economy, enhance productivity and improve living standards for the NSW community. The proposal is consistent with the SIS by: • Upgrading existing school infrastructure. • Delivering infrastructure to accommodate additional student numbers and provide modern, digitally enabled learning environments. • Enhancing the existing campus to providing upgraded facilities and supplying superior recreation and outdoor learning spaces.
Better Placed: Design Guide for Schools	The Design Guide for Schools is a best practice manual that supports the delivery of good school design. The Design Verification Statement prepared by EJE Architecture (**Appendix C**) assesses the proposal against the Design principles for schools and details the feedback of the State Design Review Panel and how that feedback has been considered and incorporated into the design. The report demonstrates that the proposed development is of a high-quality design that responds to the site's environmental characteristics while providing necessary facilities to ensure high amenity is available to both staff and students.

STRATEGIC PLANS	COMMENTS
Healthy Urban Development Checklist (NSW Health, 2009)	The purpose of the checklist is to assist health professionals to provide advice on urban development policies, plans and proposals. It is intended to ensure that the advice provided is both comprehensive and consistent. The checklist is principally about helping to answer the questions: • What are the health effects of the urban development policy, plan or proposal? • How can it be improved to provide better health outcomes? The Traffic Impact Assessment **(Appendix F**) aims to increase and encourage active opportunities. Initiatives include providing dedicated bicycle parking. The proposed multi-purpose facility and outdoor courts will provide infrastructure that encourages students to be active while at school.
Draft Greener Places Design Guide (GANSW)	The Greener Places Design Guide provides advice on: • Open space for Recreation: green infrastructure for people. • Urban tree canopy; green infrastructure for adaptation and resilience. • Bushland and waterways: green infrastructure for habitat and ecological health. Open space areas across the site are to be upgraded through the provision of soft and hard landscape features. The proposed buildings have been positioned to minimise the need for tree removal. There are significant trees with a dense canopy around the site's perimeter which are to be protected. The existing tree canopy is 24% (approx.) of the site, with new tree plantings to ultimately increase canopy cover by 7%.
Hunter Regional Plan 2041	The Hunter Regional Plan 2041 sets out the NSW Government's vision for the Hunter. The principles of the plan for the Region's growth are: • Net zero emissions economy and foster employment growth. • Promote places to be together by weaving nature into our towns. • Reduce risks associated with place-based shocks and improve community resilience. • Communities should be safe and healthy. The Planning Priorities for the Newcastle District are: • Prioritise housing within 30 minutes of Williamtown SAP • Reinforce revitalisation of Newcastle City Centre and expand transformation along the waterside. The upgrade of the School is consistent with the principles and

STRATEGIC PLANS	COMMENTS
	priorities, as it will enhance critical social infrastructure and the capability of Newcastle to meet the needs of its residents.
Greater Newcastle Future Transport Plan 2056	The Greater Newcastle Future Transport Plan (GNFTP) 2056 provides the overarching strategic transport network and vision to guide transport planning for the Greater Newcastle area. The GNFTP seeks to facilitate increased liveability in Greater Newcastle through more sustainable travel behaviour. The Plan lists several focus areas which are of significance to the Hunter Region, and more specifically the Newcastle Education Campus. The Traffic Impact Assessment and its Green Travel Plan (**Appendix F**) aims to increase and encourage active transport. It prioritises active transport and public transport modes over private vehicle travel and sets travel mode targets. The school has model travel behaviours with a high portion of travel by active modes. There is the opportunity to reinforce existing behaviours and further reduce private car usage, with 23% of the student population living within a 15-minute walking distance of the school.
Greater Newcastle Metropolitan Plan 2036	The Plan sets out strategies and actions that will drive sustainable growth across Cessnock City, Lake Macquarie City, Maitland City, Newcastle City and Port Stephens communities, which together make up Greater Newcastle. The Plan is the enabling tool that delivers the vision set in the Hunter Regional Plan. Outcome 1 of the Plan *'Create a workforce skilled and ready for the new economy'* provides an emphasis on the continued investment and growth of Newcastle's education and training sector. The outcome defines several strategies, of which Strategy *5 'Expand education and innovation clusters'* is of particular relevance to the proposal. The Strategy directly identifies the Newcastle Education Campus as an area of focus for investment. The Plan identifies that investment within all tiers of education within metropolitan Newcastle will have a flow-on effect to improve the quality of Newcastle's education capacity.
Planning Newcastle 2040 – Newcastle Local Strategic Planning Statement	The Newcastle Local Strategic Planning Statement (LSPS is a 20-year land use vision that articulates the community's idea for the future and provides a roadmap for managing the transformation of Newcastle into a global city with local Character. The Plan establishes 16 Planning Priorities to establish the envisaged aspirations for the City. The proposal is consistent with the directions

STRATEGIC PLANS	COMMENTS
	of the Plan as follows: • Planning Priority 1 – Prioritise active transport in our city. The school has model travel behaviours with 72% of travel movements by public and active transport modes. The Traffic Impact Assessment and associated Green Travel plan, propose actions to further reduce private vehicle use. • Planning Priority 4 – Green our neighbourhoods. The proposed landscape works with add 112 new trees to the site, increasing the total number of trees from 276 to 298. The new trees will increase canopy cover by 7% and contribute to reducing the urban heat island effect. • Planning Priority 6 – Reduce carbon emissions and resource consumption. The Sustainable Development Strategy **(Appendix G)** identifies that the project is registered with the Green Building Council of Australia (GBCA) and is targeting 5 Star certification under Green Start Design and As Built V1.3. • Planning Priority 7 – Plan for change and build resilience. The Flood Impact Assessment **(Appendix H)** identifies the site is flood prone land. The proposed buildings have been located and designed to avoid the 1% AEP event, and do not create any additional upstream or downstream flood impacts on adjoining properties. A Flood Emergency Response Plan (**Appendix I**) has been prepared to mitigate the risk to life and property in a Probable Maximum Flood Event. • Planning Priority 11 – Protect and celebrate our heritage. During the Schematic Design Phase, a series of workshops and community consultation events were attended and arranged by Newcastle owned and operated business, Speaking in Colour. The consultation aimed to gather the widest possible range of views and advice on what is important to the Awabakal Community. This engagement has led the detailed design development to include fundamental aspects of connection with Country. • Planning Priority 13 – Grow our key health and education sectors. This proposed development will grow the education sector through the provision of new facilities. An additional five (5) teaching and support staff will be required to support the expanded student population.
Schools Asset Strategic Plan (SASP)	The SASP recognises that improvements to school infrastructure,

STRATEGIC PLANS	COMMENTS
	through improving the performance and wellbeing of students, enhance economic prosperity in NSW. It establishes a framework to guide DoE in its planning and investment decisions, to ensure it provides fit for purpose facilities where they are required. The Newcastle Education Campus works upgrades have been developed through the SASP program methodology. The project has taken key environmental considerations from the SASP, including saving on land cost externalities by redeveloping existing facilities. The proposal will provide additional permanent learning spaces to meet the SASP facilities targets and ensure learning spaces are not overcrowded.
Department of Education Disability Inclusion Action Plan	This Plan identifies actions DoE will take over the next four years to foster an inclusive environment for people with disabilities, through policies, practices and high-quality services that reflect, recognise and respond to their diverse needs. The proposed works will improve disabled access by upgrading access across the site. The new landscape scheme incorporates equitable paths of travel, and the new buildings contain lifts to provide inclusive access to all levels of the proposed buildings. The new facilities can meet the deemed to satisfy provisions of the National Construction Code (NCC) and the associated standards (AS1428.1, AS1428.2 & AS1428.4). Refer to the Disability Access (**Appendix J**) and Architectural Plans (**Appendix B**).
Newcastle Development Control Plan 2012	Consideration of compliance and/or consistency with the relevant provisions within the Newcastle Development Control Plan 2012 is provided at **Appendix D**. The proposal is generally consistent with the provisions applying to the development.
City of Newcastle, Section 7.11 Contributions Plan	Refer to Section 6.21.

As demonstrated in the table above, the proposal is compatible with the State, regional and local strategic context.

2.2. Key Features of the Site and Surrounds

2.2.1. Surrounds

The site is located 4km west of the Newcastle Central Business District (CBD) in the suburb of Hamilton South. The site and surrounding context are shown in Figure 3 below.

Hamilton south is characterised by handsome detached single storey dwellings on large ‘suburban’ style allotments. A portion of the suburb is within the Hamilton South ‘Garden Suburb’ Heritage Conservation Area, which is significant for its demonstration of early twentieth century subdivision patterns and its association with eminent Australian

architect and planner, Sir John Sulman.

Parkway Avenue is a prominent roadway within the area linking Hamilton East and Dixon Beach. It has a boulevard style having a wide corridor with a divided carriageway and a central island which contains mature Norfolk Island pines. It is a locally listed landscape heritage item.

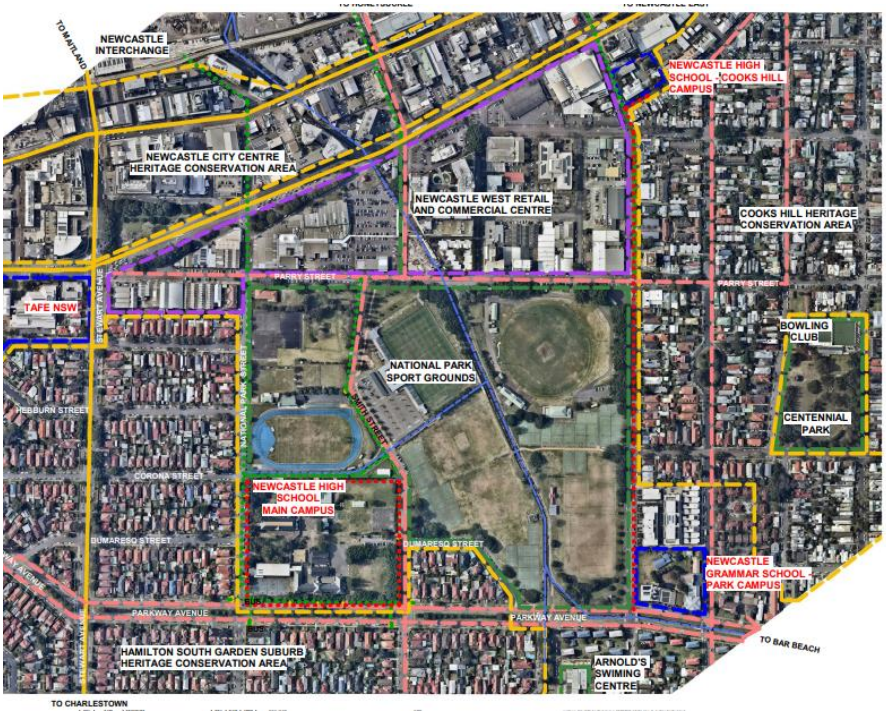


Figure 3: Site Analysis – Context (Source: EJE)

To the northeast of the site is National Park. The National Park Plan of Management identifies that it is one of Newcastle's largest and oldest sportsgrounds and open space reserves, covering over 20 hectares. The Park provides facilities for a variety of sports including netball, soccer, cricket, as well as including areas for passive recreation. It also includes a venue for community and cultural events. Facilities in National Park in the immediate vicinity of the site are the Fearnley Dawes Athletic Centre, Sports Grounds No's 5 and No. 6 and the 1st Merewether Scout Hall.

The site is located 1km southeast of the Newcastle Transport Interchange located within Newcastle West. The emerging high-density urban development in Newcastle West has limited direct impact on the site but is visible in the skyline. Students travel to and from the interchange to access the light rail. Along with the key transport node, Newcastle West provides a variety commercial, retail and public recreation opportunities within close proximity to the site. As Newcastle West continues to grow, additional services will be available within this location.

Specifically, the surrounding context comprises:

- To the north the site has a frontage to National Park (discussed above).
- To the north west the site has a frontage to National Park Street. On the opposite side of the street are detached dwellings which face the site. National Park Street is intersected by Dumaresq and Corona Streets in

the immediate vicinity of the site, and those streets also contain detached dwellings. The trees within the School site are a prominent landscape feature in the street.

- To the east the site has a frontage to Smith Street. On the opposite side of Smith Street are detached dwellings, whose side elevation face the school. Further to the south east is a pocket of other detached dwellings. The trees within the school site are also a prominent landscape feature in the street. Access to the school on-site car park is from Smith Street.
- To the south the site has frontage to Parkway Avenue (discussed above). On the opposite side of the street are detached dwellings which face the site.

Images of the surrounding context are provided below in Figures 5 – 7.

Figure 4: View north of site to Fearnley Dawes Athletic Track (Source: Google Streetview)

Figure 5: View east of site to No. 5 & No. 6 Sports Ground (Source: Google Streetview)

Figure 6: View south of site to low density residential uses along Parkway Avenue (Source: Google Streetview)

Figure 7: View west of site to low density residential uses along National Park Street (Source: Google Streetview)

2.2.2. Site Description

The site is 25a National Park Street, Newcastle West. The site's legal description is provided in Table 3 below.

Table 3: Site Identification

SCHOOL	LOT & DP	ALLOTMENT AREA
Newcastle Education Campus	Lot 1 DP 150725	20,000m^2
	Lot 1 DP 575171	4,721m^2
	Lot 1 DP 794827	21,500m^2
Total Site Area:		46,221m^2 (4.6ha)

An aerial view of the site is provided in *Figure 8*. Key features of the sites:

- Significant trees along the Smith and National Park Street and Parkway Avenue frontages.
- Building A: two-storey elongated sandstone heritage building that addresses Parkway Avenue.
- Building C: two-storey heritage building that addresses National Park Street.
- Building H: heritage significant weatherboard demountable building.
- Sports oval: main active open space.
- On-site car park.

Figure 8: Aerial view, site outlined in red (Source: GYDE)

A built form analysis is provided at Figure 9 and site photos are provided in Figures 9 – 17.

Figure 9: Built form analysis (Source: EJE)

Figure 10: Building D

Figure 11: Building H

Figure 12: Building L

Figure 13: Open space opposite to Building B

Figure 14: Building B

Figure 15: School oval – North east corner of site

Figure 16: Link between Buildings A and Building B

Figure 17: Basketball courts – South west corner of site

2.2.3. Pedestrian, Bicycle and Vehicle Access

Footpaths for pedestrian and bicycle use are available on each of the site's frontages. There are three entry points

from Parkway Avenue, four from National Park Street, and two from Smith Street.

The main vehicle entry point is off Smith Street and it provides access to a 40-space staff car parking space. The primary service vehicle entrance is through Gate 3, on the eastern side of Building A. Service vehicle entry points are also available from National Park Street and Smith Street when required. Bicycle parking is available alongside the cricket nets located in the centre of the site.

The bus drop-off and pick-up area is located at the western end of the Parkway Avenue frontage. This location provides direct access to the pedestrian access points located along Parkway Avenue.

There are drop off/pick up zones on National Park Street and Parkway Avenue.

2.2.4. Topography

The site has relatively flat topography, with a slight fall towards the north-eastern corner. Key topographical features are:

- A fall of 670mm from southwest to southeast along the Parkway Avenue frontage.
- A fall of 230mm from southwest to northeast along the National Park Street frontage.
- A fall of 1.97m from the southeast to east along Smith Street.
- A mound between Buildings B and C which is 1m (approx.) higher than the surrounding land.
- A fall of 1m (approx.) from Building H towards the eastern corner.

A survey plan is provided at **Appendix A**.

2.2.5. Trees and Vegetation

The site contains a total of 276 existing trees. The trees are established throughout the site with concentrated numbers along the perimeter and within the western courtyard behind Building B The trees onsite are planted, not remnant and maintain a broad level of significance. An Arborist report is provided at **Appendix K**.

2.2.6. Soils and Geotechnical

The geotechnical assessment report identifies that the site is underlain by the following:

- Southern portion: clay, silt and marine sand.
- Northern portion: Anthropogenic deposits typically comprising fill material.
- Northwestern portion: Silt, sand and clay.

Groundwater is located at depths ranging from 2m – 5.5m below existing ground level, with the permanent ground water table estimated to be at 1-2 AHD. The geotechnical assessment is provided at **Appendix L.**

The site is within a Mine Subsidence District. Details investigations have been undertaken, which have determined that the workings below the site have subsided (failed) and that future subsidence is unlikely. This matter is discussed further in section 6.12.1.

2.2.7. Flooding

The site is located within the Cottage Creek catchment. The Flood Information Certificate issued by City of

Newcastle (Council) identifies that the site is impacted by local catchment flooding. It is affected by the PMF and to a limited extent by the 1% AEP event.

The initial source of site flooding is overbank flows from the unnamed drainage channel beyond the northern site boundary (within National Park). Inundation then occurs from water backing up from Cottage Creek. The dominant flood affect is from mainstream flooding from Styx Creek, Thorsby Creek and Cottage Creek for 1% AEP events. In a PMF event floodwaters may inundate the site with a depth of 2.8m. A Flood Impact Assessment is provided at **Appendix H**.

2.2.8. Bushfire

The site is not mapped as bushfire prone land. Accordingly, this EIS does not include an assessment against Planning for Bushfire Protection nor a specific response to Secretary's Environmental Assessment Requirements No. 22 (Bush Fire Risk).

2.2.9. Other Site Considerations

The site and immediate surrounds are not mapped by any environmental planning instrument as being:

- Terrestrial biodiversity.
- Environmentally sensitive land.
- Biodiversity Values Map.

2.2.10. Cumulative Impacts

The site is located in proximity to multiple developments recently approved or currently under assessment, specifically within Newcastle West. The cumulative impacts of the proposal are discussed in detail in section 6.22 of this EIS, following the environmental impact assessment.

2.3. Alternatives Considered

DoE has undertaken a detailed design process to identify, evaluate and validate options. Criteria for the options evaluation included: consistency with the design objectives with reference to the EFSG, the objectives of the proposal, desired outcomes, site constraints, social and environmental outcomes.

The options considered are outlined in Table 4 below.

Table 4: Alternative Design Options

OPTION	DESCRIPTION
Base case	• Minor safe and operational works to existing buildings. • Enforce existing catchment boundaries. • Installation of two additional demountable learning spaces to accommodate demand between 2021 and 2036.
Option 1	• Upgrade core facilities to Stream 9 to meet secondary catchment student demand to 2036.

OPTION	DESCRIPTION
	• Upgrade of the following core facilities to a Stream 12 to support future student growth, library, multi-purpose facility, canteen and science laboratories. • Provision of 71 learning spaces (37 new) for up to 1420 students. • Provision of 8 support learning spaces (5 new). • Alibility to support realignment of catchment boundaries to re-direct demand from Merewether Heights Primary School from Kotara High School to the Newcastle High School.
Option 2	• Upgrade Core Facilities to Stream 12 (up to 2,040 Students), to future proof site in line with SASP. • Realign Boundary Catchments to redirect demand from Adamstown PS and Merewether Heights Primary School from Kotara High School to Newcastle High School. • Provision of 84 PLS and eight (8) SLS for up to 1,680 Students

Out of the three (3) options, Option 1 was preferred as it meets the need of the school and is generally consistent with what is proposed under this SSDA. The 'Do Nothing Option' was not favoured as it would result in the students continuing to be schooled in inadequate learning facilities.

Multiple options were explored for certain parts of the design. As part of the early master planning phase, EJE undertook a detailed site analysis for the project, which included consideration of such items as:

- The history of development at the site.
- Assessment of existing trees and green spaces.
- Potential locations for new buildings.
- Retention values of trees and buildings.
- Traffic and pedestrian movements through and around the site.

From this analysis an 'Opportunities and Constraints' diagram was prepared to identify potential items to be retained, and opportunities for new development on the site. The 'constraints and opportunities' analysis was developed to guide the masterplan options, as illustrated in the diagram in Figure 18 below.

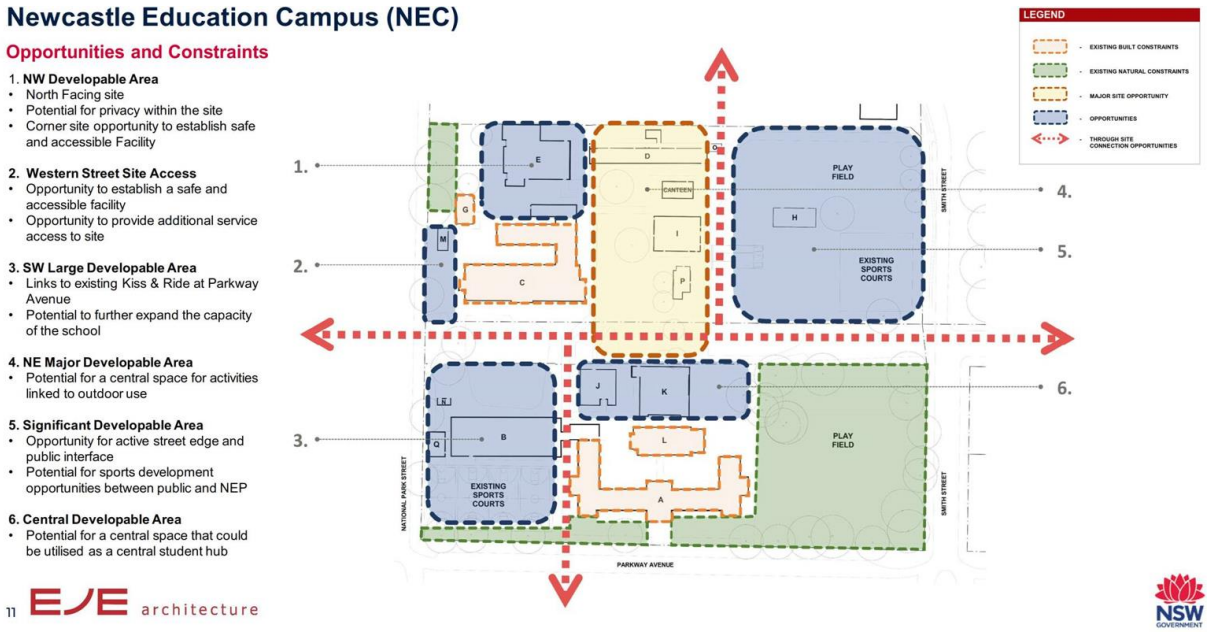


Figure 18: Constraints and Opportunities Analysis

In particular, EJE identified the opportunity to create a central outdoor space. The areas of open space at the current school are hampered by the ad-hoc position of buildings in the centre of the site, and the masterplan presented a unique opportunity to create a large central open space, that became the campus green in the multiple design options prepared. EJE also adopted the east west and north south links (proposed by the SDRP) as organising elements for the site that would not be possible with a building in the centre.

It was also identified that positioning any new buildings facing the street frontages was in keeping with the character of the area and would follow the example of Building A which faces Parkway Avenue and is a key heritage element to the site.

It was therefore not deemed appropriate to position the new buildings in the centre of the site, for the following reasons:

- Creating a central green space would open up a wide range of outdoor activities for the students and encourage outdoor learning as an important element in contemporary learning.
- New Buildings should face the street frontages to continue the alignment and form of existing buildings.
- Buildings positioned facing the street allow for easy access for visitors, and avoid security issues with visitors wandering into the centre of the site to access facilities that are encouraged to be available for after hours community use, eg Library, Multipurpose Hall/Gymnasium.

The proposed locations that were decided on have been selected to minimise potential impacts on adjoining properties while also balancing operational requirements of the school.

3. DESCRIPTION OF PROPOSED DEVELOPMENT

3.1. Overview

An overview of the key elements of the proposed development is provided in Table 5.

Table 5: Summary of key elements

PROPOSAL ELEMENT	DESCRIPTION
Project Site Area	46,221m^2 (4.6ha)
Site Description	25a National Park Street, Newcastle West.
Project Description	The proposed development involves upgrades to the Newcastle Education Campus - Newcastle High School. The proposed works include: • Demolition of eight (8) existing buildings. • Construction of a new three (3) storey learning hub on the southwestern corner of the campus, incorporating a new library, canteen, covered outdoor learning area (COLA), support learning unit, general learning spaces, hospitality teaching spaces, and science labs. • Construction of a new multi-purpose facility on the north-eastern corner of the campus, incorporating a gymnasium, stage, fitness lab, flexible learning spaces, outdoor courts, and end-of-trip (EOT) facilities for staff. • Internal refurbishment works within the existing administration building on Parkway Avenue to form a new student hub. • New student entry from Parkway Avenue. • Relocation of Block H approximately 50m south. The upgrades will cater for a total student population for 1,420 students. Ancillary works are also proposed to enable the upgrades and include new civil infrastructure and a comprehensive landscaping strategy. Refer to the Civil Drawings (**Appendix M**) and Landscape Plan (**Appendices N and O**).
Construction Staging	The proposed works will be constructed in five stages, generally as follows: **Stage 1** • Move Building H to new location on site. • Service infrastructure upgrades. • Demolition of Building B and existing sport courts.

PROPOSAL ELEMENT	DESCRIPTION
	• Remove trees, other planting in Stage 2 area. **Stage 2** • Construct New Learning Hub. • Landscaping walkway and external works associated with New Leaning Hub. • New support drop-off. **Stage 3** • Construct new multi-purpose facility. • Landscaping and external works associated with multi-purpose facility. • Demolition of Building P. **Stage 4** • Refurbish Building A and K. • Demolish Building J and existing walkway to Building K. • Landscaping and site work. **Stage 5** • Demolish Building D, E and I. • Construct new sports courts. • Campus Green and remaining landscaping / walkways. A staging plan is provided at Appendix LL.
Land Use	Educational Establishment.
Car Parking Spaces	The 40 space on-site staff car park is to be retained. No additional on-site car parking is proposed.
Bicycle Parking Spaces	160 spaces.
Pedestrian	A new student entry is proposed on Parkway Avenue between the learning hub and Building A. This will be the primary entry for students, and is adjacent to the bus zone and main kiss and drop zone. The entry will be open during drop-off and pick-up times, and closed during school general school hours with access permitted via an intercom system. Visitor and parents will continue to access the site via the existing pedestrian entry through the centre of Building A. Covered walkways will traverse the site from north-south and east-west. The main north walkway will commence at the covered link between the Learning Hub and Building A and extend to Building C. The secondary north-south walkway will extend around the eastern elevation of the learning hub and extend to the new circular driveway on National Park Street.

PROPOSAL ELEMENT	DESCRIPTION
	The east-west walkway will commence at the multi-purpose facility, extend past the campus green and connect with Building C.
Vehicular Access	A new circular driveway is proposed from National Park Street which will serve as a drop off/picked up zone for supported learning students during peak times. During off peak times it will serve as a delivery zone. Vehicular access is maintained via Gate 1 and Gate 2 from Smith Street, and Gate 3 from Parkway Avenue.
Number of Students	Increase student capacity from 1,227 to 1,420 students.
Job Creation	It is estimated that 108 jobs will be created by the future development during construction. It is estimated that additional 5 jobs will be created by the future development during operational phase. Please refer to the CIV Report for the methodology to determine these figures (**Appendix JJ**).
General Hours of Operation	School hours: 8:40am to 3:00pm Monday to Friday
Construction Hours	Monday to Friday – 7:00am to 6:00pm Saturday – 8:00am to 1:00pm No work on Sundays or public holidays

3.2. Site Remediation

The proposed development involves the remediation of the site to make it suitable for its continued use as a school. A Remediation Action Plan (**Appendix Q**) has been prepared to direct and control the works and validation.

3.3. Demolition

The proposed development involves the demolition of the following:

- Building B.
- Building D.
- Building P.
- Building E.
- Building I (two structures).
- Covered walkway
- Building J.
- Building N.

An extract of the demolition plan **(Appendix B)** is provided in Figure 19.

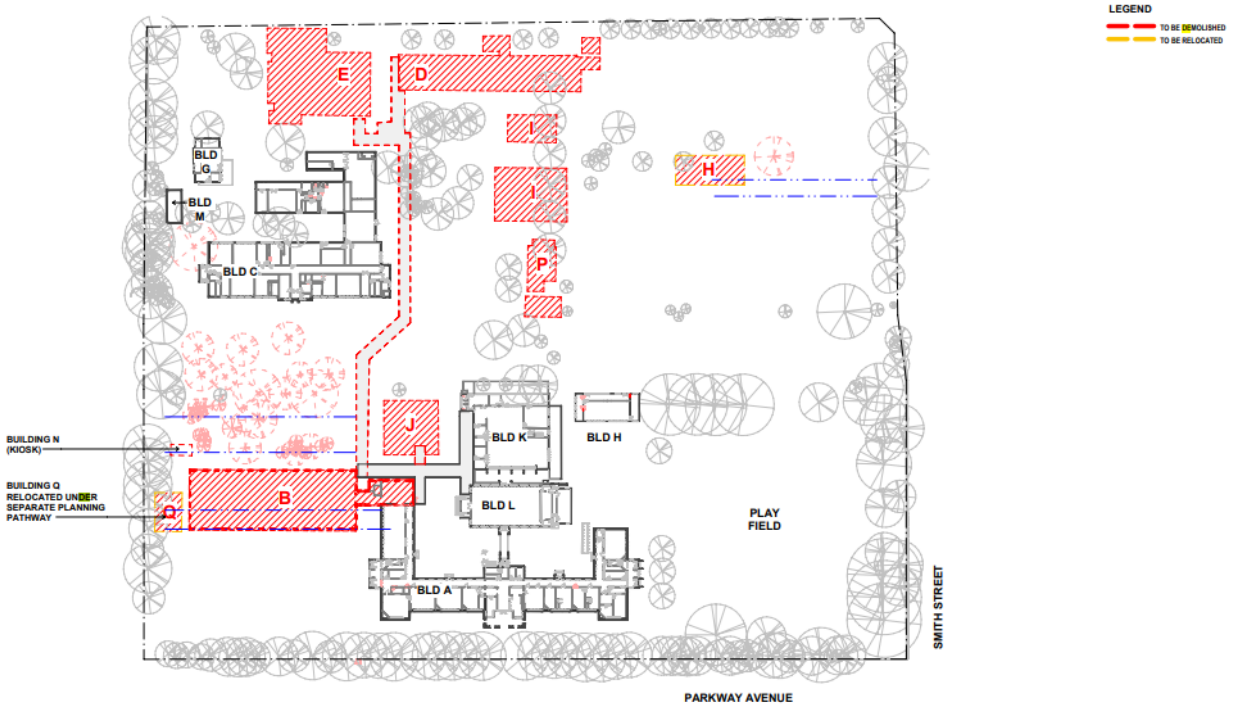


Figure 19: Extract of Demolition Plan (DWG No. DA-0-014) (source: EJE Architecture)

Building H is to be dismantled and relocated on site to allow for its renewal and continued use.

Internal demolition works involving the removal of walls within Building A. Refer to the Architectural Plans (DWG DA-3-100 **- Appendix B**).

3.4. Tree Removal

The proposed development requires the removal of 94 of the site's 276 trees. Most trees proposed for removal are located within the western courtyard. Of the 94 trees that have been identified for removal, 72 trees have been assessed as having a low or very low retention value. An extract of the tree removal plan is provided in Figure 20.

Importantly, the significant trees located on the Smith Street, National Park Street and Parkway Avenue frontages are to be retained and protected.

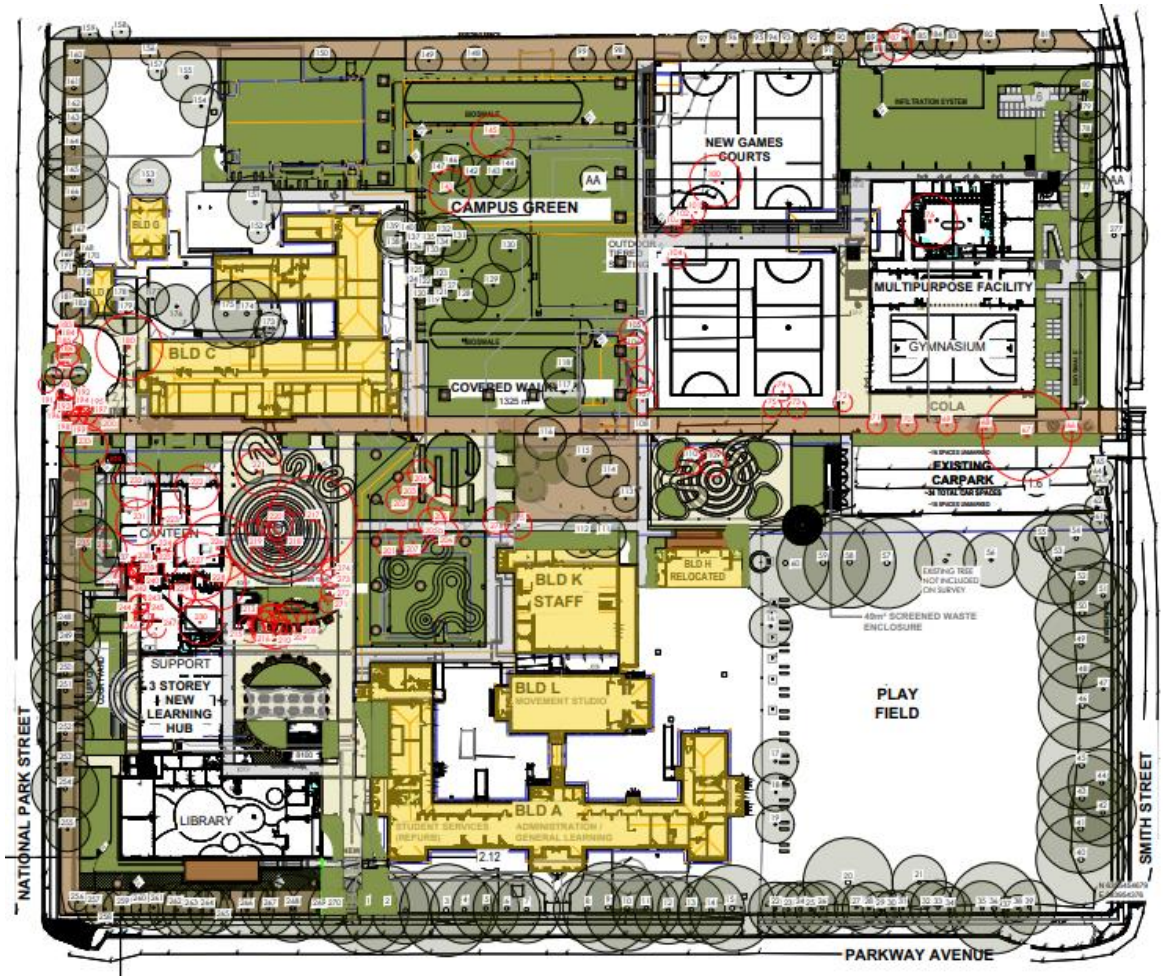


Figure 20: Tree Removal Plan (DWG No. L03) (source: Terras Landscape Architects)

3.5. Earthworks

Earthworks are proposed across the northeastern and southwestern portions of the site (**Appendix R**).

Cutting works include the removal of previously raised areas including garden beds and earth mounds, and the creation of areas for future drainage infiltration systems. The works extend to a depth of 2m and have a volume of 4,200m^3.

Fill is proposed to be applied in depths ranging from 0.2m - 1.75m, with a total fill volume of 4,630m^3. Allowing for reuse of excavated material, a total of 430m^3 of fill will be required to be imported to the site.

3.6. Construction

3.6.1. New Buildings

The proposed development includes the construction of two new major buildings.

Figure 21: Extract of Proposed Site Plan (DA-0-012) (source: EJE Architecture, marked up by GYDE)

<u>New Learning hub</u>

- Three storey L-shaped building located in the southwestern corner of the site.
- Ground floor: library with external deck, two general learning spaces, five supported learning areas, learning common rooms and a canteen. Supported learning courtyard on National Park Street.
- Level 1: twelve general learning spaces, three food technology kitchens, two textile general learning spaces and a textile commons room.
- Level 2: eight general learning science spaces, five laboratories, and two general learning spaces.
- External corridor on eastern elevation (internal facing) of building on each level, with two sets of stairs and a lift connecting them.
- Covered outdoor learning area (COLA) on the eastern side of the building.
- Outdoor learning courtyard on the eastern side of the building.
- Covered link connecting level 1 of the proposed building with level 1 of Building A. First floor balcony on building A to be punctured to create a pathway into the building.
- Roof top solar panels.

Multi-purpose facility

- Two storey building located in the eastern corner of the site.
- Ground floor: gymnasium suitable for multipurpose use including as a hall and performance space, two general purpose learning spaces, change rooms, storage spaces and an entry awning.
- Level 1: Four general purpose learning spaces, two fitness general learning spaces, a fitness lab and two musical practice rooms.
- Roof top solar panels.

3.6.2. Relocation and renewal of building H

The proposal seeks to relocate Building H from the middle of the north-eastern play field to the hardstand area adjacent to Building K. The relocation places the building in a central position and better integrates it with other school facilities.

The building will connect with the surrounding landscape, which will include a dancing circle, a yarning circle, and bush tucker garden.

3.6.3. Internal alterations to buildings

The proposed development includes internal refurbishment of two buildings.

- Building A (western end of ground floor): new floor finishes, new ceiling, fresh paint to existing walls, doors, and windows, new lighting, mechanical and IT. Spaces to be used for student wellbeing facilities.
- Building K: convert library into a staff room with kitchenette, meeting rooms, study rooms, communal seating space and a printing room.

3.7. External Materials and Finishes

3.7.1. New Learning Hub and New Multi-purpose Facility

The proposed facade materials include face brickwork, prefinished compressed fibre cement, powder-coated aluminium elements (screens and awnings), and Colorbond steel wall cladding and roofing elements. The materials are durable and require minimum on-going maintenance.

The materials have been chosen to complement the existing buildings. In particular, the material used on the learning hub will follow the colour, location and pattern of Building A.

An extract of the material palette is provided in Figure 22 and Figure 23.

Figure 22: Material Palette – Learning Hub (DWG No. DA-1-350) (source: EJE Architecture)

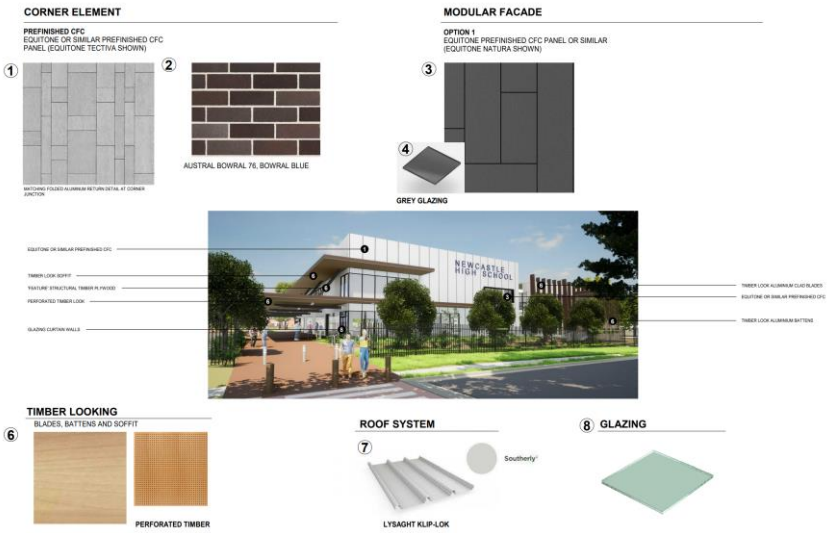


Figure 23: Material Palette – Multi-purpose Facility (DWG No. DA-2-350) (source: EJE Architecture)

3.8. Landscaping and Outdoor Recreation

The proposed development involves holistic renewal of the soft and hardscaping features of the site. A landscape concept plan and design report are provided at **Appendices N and O.** Key features of the landscape scheme include:

- Establishment of two axis corridor to improve the legibility and efficiency of pedestrian movement around the site.
    - The east-west corridor generally follows the alignment of former Dumaresq Street. It will connect the multi-

purpose facility with the facilities on the western side of the site and create a new formal pedestrian entry on Smith Street.
    - The north-south corridor extends from the new pedestrian entry on Parkway Avenue, past the heritage tress along the Parkway Avenue frontage and past historic Building A.
- Supported learning courtyard on National Park Street, including seating and productive garden below the existing significant trees.
- A corridor of tree planting with picnic tables below, between Building H and Smith Street.
- Library garden on Parkway Avenue, with decking, seating and a synthetic turf area.
- New multi-purpose outdoor courts adjoining the multi-purpose facility.
- A new yarning circle, learning circle and bush garden adjacent to the Aboriginal education programs building (Building H).
- Native and endemic plantings including 112 new trees.
- New internal courtyards between the new learning hub and Building C, incorporating an external classroom, passive recreation space and planted areas.
- A fitness area has been proposed within the Campus Green for use in PE classes and to generally facilitate healthy activities within the school.
- Retention of the perimeter trees has been a key consideration due to their heritage significance, contribution to the streetscape character and the significant shading provided to existing buildings / external areas.
- Trees within the site will also be retained where possible to provide shade to play areas and maintain the leafy feel of the campus.
- A significant number of additional trees (112) will be planted to supplement those removed, creating more passive recreation areas around the campus green and providing screening where required. Species have been selected to ensure minimal ongoing maintenance and avoid the use of poisonous plants and potential weed species.

A target of 30% canopy cover has been established with species selected to ensure minimal on-going maintenance. The existing canopy coverage is 24%. The landscape strategy seeks to ultimately replace the canopy coverage of any trees removed and introduce an additional 7% to achieve a total of 31% canopy coverage.

3.9. Site Access and Parking

3.9.1. Vehicular Access

An additional vehicular entrance is proposed from National Park Street to provide a ‘kiss & drop’ opportunity for the supported learning students.

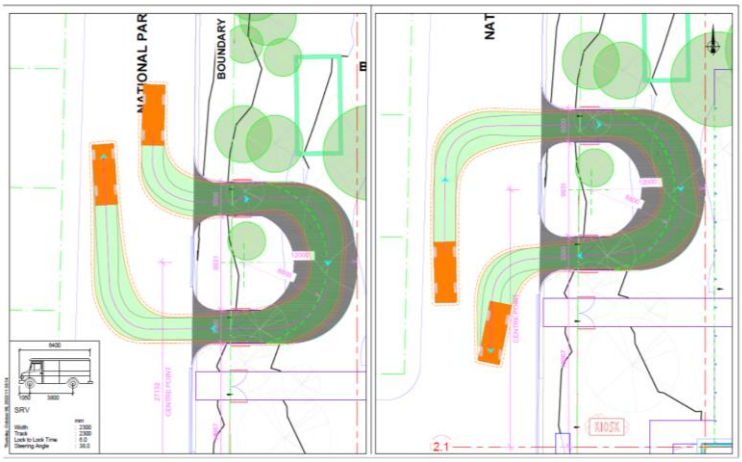


Figure 24: Proposed Vehicle Entrance from National Park Street (source: Stantec)

3.9.2. Bicycle Parking

Provision of 160 formal bike parking facilities beside the new multi-purpose facility.

3.9.3. Students drop off and pick up arrangements

It is proposed to extend the bus and student kiss and drop zones on Parkway Avenue. The bus zone is to be increased in length by 18m, increasing its capacity from two to three buses. The kiss and drop zone will be shifted southward (towards Smith Street) and extended in length, increasing its capacity by 7 spaces. This will be achieved by time limiting the use of the currently unrestricted parking spaces in front of the school.

A new drop off and pick up zone is proposed on Smith Street. This will be created by time limiting the use of the currently unrestricted 13 parking spaces in front of the school on the western side of Smith Street.

These works are located within the road reserve and Council as the road authority will need to grant approval to them.

3.9.4. Waste Management

A waste storage area is proposed to remain in the existing location on the northern end of the on-site car park. An operational waste management plan is provided at **Appendix V**. Based on the estimated waste and recycling calculations, the following bin quantities and collection frequencies are recommended:

- General Waste: 3x3^3 bulk bins collected 1 x weekly.
- Recycling: Paper and Cardboard: 20 x 240L MGBs collected 1 x weekly.
- Recycling: Refundable Containers: 7 x 240L MGBs collected as required (assumed once weekly).

Waste collection procedures will be as per the existing collection arrangements. Private contractors and Council service the school on an agreed schedule. On the day of service, the collection vehicle will enter the site from the access road from Smith Street and park adjacent to the bin holding area. The grounds keeper is responsible for ensuring the bins are presented and ready for collections and for relocation of empty bins.

3.10. Ecologically Sustainable Development

A Sustainable Development Strategy has been prepared (**Appendix G**). The project is registered with the Green Building Council of Australia (GBCA) and is targeting 5 Star certification under Green Start Design and As Built V1.3. This requires best practice sustainability initiatives over and above standard practice.

The key priorities to support the on-going operation, health, and wellbeing of staff and students include:

- Outdoor shaded landscaped communal areas.
- Sporting facilities including indoor and outdoor spaces.
- Bicycle parking and end-of-trip facilities for staff to encourage active transportation modes.
- Nomination of low formaldehyde engineered timber and low volatile organic compound materials to improve internal air quality.
- Use of natural daylight consistent with the best practice thresholds for learning spaces.
- Designing internal spaces to have views to the outside.
- Incorporation of natural ventilation for ventilation and thermal comfort.
- Considerate lighting design to meet best practice illuminance levels and control glare.
- Air conditioning for learning and administration spaces to provide year-round thermal comfort.

3.11. Infrastructure and Services

3.11.1. Stormwater

Stormwater water is proposed to be managed by several systems. An Integrated Water Management Plan is provided at **Appendix U**. Roof water will be collected from the new buildings and captured in rainwater tanks for re-use within the building's amenities and landscaping.

Surface drainage of permeable areas is proposed to be managed by infiltration. The drainage of new paved driveways, paths and sports courts is collected by surface pits and directed to the infiltration systems which include two bioswales and an infiltration pit.

3.11.2. Sewer Mains

A new connection is proposed to be made from the learning hub to the Hunter Water sewer pipe within National Park Street. A separate internal line will transfer waste from the multi-purpose facility to the learning hub. A hydraulic services reports is provided at **Appendix S**.

A Section 50 Certificate has been received from Hunter Water which confirms that access can be supplied to the sewer network (subject to conditions) and is available as an attachment to **Appendix S**.

3.11.3. Water Mains

A new 80mm connection is proposed to supply water to the new learning hub. A new 50mm connection will supply water to the new multi-purpose facility with a new water pump set. A hydraulic services reports is provided at **Appendix S**.

A Section 50 Certificate has been received from Hunter Water which confirms that access can be supplied to the water network (subject to conditions) and is available as an attachment to **Appendix S**.

3.11.4. Gas Mains

JEMENA has a 100mm pipe in National Park Street which is suitable to serve the proposed new learning hub. A new gas meter and connection is proposed to be made. A hydraulic services reports is provided at **Appendix S**.

3.11.5. Electrical

It is proposed to decommission the existing substation located within the school's National Park Street frontage and replace it with a new K type kiosk substation in a similar location. The new substation will connect into the same HV feeder on National Park Street. An electrical services reports is provided at **Appendix T**.

3.12. Staging

The proposed development will be constructed in five stages. The staging will allow the school to continue to operate throughout the works and ensure that the required supporting facilities (open space, drop off facilities etc) are available. The proposed stages will allow the works to be delivered in the most timely and efficient manner and minimise its impact on the community. The proposed stages are:

Stage 1

- Move Building H to new location on site.
- Service infrastructure upgrades.
- Demolition of Building B and existing Sport Courts.
- Remove trees and other planting in Stage 2 area.

Stage 2

- Construct New Learning Hub.
- Landscaping walkway and external works associated with New Leaning Hub.
- New support drop-off.

Stage 3

- Construct new multi-purpose facility.
- Landscaping and external works associated with multi-purpose facility.
- Demolition of Building P.

Stage 4

- Refurbish Building A and K.
- Demolish Building J and existing walkway to Building K.
- Landscaping and site work.

Stage 5

- Demolish Building D, E and I.
- Construct new sports courts.
- Campus Green and remaining landscaping / walkways.

4. STATUTORY CONTEXT

The relevant Commonwealth, State and Local legislative requirements are considered in this section.

Table 6: Statutory Context Overview

CATEGORY	ACTION
Power to grant approval	*State Environmental Planning Policy (Planning Systems) 2021* nominates certain types of development as either state significant developments, state significant infrastructure or regionally significant developments. Under clause 15(2) of Schedule 1 of Planning Systems SEPP, 'development that has a capital investment value of more than $50 million for the purpose of alterations or additions to an existing school' is categorised as SSD'. The proposed alterations and additions have a CIV of $76,592,528 (**Appendix JJ**), greater than $50 million and therefore meets the definition of SSD. The consent authority under section 4.5 of the EP&A Act is the Minister for Planning and Homes or their delegate. The EP&A Act establishes the assessment framework for the Proposal. Section 4.12(8) requires that a development application for SSD be accompanied by an Environmental Impact Statement (EIS) prepared by or on behalf of the applicant. SEARs were issued for the Proposal on 09 May 2022. A SEARs reference table is provided at **Appendix W** to identify where the requirements have been addressed in the EIS.
Permissibility	The proposal seeks consent for alterations and additions to an existing 'educational establishment,' which is permitted with consent in the R2 Low Density Residential zone pursuant to the provisions of the Newcastle Local Environmental Plan 2012. Furthermore, the upgrades to the school comprise development permitted with consent under section 3.36 of the *State Environmental Planning (Transport and Infrastructure) 2021* (T&I SEPP).
Other approvals	Section 4.41 of the EP&A Act identifies multiple approvals that are not required for SSD, including: • Permit under section 201, 205 and 2019 of the *Fisheries Management Act 1994* • Approval under Part 4 or an excavation permit under section 139 of the *Heritage Act 1997*

CATEGORY	ACTION	
	• An Aboriginal Heritage Impact permit under section 90 of the *National Parks and Wildlife Act 1974* • Bushfire Safety Authority under section 100B of the *Rural Fires Act 1997* • Approval under section 89, 90, and 91 of the *Water Management Act 2000* In accordance with section 4.42 of the EP&A Act the following legislation must consistently be applied to SSDAs: • Aquaculture permit under section 144 of the *Fisheries Management Act 1994* • Approval under section 22 of the *Coal Mine Subsidence Compensation Act 2017* • Mining lease under the *Mining Act 1992* • Production lease under the *Petroleum (Onshore) Act 1991* • Environment protection license under Chapter 4 of the *Protection of the Environment Operations Act 1997* • Consent under section 138 of the *Roads Act 1993* • A license under the *Pipelines Act 1967* The proposal development has been granted approval under section 22 of the *Coal Mine Subsidence Compensation Act 2017,* reference no. TBA22-03840. The notice of determination and supporting stamped plans are available as **Appendix X**. The project will require approval under section 138 of the *Roads Act 1993.* TfNSW, SINSW, and Council collaborated on matters in relation to traffic, car parking, and access through a formal 'Transport Working Group' that was established prior to lodgement. Council and TfNSW will be formally consulted and provided with an opportunity to respond as part of the assessment of this application. Excavations for the proposed infrastructure and footings are likely to intercept the ground water table and would ordinarily require an aquifer interference approval under the *Water Management Act 2000*. The environmental impacts are considered in section 6.	
Pre-condition to exercising the power to grant approval	**Statutory Reference**	**Relevance/Section in EIS**
	State Environmental Planning Policy (Transport and Infrastructure) 2021, section 3.36(6) and section 3.58	The proposal includes works to an existing school. The proposal has considered the design quality principles as stated within Schedule 8 and is consistent with the provisions of the T&I SEPP.
	State Environment Planning Policy (Biodiversity and Conservation) 2021, Chapter 6, Part 6.5 Sydney Drinking Water Catchment – section 6.61	The site is not in a drinking water catchment.
	State Environmental Planning Policy	A Detailed Site Investigation report has been

CATEGORY	ACTION	
	(Resilience and Hazards) 2021, Chapter 4 Remediation of land – Section 4.6	prepared by Douglas Partners **(Appendix P).** An assessment of the impact associated with the proposal is provided in section 6.15
	Concept development consent (see section 4.24 of the Act)	No concept consent applies to the site or sought as part of this application.
	State Environmental Planning Policy (Industry and Employment) 2021, Chapter 2 Western Sydney employment area	This SEPP does not apply to the site or proposal.
	Coastal Management Act 2016 - section 27(1)	The proposed development does not include any coastal protection works.

4.1. Mandatory Considerations

Table 7: Considerations under the EP&A Act and EP&A Regulations

MANDATORY MATTERS FOR CONSIDERATION	RESPONSE
Consideration under the Act and Regulation	
Environmental Planning and Assessment Act, 1979	The proposal is consistent with the objects of the EP&A Act. In particular, the proposal: • Promotes the social welfare of the community, by providing quality education infrastructure to support student learning and teaching conditions. • Allows for the orderly and economic development of the land on which an establish high school is currently operating. • Promotes sustainable management of the built and cultural heritage (including both Aboriginal, European and landscape heritage). • Promotes quality design and amenity of the built environment, architecturally designed. • Is developed for a public purpose and provides community services. The proposal is consistent with Division 4.7 of the EP&A Act, as the proposal: • Seeks to enhance education services and stimulate social welfare of the community. • Has been evaluated and assessed against the relevant heads of

MANDATORY MATTERS FOR CONSIDERATION	RESPONSE
	consideration in Section 4.15(1) of the EP&A Act (**Appendix D**).
Relevant Environmental Planning Instruments: • State Environmental Planning Policy (Transport and Infrastructure) 2021 • State Environmental Planning Policy (Resilience and Hazards) 2021 • State Environmental Planning Policy (Biodiversity and Conservation) 2021 • State Environmental Planning Policy (Industry and Employment) 2021 • Newcastle Local Environmental Plan 2012	An assessment against the relevant Environmental Planning Instruments (EPIs) is provided in the statutory compliance table available at **Appendix D.**
Other mandatory relevant considerations under EPIs	
State Environmental Planning Policy (Resilience and Hazards) 2021 – Clause 4.6	An assessment against the relevant Environmental Planning Instruments (EPIs) is provided in the statutory compliance table available at **Appendix D.**
State Environmental Planning Policy (Biodiversity and Conservation) 2021	
Newcastle Local Environmental Plan 2012 – objectives and land uses for the R2 Zone.	
Consideration under other legislation	
Environment Protection and Biodiversity Conservation Act 1999	The relevant sections of this Act are considered in the statutory compliance table at **Appendix D**.
Biodiversity Conservation Act 2016 – Section 7.14	The relevant sections of this Act are considered in the statutory compliance table at **Appendix D,** and in the BDAR Waiver Report and BDAR waiver determination at **Appendix Y**.

MANDATORY MATTERS FOR CONSIDERATION	RESPONSE
Development Control Plans	
Newcastle Development Control Plan 2012	A DCP that applies has no effect per section 3.36(9), however, the DCP guidelines that may otherwise have been relevant are considered in the compliance table at **Appendix D**.

5. ENGAGEMENT

Extensive engagement has been undertaken in accordance with the NSW Government publication 'Undertaking Engagement Guidelines for State Significant Projects.' An Engagement Report has been prepared by SINSW and is provided at **Appendix Z**. The Engagement Report provides a concise summary of the engagement, including:

- The SEARs for stakeholder and community consultation.
- The consultation process undertaken, including key meetings with stakeholders.
- A summary of feedback received, and issues raised, by specific stakeholders.
- How feedback has been considered in the development of the SSD application.

5.1. Stakeholders

Engagement has been undertaken with the following stakeholders:

Project Working Group Consultation

- The Project Reference Group (PRG).
- The Project Control Group (PCG).
- The Technical Stakeholder Group (TSG).
- The Expert Review Group (ERG).
- The Design Advisory Group.
- School Operations and Performance (School Ops).
- End User Group.

Community Consultation

- Local residents.
- Newcastle High School alumni group.
- Local Aboriginal Land Council and Registered Aboriginal Parties.
- Aboriginal Education Consultation Group.
- Current school community including parents, staff and students.
- Broader Newcastle community.

Government Agency Consultation

- Transport Working Group - City of Newcastle and TfNSW.
- City of Newcastle.
- Government Architect NSW – State Design Review Panel (SDRP).
- Member for Newcastle (Tim Crakenthorp, MP).
- NSW Rural Fire Service.
- Ausgrid.
- Department of Planning and Environment (DPE).
- State Emergency Service (SES).
- Hunter Water Authority.
- Subsidence Advisory NSW.

5.2. Engagement Activities

Feedback received during the consultation period has been considered and is summarised in Table 8 below.

Table 8: Engagement - Issues Raised and Response

ISSUES RAISED	RAISED BY?	RESPONSE
Pedestrian safety for students	School End Users	Consultation with the school community identified the need for improved pedestrian infrastructure. The school has been located at the site for almost 100 years with no pedestrian crossings. During this time, the school have been actively lobbying the City of Newcastle (Council) to construct a pedestrian crossing across Parkway Avenue for a number of years including prior to the proposed redevelopment of the school. As part of the traffic and transport analysis completed by the traffic engineer, different pedestrian crossing scenarios were assessed to identify which crossing scenario would provide the greatest improvement for safety for both students and the general public. Consultation with Council has been a priority to negotiate the most appropriate solution. The TIA aligns with Council's plans for the area and the traffic engineer has included recommendations for pedestrian infrastructure and traffic improvements along Parkway Avenue, Smith Street and National Park Street, to be installed by Council. Council has applied for Commonwealth funding to construct the pedestrian infrastructure on Parkway Avenue.

ISSUES RAISED	RAISED BY?	RESPONSE
Traffic and transport impacts	City of Newcastle and TfNSW	A Transport Working Group (TWG) was established with City of Newcastle and TfNSW to discuss and agree to measures to improve traffic and transport for the site. The TWG meet on the 15 and 29 November 2022. Key matters discussed at the meeting included: • Increasing capacity of bus zone on Parkway Ave and operational control of bus services to address congestion. • Need to improve reliability of bus service to ferry wharf for students living in Stockton. • Increasing capacity of kiss and drop zone on Parkway Avenue and create new zone on Smith Street. • Promote use of kiss and drop zone on National Park Street. • Parking demand from teachers must be addressed. • Measures to limit vehicles speeds. These matters will inform the operation of the school and will require further consultation with the TWG.
Car parking compliance with Council's DCP	City of Newcastle	During consultation with City of Newcastle's Planning, Transport and Regulation Team, Council recommended achieving compliance with the car parking provisions within the Newcastle DCP. The controls within the DCP were thoroughly considered during design development. it was determined that a merit-based solution will be prepared to provide an appropriate car parking outcome. To supplement the existing 40 staff car parking spaces, the Traffic Impact Assessment (**Appendix K**) highlights key public transport linkages to the site and Council monitored parking opportunities within proximity to the site. The TIA identifies that promoting other modes of transport and providing brand new EOT facilities for staff will lead to less need for onsite car parking. It is noted that Year 12 students are not provided car parking onsite and are not encouraged to drive a private vehicle to school. A preliminary Green Travel Plan has been prepared which identifies strategies to improve and promote active transport opportunities.
Perception of facilities being nominated for Aboriginal Programs (Clontarf and girls' program)	Community	Consultation with the school identified the need to relocate the existing Clontarf foundation to a more accessible location with access to outdoor spaces to play sport and incorporate a yarning circle and dance circle. Relocating Building H provides a more central ground level location, with direct access to the propose-built bush tucker garden as well as the adjacent playing fields to the east of the future sports courts.

ISSUES RAISED	RAISED BY?	RESPONSE
Construction activities and noise impacting on school operations	Community	A Noise and Vibration Impact Assessment (**Appendix AA**) has been prepared which adequately addresses the potential construction and operational noise impact of the proposal. The findings of the assessment are outlined in section 6.2 of this statement. In general noise levels will be compliant with noise standards. Certain construction activities will be carried out during school holidays and outside of school hours to minimise their impacts. This will be specified in a future detailed Construction Management Plan to be provided prior to the commencement of construction.
Height and position of new learning hub on busy intersection, impacting on privacy and visual amenity	Residents	The learning hub has been carefully designed through an iterative process. Key design features of the building are: • Its height is consistent with the height of Building A and lower than Building C. • Its setback from Parkway Avenue matches Building A to maintain views of the façade of that building from the street corner, to create consistency in the pattern of the buildings, and allow for landscaping on the street edge. • The design and features of Building A are reflected in the facades of the new building to maintain a similar sense of proportion, modulation, and scale. • The building addresses the corner, with a recessive brick faced ground floor, and the upper floors clad in sheeting with revealed joints. A window wraps around the upper levels, articulating the façade. The design minimises potential privacy impacts on neighbours by internalising circulation spaces. Further, the facade will be largely screened by existing trees, integrating the new building within the streetscape.
Loss of heritage buildings and history of the site	Residents	A Statement of Heritage Impact has been prepared and is provided at **Appendix BB**. An assessment of this impact is undertaken in section 6.4 of this report. In summary, the original buildings of the Newcastle Girls High School (Building A, L and K) and Newcastle Central Domestic Science School (Building C and G) have heritage significance and will be retained as part of the proposed development. Building A will continue to address Parkway Avenue and Building C will continue to address the original east-west alignment of Dumaresq Street to respect the history of the site. Buildings proposed for demolition as part of the development are of lesser significance. The new learning hub has been designed to

ISSUES RAISED	RAISED BY?	RESPONSE
		respond sympathetically to the heritage buildings.
Positioning of the new learning hub to minimise loss of urban canopy	Residents	The proposed location for the new learning hub was determined through an opportunities and constraints analysis, which considered impacts on the heritage buildings and landscape, school operational requirements and maximisation of usable outdoor space. All significant trees along Smith Street, Parkway Avenue and National Park Street frontages are to be retained. Trees are proposed for removal from the courtyard area between Buildings B and C. The loss will be offset by compensatory planting which will ultimately increase the on-site tree canopy from 24% to 31%.
PMF flood refuge	City of Newcastle and SES	A flood emergency response strategy has been developed which considers the nature of flooding and flood hazard for all events up to and including the PMF. The strategy recommend monitoring of weather patterns, allowing for early closure of the school in severe weather events. In the event of sudden rainfall which causes flash flooding while occupants are on site, the response is to monitor flood conditions and activate shelter-in place procedures.
Flood storage and DCP compliance	City of Newcastle	The development complies with Council's flood requirements as no more than 20% fill is proposed in the flood storage area.

6. ASSESSMENT OF IMPACTS

In accordance with the *State Significant Development Guidelines – Preparing an Environmental Report*, this section:

- Considers the SEARs.
- Provides a detailed summary of the results of the assessment of the potential impacts of the project.
- Summarises the key findings of the detailed technical studies in the appendices.
- Gives detailed reasons to justify any predicted exceedances of relevant standards or performance measures.
- Identifies mitigation measures, where required.

The assessment of impact has been differentiated into two categories, including:

1. Detailed Assessment

   This assessment relates to the key issues of the proposed development and provides a robust statement of environmental impacts associated with the proposal and the relevant technical studies.

2. Standard Assessment

   This assessment relates to matters that present minor or nil impact and are generally consistent with the relevant standard and controls that apply to the particular subject.

Detailed Assessment

6.1. Traffic, Transport and Accessibility

This section assesses the operational traffic, transport and accessibility impacts of the proposed development in accordance with the requirements of SEAR No. 9. Construction traffic impacts are addressed in s. 6.20.

A Traffic Impact Assessment (TIA) has been prepared by Stantec and is provided at **Appendix F**.

SEAR	Section	Documentation
No. 9 Traffic, Transport and Accessibility		
• Provide a transport and accessibility impact assessment, which includes: o an analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections. o details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading. o analysis of the impacts of the proposed development (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), potential queuing in drop-off/pick-up zones and bus bays during peak periods, identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict), and any cumulative impact from surrounding approved developments. o measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms (including proposed arrangements with local councils or government agencies) of delivery of any infrastructure improvements in accordance with relevant standards.	s.6.1.1 to s.6.1.4	Traffic Impact Assessment (**Appendix F**)

SEAR	Section	Documentation
○ measures to promote sustainable travel choices for employees, students and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan. ○ a preliminary operational traffic and access management plan for the development, including drop-off/pick-up zones, bus bays and their operations.		
• Provide a Construction Traffic Management Plan detailing predicted construction vehicle movements, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated	s.6.20	Traffic Impact Assessment (**Appendix F**)

6.1.1. Existing Conditions

The site has three street frontages, with its primary frontage to Parkway Avenue (south) and its secondary frontages to Smith Street (east) and National Park Street (west). The characteristics of the road network are described in Table 9.

Table 9: Characteristics of Local Road Network

ROAD NAME	DETAILS
Parkway Avenue	Parkway Avenue is classified as a local road on the NSW Road Network classifications map and functions as a distributor road connecting Darby Street in the east to Stewart Avenue in the west. The road corridor is 35m wide (approx.) with a wide central island and a single traffic lane and a parking lane in each direction. Tube traffic counts were undertaken and identified average weekday traffic to be 4,697 (AM - eastbound) and 5,660 (PM westbound). Its intersections within National Park and Smith Streets contain roundabouts. A bus zone, a kiss and drop zone, and 7 (approx.) unrestricted parking spaces are located on the roadway in front of the site. Pedestrian footpaths are available on each side of the road. Two pedestrian gates connect the site with Parkway Avenue. A single vehicle crossing connects the site with Parkway Avenue. This driveway provides access to a small car park and servicing area located on the southern end of Building A.

ROAD NAME	DETAILS
	There is no dedicated bicycle infrastructure within the road reserve. The TfNSW cycleway finders online tool identifies the difficulty of cycle networks and classifies Parkway Avenue as 'on road – medium' difficulty.
Smith Street	Smith Street is classified as a local road on the NSW Road Network classifications map and serves Fernley Dawes athletics centre, National Park Sportsgrounds No. 2 and No. 5 and a set of netball courts. Access to the site's main on-site car park is from Smith Street. Average weekday traffic is 1,243 (northbound) and 1,328 (southbound). On-street parking in the immediate vicinity of the site is unrestricted. Further to northeast the on-street parking is metered and time restricted to 8hr hours. A continuous pedestrian footpath is available on the western side of the street. Two continuous lengths of footpath with a central break are available on the eastern side. There is a pedestrian gate on the northeastern corner of the site which connects with Smith Street. There is no dedicated bicycle infrastructure within the road reserve. The TfNSW cycleway finders classifies Smith Street as 'On road – low difficulty'.
National Park Street	National Park Street is classified as a local road on the NSW Road Network classifications map and functions as a primary road connecting Glebe Road and the western end of the Newcastle CBD. Average weekday traffic is 1,245 (northbound) and 1,773 (southbound). On-street parking in the immediate vicinity of the site is unrestricted. Further to northwest the on-street parking is metered and time restricted to 2hrs and 8hrs hours. Pedestrian footpaths are available on each side of the road. There are two pedestrian gates in the middle of the frontage which connect with National Park Street National Park Street is unclassified by the TfNSW cycleway finders tool. There is no dedicated bicycle infrastructure within the road reserve. An on-street drop off and pick up zone is located on the eastern side of the road near its intersection with the Avenue.

The Traffic Impact Assessment (TIA) includes an analysis of the performance of the intersections of Parkway Avenue with National Park Street and Smith Street. The analysis applies a first principles approach, as described in s.3 of the Transport – Roads and Maritime Services *Traffic Modelling Guidelines* (February 2013), including reviewing traffic data and observation of operations. Key findings of the analysis include:

- The overall count data along the surrounding roads shows short peak periods in the morning (8:00 – 9:00 am) and late afternoon (5:00 – 6:00 pm).
- The afternoon peak does not coincide with the school bell time.
- The morning peak shows a demand of around 435 (eastbound) and 716 (westbound) vehicles along Parkway Avenue.
- Whilst observations around the morning bell time show an increase in traffic demand and slower speeds across the two intersections, the overall traffic flow is still deemed to be operating at a satisfactory level of service and free-flowing conditions are achieved within minutes after the school bell.

The school has drop off and pick up zones on Parkway Avenue and National Park Street. A five-minute parking restriction applies to the zones between 8:00 am to 9:30 am and 2:30 pm to 4:00 pm. The zone on Parkway Avenue has capacity for 11 vehicles and the zone on National Park Street for six vehicles. The TIA makes the following observations on the operation of the parking zones:

- Morning peak drop-off time was between 8:30 am and 8:50 am, with the longest queue occurring during the 5-minute interval of 8:40 am to 8:45 am. This period saw a maximum of 15 vehicles in the drop-off zone along with a school bus. The vehicles would spill over into the bus zone during this peak interval and cause minor congestion along Parkway Avenue and towards the intersection of Parkway Avenue/ National Park Street.
- Afternoon peak pick-up times were from 2:50 pm to 3:10 pm with the longest queue occurring during the 5-minute interval of 3:00 pm to 3:05 pm.
- The 'kiss-and-ride' zone along National Park Street was mostly unused as parents chose to informally park to drop students off closer to the school entrances. There were vehicles observed to double park along Smith Street for a few minutes while waiting for school to finish.
- Car occupancy levels were generally high with approximately 2 to 3 students per vehicle.

The Parkway Avenue bus zone abuts the drop off/pick zone and has capacity for two buses. It was observed to have a high bus turnover, particularly in the afternoons.

School staff monitor the operations of the 'kiss-and-ride' and bus zone to ensure the safety of students and parents adherence to the parking controls. As buses approach the drop off zone, teachers call out the bus number so that students can congregate on the footpath.

The school does not have formal bicycle parking or end of trip facilities. The cricket nets are used as an informal bike/scooter parking area. The TIA identifies that 60% of students live within the accepted notational cycling catchment (3,600m on-path catchment). The TIA further identifies that 8% and 17% of students live within 800m and 1,200m respectively of the school.

An analysis was made of enrolments based on proximity to bus stops to determine access to public transport. All bus routes within a 400-metre walking distance of the school entrance were selected. A 400 and 800-metre buffer was then applied to each bus stop on the routes to determine the proportion of students with access to public transport. The analysis determined that 48 per cent of students live within 800 metres of a bus stop and are eligible for the School Student Transport Scheme (SSTS – free transport).

There is a 40 space at-grade car park within the school, which is accessed from Smith Street. The car park is only for the use of staff with no site parking for students.

A show of hands survey was undertaken to establish travel mode behaviours of students and staff. The results of the survey are provided in Table 10 below.

Table 10: Travel Mode Behaviour of Staff and Students

PERIOD	CAR	WALK	BUS	TRAM/TRAIN	BICYCLE	SCOOTER
AM	37.9%	22.6%	27.0%	4.2%	6.7%	1.6%
PM	27.8%	25.3%	34.3%	4.8%	6.3%	1.5%

It can be observed that approximately 72% of total trips are made by public transport (39.1%) and active transport

(33.1%).

The TIA also includes recommendations for investigation involving changes to SSTS and local infrastructure and as such require the approval of other authorities. The recommendations include:

- The addition of a further parking space within the bus zone on Parkway Avenue and the enhancement of signage to better delineate the bus and pickup/drop off zone.
- Extension of the kiss and drop zone on Parkway Avenue and creation of a new zone in Smith Street. This change would result in the change of 20 (approx.) on street parking spaces from unrestricted to restricted paths.
- The better alignment of bus and ferry services to facilitate the movement of students who reside in Stockton. This includes services within Stockton.
- The addition of two (2) pedestrian crossings to facilitate movement across Parkway Avenue.

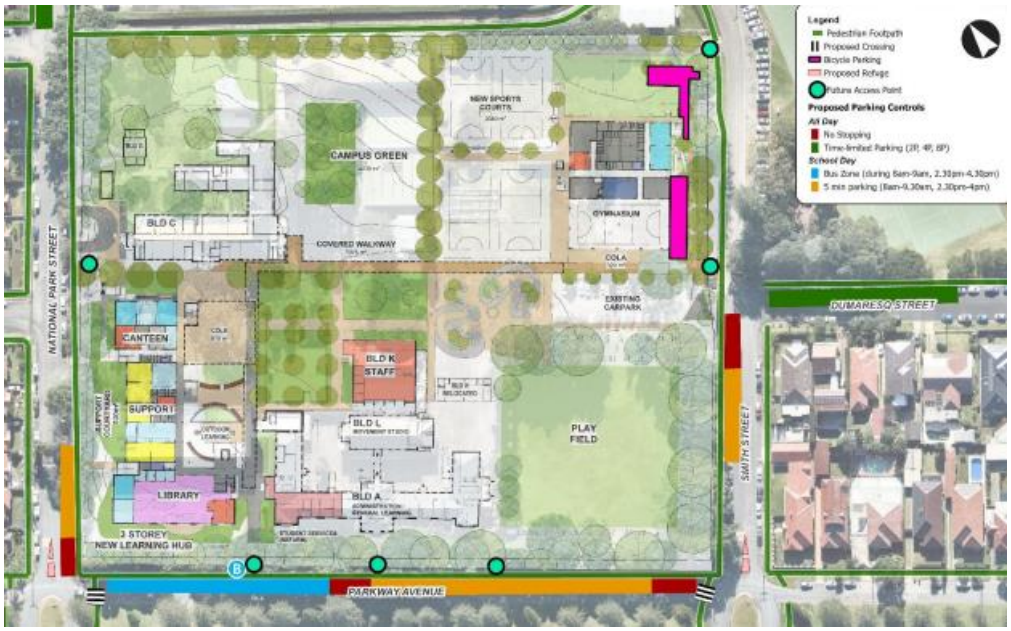


Figure 25: Public Domain Plan - these works are subject to further approval by Council under S138 (Source: EJE)

6.1.2. Proposed Environment

The proposal seeks to provide one additional pedestrian entrance along the Parkway Avenue frontage which will become the formalised student entry. This entry point is located in front of the bus pick-up and drop-off area within proximity to the private vehicle 'kiss-and-drop' facility.

Vehicle access predominately remains as existing, staff will maintain access to the existing staff carpark via Gate 2. An additional vehicle access point is proposed along National Park Street for support students to ensure a safe and accessible pick-up and drop-off location is available.

Additional Kiss-and-Drop opportunities along National Park Street and Smith Street have been recommended and

discussed with Council. Further consultation will occur with Council as the road authority prior to construction.

6.1.3. Impact Assessment

The travel behaviours of the school being 39.1% trip by public transport and 33.1% by active transport, positively exceed the targets in the *Greater Newcastle Future Transport Plan 2056* which aims for 7.5% use of public transport and 17% by active transport by 2056. The preliminary Green Travel Plan aims at a minimum to maintain existing travel behaviour, but targets increases in the use of active and public transport.

Moderate and reach mode share targets have been developed (Table 11). The key difference between the existing and proposed targets is the shift from private vehicle to public transport and a future (reach) shift from public transport to active transport modes.

Table 11: Moderate and Reach Mode Share Targets (Source: Stantec)

	WALKING	BICYCLE	PUBLIC TRANSPORT	PRIVATE VEHICLE
Moderate	25%	10%	40%	25%
Reach	27%	11%	39%	23%

There is the potential to meet the reach targets, with key opportunities for behaviour change being:

- Reducing the number of car movements in the AM peak. A characteristic of existing travel behaviour is the larger number of AM car movements (37.9%) than PM car movements (27.8%). This difference is a result of parents/ carers dropping children off when it aligns with a morning private travel trip. This behaviour can be changed by discouraging it and providing safe and reliable transport as an alternative.
- Increasing student use of public transport. The TIA analysis shows 48% of students live within proximity to a bus route. The Green Travel Plan (GTP) can incorporate measures to promote use of public transport.

A key measure to achieve the mode share target is the appointment of a School Travel Coordinator. The TIA recommends appointment of a School Travel Coordinator for 12 months from commencement of operations. The coordinator would be a dedicated and appropriately skilled resource, able to promote changes in travel behaviour. The appointment of a coordinator is adopted as a recommended mitigation measure.

The overall existing traffic volumes are:

- AM: 38% of current student population (1209) = 459
- PM: 28% of current student population (1209) = 338

Total student by private vehicle (existing sum of AM and PM) = 798.

The overall proposed traffic volumes are:

- Moderate target: 25% of future population (1420 - multiplied by 2 to reflect AM&PM trips) = 710
- Reach target: 23% future population (1420 - multiplied by 2 to reflect AM&PM) = 653.

The traffic impacts of the School can therefore be reduced if the mode share targets are achieved.

The TIA includes a first principles analysis of the operation of the intersections of Parkway Avenue, with National

Park and Smith Streets. The analysis determines that the school has limited operational impacts on the intersections with a satisfactory level of service and free-flowing conditions achieved within minutes of the end of the AM and PM peaks and that the upgrade of the school will have a negligible impact on traffic conditions. The traffic counts identify that the peak traffic flows on National Park Street in the PM occur outside of the time of the peak PM flows from the school.

The kiss and drop zones are an important element of the travel infrastructure. Parkway Avenue is the school primary zone at present. The recommended increase in its capacity will enhance the efficiency of its operation. At present, vehicles using this zone spill into the adjoining bus zone in peak periods. The Green Travel Plan (GTP) proposes management measures to prevent this undesirable behaviour, including improved road signage to delineate the bus zone and general signage to explain the operation of the zone. The proposed new kiss and drop zone on Smith Street will significantly enhance capacity (potentially by 13 spaces). Initiatives to promote use of the National Park Street zone should also further increase its use and further disperse kiss and drop activities.

The proposed work does not involve any increase in on-site parking. Additional parking demand may be generated by the five additional staff and additional year 12 students.

The TIA notes that the staff car park reaches capacity by 8.50am and observed that on-street parking in the surrounding streets was mostly occupied before school peak hours. It concludes that school staff are having a negligible impact on on-street parking demand. At present, 86% of staff travel to school by car, because of the need to transfer materials between work and home. A role of the Transport co-ordinator will be to better understand staff travel behaviours and opportunities for change. New end of trip facilities are proposed which are expected to incentivise active mode of travels by staff. End of trip facilities are currently not available.

There is no on-site parking for students, and none is proposed. The proposal will increase the year 12 student population by approximately 30 students. If new students follow existing travel behaviours this could generate the need for an additional ten car spaces. It is important to note however that the mode share data does not differentiate between travel as a passenger or driver, and that seniors student favour car-pooling with friends. It is forecast that students will increase parking demand by between 5 - 10 spaces, and that this can be accommodated within the street network.

A new circular driveway is proposed from National Park Street. The driveway will serve as a pick up/drop off zone for supported learning students in the AM/PM peak and as a loading/serving area for small rigid vehicles (6.4m) outside those times. The supported learning students constitute a small portion of the student population and as such, the entry will receive light usage and cause minimal change to the road network. The TIA identified that traffic speeds are above 40km/hr in the school zones. Council and Transport for NSW have agreed to identify measure to reduce vehicle speeds.

6.1.4. Mitigation Measures

1. The Construction Traffic Management Plan (CTMP) will be followed during the construction phase of the project to ensure:
    a. An appropriate and convenient environment for pedestrians.
    b. Impact on pedestrians is minimised.
    c. Appropriate capacity for pedestrians is maintained at all times on footpaths around the site.
    d. Appropriate public transport access is maintained.
    e. Current levels of parking within the precinct is maintained.
    f. Permanent access to/ from the site is accessible for emergency services.
    g. Access for construction vehicle is designated.

h. Construction vehicle activity around the site is controlled.
i. The impacts to general traffic in the vicinity of the site is minimised.

2. Advocate to Newcastle Council and Transport for NSW to identify interventions to reduce vehicle speeds in the roads surrounding the school.

3. DoE to make an application under s.138 of the *Roads Act 1993* to extend the Parkway Avenue bus zone and drop off zones.

4. DoE to make an application under s.138 of the *Roads Act 1993* to create a new drop off and pick up zone on Smith Street.

5. DoE to appoint a School Travel Coordinator for 12 months from the commencement of operation of the new facilities, to implement the Green Travel Plan.

6. Preparation of a final Green Travel Plan, consistent with the draft Green Travel Plan and any relevant conditions of consent.

7. The Green Travel Plan is to incorporate measures to promote use of the National Park Avenue kiss and drop zone by the school community.

6.2. Noise and Vibration

This section assesses the operational noise and vibration impacts of the proposed development in accordance with the requirements of SEAR No. 11. Construction noise impacts are assessed in section 6.20.

A Noise and Vibration Impact Assessment for SSDA has been prepared by JHA Services and is provided at **Appendix AA**.

SEAR	Section	Documentation
No. 11 Noise and Vibration		
• Provide a noise and vibration assessment prepared in accordance with the relevant NSW Environment Protection Authority (EPA) guidelines. The assessment must detail construction and operational noise (including any public-address system, events, and out of hours use of school facilities) and vibration impacts on nearby sensitive receivers and structures, considers noise intrusion, and outline the proposed management and mitigation measures that would be implemented.	s.6.2.1 to s.6.2.4, and s.6.20	• Noise and Vibration Impact Assessment (**Appendix AA**)

6.2.1. Existing Environment

The surrounding land uses are identified as follows:

- North: Low density residential and active recreation.
- East: Low density residential and active recreation.

- South: Low density residential.
- West: Low density residential.

Table 12: Noise Sensitive Receivers (Source: JHA)

RECEIVER	TYPE	DISTANCE
1. 76 National Park St	Residential	30m
2. 82 National Park St	Residential	50m
3. 27 Parkway Ave	Residential	30m
4. 1 Smith St	Residential	60m
5. 17 Dumaresq St	Residential	20m
6. Corner of Parry and Smith Street	Active recreation	20m
7. 2B Dumaresq St	Active recreation	20m

Attended and unattended noise surveys were conducted in five locations around the site to establish the ambient and background noise levels of the site and surrounds. Long-term noise monitoring was carried out from 29 November 2022 - 8 December 2022. The noise loggers were placed in the three locations (unattended noise monitoring - Figure 26), mounted 1.5 metres above the ground and fitted with windshields.

Figure 26: Noise survey locations (Source: JHA)

The Rating Background Levels (RBLs) were established in accordance with the NSW EPA Noise Policy for Industry (NPI) 2017. The results of the monitoring are provided in Table 13.

Table 13: Results of long-term noise monitoring (Source: JHA)

LOCATION	RATING BACKGROUND NOISE, DB(A)			AMBIENT NOISE LEVELS, DB(A)		
	DAY 7AM-6PM	EVENING 6PM-10PM	NIGHT 10PM-7AM	DAY 7AM-6PM	EVENING 6PM-10PM	NIGHT 10PM-7AM
L1	44	37	30	58	57	51
L3	45	41	33	59	55	50

Long-term traffic noise monitoring was measured from noise logger L2 (Figure 26), with the logger positioned to record noise levels along Parkway Avenue. The results of the monitoring are available in Table 14 below.

Table 14: Record Noise Levels (Source: JHA)

LOCATION	MEASURED TRAFFIC NOISE LEVELS, DB(A)			
	DAY (7AM-10PM)		NIGHT (10PM-7AM)	
L2	$L_{Aeq,15hour}$ 61	Noisiest $L_{Aeq,1hour}$ 64	$L_{Aeq,9hour}$ 53	Noisiest $L_{Aeq,1hour}$ 58

Short-term noise monitoring was carried out on 29 November 2022 and 8 December 2022, during the day to obtain representative third-octave noise levels. The full summary of results of the short-term noise monitoring is provided within the Noise and Vibration Impact Assessment.

The surveys found that ambient noise levels are dominated by vehicular movement on Parkway Avenue and infrequent vehicular movement on National Park Street and Smith Street. Low pedestrian activity was noted.

Noise emissions from the site are controlled under various policies and guidelines:

- Mechanical noise: is assessed in accordance with the NSW EPA 'Noise Policy for Industry 2017'. The policy aims to control intrusive noise into nearby sensitive receivers and to noise level amenity for land uses.
- General noise: is assessed in accordance with State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP). Schedule 2 of the T&I SEPP creates a noise standard for complying development in schools. Although not directly applicable, the standard is used as benchmark for assessment of school developments. The noise standard matches the intrusive noise criteria from the Noise Policy for industry.
- Noise emission from outdoor playgrounds: Association of Australasian Acoustical Consultants Guidelines for Child Care Acoustic Assessment. In the absence of guidelines on noise impacts from playgrounds the guideline is applied due to the similarities between child care outdoor play areas and those of schools.

A summary of the noise criteria from the guidelines and policies is provided in Table 15 below.

Table 15: Summary of noise level criteria at the nearest sensitive receivers

NOISE EMISSION	RECEIVER	TIME PERIOD	NOISE LEVEL CRITERIA $L_{AEeq\ 15MIN}$ DB(A)
External Mechanical Plant	Residential receivers (1, 2)	Day (7am – 6pm)	49
		Evening (6pm – 10pm)	42
		Night (10pm - 7am)	35
	Residential receivers (3, 4, 5)	Day (7am – 6pm)	50
		Evening (6pm – 10pm)	43
		Night (10pm - 7am)	38
	Active Recreation	When In Use	53
School's operational noise	Residential receivers (1, 2)	Day (7am – 6pm)	49
		Evening (6pm – 10pm)	42
		Night (10pm - 7am)	35
	Residential receivers (3, 4, 5)	Day (7am – 6pm)	50
		Evening (6pm – 10pm)	46
		Night (10pm - 7am)	38
New sports court	Residential receivers (1, 2)	Up to 4 hours (7am – 6pm)	54
		More than 4 hours (7am – 6pm)	49
	Residential receivers (3, 4, 5)	Up to 4 hours (7am – 6pm)	55
		More than 4 hours (7am – 6pm)	50

The following potential sources of noise from the proposed development have been identified:

- Noise emissions from mechanical plant.
- Noise emissions from School Bells and Public Address system.
- Noise emissions from the Multi-purpose facility
- Noise emissions from outdoor play.
- Noise emissions from traffic generation noise.

6.2.2. Proposed Environment

Mechanical Plant

Two mechanical plant rooms are proposed on the roof of the learning hub. The mechanical plant will operate continuously during the school's core hours of operation. The nearest sensitive receivers to the plant are No's 27

and 76 National Park Street.

A detailed noise assessment cannot be conducted as the final mechanical plant has not been selected. The noise assessment adopts a conservative approach and applies the evening noise level criteria as the relevant standard, despite the plant only proposed to being used in the day. The noise assessment applies corrections for the distance to the sensitive receivers and assumes the use of acoustic screening.

The results (Table 16) and show that the noise levels comply with the adopted project noise trigger level standard.

Table 16: External mechanical plant assessment to nearest noise-sensitive receivers (Source: JHA)

CALCULATION	RESIDENTIAL RECEIVER	
	MECHANICAL PLANT ROOM A – NATIONAL PARK STREET	MECHANICAL PLANT ROOM B – PARKWAY AVENUE
Sound Pressure Level of Condenser Units @1m, dB(A)	76	77
Distance correction, dB	-30	-30
Acoustic screen / louvre intersection loss, dB	-15	-15
Predicted noise level at the nearest residential receiver, dB(A)	34	35
Evening-time Noise Level Criteria, dB(A) / Complies (Yes/No)	42 / Yes	42 / Yes

Public address and school bell system

Public Address and School Bell Systems have potential to cause noise nuisance for sensitive noise receivers. The Environment Protection Authority believes that systems can be installed and operated in a manner that meets the needs of the school to provide communication that enable proper management of the student population, whilst not adversely impacting neighbours.

The public address and noise system has not been selected at this time and as such it is not possible to assess its impact. The Noise Impact assessment identifies a series of measures which if implemented will result in there being negligible impact to neighbours. The measure are included in the mitigation measures and include actions to be taken during installation, set up and operations.

Multi-purpose building and outdoor courts

The proposed multi-purpose facility will be used the school during the school hours for indoor sports, school assemblies, presentations, examinations and student concerts. The outdoor courts have the possibility to be used by the community out of school hours, however this will need to be arranged with City of Newcastle (Council) and does not a form a formal part of this application. On-going consultation with Council will occur into the operational phase of the project.

The worst-case noise scenario involves amplified noise (such as musical performances) during the evening, with

doors and windows in the west façade open. Table 19 illustrates that under this scenario the development exceeds the adopted noise criteria by up to 10dB. This is a 'worst-case scenario,' and is only expected to be the case during the infrequent high noise generating events. Further mitigation measures will be explored during the detailed design such that the noise breakout is reduced as best as practicable.

An alternate scenario was modelled under substantially the same conditions (amplified noise, event during the evening) but with doors and windows in the west façade closed not open. Under that scenario the meets the adopted noise criteria.

Table 17: Multi-purpose Facility (Source: JHA)

CALCULATION	RESIDENTIAL RECEIVER SMITH STREET
Internal Noise Level $L_{Aeq,\ 15min}$ dB(A)	90
Distance attenuation, dB	-30
Sound Reduction of Façade (windows open), dB	-10
Correction for under ventilated scenario only using west façade, dB	-15
Area correction, dB	19
Predicted Noise Level at Nearest Receiver, dB(A)	54
Noise Level Criteria (Evening-time), $L_{Aeq,\ \mathbf{15min}}$ dB(A) / Complies?	46 / No

Outdoor Play

Noise emissions from the use of outdoor play areas has the potential to impact on sensitive noise receivers. The school has a series of existing outdoor play areas including the oval and basketball courts and new play areas, including the outdoor courts beside the multi-purpose facility. Students primarily use the outdoor areas during recess and lunchtime.

The proposed development will increase student capacity. However, the existing outdoor play areas are expected to continue operate as they currently do and as such and there will be a negligible increase in noise.

The proposed outdoor courts are likely to receive intensive use by students and be a source of noise. An assessment of the impact has been made based on the following general parameters: 200 students, 100 students talking at any one time in a raised voice, with the sensitive receivers on Smith Street having the greatest potential to be impact. The results of the assessment are shown in Table 18 and show that the noise levels will meet the adopted criteria.

Table 18 New Multi-purpose Sports Courts (Source: JHA)

CALCULATION	RESIDENTIAL RECEIVER SMITH STREET
L_{Aeq} of 100 students with raised vocal efforts @ 1m	89
Assumed distance (70m) attenuation from the outdoor play ground, dB	-37
Correction for partial shielding provided by multi-purpose facility dB	-10
Resulting level at residential receiver	42
Noise Level Criterion daytime (up to 4 hours)/Complies	54/Yes
Noise Level Criterion daytime (over 4 hours)/Complies	49/Yes

Traffic Noise

An assessment of the noise impact from traffic on Parkway Avenue on the school has been conducted, to ensure compliance with the Education and Facilities Standards Guidelines. The assessment determined that compliance with internal noise levels can be achieved subject to provision of glazing with a minimum sound reduction index of RW32, and that a 6.38mm laminated fixed single glazing system achieves the nominated sound reduction index.

Construction Noise

Preliminary consideration of construction noise has been undertaken, with detailed consideration to be undertaken as part of a future Construction Environmental Management Plan. The construction noise assessment considers the school as a sensitive noise receiver.

Construction hours in accordance with EPA guidelines are proposed, being:

- Monday to Friday: 7am to 6pm.
- Saturday: 8am to 1pm.
- Sundays and Public Holidays: No excavation or construction works.
- High noise level works shall not occur during shoulder periods of the recommended standard hours – i.e 7am to 8am and 5pm to 6pm

A preliminary noise impact assessment has identified that unmitigated noise emissions from typical construction equipment including:

- Circular saws
- Piling rigs, and
- Pumping trucks.

will exceed the *Australian Standard AS2436:2010 'Guide to Noise Control on Construction, Maintenance & Demolition Sites'* for a 15-minute period.

The noise assessment concludes that the noise impacts can be limited to acceptable levels through noise mitigations measures such as acoustic screening.

Vibration impacts are dependent on the equipment to be used and its proximity to the sensitive receiver. The impact can include damage to building or adverse human responses. Future construction works must be planned to meet the safe working distance in the NSW RMS 'Construction Noise and Vibration Guideline' and human comfort standards in DECC's 'Assessing Vibration: A Technical Guideline'.

6.2.3. Impact Assessment

The subject site is surrounded by sensitive noise receivers and has the potential to adversely impact them.

The proposed development will relocate the outdoor play courts from the south western corner of the site to the northern boundary. This is beneficial as it locates the courts further from the sensitive noise receivers. The number of courts is proposed to be increased and it is anticipated they will be used by up to 200 students at a time. The noise assessment determines that the adopted noise criteria will be met at the nearest sensitive noise receivers on Smith Street, with noise impacts mitigated by the 70m separation between the uses and the multi-purpose facility which acts in part as a noise barrier. Peak use of the courts will occur only during two time periods, being lunch and recess.

Noise emissions from the mechanical plant on the roof of the Learning hub can comply with the adopted noise standards. The plant will primarily be used during school operations. Additional consideration will be given to the type of plant and acoustic control measures to ensure compliance with those standards, as part of construction process.

Noise from the multi-purpose facility is generally capable of complying with the adopted noise standards. During a worst-case scenario (amplified music, evening event, windows open) the adopted noise criteria will not be met. When the windows are closed compliance is achieved. Given the likely infrequent occurrence of the worst-case noise emissions, the nature of the use and its expected impacts, the impact is considered acceptable. However, a mitigation measure is proposed to seek to further limit potential impacts.

A playground area is to be established on National Park Street for the use of the supported learning students. The playground will be used by fewer students, and it is not expected to generate adverse noise impacts.

Based on the technical assessment undertaken as part of this EIS, we conclude that noise impacts likely to arise from the development are acceptable and manageable subject to the identified mitigation measures.

6.2.4. Mitigation Measures

8. Project Specific Acoustic Measures – Acoustic amelioration measures will be required due to the expected exceedances of the noise level criteria. Temporary shielding such as solid hoarding/acoustic curtains may reduce the expected noise impacts and is proposed as a noise control measure during construction. The location and extent of the shielding are to be defined in the detailed Construction Noise and Vibration Management Plan (CNVMP).

9. General Control Elements – Construction noise and vibration shall be managed by implementing the strategies listed below:

a. Plant and equipment. controlling noise and vibration at the sources is one of the most effective methods of minimising the impacts from any work site activities. Work practices that will reduce noise and vibration at the source include:
    i. Employing quieter techniques for all high noise activities such as rock breaking, concrete sawing, and using power and pneumatic tools.
    ii. Use quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
    iii. Selecting plant and equipment with low vibration generation characteristics.
    iv. Operate plant in a quietest and most effective manner.
    v. Where appropriate, limit the operating noise of equipment.
    vi. Regularly inspecting and maintain plant and equipment to minimise noise and vibration level increases, to ensure that all noise and vibration reduction devices are operating effectively.
b. On site noise management. Practices that will reduce noise from the site include:
    i. Maximising the distance between noise activities and noise sensitive receivers. Strategically locate equipment and plant.
    ii. Undertaking noisy fabrication work off-site where possible.
    iii. Avoid the use of reversing beeping alarms or provide for alternative systems, such as broadband reversing alarms.
    iv. Maintaining any pre-existing barriers or walls on a demolition or excavation site as long as possible to provide optimum sound propagation control.
    v. Constructing barriers that are part of the project design early in the project to afford mitigation against site noise.
    vi. Using temporary site building and material stockpiles as noise barriers. These can often be created using site earthworks and may be included as a part of final landscape design.
    vii. Installing purpose built noise barriers, acoustic sheds and enclosures
c. Work scheduling. Scheduling work during periods when people are least affected is an important way of reducing adverse impacts. The following scheduling aspects may reduce impacts:
    i. Provide respite periods, including restricting very noisy activities to daytime, restricting the number of nights that after-hours work is conducted near residences, or by determining any specific requirements, particularly those needed for noise sensitive receivers.
    ii. Scheduling activities to minimise impacts by undertaking all possible work during hours that will least adversely affect sensitive receivers and by avoiding conflicts with other scheduled events.
    iii. Scheduling work to coincide with non-sensitive periods, to reduce impact on examinations.
    iv. Scheduling noisy activities to coincide with high levels of neighbourhood noise so that noise from the activities is partially masked and not as intrusive.
    v. Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from sensitive receivers.
    vi. Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
    vii. Designating, designing and maintaining access routes to the site to minimise impacts.
    viii. Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.
d. Consultation, notification and complaints handling.
    i. Provide information to neighbours before and during construction.
    ii. Maintain good communication between the community and Project staff.
    iii. Have a documented complaints process and keep register of any complaints.
    iv. Give complaints a fair hearing and provide for a quick response.

v. Implement all feasible and reasonable measures to address the source of complaint. Implementation of all reasonable and feasible mitigation measures for all works will ensure that any adverse noise impacts to surrounding receivers are minimised when noise goals cannot be met due to safety or space constraints.

10. Additional Noise and Vibration Control Measures – If, during construction, an item of equipment exceeds either the noise criteria at any location or the equipment noise level limits, the following noise control measures, together with construction best practices, shall be considered to minimise the noise impacts on the neighbourhood.
    a. Schedule noisy activities to occur outside of the most sensitive times of the day for each nominated receiver.
    b. Consider implementing equipment-specific screening or other noise control measures recommended in Appendix C of AS 2436:2010.
    c. Limit the number of trucks on site at the commencement of site activities to the minimum required by the loading facilities on site.
    d. When loading trucks, adopt best practice noise management strategies to avoid materials being dropped from height into dump trucks.
    e. Avoid unnecessary idling of trucks and equipment.
    f. Ensure that any miscellaneous equipment (extraction fans, hand tools, etc) not specifically identified in this plan incorporates silencing/shielding equipment as required to meet the noise criteria.

11. Public address and school bell system – shall be designed and operated in accordance with the following:
    a. Low-powered horn-type speakers shall be designed, installed, and operated such that the system does not interfere unreasonably with the comfort and repose of occupants of nearby receivers.
    b. Speakers shall be mounted with a downward angle and as close to the floor as possible.
    c. The noise level of the system shall be adjusted onsite to ensure it is audible for the school without being excessive. The system shall be set to ensure the noise at nearby residences and sensitive receivers does not exceed noise level criteria.
    d. Once the appropriate nose level has been determined onsite, the system shall be limited to these noise levels so that staff cannot increase the noise levels.

6.3. Flooding

This section assesses the flood risks impacts of the proposed development in accordance with the requirements of SEAR No.14. A Flood Impact Assessment and Flood Emergency Response Plan has been prepared by BMT and are provided at **Appendices H and I**.

SEAR	Section of EIS	Documentation
No. 14 Flooding Risk		
• Identify any flood risk on-site having regard to adopted flood studies, the potential effects of climate change, and any relevant provisions of the NSW floodplain Development Manual.	s.6.3.1	Flood Impact Assessment (**Appendix H)**
• Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions and operational procedures to mitigates flood risk where required.	s.6.3.2 and s.6.3.5	Flood Emergency Response Plan (**Appendix I**)
Additional Assessment Requirements – Flooding		

SEAR	Section of EIS	Documentation
• Provide a flood impact and risk assessment prepared in accordance with the NSW Floodplain Development Manual, and existing council's and government studies and guidance.	s.6.3.1	Flood Impact Assessment (**Appendix H**) Flood Emergency Response Plan (**Appendix I)**
• Identify flood behaviour, flood constraints and risks on the site and its surrounding including the potential impacts of climate change for the full range of events i.e. up to and including the probable maximum event (PMF).	s.6.3.1	
• Assess the impacts of the development, including any changes to flood behaviour and risk, impacts of flooding on the development and its future community and on existing community for the full range of events.	s.6.3.2	
• Propose management measures required to minimise the impacts of flooding on the development and minimise flood risks to the community, including an Emergency Management Plan considering access to and from the site, and evacuation issues during significant flood events including the PMF, from both local catchments and/or regional catchments. *Consultation – if the site is located in a flood catchment, or flood affected, the Applicant must undertake consultation with SES (as relevant agency) prior to lodgment of the EIS.*	s. 6.3.4 and s.6.3.5	

6.3.1. Existing Environment

The site is located within the Cottage Creek catchment and is directly impacted by a 110ha section of that catchment which drains to Cottage Creek. The adjoining property to the north, the Fearnley Athletics field, contains an unnamed drainage channel on its southern side, near to its common boundary with the site. The channel drains in an easterly direction and conveys water to Cottage Creek.

The site is subject to flooding in certain events. Flooding primarily arises from the local catchment, and in the first instance results from overbank flows from the adjoining unnamed drainage channel. As events intensify, additional inundation occurs from water backing up from Cottage Creek. Whilst flood impacts generally arise from the local catchment, mainstream flooding from Styx Creek, Thorsby Creek and Cottage Creek occurs for 1% AEP events and rarer.

The majority of the site is outside the flood extent for all events from the 5% AEP flood to the 0.5% AEP. In the rarer events, a limited portion of the north eastern corner of the site is flood affected. Depths of water in this low area range from 750mm and 850mm in the 1% AEP and 0.5% AEP respectively. Notwithstanding, the entire site is affected by the PMF flood extent.

The Hydraulic Behaviour Threshold map for events between 5% and 0.5% AEP, identifies that the site and surrounds are transitable (Hazard level H1 or not flooded) and therefore, evacuation during such events is possible. However, in the event of a PMF event, floodwaters spilling from multiple watercourses entirely inundate the site, and due to the rapid rate of rise in depths, are considered a flash flood event.

6.3.2. Proposed Environment

The Flood Impact Assessment completed modelling based on City of Newcastle's Council adopted flood study for the catchment 'Thorsby, Cottage and CBD Flood Study' (BMT, 2008) and 'Honeysuckle Redevelopment Area Flood Study' (BMT, 2018).

The modelling determines the post-development conditions for events from the 5% AEP flood to the PMF. The change in peak flood level and velocity mapping (Figure 27 -Figure 30) provides a visual representation of the flood differences before and after the proposed development occurs.

Figure 27: Change in Peak Flood Level - 5% AEP Flood

Figure 28: Change in Peak Flood Velocities – 5% AEP Flood

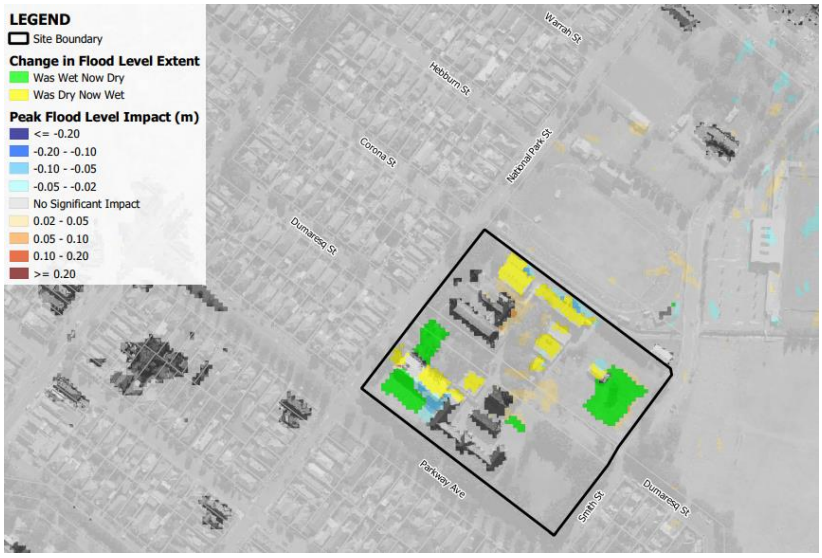


Figure 29: Change in Peak Flood Level – PMF

Figure 30: Change in Peak Flood Velocities – PMF

The mapping illustrates that post development there are no significant changes in flood levels or new areas subject to water under velocity on the site. Importantly, the proposed development does not result in increased flood impact to adjoining properties or public roads.

The proposed new buildings have been designed in accordance with the flood planning levels. Buildings A, K and the Learning Hub are located outside the area affected by the 1% AEP event and as such, not subject to a flood planning level. The multi-purpose facility is subject to a flood planning level of 4.44 AHD and has a ground floor level of 4.6 AHD, compliant with flood planning level. The ground floor of each building is located below the PMF, but each building has a second storey.

Table 19: Flood Planning Levels (Source: BMT)

BUILDING	1% AEP FLOOD LEVEL	FLOOD PLANNING LEVEL	DESIGN GROUND FLOOR LEVEL	PMF LEVEL	SECOND STOREY
Building A Refurbishment only	Not affected	n/a	4.6	5.1	Yes
Building K Refurbishment only	Not affected	n/a	4.2	5.1	No
Learning Hub	Not affected	n/a	4.6	5.1	Yes
Multi-purpose Facility	2.94	4.44	4.6	5.1	Yes

In the PMF event, flood backwaters from Cottage Creek converge with those Styx Creek and result in flood waters up to 2.8m in depth and cutting off evacuation routes from the site. Due to the rapid rate of rise of the waters, the event is considered flash flooding. In a PMF event, there is a high risk of harm to those attempting to leave the site, and as such, shelter in place is the preferred course of action.

6.3.3. Consultation with Council

Council's Engineering Section was consulted on the flood study to obtain feedback on the procedures and methods adopted and was provided with a draft version of the study. Council's response focused on the following points:

1. *Compliance of the proposed development to section 4.01.02 of the Newcastle Development Control Plan 2012 – 'Filling of Flood Storage Area'.*

   Section 4.01.02 of the Newcastle Development Control Plan 2012 (NDCP) states –

   > Not more than 20% of the area of any development site in a flood storage area is filled. The remaining 80% is generally developed allowing for underfloor storage of floodwater by the use of suspended floor techniques such as pier and beam construction.

   The proposed percentage of fill in the 1% AEP is 15% and 17% in the PMF (refer to s.4.4.4 of flood impact assessment). Compliance with section 4.01.02 of the NDCP is therefore achieved.

2. *Suitability of the proposed Multi-purpose Facility Building to withstand hydraulic forces.*

   Council advised that a structural certification was necessary to confirm the adequacy of the multi-purpose facility to withstand the force of the flood waters.

   To inform the structural certification, the most conservative quantities of the PMF flood data was extrapolated from the 'Thorsby, Cottage and CBD Flood Study' (BMT, 2008), and the 'Honeysuckle Redevelopment Area Flood Study' (BMT, 2018). The certification is provided within with Flood Impact Assessment.

6.3.4. Consultation with SES

The State Emergency Services (SES) was consulted and provided advice based on the principles outlined in the 'NSW Floodplain Development Manual' (2005).

The advice identifies the preferred emergency strategy for the school is early closure prior to commencement of a flood event and before the start of the school day based on a severe weather warning for flash flooding. Further, the SES recommended, given the potential for flash flooding, that a flood refuge above the PMF be established. The SES's recommendations have informed the Flood Emergency Response Plan.

6.3.5. Flood Emergency Response Plan

The Flood Emergency Response Plan (FERP) has been prepared to ensure appropriate flood risk management measures are undertaken if an extreme flood event were to occur. The FERP describes the requirements for the proposed buildings, including finished floor levels, flood evacuation, warning systems, signage, and responsibilities of building wardens in the case of a flood emergency.

The emergency strategy in the case of an impending event is early closure of the school, and in the case of an extreme event, closure of the school before the start of the school day. Where the strategy fails, people shelter-in-place on the upper level floors of building which are located above the PMF level.

During construction, the FERP has evaluated that sufficient space will be available throughout all stages of construction for the purpose of sheltering in place.

Following the proposed development works, the total number of site occupants is expected to be to 1,530. Based on a calculation of the available space for sheltering-in-place, each person would have 4.75m^2 of space above the PMF level.

The FERP includes a summary of actions required in the form of warning systems and signage that are to be displayed at common muster points such as ground floor entry, stairways, the car park and visible points along the ground floor. Maintenance activities must also be nominated and ensure all emergency management systems are in full working order.

The strategies present in the FERP are considered to be the most reasonable response for the site-specific circumstances and are appropriate for managing the residual flood risk.

6.3.6. Impact Assessment

The flood modelling shows that the proposed development results in minimal change to the flood conditions on site and does not result in adverse upstream or down stream impacts on adjoining properties. The majority of the site is outside the flood extent for all events from the 5% AEP flood to the 0.5% AEP. In the rarer events, a limited portion of the north eastern corner of the site is flood affected.

The multi-purpose facility is the only building located by the 1% AEP. The ground floor of the building is located above the flood planning level and will be safe from inundation in this event. The northern end of the building contains a void below it so that flood waters can pass through.

The site is affected by adverse flood conditions In the PMF under the existing and proposed development scenarios. The FERP provides a structured approach to the management of the school in a PMF event. The

preferred management approach of pre-emptively closing the school when an extreme event is forecast, mitigates risk and potential harm to life by excluding people from the site. Sheltering in place is a feasible alternative option in the case of an unexpected event. There is sufficient floor area elevated above the PMF within the upper storeys of the school buildings to accommodate the expected site population.

6.3.7. Mitigation Measures

12. The Flood Emergency Response Plan (FERP)
    a. The Flood Emergency Response Plan is to be implemented on occupation of any of the new buildings or refurbished buildings.

6.4. Heritage

This section assesses the environmental heritage impacts of the proposed development in accordance with the requirements of SEAR No.19. A Statement of Heritage Impact and Archaeological assessment have been prepared by EJE Heritage and are provided at **Appendices BB and CC**.

SEAR	Section	Documentation
No. 19 Environmental Heritage		
• Where there is potential for direct or indirect impacts on the heritage significance of environmental heritage, provide a Statement of Heritage Impact and Archaeological Assessment (if potential impacts to archaeological resources are identified), prepared in accordance with the relevant guidelines, which assesses any impacts and outlines measures to ensure they are minimised and mitigated.	s.6.4	• Statement of Heritage Impact (**Appendix BB**) • Archaeological assessment (**Appendix CC)**

6.4.1. Existing Environment

The site is an item of local environmental heritage and listed under Schedule 5 of the Newcastle Local Environmental Plan 2012. The southern portion of the site is also located within the Hamilton South Garden Suburb conservation area.

Newcastle High School was established in 1906 within the campus of the Newcastle East Public School. The primary school relocated in 1911 and the High School expanded to 286 students by 1912. Government policy of the time was to create segregated schools in locations within sufficient population, and this was seen to be the case in Newcastle. In November 1925, the Government purchased the southern portion (Parkway Avenue to Dumaresq Street) of the current school site. Two years later it obtained the northern portion of the site by compulsory acquisition of a section of National Park. It was intended that separate boys and girls schools would be constructed on the site.

The girls school was constructed first and consisted of Buildings A, K and L. The foundation stone was laid by D.H Drummond Minister for Education in December 1928 and the school was officially opened in March 1930. An image of the site in 1975 is provided in Figure 31.

Building A contains the foundation stone and is the main frontage of the school, presenting a grand entrance to Parkway Avenue. The building is two-storey in a symmetrical U shape. Modifications to the building have occurred including demolition of the single storey demonstration room in 1964 to connect Block A to Block B. In 1976, when

the Newcastle Girls' High School was refitted to become co-educational, a major internal renovation was undertaken which included new internal walls and replacement of the slate roof with terracotta tiles. The SoHI concludes that Building A is typically in good condition with the only obvious dilapidation being paint.

Building L was constructed as an assembly hall with a capacity of 545 students. It included the detailing which was applied to Building A and has stuccoed entrances and window surrounds.

Building K was a gymnasium and constructed of brick with slate roof to match the other buildings. The building had large sliding doors on its southern façade which allowed the gym floor to open onto a wide verandah. It contained the school's first canteen, P.E instructor's office, locker rooms, shower and lavatories. Its external finish was simpler in detail than Building A and L.

Building H is a portable building having been introduced circa 1954 and already relocated within the site at least once.

Plans for Building C located on the allotment north of Dumaresq Street were prepared and in a departure from the previous intent, was not for a Boys High School but for the Newcastle Central Domestic Science School. The building was designed in a simpler but still impressive style.

A portion of the site is located within the Hamilton South 'Garden Suburb' Heritage Conservation Area (HCA). The HCA is significant to the local community for the surviving evidence of an early 20th Century subdivision pattern made up of single dwellings on large 'suburban' style allotments generally over 600m^2. The area has associational significance with the eminent Australian architect Sir John Sulman.

The SOHI identifies a number of trees as possible heritage trees and other trees have been categorised as being of high retention value if maintained in their existing groups. The 'possible heritage trees' are mature age 'Hills Weeping Figs', 'Norfolk Island Pines', and 'Small-Leaf Figs'. The high retention value trees are typically 'Brush Box', 'London Plane Trees', 'Angophoras' and 'Sydney Blue Gums'.

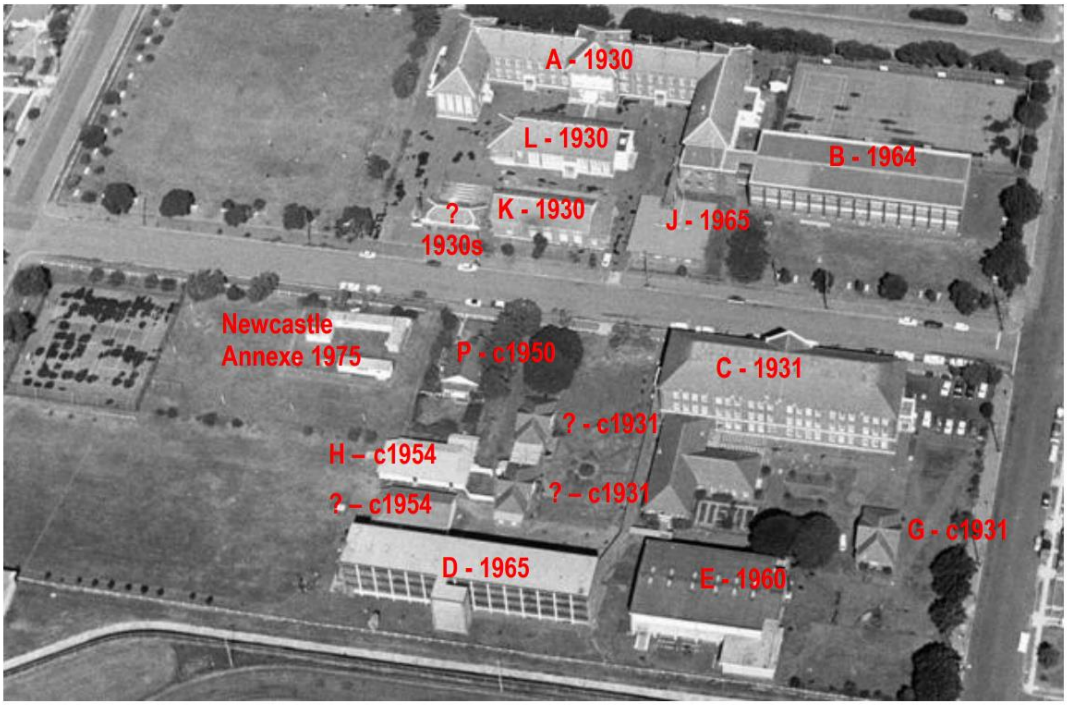


Figure 31: Aerial Image of the subject site from the north in 1975 (source: EJE Heritage)

The subject site is in proximity to further Heritage Items of Local significance, as listed in Table 20 below.

Table 20: Heritage Items within proximity to the site

SUBURB	ITEM	ADDRESS	SIGNIFICANCE	ITEM NO.	GENERAL DISTANCE
Hamilton East	Fig Trees	Stewart Avenue	Local	I161	300m
Hamilton South	House	135 Parkway Avenue	Local	I175	240m
Bar Beach	Parkway Avenue, including verges, median strips, public footpaths, public roads, kerbs and gutters, street trees, garden beds, bridges and stormwater drains	Parkway Avenue from Denison Street, Hamilton East, to Memorial Drive, Bar Beach	Local	I704	1.3km

The archaeological assessment identifies the potential for archaeological resources in the school curtilage associated

with earlier phases of development. Potential archaeological resources associated with late nineteenth and early twentieth century use of the area as grazing pasture, golf course, racetrack, Shedden Park, and dumping ground may be of local significance for historical, research values and representative values.

6.4.2. Proposed Environment

The original buildings associated with the Newcastle Girls' School (1928-30) and the Newcastle Central Domestic Science School (1930-32) are to be retained. It is proposed to demolish several buildings which are part of the heritage listing. The buildings and their significance are discussed below:

- Building B: This building has moderate to high significance, because of its demonstration of progressive architectural practices by the NSW Government Architects and its association with the member of the band Silverchair. Most of its historic significance can be captured in an archival recording. The significance of the building is also impacted by the poor condition of the concrete.
- Building D: This building is assessed as having moderate local significance, as it demonstrates the growth and development of Newcastle High School. Its historic significance can be captured in an archival recording.
- Building E: This building is assessed as having moderate local significance, as the assembly hall for Hunter Girls High School and has interesting construction methods, with tilt up panels. The building is too small for the school, which will impact the contribution that it makes it significant. Retention of Block E, while it is still useful, is recommended, and reconsideration of its value can be revisited when the multi-purpose facility is in operation.
- Building I: This building is assessed as having moderate local significance, as the only building constructed to facilitate the amalgamation of the boys and girls school and commencement of co-education.
- Building J: This building is assessed as having moderate local significance, due to its long term use as a staff room and association with those staff members.
- Building N: This building is the electrical switch room and is assessed as having low local significance.
- Building P: This building is assessed as having moderate local significance, as the last evidence on an on-site care taker for the campus

The substantial trees surrounding three sides of the school site will be retained and continue to be a prominent feature of the streetscape. All trees identified as heritage or possible heritage are retained. Views to the school buildings do not obviously occur until a viewer is at the fence line, and most notably at the main school gate.

The new learning hub will be located on the southwestern corner of the site between Buildings A and C. A covered link is proposed between Building A and the learning hub. The link is elevated, being at first floor level, with the ground level open. The learning hub is separated from Building C by a 14.2m wide landscaped courtyard.

The proposed covered walkways will connect with the southeastern corner of the building and sit forward of the front façade on National Park Street.

The new multi-purpose facility is in the northeastern corner, furthest away from the buildings of heritage significance. The new building relates closely with the sports precinct adjacent to the site. The roof of the building slopes down to the west so that its lowest side is towards the significant buildings.

Building H is proposed to be moved from outside the conservation area into a part of the site which is within the conservation area.

6.4.3. Impact Assessment

Relocation of Building H maintains its association with the school which extends approximately 70 years. The building is to be renewed and its surrounds enhanced by landscaping that supports its use. The proposed works to Building H will enhance its significance and ensure its ongoing relevance. A letter of structural advice has been prepared (**Appendix KK**) which identifies a methodology to apply during the relocation to limit structural damage to the building.

The learning hub has been designed to stand separate to the existing buildings of heritage significance, to ensure the old and new are clearly distinguished and easily understood. Design elements and proportions of the new learning hub are inspired by the form of Building A in a contemporary way, so that the two structures complement each other. Its height is consistent with the height of Building A. Its setback from Parkway Avenue also matches Building A to create consistency in the pattern of the buildings, and allow for landscaping on the street edge.

The covered link between Buildings A and B creates a light connection with the heritage building. The structure is subservient to the strong form of the heritage building and clearly distinguishable as new fabric.

The proposed covered walkways around the site provide connection to heritage significant buildings. The walkways are simple structures with support posts and a flat roof. The walkway will sit between the façade of Building C and National Park Street, but will be of secondary visual importance, because of its lightweight form and the height and bulk of the heritage building.

The multi-purpose facility is in the northeastern corner of the site, away from the heritage significant components. This reduces the perceived scale of the new building in deference to the older buildings. The offset distance, and treatment of the roof, are considered sufficient to minimise any impact to the significance of the existing school buildings.

The proposed electrical kiosk is in a discrete area near the northwest corner of the proposed new learning hub. The kiosk will be coloured to settle into the background of the setting and is located outside the boundaries of the conservation area.

None of the trees identified as ‘possible heritage trees’ are proposed to be removed to facilitate the proposed alterations and additions. All ‘possible heritage trees’ will be maintained and protected throughout construction and operation (see section 6.11).

Mitigation measures proposed to ensure that archaeological resources are identified and protected.

6.4.4. Mitigation Measures

13. Prior to demolition archival photography of buildings to be demolished.

14. Test excavations
    a. Test excavations are to be undertaken on the northeast green space, under Section 139(4) of the *Heritage Act 1977* “excavation permit exceptions”. Archaeologists are to create a grid plan and excavate 1 m by 1m squares in predetermined areas. Topsoil and potential artefact bearing deposits will be removed with archaeological supervision and a record made. Excavation will cease once culturally sterile deposits are reached after which, the area will not be subject further archaeological monitoring, but an unexpected finds protocol will be implemented.
    b. No excavation works shall occur since such time that the Aboriginal Cultural Heritage Plan (ACHP) has

been prepared to ensure no impact to Aboriginal relics.

15. Discovery of relics
    a. The discovery of relics will result in:
        i. NSW Heritage being notified of the relic/s under Section 146 of the *Heritage Act 1977* and
        ii. Avoidance through changing of construction plans; or further archaeological excavation with excavation permit (Section 140) if impacts cannot be avoided.

16. Archaeological monitoring
    a. Archaeological monitoring of demolition and excavation works under Section 139(4) of the Heritage Act 1977 "excavation permit exceptions" is to occur for all other areas of the school site. If archaeological resources are found:
        i. A stop works will be implemented and archaeologist will determine if the find meets the definition of relics. If not a relic, works may proceed. If a relic, works stop and NSW Heritage will be notified of the relic/s under Section 146 of the Heritage Act 1977.
        ii. The discovery of relics will result in one of two courses of action: avoidance through changing of construction plans; or archaeological excavation if impacts cannot be avoided.

6.5. Contamination and Remediation

This section assesses the suitability of the site for the proposed development in accordance with the requirements of SEAR No. 16. A combined Preliminary (PSI) and Detailed site investigation (DSI), and a separate Remedial Action plan (RAP) are provided at **Appendices P and O**.

SEAR	Section	Documentation
No. 16 Contamination and Remediation		
• In accordance with Chapter 4 of SEPP (Resilience and Hazards) 2021, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.	• s.6.5.1 to s.6.5.3	• Detailed Site Investigation Report (**Appendix P**) • Remediation Action Plan **(Appendix Q**)

6.5.1. Methodology

The objective of the PSI and DSI is to:

- Assess the potential for contamination at the site based on past and present land uses.
- Undertake subsequent subsurface investigation to assess the suitability of the site for the proposed development from a contamination perspective.
- Assess whether further investigation and/or management is required regarding the proposed development.

The past and present uses analysis consisted of extensive historical analysis including aerial data and site inspections.

6.5.2. Findings

The key findings of the analysis identify that the site was undeveloped in the early 1900's and was likely used for grazing and as a golf course. Dumaresq Street was extended across the site around 1910, and records suggest that the site has been used as a school since around March 1930. The Newcastle Girls High School was established in 1930 and Newcastle Boys' High School in 1934, on opposite sides of Dumaresq Street, the key buildings constructed at this time remain on site.

Dumaresq Street was removed, and its land area incorporated into the school campus around 1975. Several other site buildings have been constructed on site and demountable (temporary) buildings were also present at times. The site has been filled to varied depths but a definitive timeline for this occurring is not known, however may been in the 1920s in line with other works occurring in Newcastle at that time. There is the possibility of waste materials (ash etc) to have been sourced from the former gasworks at Steel Street Newcastle for fill. Other site filling may have occurred during the course of school development. There is no information on historical waste management (incineration, chemical disposal, building waste).

Comprehensive subsurface investigations were undertaken with tests conducted at 51 locations (21 test pits, 21 bores and 9 surface samples). Test sites were examined by visual inspection and eleven samples presented for laboratory testing. Key findings of the analysis include:

- The presence of fill across the site to depths of between 0.1 m and 3.1 m. The fill was deepest in the north / north-eastern parts of the site which are lower-lying.
- Fill materials were observed to comprise various anthropogenic materials including building wastes, coal, coal chitter, slag, ash, asphalt and fibro sheeting fragments (ACM).
- The majority of the tested soils were within the adopted human health and ecological guidelines for public open space (secondary school) land use for chemical contaminants, with the exception of localised soils containing:
    - Heavy metals – this impact is likely to be associated with historical fill placement.
    - TRH (Total Recoverable Hydrocarbons) and PAH (Polycyclic Aromatic Hydrocarbons) – this impact is likely to be associated with slag, ash, asphalt and coal within fill materials.
    - BTEX (benzene, toluene, ethylbenzene and xylene).
    - PFAS (Per and Polyfluorinated Substances) - PFAS was detected above the limit of reporting in all the 11 samples tested. Most samples contained low level PFAS below the adopted human health and ecological criteria (direct and indirect exposure) with the exception of one which exceeded the ecological soil guideline (ESL) for indirect exposure.
    - Asbestos - Bonded ACM were identified in soil at three of the test locations comprising bonded ACM within filling at Pits 305 and 307 (north/north-eastern fill area) and Bore 209 (western site of site). Given the widespread filling and presence of built waste, additional ACM is likely to present across the site.
    - The results of the limited groundwater testing from the irrigation bore indicates minor exceedances for copper and zinc, however, suggests that the use of groundwater for irrigation purposes from groundwater bore (GW1) is not significantly impacting soil contaminant concentrations at the site.

The location of the exceedances (hotspots) is shown in Figure 32 below.

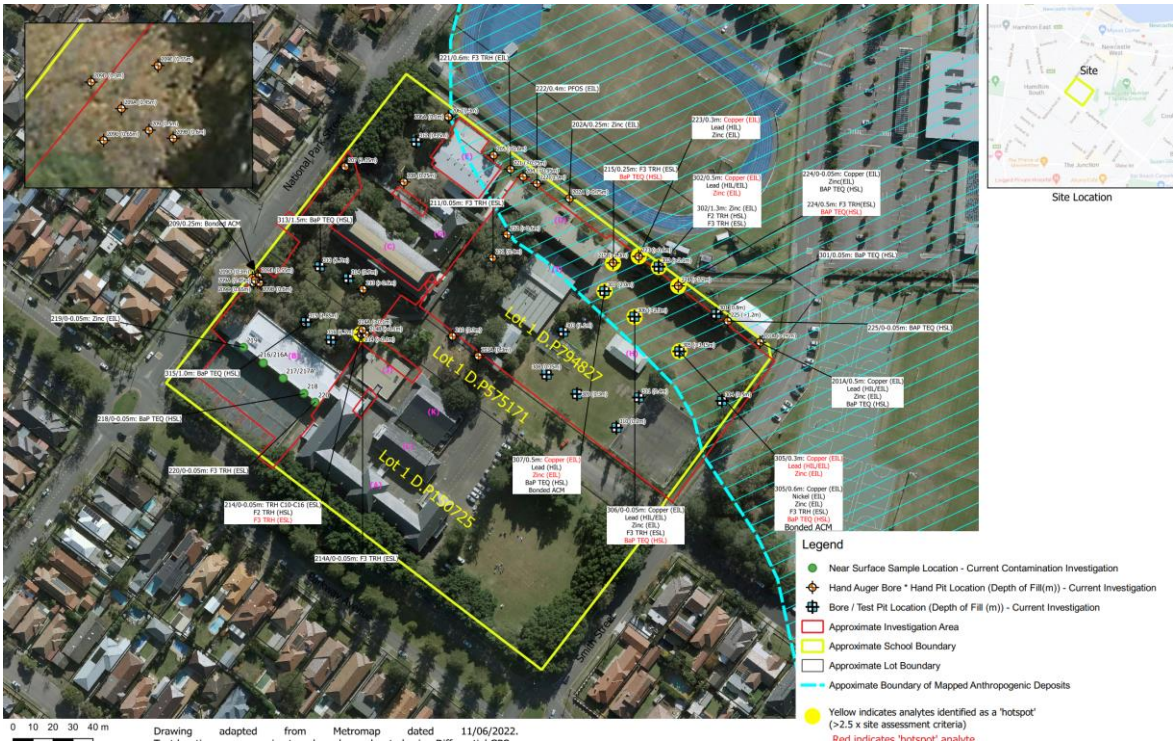


Figure 32: Soil Exceedances above the adopted site level criteria (source: Douglas Partners)

The recommendations of the analysis are:

- Preparation of a site-specific RAP to integrate with the specifics of the proposed development, such as areas of capping / open space and staging requirements.
- Alternative locations and/or redesign of proposed stormwater management structures to avoid direct infiltration of stormwater into contaminated fill.
- Implementation of interim measures to minimise potential exposure to student, staff and workers at the site.
    a) Exposed soils at test locations (pits etc) or bare areas with visible anthropogenics including ash, glass, porcelain etc are top dressed and/or turfed after raking and collection of larger fragments to minimise exposure;
    b) Staff are made aware of potential surface ACM impacts and encouraged to report any observed fragments to management who should arrange for localised collection, disposal and reporting of fibro in grounds as per the school Asbestos Management Plan / SI NSW standard procedures.
    c) Use of the groundwater bore for school irrigation is ceased.

6.5.3. Remediation Action Plan (RAP)

In accordance with the recommendations of the detailed site investigation, a remediation action plan (RAP) was prepared and the preferred remediation approach for the development is Option 3 which includes on-site management (capping) of heavy metal, TRH, BTEX, PAH and asbestos impacted fill. This remediation method (option 3) is considered the most suitable remediation method for several reasons as follows:

- The proposed development will comprise several new concrete slabs/pavements (building footprints/sports courts) and new landscaped areas which predominantly require the placement of imported fill to achieve design finish levels (i.e. proposed development will be largely capping existing areas as part of the construction process).
- Widespread asbestos impacts within fill have been identified across the site and potentially extend beyond the confirmed locations within fill materials, particularly those containing building wastes which were identified extensively across the site.
- Additional chemical contamination was identified within fill and is distributed broadly across the site.
- Contaminated fill materials include significant areas of deep fill which would require extensive earthworks and considerable costs to remove from site.
- On site management of impact fill materials in-situ reduces the potential for exposure to contaminants in fill via excavation.

6.5.4. Stormwater design

- The stormwater infiltration has been redesigned as per the recommendation of the DSI, to to avoid direct infiltration of stormwater into contaminated fill.

6.5.5. Mitigation Measures

17. Remediation of the site in accordance with the requirements of the RAP and under the direction of the site auditor.

18. On completion of remediation works a long term environmental management plan must be prepared in accordance with NSW EPA guidelines.

19. Implementation of interim measures to minimise potential exposure to student, staff and workers at the site.
    a. Exposed soils at test locations (pits etc) or bare areas with visible anthropogenics including ash, glass, porcelain etc are top dressed and/or turfed after raking and collection of larger fragments to minimise exposure.
    b. Staff are made aware of potential surface ACM impacts and encouraged to report any observed fragments to management who should arrange for localised collection, disposal and reporting of fibro in grounds as per the school Asbestos Management Plan / SINSW standard procedures.
    c. Use of the groundwater bore for school irrigation is ceased.

6.6. Aboriginal Cultural Heritage

This section assesses the impacts of the proposed development on Aboriginal Cultural Heritage in accordance with the requirements of SEAR No. 18. An Aboriginal Cultural Heritage Assessment (ACHA) has been prepared by EMM and is provided at **Appendix FF**.

SEAR	Section	Documentation
No. 18 Aboriginal Cultural Heritage		
• Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts for any Aboriginal cultural heritage values on the site.	s. 6.6.1 to s.6.6.4	• Aboriginal Cultural Heritage Assessment Report (**Appendix FF**)

An Aboriginal Cultural Heritage due diligence assessment (DD assessment) was completed as part of initial project investigations. The assessment identified potential for cultural material to exist with the site having pre-colonial landscape features, including immediate proximity to water (a swamp and tributary of Cottage Creek) and level to flat terrain that may have been conducive to Aboriginal occupation and stone tool procurement. Further, nearby excavations have revealed that Aboriginal people occupied the Newcastle area.

The ACHA followed the methods detailed in *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2012* (DECCW, 2010). There were 49 Aboriginal parties identified with a potential interest in the project, each of whom was notified. Responses were received from 10 parties, who were adopted as the Registered Aboriginal Parties (RAP). The RAP were invited to participate in the assessment process, including:

- Participation in a field survey.
- Participation in a two-week period of archaeological test excavations.

6.6.1. Existing Environment

The ACHA characterises the locality as flat, level floodplain adjacent to Cottage Creek and south of the Hunter River and identifies it would have consisted of undulating sand dunes inter-mixed with swampy lowlands, prior to development. A search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken for an 84km^2 (7 x 12 km) area centred on the site. The search area contained 119 Aboriginal sites with a concentration 500m - 1,000m north of the school, near the foreshore of the Hunter River estuary, and the confluence of Cottage and Throsby Creeks.

Multiple aboriginal heritage investigations have been undertaken in the vicinity of the site, including archaeological tests. The investigations have discovered multiple artefacts including tuff stones.

A field survey was undertaken with Registered Aboriginal Parties. There were no Aboriginal objects identified, nor any trees with cultural modifications. Areas of archaeological potential were identified in portions of the site where no substantial disturbance was identified.

Figure 33: Field Survey results (Source: EMM)

An archaeological excavation was undertaken focussing on areas identified as having moderate potential in the field surveys. Excavations were not undertaken within the north west corner or the playing field as works are not proposed in those areas. There were thirteen test pits, which extended to depths of 1.5m below current surface.

Figure 34: Excavation pit locations (Source: EMM)

The archaeological survey uncovered varying densities of in shallow depths. These findings resulted in two identified resource sites, being:

- NEC AS 1 – A dense stone artefact scatter (7-28/m^2) located in the northeast corner of the site.
- NEC BS 1 – A low density background stone artefact scatter (<4/m^2) that covers the remainder of the site.

No project specific cultural values have been provided by the local Aboriginal community for the identified sites.

Figure 35: Archaeological resource (Source: EMM)

The ACHA identifies that is scientific terms that archaeological resource NEC AS 1 has moderate (local) significance and is one of the few known stratified archaeological resources beyond the Hunter River estuary and may have been used in the post-contact period. NEC BS1 has limited potential and little further information can be obtained from additional investigation of this site.

6.6.2. Proposed Environment

The proposed multi-purpose facility is located within the area archaeological resource NEC AS 1. The ACHA quantifies its impact as follows:

- NEC AS 1 is 4,500m^2 in area.
- The multi-purpose facility would adversely affect 1,000m^2 and the new sports courts 875m^2.
- A total area of 1,225 - 2,625m^2 (>40%) would be unaffected and subject to future conservation.

6.6.3. Assessment

The ACHA states that while both sites would be subject to direct impacts resulting in partial loss, and potential intergenerational / cumulative loss of material culture, that the proposal, in conjunction with the mitigation measures, results in numerous cultural heritage benefits, including:

- The long-term preservation of a portion of the NEC AS 1.
- A greater understanding of the past and contemporary values in the region.
- Opportunities for heritage interpretation and public outreach built-in to the overall design scheme.
- The school community includes Aboriginal students and operates programs to incorporate their culture, knowledge of the site.

6.6.4. Mitigations Measures

20. Aboriginal Cultural Heritage Management Plan
    a. Prior to ground disturbance, an Aboriginal Cultural Heritage Management Plan (ACHMP) must be developed by a heritage specialist in consultation with the Registered Aboriginal Parties (RAPs) and consent authority to provide the post-approval framework for managing Aboriginal heritage and considering European heritage within the project area.

21. Heritage-interpretation strategy
    a. A heritage-interpretation strategy must be developed by a heritage specialist to identify the interpretive values of the project footprint, and specifically Aboriginal heritage values across the project area, and to provide direction for potential interpretive installations and devices. This strategy should be made available for consultation and feedback with the RAPs. Following consultation and feedback on the strategy, a heritage interpretation plan would refine the strategy with content (visual and textual) and design details in order to allow the implementation stage.

22. Construction Environmental Management Plan
    a. The CEMP, or equivalent, should ensure that the cultural landscape is considered throughout the project and as part of the rehabilitation of the project area. In discussion with the Aboriginal community, rehabilitation of areas where infrastructure is not remaining after the project should be undertaken to determine suitable ecological communities and other factors in returning the cultural landscape as close to its current state as feasible.

23. Registered Aboriginal Party consultations
    a. Consultation should be maintained with the RAPs during the finalisation of the assessment process and throughout the project.

Standard Assessment

6.7. Design Quality

This section demonstrates that the development has been reviewed by the State Design Review Panel (SDRP) and how the recommendations of the SDRP have been included in the final design.

SEAR	Section	Documentation
No. 3 Design Quality		
• Demonstrate how the development will achieve: • design excellence in accordance with any applicable EPI provisions.	• Not Applicable	• Design Verification Statement (**Appendix C**)
• good design in accordance with the seven objectives for good design in Better Placed.	• Not Applicable	

SEAR	Section	Documentation
• Where required by an EPI or concept approval, or where proposed, demonstrate how the development has been subject to a competitive design process, carried out in accordance with an endorsed brief and Design Excellence Strategy. Recommendations (from the jury and Design Integrity Panel) are to be addressed prior to lodgement.	• Not Applicable	
• In all other instances, demonstrate that the development has been reviewed by the State Design Review Panel (SDRP). Recommendations are to be addressed prior to lodgement.	s.6.7.1	

6.7.1. State Design Review Panel

The project was presented to the SDRP twice:

- 23 February 2022: Reflecting the Masterplan and Concept Design process at the initial presentation ·
- 17 August 2022: Further development of the design during the Schematic Phase in response to the Panel's initial comments.

EJE have prepared formal responses to the comments from the SDRP meeting and subsequent comments received from the SDRP on 01 March 2022 and 25 August 2022 respectively. The key matters have been summarised below, refer to the Appendix 1 and Appendix 2 of the Architectural Design Verification Statement (**Appendix C**).

1. Siting of learning hub in relation to heritage building

When determining the position of the new learning hub EJE considered the following:

- The setback of existing buildings.
- The Urban Design principles of aligning new building with an established setback.
- Prominence of existing trees along the boundary.
- Positioning buildings to maximise usable outdoor area for the school.
- Avoid creating outdoor areas that will be difficult to supervise.

The proposed location of the new leaning hub aligns with the principles outlined above. The new building is setback behind the row of established Fig Trees which are located along with the Parkway Avenue frontage. The building has also been aligned with the adjacent heritage building known as Building A.

The separation distance between the proposed new building and Building A is 14 metres, allowing views from the southwest to the corner of Building A, noting this view is obscured by the established Fig Trees along the Parkway Avenue frontage.

2. Landscape relationship with built form

The landscape design approach used the following concept design principles in the preparation of the proposed landscaping strategy:

- Retention of the perimeter trees has been a key consideration due to their heritage significance, contribution to the streetscape character and the significant shading provided to existing buildings / external areas.

- Trees within the site will also be retained where possible to provide shade to play areas and maintain the leafy feel of the campus.
- A significant number of additional trees will be planted to supplement those removed, create more passive recreation areas around the Campus Green and provide screening where required. Species have been selected to ensure minimal ongoing maintenance and avoid the use of poisonous plants and potential weed species.
- A fitness area has been proposed within the Campus Green for use in PE classes and to generally facilitate healthy activities within the school.
- The existing playing field in the southeastern corner is to be maintained.
- Consideration of security, supervision and crime prevention principles.

3. Engagement with tradition custodians to inform meaningful approach to Country

During the Schematic Design Phase, Newcastle Aboriginal owned and Operated business, Speaking in Colour, was engaged to undertake a series of workshops and community consultation events. The consultation aimed to gather the widest possible range of views and advice on what is important to the Awabakal Community.

In addition to the series of workshops, an indigenous consultant was engaged to liaise with the design team. As a result of the three (3) workshops and other consultation activities, the following priorities were identified:

- Incorporation of Aboriginal culture at the school is normalised.
- Students feel safe and welcomed.
- Saltwater People stories and language is incorporated in the project.
- Existing Aboriginal Girls and Boys programmes at NHS are successfully engaging with students and should be enhanced with improved facilities.

The engagement resulted in the ability for Awabakal culture, stories and languages to be included across a wide range of elements within the building and landscape design. Please refer to section 6.11.3 for further discussion.

4. Reinforce east-west axis

The opportunity to create a site axis was identified in the Masterplan to create a linkage between the existing heritage building, new buildings and open space area. The adoption of the site axis results in improvements to the entry into the school from Parkway Avenue, Smith Street and National Park Street.

The central east-west axis has been developed in conjunction with the planning and siting of new buildings and creates linkages to existing infrastructure. The landscape strategy proposes an avenue of trees along the east-west axis to further strengthen the link through the site, while also providing shade canopy for pedestrians.

Accordingly, it has been demonstrated that the development has been reviewed by the SDRP twice prior to lodgement and the feedback from the SDPR has been thoroughly considered throughout design development. The submitted design reflects the input provided by the SDRP.

6.7.2. Mitigation Measures

None.

6.8. Built Form and Urban Design

This section identifies how quality design has been achieved in accordance with the Education SEPP Design Quality Principles and the Design Guide for Schools in accordance with the requirements of SEAR No. 4.

SEAR	Section	Documentation
No. 4 Built Form and Urban Design		
• Demonstrate how design quality will be achieved in accordance with the Education SEPP Design Quality Principles and the Design Guide for Schools, including: • how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality.	s.6.7 and s.6.8	• Architectural Plans (**Appendix B**) • Survey Plan (**Appendix A**)
• how the building design will deliver a high-quality development, including consideration of façade design, articulation, roof design, materials, finishes, colours, any signage, integration of services, and the principles of Crime Prevention through Environmental Design.	s.6.8	• Design Verification Statement (**Appendix C**)
• Assess how the development complies with the relevant accessibility requirements.	s.6.8	• BCA Compliance Statement (**Appendix GG**) • Accessibility Report (**Appendix J**)

6.8.1. Design Quality Principles

The Design Verification Statement (**Appendix C**) addresses how design quality will be achieved in accordance with the Education SEPP Design Quality Principles and the Design Guide for Schools. A summary is provided below:

Principle 1 – Context, built form and landscape

The Newcastle High School is an established major public high school which services inner City suburbs in close proximity to the CBD. The local context includes established retail and commercial areas, varying residential accommodation, high quality regional sporting facilities, and major transport nodes known as the Newcastle Public Transport Interchange.

The site is located within the Hamilton South Heritage Conservation Area and contains significant tree plantings which form a strong line alone the Parkway Avenue, National Park Street and Smith Street frontages.

The following design considerations determined the position and form of the new learning hub:

- Establishing a setback that relates to the position of existing buildings on the site.
- Retaining the prominence of existing trees along the primary and secondary frontages.
- Establishing building facades that relate to the character of existing heritage buildings A and C.
- Ensuring the proposed height of the building is consistent with adjoining buildings.
- Creating a corner element at the significant Parkway Avenue and National Park Street interchange to reinforce and introduce the site and create a more prominent student entry point. The corner element also enhances the starting point for the east to west link along the former Dumaresq Street alignment.
- Maximising usable outdoor areas within the school.
- Ensuring outdoor areas are easily supervised.

The following design considerations determined the position and form of the new multi-purpose facility:

- Creating a built form which responds to the needs of the users (staff and students).
- Providing a central east to west corridor to allow the building to be accessed from both sides of the building.
- Providing a large covered outdoor area to the south of the building to increase the opportunity to cater for assemblies at the school.
- Using robust prefinished materials, including compressed fibre cement, powder-coated aluminium, face brickwork and Colorbond steel to create a building that will maintain its features without requiring heavy maintenance.

Principle 2 – Sustainable, efficient and durable

Principle 6 – Whole life, flexibility and adaptive

The sustainable development measures adopted in the design include:

- Passive design using the appropriate extents of glazing, combined with shading and envelop thermal performance to minimise active energy use and provide comfort.
- Learning spaces having natural ventilation and ceiling fans to allow passive cooling for a majority of the year, providing the opportunity to minimise the use of mechanical systems.
- Building services such as HVAC and lighting with energy performance over minimum prescribed standards.
- Electrification of hot water plant, switching from gas to heat pumps as part of a strategy to integrate net zero ready design principles.
- 99 kw Roof top solar PV for onsite energy generation.
- Specifying use of low impact / low toxicity materials.

The proposed development will achieve the environmental performance targets in the Educations Facility Design Guidelines.

The project has adopted the SINSW Modern Methods of Construction (MMoC) and Standardised Hub Layouts. The internal spaces have been designed to fit within consistent planning grids to create efficiencies across school projects and encourage innovative MMoC methods.

Principle 3 – Accessible and inclusive

The Disability Access report by Lindsay Perry Access (**Appendix J**) and BCA report by Blackett Maguire + Goldsmith (**Appendix GG**) have been prepared to meet the requirements of SEAR No. 4 and demonstrate that the proposed development complies with accessibility requirements.

The proposed development has been assessed against the accessibility legislation, including the following:

- The *Disability Discrimination Act 1992*.
- The Disability (Access to Premises) Standards.
- The National Construction Code / Building Code of Australia (Volume 1).
- AS1428 – Design for Access and Mobility.
- AS1735 – Lifts, escalators and moving walks.
- BCA clauses D3.1 to D3.12.
- BCA clauses E3.6.
- BCA clauses F2.2 and F2.4.

The Disability Access Report provides an assessment of the new buildings and existing buildings to be upgraded / refurbished. With respect to the existing building, only the “affected part” or “new work” are subject to accessibility upgrade works.

The assessment concludes that the fundamental aims of the accessibility legislation are achievable within the proposed development. The design approach will meet the performance requirements of the BCA, ensuring equitable and dignified access is provided. The access consultant will work with the project team as the scheme progresses to ensure appropriate outcomes are achieved in building design and external domain design.

Principle 4 – Health and safety

Principle 5 – Amenity

Principle 7 – Aesthetics

The re-development of the Newcastle Education Campus will facilitate engagement with the community and surrounding locality through the positioning of new buildings to activate street frontages and create connections with adjacent buildings and nearby active environments. The two (2) new buildings have been located adjacent to street frontages with clearly recognisable, accessible, and safe pedestrian entries.

The proposed new building location responds to the needs of the existing education establishments while contributing to the established character of the area. In particular, the proposal seeks to maintain the significant tree plantings as shown in Figure 36 below.

Figure 36: View looking east (source: Terras)

While the site maintains a character presence within the immediate locality, the site is secure within the public domain. The site is accessible to student during drop-off and pick-up and will be secured between 9am and 3pm to ensure access to visitors is controlled through the main entrance at Building A. Staff and students that arrive late may access the campus through an intercom at the proposed new student entry.

6.8.2. Mitigations Measures

24. During the detailed design and prior to construction, the requirements as stated within the Disability Access Report (November 2022) are to be incorporated into the design.

25. During the detailed design and prior to construction, the recommendations within the Disability Access Report (November 2022) are to be considered and included in the design where appropriate.

26. New facilities must meet the deemed to satisfy provisions of the National Construction Code (NCC) and the associated standards (AS 1428.1, AS1428.2 & AS1428.4). Acknowledging that the existing buildings may not be able to provide this level of access.

6.9. Environmental Amenity

High quality environmental amenity has been addressed within the Visual Impact Assessment (**Appendix HH**) and Shadow Diagrams (**Appendix B**).

SEAR	Section	Documentation
No. 5 Environmental Amenity		
• Address how good internal and external environmental amenity is achieved, including access to natural daylight and ventilation, pedestrian movement throughout the site, access to landscape and outdoor spaces.	s.6.9.1	• Visual Impact Assessment (**Appendix HH**) • Access Report (**Appendix J**)
• Assess amenity impacts on the surrounding locality, including lighting impacts, solar access, visual privacy, visual amenity, view loss and view sharing, overshadowing and wind impacts (including the preparation of a wind assessment where the development has a height above four storeys). A high level of	s.6.9.2	• Visual Impact Assessment (**Appendix HH**) • Design Verification

SEAR	Section	Documentation
environmental amenity for any surrounding residential or other sensitive land uses must be demonstrated.		Statement (**Appendix C**)
• Provide a solar access analysis of the overshadowing impacts of the development within the site, on surrounding properties and public spaces (during summer and winter solstice) at hourly intervals between 9am and 3pm, when compared to the existing situation and a compliant development (if relevant).	s.6.9.3	• Shadow Diagrams (**Appendix B**)

6.9.1. Internal and External Amenity

External

The existing site conditions comprise structures and vegetation associated with its historic and on-going use as a educational facility. The proposed works seek to refurbish, extend and provide new buildings to facilitate high quality education outcomes. The approach to accessible paths of travel has been thoroughly considered in the pedestrian pathway design. In this instance, the access approach to building has considered the following:

- Access from the allotment boundary at the pedestrian entrances along National Park Street, Smith Street, and Parkway Avenue to the building entrances.
- Access from the accessible parking area to the building entrances.
- Access between associated accessible buildings within the site.

The opportunity to enhance the physical context of the site by creating a site axis was identified in the Masterplan by linking the existing heritage buildings, new building and areas of open space within the site. The key pedestrian linkages are demonstrated in Figure 37 below.

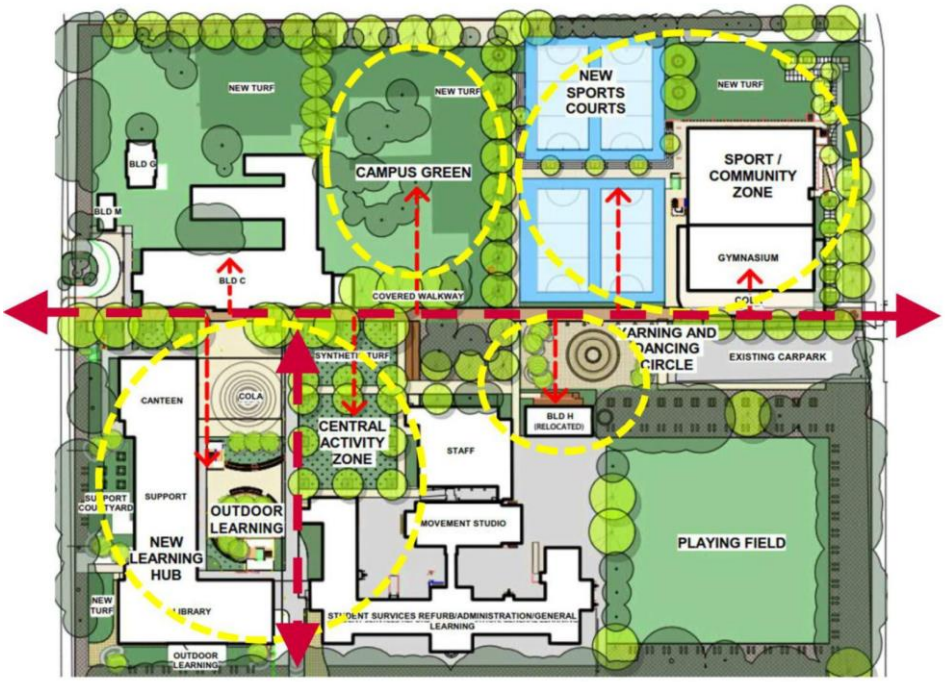


Figure 37: Key Pedestrian Linkages (source: EJE)

On a broader scale throughout the site, existing and proposed pathways are generally in excess of 1800mm wide and site levels indicate that an accessible path of travel is achievable throughout the campus.

The proposed development incorporates a variety of landscaping initiatives allowing for an increase in visual privacy from the streetscape frontages. This is provided through the retention of the existing heritage trees and new plantings throughout the site. Further information in relation to the high-quality landscaping strategy is provided in Section 6.11 of this EIS.

Learning spaces in the new learning hub and multi-purpose facility have been designed to provide passive surveillance and outlook into the site. The existing tree lined perimeter provides a visual screen of the road and mitigates overlooking of neighbouring properties.

Internal

With respect to the existing building, only the 'new work' and 'affected part' are subject to accessibility upgrade works. The new learning hub is designed over three (3) levels and provides a well-defined circulation spine along the northeastern side of the building to provides access to the lift and main stairs at each level. The multi-purpose facility is designed over two (2) levels and provides a well-defined circulation space centrally within the building at both levels and links to the stair / lift. The following accessible features are incorporated in the design:

- Access is provided to and within all areas normally used by the occupants.
- Doorways achieve circulation areas that will facilitate independent access for people with disabilities.
- Corridor area are of a width that enables wheelchair turning and passing areas.

- The provision of accessible sanitary facilities and accompanying ambulant toilets meets BCA requirements.

The project is targeting 5 Star Green Star rating under GS Design and As Built. The project framework requires adoption of net zero ready design features and features to support circular economy. In addition, the design maintains a strong focus on features to support indoor environmental quality.

The proposal has been designed around the following sustainability framework:

- Passive design using the appropriate extents of glazing, combined with shading and envelop thermal performance to minimise active energy use and provide comfort.
- Learning spaces have natural ventilation and ceiling fans to allow passive cooling for a majority of the year, providing the opportunity to minimise the use of mechanical systems.
- Building services such as HVAC and lighting with energy performance over minimum prescribed standards.
- Electrification of hot water plant, switching from gas to heat pumps as part of a strategy to integrate net zero ready design principles.
- 99 kw Roof top solar PV for onsite energy generation.
- Specifying use of low impact / low toxicity materials.
- Use of recycled materials in concrete.
- Materials from accredited sustainable supply chains / suppliers.
- Adaptive re use of buildings which retains heritage to reduce materials and resource use and embodied carbon.
- The buildings will contain energy and water efficient fittings and appliances.
- Waste will be reduced by recycling of suitable paper and plastic products, plus the inclusion of compost areas and kitchen gardens in the play areas for on site food waste recycling.

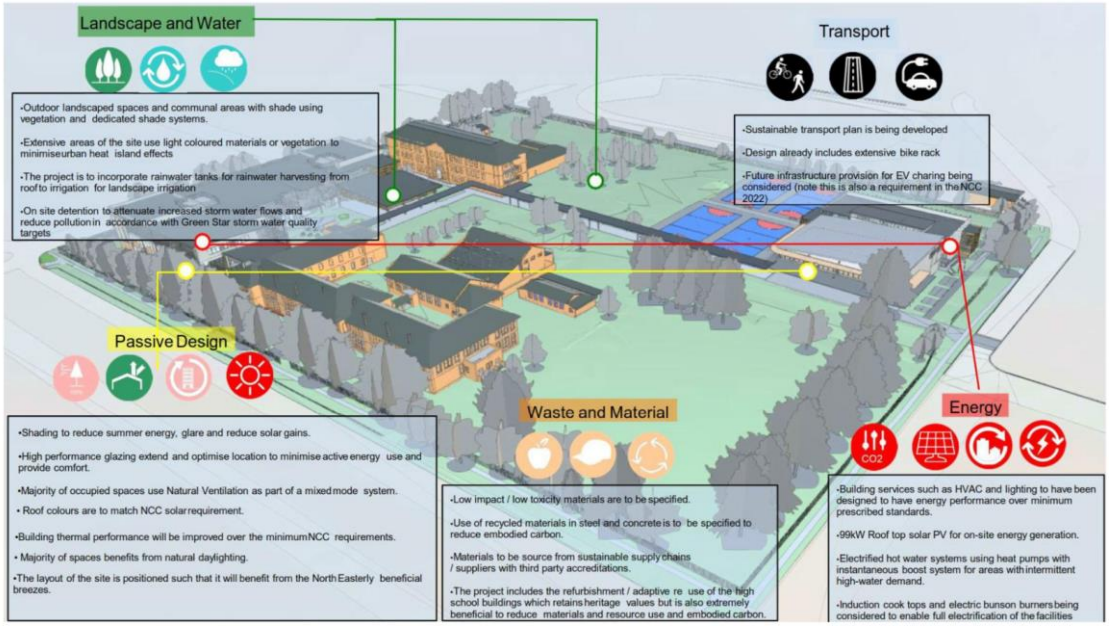


Figure 38: Passive Design Principles (source: EJE)

6.9.2. Surrounding Locality

The site is adjoined by public recreation facilities to the north and northeast, as well as low-density residential in all other directions. A locality plan is provided in Figure 39 below.

Figure 39: Locality Plan (source: Terras)

The locality's unique visual character highlights the diverse land use and multi-functionalism of the city as shown in Figure 40 below. The key design guidelines outlined the setback, orientation and landscaping initiatives that were taken into consideration when undertaking design development. The visual analysis identified four key landscape character units within a 500m radius of the site. These are:

1. Parkway Avenue Heritage Conservation Area
2. Residential Development
3. Public Recreation
4. Mixed-use Development

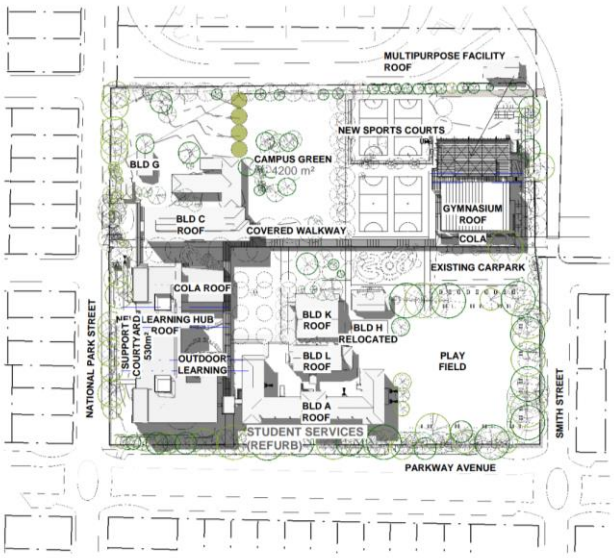
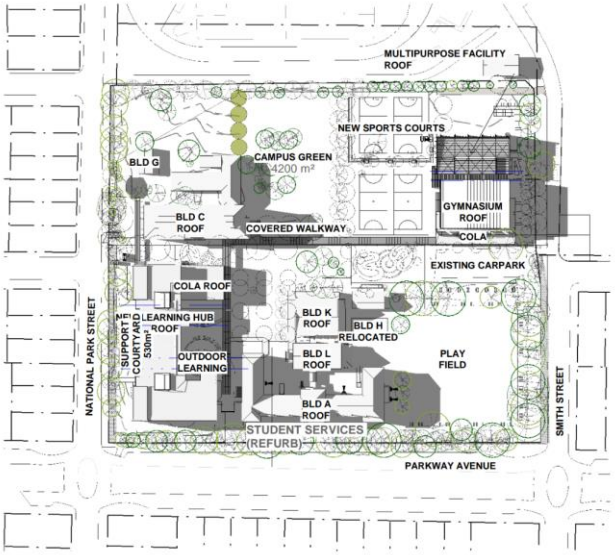
The re-development of the Newcastle High School will give the school renewed presence and identity within the community, strengthening its position within the Hamilton South neighbourhood. The Newcastle High School site is bound by three local roads, with Parkway Avenue busy at peak times in the morning and afternoon. Although traffic noise may be present at these times, the building walls and windows of the New Learning Hub will be designed to meet noise level requirements specified in the Noise and Vibration Impact Assessment (**Appendix AA**) which will provide a high level of amenity.

Figure 40: Locality Character (source: Terras)

The proposed new buildings are not four storeys in height. Therefore, a wind assessment is not required in this case.

6.9.3. Solar Access

SHADOW	COMMENT
 1 SHADOW DIAGRAMS - WINTER 9 AM 1 : 1500	Due to the orientation of the site, the 9am shadows fall predominantly within the site with a small overflow onto Parkway Avenue. At 9am, adequate solar access to pedestrian areas, areas of outdoor open space and classrooms is maintained. The only area where the shadow leaves the site boundaries is across a small section of Parkway Avenue which does not impact on the amenity of the site or surrounding locality. It can be concluded that the 9am shadow does not impact any surrounding residential development and maintains appropriate solar access within the site.

SHADOW	COMMENT
 2 SHADOW DIAGRAMS - WINTER 12 PM 1 : 1500	The shadows between 9am and 12pm fall almost completely within the boundaries of the site. At 12pm, the shadows can be described as minimal, allowing solar access for all buildings and areas of outdoor play space. It can be concluded that the 12pm shadows do not impact any surrounding residential development and maintain appropriate solar access within the site.
 3 SHADOW DIAGRAMS - WINTER 3 PM 1 : 1500	Between 12pm and 3pm the shadows move to the east and are contained within the site except for a minor overflow into Smith Street. At 3pm, the shadow impacts remain minimal due to the generally low height of existing and proposed buildings. The overshadowing of Smith Street is directly adjacent to No. 5 Sportsground and does not impact any residential properties across Smith Street. It can be concluded that the 3pm shadows do not impact any surrounding residential development and maintain appropriate solar access within the site.

6.9.4. Mitigation Measures

None.

6.10. Visual Impact

This section assesses the visual impacts of the proposed development in accordance with the requirements of SEAR No. 6. A visual impact assessment report (VIA) has been prepared (**Appendix HH**).

SEAR	Section	Documentation
No. 6 Visual Impact		
• Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development.	s.6.10.3	• Visual Impact Assessment (**Appendix HH**)
• Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that addresses the impacts of the development on the existing catchment.	s.6.10.4	• Visual Impact Assessment (**Appendix HH**)

6.10.1. Existing Environment

Key observations of the VIA on the existing landscape/environment are:

- Predominant viewpoints into the site are restricted to motorists and pedestrians travelling within the immediate streetscape.
- Viewpoints into the site outside immediate proximity, are reduced to within 500m.
- Vehicles travelling along Parkway Avenue, National Park and Smith Street have greatest views of the site.
- The viewing time of pedestrians and general public in the public recreational spaces immediate to site are minimal due to the exposed nature of the area with minimal shelter. Pedestrian and traffic flow in this area is high but only within seasonal sports and for limited periods of time.

The examination of the existing landscaped and environment allow for identification of viewsheds. The viewshed diagram in Figure 41 demonstrates views into the site and the viewpoint examined in the visual impact analysis.

Figure 41: View shed diagram (source: Terras)

6.10.2. Proposed Environment

Key findings of the VIA on the visual impact are:

- Views of the site were limited to within 500m due to topography, existing and proposed vegetation and the existing, established built environment. These views are afforded to pedestrians and vehicles predominantly in motion for short periods of time.
- When views are present for longer periods of time, they are viewed within their built environment context. Generally, the viewpoints assessed are viewed within the context of the surrounding landscape, and the proposed development will integrate with the existing environment due to its form, and the use of landscaping.
- The proposed development is consistent with the character of the area and up keeping with the elements of the previous site use.
- The proposal will have a low accumulative visual impact on the surrounding area, with the exception of immediate proximity views which will have a moderate impact. The proposed works create a high quality learning space for surrounding residents and a positive contribution to Hamilton South suburb.

6.10.3. Assessment

The site and surrounding lands are generally flat with the topography rising to the east, with a high point at the ANZAC memorial above Bar Beach. The site provides a mixed visual character. To the east and south are open recreation areas with the Newcastle CBD skyline visible beyond. To the north and west are low density residential areas located within the Hamilton South Heritage Conservation Area, a planned garden suburb. Important visual characteristics of the Conservation Area include the form and scale of housing of housing and their spatial relationship to their lots, and the layout and landscaping of key streets including Parkway Avenue.

The visual impact assessment demonstrates that the visual catchment for the proposed development is generally limited to within 500m due to topography, vegetation, and existing buildings. The views are experienced by residents of the dwellings that surround the site and will consider the context of the broader built environment. The views are also experienced by pedestrians and motorists for a short period of time as they pass the site and are viewed in the

context of the landscape.

The visual impact assessment rates the visual impact from the view points from low to moderates, with the overall visual impact of the proposed development being low. This impact level is determined based on the works contrasting with but demonstrating a degree of integration with the streetscape, and the impact of existing and proposed boundary vegetation in screening the development. The higher rating of moderate is generally applied due to the visual impact from adjoining residences.

The proposed development will not create any unreasonable visual impacts. The educational use of the site is different from the surrounding low density residential areas and some difference in built form and character is anticipated by the planning framework. The proposed development will substantially retain the landscape edge to the site, which is an important visual buffer and character element in the street.

Mitigation Measures

27. Implementation of the landscaping plan prepared and submitted with the DA. Planting to be undertaken as soon as practicable.
28. A landscape maintenance schedule is to be prepared to identify maintenance requirements and practices to be implemented.

6.11. Trees and Landscaping

An Arboricultural Impact Assessment (AIA) (**Appendix K**), has been prepared to assess the existing condition of trees onsite, identify their location and significance and identify trees that are to be retained and removed to facilitate the proposed development. In this instance, the location and design of the proposed new buildings have been considered the existing landscaped nature of the site.

Landscape Plans (**Appendix N**) and a Landscape Report (**Appendix O**) have been prepared to provide a detailed site-wide, long-term landscaping strategy.

SEAR	Section	Documentation
No. 7 Trees and Landscaping		
• Assess the number, location, condition and significance of trees to be removed and retained and note any existing canopy coverage to be retained on-site.	s. 6.11.1	• Arboricultural Impact Assessment (**Appendix FF**)

SEAR	Section	Documentation

• Provide a detailed site-wide landscape plan, that:
  • details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage.
  • provides evidence that opportunities to retain significant trees have been explored and/or informs the plan.
  • considers equity and amenity of outdoor play spaces.
  • demonstrates how the proposed development would:
  ▪ contribute to long term landscape setting in respect of the site and streetscape.
  ▪ mitigate the urban heat island effect and ensure appropriate comfort levels on-site.
  ▪ contribute to the objective of increased urban tree canopy cover.
  • maximise opportunities for green infrastructure, consistent with Greener Places.
	s. 6.11.1 to s.6.11.3	• Landscape Plan (**Appendix N**)
		• Landscape Design Report (**Appendix O**)

6.11.1. Arboricultural Impact Assessment

A visual tree assessment was initially undertaken between December 16 and December 19, 2020, and a subsequent level 1 tree assessment was undertaken on September 20, 2022, to identify any obvious defects of conditions that may have changed since the initial inspection.

The AIA concluded that a total of 276 trees are located on site. Of the 276 trees identified, 94 trees are either within the building footprint of the proposed new buildings or will be directly or indirectly impacted upon by the proposed development and will require removal. Of the 94 trees that have been identified for removal, 72 trees have been assessed as having a low or very low retention value.

A tree evaluation sheet, that provides the name, age, height, canopy spread, diameter at breast height, structure, health, condition, SULE, observation, hazard potential, landscape significance, sustainability, retention value, and outcome of all 276 trees, is documented in the AIA (**Appendix K**).

A total of 183 trees are proposed to be protected and retained. Pursuant to schedule 5 of the NLEP 2012, Newcastle High School is a listed local heritage item. Based on their age, size and prominence, it is assumed that Trees No. 1 to 15, 117, 118, 160, 161, 164 to 166, and 248 to 251 may have a historical association with the site. All trees that are assumed to maintain historical association with the site are proposed to be retained.

The site contains 12 trees of a species identified in the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) list of Threatened Flora and Fauna, including Tree No. 83, to 86, 88, 89, 91, 92, 94, 95, 108, and 155. Of the 12 trees identified, one (1) is proposed to be removed to facilitate the proposed development, Tree No. 108.

Tree No. 108 is a Magenta Lilly Pilly (*Syzygium paniculatum),* a species identified EPBC Act list of Threatened Flora and Fauna. The tree's TPZ will likely be impacted during demolition of 'Building P' and construction of a new pedestrian path. The AIA identifies that due to its age and size, the tree has been recently planted, is not considered a remnant species of the area, and its removal would not significantly impact on the vulnerability of the species.

6.11.2. Canopy Coverage

The existing landscape character of the area is typified by suburban-style development with modest gardens. The Landscape Design Report (**Appendix O**) identifies that the existing vegetation on site primarily includes amenity tree planting with a turf / mulch / mass planted understorey. The predominate vegetation species consists mainly of *Ficus microcarpa var. hillii, Araucaria heterophylla*, *Lophostemon confertus* and *Ficus oblica.* The existing tree canopy coverage has been calculated at 24% of the site.

The proposed landscaping strategy includes planting of a significant number of new trees that will increase the canopy coverage by 7% to achieve a target of 30% site canopy coverage. The landscape plan identified 112 new trees, increasing the canopy covered from 24% (existing) to 31% (proposed).

6.11.3. Landscape Plan

The comprehensive landscaping strategy has been designed in consideration the following principles:

- **Connectivity**

  Connection within the site and connection with the broader community has been a key component of the landscape masterplan. The existing hall and sports courts are in poor condition and are currently spread across the campus. The proposed hall provides centralised location for activities in the north-eastern corner of the site, connected by high-quality pedestrian pathways, focused on the central east-west axis from National Park Street to Smith Street.

- **Urban Heat Island**

  In accordance with the SNISW requirements to maintain at least 4 hard surface sports courts for High Schools, the proposed landscaping strategy seeks to provide a 60% tree canopy coverage across the 'soft landscaping' area. Substantial new plantings, including 112 new trees, will increase the existing tree canopy covered by 7% to achieve 31% canopy coverage across the site.

- **Outdoor spaces**

  A key feature of the landscape design is the incorporation of the east-west axis from National Park Street to Smith Street. While this feature provides a connectivity passage through the site, the axis also supports the parcels of open space throughout the site. The areas of open space known as 'landscape use areas' provide:
  - Open space for active play
  - Passive recreation area with shade that can also be used for outdoor learning.
  - Amenity landscape works to enhance the visual appeal of the school and break-up hard surfaces.

- **Connecting with country**
  Speaking in Colour, a Newcastle Aboriginal owned and operated business, was engaged to undertake a series of workshops and community consultation sessions to gather an informed perspective on what is important to the Awabakal Community. The workshops were attended by former and current teaching staff, senior representatives of the Awabakal Community, and Cherie Johnston, an indigenous consultant who liaised with the design team, and former student of Newcastle High School.

The following priorities were identified:

- Incorporation of Aboriginal Culture at the school is normalised.
- Students feel Safe and Welcomed.
- Saltwater People stories and language are incorporated in the project.
- Existing Aboriginal Girls and Boys programmes at NHS are successfully engaging with students and should be enhanced with improved facilities.

The landscape plan has incorporated a number of design elements to achieve these priorities, including a dance / yarning circle, bush tucker gardens, artworks on the ground and seats with text to assist with storytelling, maximising opportunities for green infrastructure, consistent with Greener Places.

6.11.4. Mitigation Measures

29. Tree works are to be carried out by a qualified tree contractor in accordance with Australian Standard 4373-2007 and in accordance with the Code of Practice Amenity Tree Industry (August 2007).
    a. The person supervising pruning works should have a minimum qualification of AQF Level 3. Pruning works should be carried out by a person who has the minimum qualification of AQF Level 2.
30. Implementation of Tree Protection Measures and Tree Protection Zone Specifications during both demolition and construction.
    a. To provide the developers with a guide so that the trees to be retained can be protected throughout the development process.
31. Tree Protection Measures must comply with Australian Standard 4970 – 2009 Protection of Trees on Development Sites.
32. Suitably qualified arborist (AQF level 5 or equivalent) to be on site to supervise excavation and works within an established TPZ.

6.12. Ecological Sustainable Development

The Sustainable Development Strategy (**Appendix G**) has been prepared to provide a summary of the sustainable development strategies adopted for the proposal. The strategies have been developed in accordance with the NSW Education Facilities Standards and Guidelines (EFSG).

SEAR	Section	Documentation
No. 8 Ecological Sustainable Development		
• Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are be incorporated in the design and ongoing operation of the development.	s. 6.12.1	• ESD Report (**Appendix G**)
• Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards and integrate environmental design strategies in accordance with the Environmental Design in Schools Manual.	s. 6.12.2	

SEAR	Section	Documentation
• Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.	s. 6.12.3	

6.12.1. ESD Principles

The project aligns with the principles of ecological sustainable development pursuant to section 193 of the *Environmental Planning and Assessment Regulation 2021.* The principles have been incorporated in the design and proposed on-going operations of the development as follows:

1. **Precautionary Principles**

   The sustainability initiatives for the proposal exceed the standard practice approach of building design. The initiatives will contribute to:
   - A reduction in energy consumption and carbon emissions.
   - Building resilience and adapting to the impacts of climate change.
   - The enhancement of occupant health and wellbeing through improved indoor environments.
   - The management of environmental impacts from construction activities through the preparation of a comprehensive site-specific environmental management plan.
   - A reduction of discharge from the site achieves standards beyond those required for statutory compliance.

2. **Intergenerational Equity**

   The proposal seeks to benefit present and future generations through increasing the health and environmental benefits associated with the reduction of pollutants, enhanced active transport facilities, and the creation of high quality indoor and outdoor spaces that can be utilised and accessed by all ages, cultures, and abilities.

   At the forefront, the development will provide new and upgraded educational facilities to increase student capacity and provide high quality resources to support teaching and learning. In association with the new facilities, the development seeks to integrate best practice indoor environmental features to reduce internal air pollution levels and enhance the health and wellbeing of occupants. In addition to the benefits of the new and upgraded learning facilities, a key focus of the project involves incorporation of the principles of 'Designing with County.' The 'Designing with Country' principles incorporated into the design include:
   - The incorporation of native landscape plantings in the landscaping strategy, including plants that produce 'bush tucker.'
   - QR codes incorporated into the outdoor spaces which provide a link to information about plants and stories that connect to Aboriginal culture.
   - Visual representation of Aboriginal culture through artwork incorporated into the landscape design.
   - Relocation of Building H into the centre of the school to be used for Aboriginal programs. The interior design has created separate male and female areas to address the need for a culturally safe space for 'separate business.'
   - A yarning / dance circle directly adjacent to Building H and incorporated into the landscaping strategy.

3. **Conservation of Biological Diversity and Ecological Integrity**

The proposal has been designed with consideration to conservation of the site's mature vegetation, and seeks to protect and enhance the diverse ecology with the comprehensive landscaping strategy as outlined within section 6.9 of this EIS.

4. **Improved Valuation, Pricing, and Incentive Mechanism**

The development is targeting a high level of sustainability performance which will impose additional upfront capital cost resulting in increased asset value with improved financial and environmental life cycle performance. The specific initiatives and key project decisions to achieve these goals include, switching gas fired to heat pump domestic hot water system, and the adoption of other net zero ready design principles to ensure the new buildings achieve carbon neutral operation with minimal reliance on carbon offsets.

6.12.2. Environmental Design in Schools Manual

The proposal has been designed in consideration of the requirements of the EFSG and strategies within the GANSW Environmental Design in Schools Manual. The development seeks to achieve a sustainability outcome above the minimum with the following performance commitments:

- Targeting formal 5-Star Green Star Certification (Australian Excellence), and
- Adoption of the 'Net Zero Ready' design principles.

Refer to the Sustainable Development Strategy (**Appendix G**) for further information.

6.12.3. Net Zero Readiness

The proposal seeks to adopt a range of features to support net zero readiness, including:

- Reducing emissions at the source through combining passive design and improved energy efficiency.
- Electrification of heating plant and hot water system using heat pumps. Electrification is a key net zero strategy as it enables the use of green power.
- Inclusion of a 99kv on-site roof mounted solar PV system and battery. This will provide renewable energy and offset the grid electrical demand.
- Nominating the use of recycled materials such as fly, to reduce cement content in structural elements.
- Encouraging active transport by providing active transport facilities for both staff and students.
- WSUD including: waterless heat rejection, water efficient taps, toilets, showers and appliances, and rainwater harvesting is proposed for irrigation.

6.12.4. Mitigation Measures

None.

6.13. Biodiversity

This section assesses the biodiversity impacts of the proposed development in accordance with the requirements of SEAR No. 10. A Biodiversity Development Assessment Report waiver request has been prepared and lodged with the Department of Planning and Environment. The site is not biodiversity certified land.

SEAR	Section	Documentation
No. 10 Biodiversity		
• Assess any biodiversity impacts associated with the development in accordance with the *Biodiversity Conservation Act 2016* and the Biodiversity Assessment Method 2020, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted or the site is on biodiversity certified land.	s.6.13	• BDAR Waiver (**Appendix Y**)
• If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.	S.6.13	

6.13.1. Impact Assessment

The site has significant vegetation along its eastern, southern and western boundaries including fig and eucalyptus trees. Clusters of vegetation are also located within the internal courtyard adjoining Building B and an external courtyard fronting National Park Street. The lands to the north and east are managed public open space (grass) and do not contain any vegetation that links with vegetation on the site. The lands to the south and west are occupied by dwelling houses and do not contain substantive clusters of vegetation.

Neither the site nor the adjoining lands are mapped as having biodiversity values by the *Biodiversity Values Map and Threshold tool.*

The biodiversity assessment classifies the vegetation on site as urban native/exotic vegetation and without the characteristics of any particular plant community type. Two threatened flora species, the Magenta Lilly Pilli and the Wallangarra White Gum, are present on site.

The authority of the "Planning Agency Head' of the Department of Planning and Environment (DPE) reviewed the application of the test of significance under section 1.5 and 7.3 of the *Biodiversity Conservation Act 2016* and clause 1.4 of the *Biodiversity Conservation Regulation 2017* and determined 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. Accordingly, a waiver under section 7.9 has been granted for the proposed development (**Appendix Y**).

6.13.2. Mitigation Measures

33. No filling is to occur within 3m of the northern boundary to protect the vegetated riparian zone of the adjoining stream within National Park.

6.14. Ground and Water Conditions

This section assesses the ground and water conditions on site in accordance with the requirements of SEAR No. 12. A Soil and Water impact assessment report has been prepared (**Appendix R**).

SEAR	Section	Documentation
No. 12 Ground and Water Conditions		
• Provide an assessment of the potential impacts on soil resources, including related infrastructure and riparian lands on and near the site. • Provide an assessment of the potential impacts on surface and groundwater resources (quality and quantity), including related infrastructure, hydrology, aquatic and groundwater dependent ecosystems, drainage lines, downstream assets and watercourses. • Provide an assessment of salinity and acid sulfate soil impacts.	s.6.14.1	• Geotechnical Assessment (**Appendix L**) • Bulk Earthworks Plan (**Appendix U**) • Surface and Groundwater Report (**Appendix R)** • Acid Sulfate Soils Management Plan (**Appendix DD**)

6.14.1. Ground Conditions

Earthworks

Cut and fills earthworks are proposed in the southwestern and the northeastern quadrant of the site (refer Figure 42).

The excavations extend over a limited area (red in Figure 42) and involve the removal of garden beds and earth mounds and creation of pits for the proposed infiltration system. The excavations extend to a depth of about 2m and involve 4,200m^3 of material. Fill is proposed across a greater portion of the site (green in Figure 42), ranging from 0.2m - 1.75m in depth and involving 4,630m^3 of material. A net fill (balance) of 430m^3 is proposed.

The Soil and Water report (**Appendix R**) concludes there is low risk of soil instability as a result of the earthworks and endorses the recommendations of the geotechnical report, which include:

- Retaining walls greater than 0.8m to be engineered to respond to site parameters.
- Long term batters for cut and will be no steeper than 2.5H: 1V and protected against scour and erosion.

It is proposed to place fill in proximity to the northern boundary which adjoins a water course within National Park. Sediment controls will need to be installed to avoid transfer into the water course until such time as the soil is stabilised. Sediment control is discussed in s.6.20.

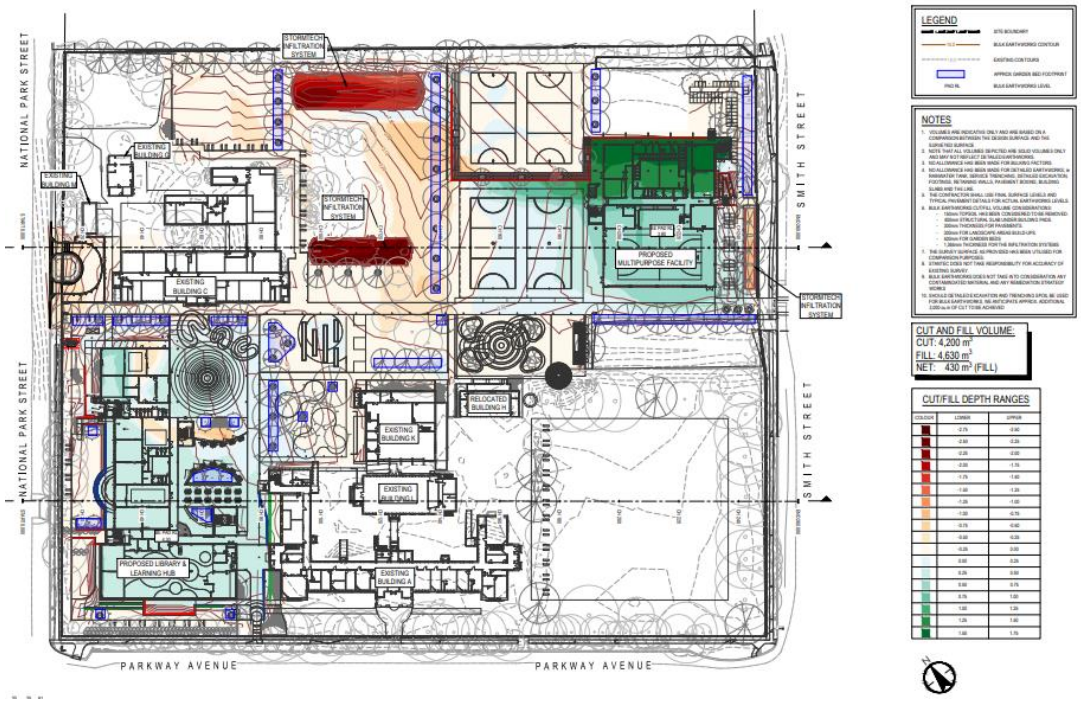


Figure 42: Bulk earthworks plan (source: Stantec)

Mine Subsidence

The site is within a mapped mine subsidence district and overlies the workings of the AA Hamilton Company's Hamilton Pit. Mining is believed to have occurred in the 1900's, with the workings at a depth of about 55m.

Comprehensive geotechnical investigation (**Appendix X**) have been undertaken to determine the stability of the site and whether remediation was required. Six bores were drilled and identified that the workings have failed (subsided). The investigations determined that future subsidence is unlikely, and that grouting is not required.

Subsidence Advisory issued their approval (TBA22-03840) to the development under Part 3 of the *Coal Mine Subsidence Act 2017* on 2 November 2022 (**Appendix X**)

Contamination

The Detailed Site Investigation (**Appendix P**) identifies that the soil is contaminated and will require remediation. The remediation works will be undertaken in accordance with the Remediation Action Plan (**Appendix Q**) under the direction of a Site Auditor. The Site Auditor has prepared an Interim Audit Advice letter (**Appendix Q**)

Surface and Groundwater

The site does not contain permanent or ephemeral surface water. The Bureau of Meteorology Groundwater Dependent Ecosystems Atlas does not identify any aquatic, subterranean or terrestrial systems in the vicinity of the site.

The previously referred to water channel within the Fearnley Dawes Athletic centre is identified as a first order Strahler stream. The Department of Primary Industries Guideline for Riparian Corridors on waterfront land requires a 10m Vegetated riparian zone. The building works are setback the required distance and the mitigations measure include setting back fills works by 10m from the channel. The setback area is vegetated with small trees and grass.

The geotechnical investigation located groundwater at depths ranging from 2m to 5.5m below existing ground level and estimated the permanent ground water table to be at 1-2 AHD. The Soil and Water report makes the following conclusions:

- It is unlikely that the earthworks will intercept the average ground water levels.
- Infiltration drainage systems may result in short term localised ground water mounting. This is likely to have negligible impact on regional ground water levels.
- Infrastructure works may require deeper excavations and intercept the ground water table. A dewatering plan should be prepared for those works.

Salinity and Acid Sulphate

The geotechnical investigations revealed the potential for ASS at depths of 8.3m (being the limit of the testing depths) and deeper. An Acid Sulphate Soil Management Plan has been prepared which recommends that soils below that depth are considered ASS as a precautionary measure. The proposed works with the potential to impact the ASS are:

- Excavation/dewatering for services
- Piling works.

The recommendation management measure for excavated ASS is neutralisation by lime treatment and oxidation.

Based on available mapping, on-site testing of water demonstrating “fresh” conditions and experience in the Newcastle area, it is considered that the development is unlikely to result in salinity impacts and such a Salinity Management Plan is not considered to be required.

6.14.2. Mitigation Measures

34. The preparation of a dewatering management plan for piling and infrastructure servicing works. The plan is to be prepared prior to the undertaking of those works.

35. The proposed structural and civil elements of the development should be designed for site-specific soil / water aggressiveness in line with standard design measures.

6.15. Stormwater and Wastewater

This section assesses the developments stormwater and wastewater impacts in accordance with the requirements of SEAR No. 13. An Integrated Stormwater Management Plan (ISWMP) has been prepared by Stantec and is provided at **Appendix U.**

SEAR	Section	Documentation
No. 13 Stormwater and Wastewater		
• Provide an Integrated Water Management Plan for the	s.6.15	Integrated Water

SEAR	Section	Documentation
development that: • is prepared in consultation with the local council and any other relevant drainage or water authority. • details the proposed drainage design for the site including any on-site treatment, reuse and detention facilities, water quality measures, and the nominated discharge points. • demonstrates compliance with the local council or other drainage or water authority requirements and avoids adverse impacts on any downstream properties.		Management Plan (**Appendix U**)
• Where drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards of, the local council or other drainage or water authority.	N/A	N/A

The design requirements for stormwater management are set out in the Newcastle Development Control Plan 2012 (NDCP 2012) and the Stormwater and Water Efficiency for Development Technical Manual 2015 (the Manual). The Manual states that disconnection of impervious areas from the drainage system can include directing runoff from down pipes, rainwater tank overflows and impervious areas onto stormwater harvesting devices, infiltration measures, grassed and other landscaped areas designed to accept these flows.

The new buildings, playing courts and other structures create an additional 1,100m^2 (approx.) of impervious surface. The proposed water management system is outlined in Table 21.

Table 21: Stormwater Conveyance

System	Detail
Roof drainage	Roof water will be directed by gutter and downpipes rainwater tanks for beneficial reuse in the amenities and for landscaping.
Surface drainage	Surface water will be managed by infiltration. Runoff from new footpaths and sports courts will be collected by surface pits and directed to infiltration systems (two bioswales and an infiltration trench) via gross pollutant traps and storm filters. If the infiltration system reaches capacity, water will overflow to a silt arrestor pit or the stormwater channel.
In Ground Drainage	The in-ground drainage has been designed to meet the following criteria: • In the minor design storm event (20-year ARI event) there will be no surcharge of the in-ground drainage system. • In the major design storm event (100-year ARI event) there will no uncontrolledly discharge from the site onto neighbouring properties or the

System	Detail
	surrounding street.
Legal Point of Discharge	The development area discharges via three infiltration systems located around the site, designed to correspond with the project phases. The infiltration system overflow will be connected to alit arrestor pits with absorption champers at the base.

Post development runoff will match the pre-development runoff as closely as possible. The three infiltration systems will collect runoff, holding it until it infiltrates, evaporates or in major events, discharges to street drainage.

A pollutant reduction model has been generated using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) software program. The model demonstrates that the treatment drains achieve pollutant load reductions that exceed Council's requirements.

Table 22: Pollutant load reductions (Source: Stantec)

Pollutant	Council Target	Reduction	Target acheived
TSS	85%	95.1%	Yes
Phosphorus	65%	78.2%	Yes
Nitrogen	45%	74.8%	Yes
Gross Pollutants	90%	100%	Yes

6.15.1. Mitigation Measures

None.

6.16. Hazards and Risks

This section assesses the hazards and risk impacts of the proposed development in accordance with the requirements of SEAR No. 15.

SEAR	Section	Documentation
No. 15 Hazards and Risks		
• Where there are dangerous goods and hazardous materials associated with the development provide a preliminary risk screening in accordance with Chapter 3 of SEPP (Resilience and Hazards) 2021.	s.6.16	N/A
• Where required by SEPP (Resilience and Hazards) 2021, provide a Preliminary Hazard Analysis prepared in accordance with Hazardous Industry Planning Advisory Paper No.6 – Guidelines for Hazard Analysis.	s.6.16	

• If the development is adjacent to or on land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline and prepare a hazard analysis.	s.6.16	

6.16.1. Impact Assessment

The DoE is responsible for implementing safe procedures regarding the management of hazardous chemicals and materials in schools. There are a wide range of chemicals used in schools for administrative and educational purposes. The chemicals are used in small quantities and in varying concentrations. Given the quantities of the chemical and the nature of their use, the school is not a potentially hazardous industry and as such a preliminary risk assessment is not required.

The DoE Chemical Safety in Schools (CSIS) resources assist schools to:

- Use and store chemicals in a safe manner.
- Control the risk from chemicals.
- Meet legislative requirements for hazardous substances and dangerous goods.
- Identify best practice in the use of chemicals for teaching and learning.

Under the CSIS framework, the school appoints a CSIS coordinator to develop a coordinated and safe chemical management plan.

DoE consulted with the DPE Hazards team and has been advised the site is not adjacent to or on land in a pipeline corridor.

6.16.2. Mitigation Measures

None.

6.17. Waste Management

This section assesses Waste Management in accordance with the requirements of SEAR No. 17. A Construction and Demolition Waste Management Plan (C&D WMP) and Operational Waste Management Plan (OWMP) have been prepared by Elephant's Foot and are provided at **Appendices EE and V.**

SEAR	Section	Documentation
No. 17 Waste Management		
• Identify, quantify and classify the likely waste streams to be generated during construction and operation.	s.6.17.1	• Construction and Demolition Waste Management Plan (**Appendix EE**) • Operational Waste Management Plan
• Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.		
• Identify appropriate servicing arrangements for the site.	s.6.17.2	
• If buildings are proposed to be demolished or altered, provide a hazardous materials survey.		

(**Appendix V**)

6.17.1. Construction and Demolition Waste

The proposed development involves the demolition of eight buildings. The anticipated volumes of waste materials generated from the demolition are shown Table 23. There is significant opportunity for waste minimisation and resource recovery.

Table 23: Demolition Waste (Source: Elephants Foot)

MATERIAL	VOLUME (M3)	TONNES (T)	APPROX. PERCENTAGE RECOVERED
Bricks	1312	1574.4	100%
Tiles	24.04	24.04	100%
Concrete	2372	3558	100%
Timber	238.2	45.258	33%
Plasterboard	122.98	24.596	50%
Metals	269	134.5	100%
Asbestos	128.4	39.804	0%
Other waste	345.5	103.65	30%
Totals	**4812.12**	**5504.248**	

Waste generated during the construction phase will largely consist of off-cuts and discarded bricks, timber, steel, concrete, tiles, plasterboard, and piping. The anticipated volumes of waste materials from construction are shown in Table 24. Construction waste will be managed by the principal contractor and sub-contractors.

Table 24: Construction Waste Conversion (Source: Elephants Foot)

MATERIAL	VOLUME (M3)	TONNES (T)	APPROX. PERCENTAGE RECOVERED
Bricks	911	911	99.8%
Tiles	40.4	48.5	100%
Concrete	1.1355	1.1	100%
Timber	248.4	372.6	100%
Plasterboard	0	0.0	33%
Metals	594	118.8	50%
Asbestos	297	17.1	100%

Other waste	136.65	40.995	30%
Totals	**2228.587**	**1510.1**	

There will be many opportunities to reduce the volume of waste generated during the construction and demolition stage. Examples of potential reuse are provided in Table 25 the most appropriate reuse/recycling option will be determined by the appointed contractor.

Table 25: Potential Reuse/Recycling Options for Construction Materials (Source: Elephants Foot)

MATERIAL	REUSE/RECYCLING POTENTIAL
Asphalt	Hot in-place recycling or reprocessed into Reclaimed Asphalt Pavement
Bricks	Cleaned and/or rendered for reuse, crushed for fill, sold or provided to a recycled materials yard.
Cardboard Packaging	Recycled at a paper/carboard recycling facility.
Carpet	Cleaned and reused for the same purpose, reused in landscaping or garages/sheds, recycled at an appropriate processing facility.
Concrete, Masonry, Spoil	Reused on-site as fill, levelling or crushed for road base.
Doors, Windows, Fittings	Reused in new or existing buildings or sent to second-hand supplier
Glass	Recycled at a glass recycling facility, aggregate for concrete production, crushed for termite barrier, reused as glazing.
Green Waste (Organics)	Mulched, composted for reuse, trees chipped for use in landscaping or removed carefully and reused onsite or sold.
Hardwood Beams	Reused as floorboards, fencing, furniture or sent to second-hand timber supplier.
Insulation Material	Reprocessed to remove impurities and reused for the same purpose or as off-cuts, compressed for ceiling tile manufacture.
Metal, Steel/Copper Pipe	Recycled at a metal recycling facility, melted into secondary materials for structural steel, roofing, piping etc. copper sold for re-use.
Other Timber	Reused in formwork, ground into mulch for garden or sent to second-hand timber supplier.
Plasterboard	Crushed for reuse in manufacture of new plasterboard, returned to supplier or used in landscaping.
Plastics	Reused as secondary materials for playgrounds, park benches etc.
Roof Tiles	Cleaned and reused, crushed for reuse for landscaping and driveways or sold or provided to a recycled materials yard.
Soil	Stockpiled onsite for reuse as fill.
Synthetic & Recycled Rubber	Reused for the same purpose or reprocessed for use in manufacture/construction of safety barriers, speed humps.

MATERIAL	REUSE/RECYCLING POTENTIAL
Topsoil	Stockpiled onsite for reuse in landscaped areas.

6.17.2. Operational Waste

The waste generation of by the existing school has been used to calculate the number of bins required for the enlarged school and is shown in Table 26.

Table 26: Estimated Waste and Recycling Volumes

No. Students	General Waste Generation Rate (L/Student/week)	Generated General Waste (L/Week)	Paper Cardboard Recycling Generation Rate (L/Student/Week)	Generated Paper Cardboard Recycling (L/Week)	Refundable Container Recycling Generation Rate (L/Student/Week)	Generated Refundable Recycling (L/Week)
1420	5.5	7810	3.3	4686	0.2	1562
TOTAL		**7810**		**4868**		**1562**
Bins and Collections	General Waste Bin Size (L)	3000	Recycling Bin Size (L)	240	Recycling Bin Size (L)	240
	General Waste Bins per Week	2.60	Recycling Bins per Week	19.53	Recycling Bins per Week	6.51
	General Waste Collections per Week	1	Recycling Collections per Week	1	Recycling Collections per week	1
	Total General Waste Bins Required for Collection	3	Total Recycling Bins Required for Collection	20	Total Recycling Bins Required for Collection	7

Based on the estimated waste and recycling calculations, the following bin quantities and collection frequencies are recommended:

General Waste: 3x 3m^3 bulk bins collected 1 x weekly.

Recycling - Paper and Cardboard: 20 x 240L MGBs collected 1 x weekly.

Recycling - Refundable Containers: 7 x 240L MGBs collected as required (assumed once weekly).

Labelled waste and recycling bins will be placed throughout the school. Staff and students will be responsible for placing their waste and recycling into the correct receptacle, and the fullness of the bins will be monitored and serviced by cleaners.

Waste collection procedures will be as per the existing collection arrangements. Bins are stored at the western end of the staff car park. Private contractors and Council collection service the school. On the day of services, the collection vehicle will enter the site from Smith Street and stop in the car park aisle adjacent to the bin holding area. The grounds keeper is responsible for ensuring the bins are presented and ready for collection.

6.17.3. Hazardous Materials

A Hazardous Materials survey has been prepared and identifies that the buildings to be demolished contain hazardous materials. The C&D WMP includes a requirement for all hazardous materials to be removed by a suitably qualified contractor and for the waste to be disposed of at a licenced facility. It further requires that an unexpected finds protocol is established. The requirements of the C&D WMP are included as mitigation measures.

6.17.4. Mitigation Measures

36. During the construction and demolition phase the requirements of the C&D WMP must be met.

37. During the operational phase the requirements of the Operational WMP must be met.

38. Hazardous Material
    a. All hazardous materials within buildings to be demolished, as identified in the Hazardous materials survey, are to be removed by a suitably qualified contractor.
    b. All hazardous materials removed are to be disposed of at a licenced waste facility.

6.18. Social Impact

A Social Impact Assessment (SIA) (**Appendix II**) has been prepared in accordance with the NSW Department of Planning and Environment Social Impact Assessment Guidelines for State Significant Projects.

SEAR	Section	Documentation
No. 20 Social Impact		
• Provide a Social Impact Assessment prepared in accordance with the Social Impact Assessment Guidelines for State Significant Projects.	s. 6.18.2	• Social Impact Assessment (**Appendix II**)

6.18.1. Methodology

The SIA considered the potential impacts (positive and negative) that the proposed redevelopment of the site could have on the social locality. The assessment area (social locality), or the geographical areas and communities potentially impacted by the redevelopment, extended from immediate neighbours (Australian Bureau of Statistics: Statistical Area 1) to Newcastle High School Community Group (school catchment), and Newcastle local government area.

6.18.2. Findings

The SIA found that overall, the proposal provides a significant positive impact for the community. Of most note is that the proposal will create more opportunity for students in the Newcastle High School Community to access state of the art education facilities and improved programming which will result in positive social outcomes for students, families, and the community in general. These are benefits that will have a positive generational impact. Specifically, the project will have positive social impacts for the school and students through:

- Improved access to quality learning spaces and facilities
- Increased areas of open green space, increasing opportunities for students to participate in more passive

and active recreation activities, and supporting a healthier environment
- New facilities will make positive, sustainable change to the buildings and running of the school
- Improved amenity and functionality, providing a better learning environment and increasing safety
- Fit for purpose learning environments support the delivery of best practice pedagogies, improving learning outcomes and employment prospects.

Table 27: Assessment of eight social impact categories

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
Category One: Community		
The Project will include activities during the construction phase and increased enrolments in the operational phase that will result in changes to community composition, function and social fabric of the school	• Proactively engage with the local area (LA) and NSCG to build awareness of the pending construction • Maintain ongoing engagement with the LA, NSCG and other relevant stakeholders with an association with the school during construction • Maintain any perceived changes to sense of place through historic documentation of the site integrated with the design • Investigate opportunities to host an open day/community event for students and LA residents to come and view the new school facilities, build familiarity and build good will	**Minimal**
Category Two: Culture		
The Project will impact tangible and intangible heritage on the site which may generate negative community sentiment	• Maintain ongoing engagement with the LA, NSCG and other relevant stakeholders with an association with the school during construction • Ensure members of the NHS alumni are engaged in ways to reflect the history of the site in the architectural and / or landscape designs • Maintain any perceived changes to sense of place through historic documentation of the site integrated with the design, or during construction by using hoardings • Ensure any murals or other artefacts on the site are documented and opportunities for reinstatement or new works are provided	**Medium**
The project will impact on Aboriginal cultural heritage	• Develop an Aboriginal heritage management plan to guide post-approval requirements as identified in the Aboriginal cultural heritage assessment by EMM Consulting December 2022. • Develop an interpretation strategy to incorporate Aboriginal heritage values into the development.	**Minor**

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
	• Consultation should be maintained with the Registered Aboriginal Parties (RAPs) throughout the project.	
The Project incorporates First Nations Connecting with Country principles to acknowledge and celebrate Aboriginal culture	• Implement opportunities identified through consultations with First Nations People, which may include integrating Connecting with Country design elements where there is design flexibility, which may include the façade landscaping, and walkways • Create opportunities for Aboriginal students and / or local artists to be involved in implementing Connecting with Country design approaches prior to Construction Certificate • Ensure opportunities for Connecting with Country outputs are reflected in architectural and landscape plans	**High**
Category Three: Accessibility		
The Project will improve access for all students in the NSCG to quality learning spaces and facilities	• Ensure accessibility design features are incorporated throughout the design of buildings and landscape	**Very High**
Category Four: Way of Life		
The Project will provide additional community infrastructure that will improve liveability across the Social Locality	• Implement the NSW Department of Education's Community Use of School Facilities policy to promote utilisation of new facilities • Continue to work with the City of Newcastle Council to investigate funding of joint use facilities • Work with the City of Newcastle Council to develop a licence agreement for community use of the outdoor multi-purpose courts	**High**
The Project will result in traffic and parking impacts during construction and operations	• Investigate incentives or measures to promote the uptake of public transport usage for construction workers to minimise the impacts on parking and the local road network • Promote active transport plans to school • Consider upgrading street provisions for pedestrian safety including zebra crossings at key routes including National Park Street and Smith Street, and a refuge island at the north portion of the National Park Street / Parkway Avenue intersection	**Medium**

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
	• Continue to allow parking on the NEC site on weekends to support access to National Park and reduce parking pressure on residents	
Category Five: Health and Wellbeing		
The Project will result in increased areas of open green space, increasing opportunities for students to participate in more passive and active recreation activities, and supporting a healthier environment	• Develop a CMP prior to the construction phase to ensure that all students and staff have safe access to open space to ensure their ongoing health and wellbeing • Increase on site opportunities for bicycle storage and active transport options • Consider the creation of a shared path along Parkway Avenue to increase active transport options and integrate with shared pathways proposed along adjoining streets as identified in the City of Newcastle Council National Park Masterplan.	**Very High**
Construction and operational activities negatively impact health and wellbeing of students, staff and residents	• A CMP is to be prepared prior to construction and mitigation measures will be implemented to reduce the impacts associated with noise and vibration • Noise or vibration impacts will be mitigated in accordance with the recommendations of the Noise and Vibration Impact Assessment prepared by JHA Consulting Engineers • Provide a detailed Construction Noise and Vibration Management Plan prepared by a qualified acoustic consultant prior to construction • Develop an issues register for ease of documentation of concerns throughout the construction and transition process to ensure that issues are addressed timely and adequately. • Establish a Bi-weekly progress meeting involving the contractor, SINSW and school staff representatives to identify emergent issues and proactively address challenges before they escalate • Maintain ongoing proactive communication with surrounding residents to identify emergent issues before they escalate	**Medium**
School users and residents in the Local Area may be impacted by dust and emissions from construction activity resulting in negative health impacts	• A CMP is to be prepared prior to construction with mitigation measures to be implemented to reduce the impacts associated with poor air quality • Develop an issues register for ease of documentation of concerns throughout the construction and transition process to ensure that issues are addressed in a timely manner and adequately.	**Medium**

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
	• Establish a Bi-weekly progress meeting involving the contractor, SINSW and school staff representatives to identify emergent issues and proactively address challenges before they escalate • Maintain ongoing proactive communication with surrounding residents to identify emergent issues before they escalate	
Category Six: Surroundings		
The new facilities provided as part of the Project will make positive, sustainable change to the buildings and efficiency of the school	• Implement a Green Travel Plan to provide a set of measures and initiatives in encouraging sustainable travel alternatives for staff, students, parents and guardians. • Mitigate risks associated with climate change through Environmentally Sustainable Design (ESD) • Design and construct the project to be “Net Zero Enabled” to allow for future net zero operation with the use of 100% green power and offsetting residual emissions from waste and water • Increase the tree canopy to a minimum of 31% • Implement measures identified in the GHD Sustainable Development Plan	**High**
Interactions between construction and an operational school may increase the risk to safety in and around the site	• Review access to and from the site for all modes of transport, potential hazards and identify restricted areas • Develop an issues register for ease of documentation of concerns throughout the construction and transition process to ensure that issues are addressed in a timely manner and adequately. • Stage construction to allow for the continued safe operation of the school while construction takes place. • Develop and implement a child focused educational program focused on safety around the construction site • Establish clear site entry and exit points that are separate from the general school community to ensure workers and students do not interact	**Medium**
The Project will improve the amenity and functionality of the site, providing a better learning environment and increasing school	• Support teacher upskilling and training initiatives to ensure the new learning environments support teacher effectiveness and maximise student benefits	**High**

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
safety for users		
Redevelopment and general changes to the site may result in a loss of local amenity	• Develop and implement a CMP to address the built heritage within the project area. This will address any conservation zone, views and vistas along with impacts to heritage • Establish tree protection zones around existing trees • Identify replacement trees in Landscape Design Report • Undertake landscape improvements according to the Landscape Design Report	**Low**
The site may be impacted by flooding	• Implement strategies and measures associated to manage any residual flood risk as identified in the Flood Emergency Response Plan • The multi-purpose facility must be engineered to withstand H5 flood hazards	**Medium**
Category Seven: Livelihoods		
Improvements and development of fit for purpose learning environments will support the delivery of best practice pedagogies will improve student learning outcomes and realise improved employment prospects.	• Undertake user experience surveys and longer term social impact monitoring and evaluation to better enable understanding benefits of the redesign of NHS	**High**
The Project will provide employment for the local construction workforce and will have a positive impact on local business and retailers	• Include recruitment and training initiatives in construction contracts to increase in the number of women in trades and the industry, meet the requirements of Aboriginal participation, and provide opportunities to people from the local region and aged under 25.	**High**
Category Eight: Decision Making Systems		
The Project will continue to provide opportunities for stakeholder input	• Develop a comprehensive working draft community engagement and communications plan to effectively manage engagement and communications throughout each phase of the Project	**High**

SOCIAL IMPACT ASSESSMENT GUIDELINES		
Potential Impact	**Mitigation / Enhancement**	**Residual Impact**
and comment and build the school community	• Consider providing bi monthly (every two months) community information update events or collateral	

6.18.3. Mitigation Measures

The mitigation measures recommended in the SIA (Table 27) encapsulate the findings of other technical reports and are included in their recommendations and mitigation measures (and listed in other sections of this report). Those mitigation measures unique to the SIA are:

39. Under user experience surveys and longer-term social impact monitoring and evaluation to better enable understanding benefits of the redesign of NHS. This knowledge can inform future projects by DoE on this and other sites.

Other mitigations measures relate to matters outside of the planning process, including teacher training and construction contracts. Those matters will be separately considered by SINSW.

6.19. Infrastructure Requirements and Utilities

An Infrastructure Report (**Appendix S**) has been prepared in relation to the proposed sewer, water, and natural gas infrastructure scope.

SEAR	Section	Documentation
No. 21 Infrastructure Requirements and Utilities		

• In consultation with relevant service providers:
  • assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.
  • identify any infrastructure upgrades required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.
  • provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.
	s. 6.19.1 and s.6.19.2	• Infrastructure Report (**Appendix S &T**)

6.19.1. Services

The proposed development seeks to provide the following services to facilitates the proposed works, including:

1. Sewerage Infrastructure
2. Portable Water
3. Natural gas

The site is currently serviced by an existing 150mm PVC Hunter Water Sewer connection on National Park Street. New connections to the existing Hunter Water Sewer connection are proposed for the new learning hub and multi-purpose facility.

The site maintains existing portable water service from an existing 150mm CICL Hunter Water connection with multiple connection points along National Park Street and Parkway Avenue. A new 80mm connection and new water meter is proposed and will connect to the existing Hunter Water network to supply water to the new learning hub. A new 50mm connection is proposed and will connect to the existing Hunter Water network to supply water to the new multi-purpose facility with a new water pump set.

The existing fire water connection and inground fire hydrant system are proposed to be retained. The existing fire hydrant booster assembly will be replaced with a new booster assembly and a new pressure pump set will be installed based on the water flow and pressure data from Hunter Water.

JEMENA maintains a 100mm steel (ST) pipe with 210kPA pressure available in the site adjacent to National Park Street which is suitable to serve the proposed new learning hub. A new gas meter and connection shall be submitted to JEMENA for approval during the construction stage.

6.19.2. Site Infrastructure Delivery Strategy

Sewerage and Water

The sewerage and water connection will be maintained throughout the planning approval and construction timeline. The following actions shall take place to ensure the site maintains sewer and water connections throughout the multiple phases of the project:

- A Section 50 Compliance Certificate approval was obtained prior to lodgement of the application.
- Prior to sewer and water construction works, and prior to construction, an application for the hydraulic design must be submitted to Hunter Water for approval. The hydraulic design shall meet the notice of requirements after the Section 50 Compliance Certificate. The trade waste discharge, sewer pump station, backflow device, the size and location of the connections, the location of the water and rainwater tank configurations shall be included in the hydraulic design assessment.
- Once the connection works have been completed and the water meter installed, the inspections confirming compliance shall be undertaken. Further requirements may be applicable relating to site containment backflow prevention devices, including fire hydrant services. Certification must be registered within seven (7) days of device installation.
- A Trade Wastewater Agreement is required where the development incorporates trade waste discharge to our sewerage system. This requirement will be nominated in the hydraulic design approval.

Natural Gas

The Natural Gas connection to JEMENA will be maintained throughout the construction timeline.

- During the construction phase, an application for the new connection and new gas meter set shall be submitted to JEMENA for approval of the connection location, size, and location of the new gas meter.
- Once the connection works have been completed and the gas meter installed, the inspections confirm compliance and JEMENA requirements.

6.19.3. Mitigation Measures

None.

6.20. Construction Management

This section assesses the construction and operation staging impacts of the development in accordance with the requirements of SEAR No. 24.

SEAR	Section	Documentation
No. 24 Construction Operation and Staging		
• Provide details of existing (if relevant) and proposed operations, including staff and student numbers, any before/after school care services and/or community use of school facilities.	s. 6.20.1	N/A
• If staging is proposed, provide details of how construction and operation would be managed, and any impacts mitigated.	s. 6.20.3	

6.20.1. School Operations

The proposed staff and student numbers are provided in Table 28 with each to increase by 8.6%. The rate of increase in student population is dependent on the community's growth. DoE will determine student populations and school intakes based on future demand and capacity.

Table 28: Proposed Staff and Student Numbers

POPULATION	CURRENT	PROPOSED
Staff	114	119
Students	1,227	1,420

The DoE Educational Standard Guidelines (EFSG) create minimum internal and outdoor external space standards, as well as building design requirements for new schools. The proposed development is compliant with the EFSG, demonstrating that the site and facilities are suitable for the proposed student and staff density.

The school does not have before or after school care services, and none are proposed by this development.

6.20.2. Community Use of School Facilities

The existing school facilities are unsuitable for use by the community. Community members do contribute to the school by tending a section of the gardens.

It is proposed to promote community use of the proposed outdoor multi-purpose courts. DoE will work with the City of Newcastle Council to develop a licence agreement for community use of the outdoor multi-purpose courts.

6.20.3. Construction Staging

The proposed development will be constructed in five stages. The stages will be delivered in a continuous process without any time break between. The benefits of staging are:

- It will allow the school to continue to operate throughout the works and ensure that the required supporting facilities (open space, drop off facilities etc) are available.
- The proposed stages will allow the works to be delivered in the most timely and efficient manner.
- It will disperse and minimise impacts on the community by spreading construction activities.

The proposed stages are:

Table 29: Proposed Stages

STAGE	COMMENT
Stage 1 – • Move Building H to new location on site. • Service infrastructure upgrades. • Demolition of Building B and existing Sport Courts. • Remove trees, other planting in Stage 2 area.	• Construction vehicles will access the site from National Park Street. • Vehicle access point will be monitored at all times during construction to maintain safety, with pedestrians and passing vehicles given priority. • School activities conducted in Buildings B and H will be transferred to the temporary school buildings. • Primary pedestrian access will be through Building A, with secondary access from Smith Street. • Kiss and drop zones on National Park Street and Parkway Avenue will continue to operate. • The bus zone on National Park Street will continue to operate. • The on-site car park will continue to be available for teachers. • Part school oval, northeast sports courts and internal courtyards will be available for student use.
Stage 2 – • Construct New Learning Hub. • Landscaping walkway and external works associated with New Leaning Hub. • New support drop-off.	• Construction vehicles will access the site from National Park Street. • Vehicle access points will be monitored at all times during construction to maintain safety, with pedestrians and passing vehicles given priority. • School activities conducted in Buildings B and H will be transferred to the temporary school buildings. • Primary pedestrian access will be through Building A, with secondary access from Smith Street. • Kiss and drop zones on National Park Street and Parkway Avenue will continue to operate. • The bus zone on National Park Street will continue to operate. • The on-site car park will continue to be available for teachers. • Part school oval, northeast sports courts and internal courtyards will be available for student use.
Stage 3 – • Construct new multi-purpose facility. • Landscaping and external works	• Construction vehicles will access the site from Smith Street. • Vehicles access point will be monitored at all times during construction to maintain safety, with pedestrians and passing vehicles given priority. • Student access will be through the new entry on Parkway Avenue, with secondary access from Smith Street. • Parents and visitors will continue to access the site through the formal

STAGE	COMMENT
associated with multi-purpose facility. • Demolition of Building P.	entrance in the center of Building A. • Kiss and drop zones on National Park Street and Parkway Avenue will continue to operate. • The bus zone on National Park Street will continue to operate. • The on-site car park will continue to be available for teachers. • Part school oval and internal courtyards will be available for student use.
Stage 4 – • Refurbish Building A and K. • Demolish Building J and existing walkway to Building K. • Landscaping and site work.	• Construction vehicles will access the site from Smith Street. • Vehicles access point will be monitored at all times during construction to maintain safety, with pedestrians and passing vehicles given priority. • School activities conducted in Buildings J and K will be transferred to other existing buildings and new buildings. • Student access will be through the new entry on Parkway Avenue, with secondary access from Smith Street. • Parents and visitors will continue to access the site through the formal entrance in the center of Building A. • Kiss and drop zones on National Park Kiss and drop zones on National Park Street and Parkway Avenue will continue to operate. • The bus zone on National Park Street will continue to operate. • The on-site car park will continue to be available for teachers. • Part school oval, multi-purpose facility and internal courtyards will be available for student use.
Stage 5 – • Demolish Building D, E and I. • Construct new sports courts. • Campus Green and remaining landscaping / walkways.	• Construction vehicles will access the site from Smith Street and National Park Street. • Vehicles access point will be monitored at all times during construction to maintain safety, with pedestrians and passing vehicles given priority. • School activities conducted in Buildings D, E and I will be transferred to other existing buildings and new buildings. • Student access will be through the new entry on Parkway Avenue, with secondary access from Smith Street. • Parents and visitors will continue to access the site through the formal entrance in the center of Building A. • Kiss and drop zones on National Park Kiss and drop zones on National Park Street and Parkway Avenue will continue to operate. • The bus zone on National Park Street will continue to operate. • The on-site car park will continue to be available for teachers. • Part school oval, multi-purpose facility and internal courtyards will be available for student use.

6.20.1. Construction Impacts

The staging of the works will not lead to any additional impacts, noting:

- Service infrastructure upgrades will be conducted in Stage 1, and as such will be available for future stages.
- Landscape works are to be completed at the conclusion of each stage, stabilising the site and providing a finished appearance to the streetscape.
- Noise and vibration for each stage will be controlled in accordance with the recommendations of the Noise and

Vibration Management Plan (**Appendix AA**) and a future Construction Environmental Management Plan.
- Erosion and sediment control will occur in accordance with the erosion and sediment control plan (**Appendix U**) and a future Construction Environmental Management Plan.

6.20.2. Mitigation Measures

40. Upon receipt of development consent, the Department of Education must endeavour to establish an agreement for community use of the outdoor multi-purpose courts with City of Newcastle Council.
41. A Construction Management Plan (CMP) is required to be prepared by the appointed construction manager. The CMP must a community engagement and communications plans, incorporating the requirements of the Social Impact Statement.
42. The erosion and sediment control plan must be implemented.

6.21. Contributions and Public Benefit

The City of Newcastle s.7.12 Development Contributions Plan applies to the development. It is specified in s.1.5 that the plan applies to non-residential development, including alterations and additions.

Whilst Council's Contribution Plan does not exclude Crown Developments or educational established from the payment of the relevant contribution, an exemption is appropriate. The DoE is a public authority which relies on government funding to deliver new school infrastructure for the community and public. Levying Council contributions from the DoE to fund infrastructure is contrary to the purpose of a contribution plan in the first place.

The following planning policies support the best practice of exempting community infrastructure from paying contributions:

Circular D6 – Crown Development Applications and Conditions or Consent

Exemption from contributions is supported by Planning Circular (Circular D6) relating to Crown DAs, issued by the then Department of Urban Affairs and Planning in 1995. Circular D6 sets out the circumstances in which it is appropriate for a consent authority to seek the approval of the applicant or the Minister to impose conditions of consent. Circular D6 notes that where a consent authority intends to levy contributions on Crown Development, they must be justified, and consideration should be given to the Crown's role in providing a community service, the cost of which is accountable to all taxpayers in the State.

The currency of Circular D6 is confirmed in the Draft Development Contributions Practice Note – July 2005, which states "the current limitation on imposition of levies on Crown Developments as outlined in Circulate D6…remain in force."

Draft Local Development Contributions Guidelines

The Guidelines outline the best practice approach to developer contributions on the public sector:

8.3 Public sector development

The current limitations on the imposition of development contributions on public sector developments as outlined in Circular D6 – Crown Development Applications and Conditions of Consent remain in force.

Public sector development generally falls into the following 2 categories:

- *Development that is carried out with an underlying philosophy of community service such as a courthouse, school, hospital or social housing; or*
- *Development that is carried out on a profit-making basis Council can, in its contribution plan, identify those types of developments that are exempt from contributions.*
- *Council can, in its contribution plan, identify those types of developments that are exempt from contributions. In this regard it is considered best practice to exempt those developments provided by the Crown with an underlying philosophy of community service, such as a courthouse, school or community centre, should not be levied a contribution as the material public benefit that is derived from the development exceeds any demand that it creates on existing infrastructure. Where development is carried out by the public sector on a profit-making capacity they should pay a level of contribution equal to that applicable to the private sector.*

Given the public benefits of the proposal and that it is provided to support planned growth, development contributions should not be levied on this project.

6.22. Consideration of Cumulative Impacts

To understand whether the proposal is likely to generate cumulative impacts with other developments, we have undertaken a review of nearby relevant proposals/approvals in accordance with the Department of Planning and Environment's (DPE) Cumulative Impact Guidelines and included a summary in Table 30 below.

Table 30: Review of Nearby Relevant Proposals/Approvals

NO.	ADDRESS	APPLICATION NO.	DEVELOPMENT DESCRIPTION	WALKING DISTANCE FROM SITE
1	711 Hunter Street, Newcastle West	PPSHCC-159	Under Assessment: Design, construction and operation for Stage 2 of a 26-storey mixed-use development with high quality tower forms at 711 Hunter Street, Newcastle West.	900m
2	643 Hunter Street, Newcastle West	PPSHCC-137	Under Assessment: Commercial premises and associated shop top housing	1km
3	854 Hunter Street, Newcastle West	PPSHCC-104	Approved: Mixed use development, including shop top housing with 365 dwellings, ground floor retail premises, commercial premises and a basement	1.3km
4	1 National Park Street, Newcastle West	PPSHCC-10	Approved: Mixed use development (demolition of buildings and erection of 22 storey shop top housing)	900m
5	32 Union Street, Newcastle West	PPSHCC-22	Approved: Mixed use development - demolition of structures erection of 14 storey mixed use including seniors living and aged care facilities	1.3km

NO.	ADDRESS	APPLICATION NO.	DEVELOPMENT DESCRIPTION	WALKING DISTANCE FROM SITE
6	127 Union Street, Cooks Hill NSW 2300 Newcastle Grammar School – Parkway Campus	SSD-13895306	Approved: Concept proposal (stage 2 and stage 3) and first stage of development (stage 1) for alterations and additions Newcastle Grammar School – Park Campus.	900m

The site is sufficiently spatially separated from the identified nearby projects, such that the general impacts arising from their built form (privacy, views, heritage, overshadowing) will not accumulate. The separation of the sites will also prevent the minimal environmental pollution (noise, odour, light spill) they emit from accumulating.

Each of the sites is subject to a level of flood impact. The flood modelling is developed from Council's strategic flood model which captures catchment wide impacts. Cumulative flood impacts have therefore been considered through use of the catchment model.

The site is contaminated and will require remediation. Other nearby project were also found to be contaminated and in need of remediation. The detailed site investigations for this project determined that there is no ground water contamination, and that the ground contamination is localised and generally immobile. There is not therefore any cumulative contamination impacts.

The proposed development will result in the removal of 0.15ha of foraging habitat for the grey head flying fox, an endangered species. The loss will not result in a significant biodiversity impact because the habitat is of low quality and better-quality habitat is readily available in the region. The nearby projects are on unvegetated urban sites, and as such there will be no cumulative biodiversity impacts.

The site and nearby projects will share the same local road network and there is potential for cumulative traffic impacts on National Park Street, which connects Newcastle West and Hamilton South. Traffic from project numbers 2, 3, and 5 will be distributed across other roads which provide more direct connection from them to key locations (e.g., beaches, CBD, Honeysuckle, Hunter expressway). Project numbers 1 and 4 have frontage to National Park Street and the potential to have cumulative traffic impacts.

The development application for 711 Hunter Street was accompanied by a Traffic Impact Assessment by BG&E. Vehicle access for the development is proposed from Little King Street, which is near to but does not interest with National Park Street. The trip distribution analysis predicts that no traffic will arrive or depart that development via National Park Street (south). Traffic is predicted to circulate around the Hunter St, King St, Stewart Ave, and National Park Street (north) street block, to access/depart Little King Street.

The development application for 1 National Park Street was accompanied by a Traffic Impact Assessment by Intersect Traffic. Vehicular access (entry and exit) is proposed from National Park Street. The distribution analysis predicts that 5% of traffic will travel on National Park Street (south) which equates to eight (8) vehicles in the AM and PM. The assessment calculates the National Park Street (south) has mid - block capacity of 1800 total vehicles per hours and a demand of 1083 (in 2029).

The development at the Newcastle Grammar School – Parkway Campus was accompanied by a Traffic Impact Assessment prepared by Intersect Traffic. Vehicular access to the site is provided from Corlette Street and exits onto

Union Street. The TIA confirms that subject to satisfactory intersection performance the local road network around the school has sufficient spare network capacity to cater for development. The school currently has no on-site parking and the proposal provides a new 37 space car park which will reduce demand for on-street parking.

The Traffic Impact Assessment (**Appendix F**) identifies that the intersection of National Park Street and Parkway Avenue generally operates efficiently, and the peak is limited and clears quickly. Given the characteristics of the intersection, it is unlikely that the combined impact of the school, 1 National Park Street, and the Newcastle Grammar School – Parkway Campus upgrades will cause adverse traffic conditions.

7. JUSTIFICATION OF THE PROJECT

7.1. Strategic Context

NSW is facing unprecedented population growth, particularly in children under 15 years of age. By 2031, an additional 269,000 new students will require access to government and non-government schools, of which over 164,000 are expected to enter the government school system. This growth is significantly above historical trends. By law, all school-age children are eligible to attend a government school.

This means that by 2031, government school enrolments will rise by 21% on 2016 levels. The NSW Government is investing $8.6 billion over the next four years to deliver a program of 215 new and upgraded schools to support communities across NSW. This is the highest investment in public education infrastructure in the history of NSW. Included in this program is the Newcastle Education Campus, which will cater for the growing population of the region.

Redevelopment and renewal of the Newcastle Education Campus is consistent with the State's strategic objectives, including:

- NSW Premier's Priorities - Bumping up education results for children: the proposal is consistent with this priority as it includes new high quality learning spaces and facilities which will benefit students and teachers.
- State Infrastructure Strategy 2018 - 2038 Building the Momentum: The proposal is consistent with the SIS by enhancing the existing campus to providing upgraded facilities and supplying superior recreation and outdoor learning spaces.
- Hunter Regional Plan 2041: the proposal is consistent with the Regional plan as it will enhance critical social infrastructure and the capability of Newcastle to meet the needs of its residents.
- Greater Newcastle Metropolitan Plan 2036: the proposal is aligned with the Metropolitan plans objective to expand education and innovation clusters.
- Planning Newcastle 2040 - Newcastle Local Strategic Planning Statement: the proposal is aligned with planning priority 13, which seeks to grow Newcastle's key health and education sectors.

7.2. Statutory Context

- The proposal is consistent with the objects of the EP&A Act.
- The proposed development is permissible with consent under Newcastle Local Environmental Plan 2012.
- The site can be remediated and made suitable for its ongoing use as an educational establishment, as required under the Resilience and Hazards SEPP.
- The proposal does not result in any significant adverse biodiversity impacts as demonstrated by the issue of the

Biodiversity Assessment Report waiver.

- The proposal is generally consistent with the relevant controls under the DCP.

7.3. Engagement

The community and authority engagement undertaken for this project is discussed in detail in Section 5 of this EIS, the Engagement Report (**Appendix Z**) and the Social Impact Assessment (**Appendix II**). Key community concerns raised are addressed below:

- Height and position of new learning hub: The learning hub is consistent with the height of Building A and lower than Building C. The upper floor is recessive in materiality to minimise its visual importance. It has generous setbacks from the street frontages, which allow for retention of existing trees and new landscaping.
- Construction Impacts: It is acknowledged that construction can be disruptive. A Construction Environmental Management Plan will be prepared which will incorporate the recommended control measures in the Traffic Impact Assessment and the Noise and Vibration impact assessment.
- Staff car parking: It is not proposed to provide additional on-site car parking. DoE is endeavouring to reduce the traffic impacts of its facilities and change travel behaviours of staff and students. A travel co-ordinator will be appointed and work directly with staff to deliver change.

7.4. Consideration of Alternatives

The alternatives considered for the project are discussed in Section 2.3 of this EIS. Of the three options, Option 3 was preferred and is generally consistent with what is proposed under this SSDA. The 'Do Nothing Option' was also considered in the analysis. This option was not favoured as it would result in the students continuing to be schooled in inadequate learning facilities.

7.4.1. Design of the Project

- The proposed buildings are located on portions of the site that have been previously developed and are generally environmentally unconstrained.
- The proposal retains the existing significant trees along the eastern, southern and western boundaries. The trees will continue to create a visual buffer between the school and adjoining residential dwellings and create a green edge to the street.
- The proposal retains key open space, including the Oval and creates new open space, including the Campus green. Open space is key to the functionality of the school and important for student amenity.
- The proposal retains all heritage significant buildings and their curtilage.
- The learning hub building been carefully designed to match the scale, setback and materiality and of the adjoining heritage building (Building A).
- New holistic landscape scheme across the site, including planting of 112 new trees and creation of new and improved play spaces. Tree canopy cover will increase from 24% to 31% once the new landscaping is established. A yarning circle, bush garden and learning circle are to be created to celebrate the site's Aboriginal heritage and enable it to be part of the schools learning practices and values.
- New walkways will be created, provide legible, accessible and weather protected paths of travel. The new building including lifts to provide access to each of their levels.

7.4.2. Assessment of Impacts

The proposed works will result in an intensification of the use, with student capacity to be increased by 193. The site and facilities are compliant with the DoE Educational Standard Guidelines, demonstrating their suitability for the proposed student density.

The environmental impacts are assessed in Section 6. Where impacts are identified, this EIS and accompanying technical reports explain why they are acceptable and how they can be mitigated. Key impacts are:

- Traffic and Parking: The road network is capable of accommodating the proposed intensification of use. The adjoining intersections operate satisfactorily, with minor impacts during peak periods for short periods. Student use of public and active transport modes is high and will be further enhanced through green travel initiatives.
- Overflow staff parking demand will continue to be met by on-street parking.
- Heritage: The buildings have been carefully designed to respect the site's and conservation area's heritage values. The learning hub building been carefully designed to be compatible with the scale, setback and materiality and of the adjoining heritage building (Building A).
- Site Suitability: Flood, soil stability and availability of services is suitable. Portions of the site require remediation. The contaminates are common and remediation techniques well known and practiced. The site can be made suitable if remediated in accordance with the remediation action plan.
- Aboriginal heritage: The subsurface of the site has the potential to contain Aboriginal archaeology. It is proposed to undertake further extensive archaeological investigations, prior to construction of the multi-purpose facility.

The assessment of the economic, social and environmental impacts is summarised below:

- **Economic** – The proposal will result in positive economic impacts through the direct creation of approximately 108 jobs during construction as a result of the proposed works. The works are also expected to create multiplier effects through the local economy, indirectly creating further jobs.
- **Social** - the key social impacts of the proposal are considered to be:
    - improved access to quality learning spaces and facilities.
    - increased areas of open green space, increasing opportunities for students to participate in more passive and active recreation activities, and supporting a healthier environment.
    - new facilities will make positive, sustainable change to the buildings and running of the school.
    - improved amenity and functionality, providing a better learning environment and increasing safety.
    - fit for purpose learning environments support the delivery of best practice pedagogies, improving learning outcomes and employment prospects.
    - Community use of the multi-purpose outdoor courts.

  The SIA concludes that based on the assessment and recommendations provided, the proposal will likely create a high positive impact on the community.
- **Built Environment** – The proposed buildings have been sited and designed to minimise unreasonable impacts on the site's heritage value and the amenity of adjoining residential dwellings and increase student and staff amenity to by providing high quality learning facilities. Proposed traffic and transport upgrades, including the extension of the bus and drop off and pick up zones on Parkway Avenue and creation of a new kiss and drop zone on Smith Street, will improve the efficiency of traffic in peak periods.
- **Natural Environment** – the proposal has been designed to avoid adverse impacts on the natural environment.

The north eastern corner of the site is flood affected. The ground floor of the multi-purpose facility is set at a level above the flood planning level. A Flood Evacuation Emergency Plan is proposed to manage site in PMF events and will improve the school's responses to an existing flood risk. The site has a number of large significant trees, which contribute to the amenity of the school and surrounding streets. All perimeter trees are proposed to be protected and maintained.

The cumulative impacts of the proposal are considered in Section 2.4 and throughout section 6.22 of this EIS. Mitigation measures have been identified in Section 6 and in the mitigation measures table at **Appendix E**. Incorporating these mitigation measures will ensure the proposal does not result in any unreasonable impacts.

8. CONCLUSION

This EIS has been prepared to consider the environmental, social and economic impacts of proposed upgrades to the Newcastle Education Campus. The EIS has addressed the issues outlined in the SEARs and has been prepared in accordance with the Department's State Significant Development Guidelines - Preparing an Environmental Impact Statement.

Based on the detailed assessment undertaken in this EIS, we conclude that it is in the public interest that consent be granted to the proposal, subject to the implementation of suitable conditions of consent reflecting the recommended mitigation measures in **Appendix E**.