Mosman High School Upgrade

Environmental Impact Statement
State Significant Development Application (SSD-10465)

architectus™

Prepared for:
Department of Education NSW

Date: 31 March 2021

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31 March 2021

Revision history

Issue Reference	Issue Date	Issue Status
A	24 September 2020	Draft for client review
B	28 September 2020	Final
C	27 October 2020	Response to DPIE comments
D	24 March 2021	Alternate Tender – Test of Adequacy
E	31 March 2021	Alternate Tender – Final

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AI	**Ecological Sustainable Development Report** *Prepared by EMF Griffiths*
AJ	**Arboricultural Assessment** *Prepared by Birds Tree Consultancy*
AK	**BDAR Waiver Request** *Prepared by NGH Consulting*
AL	**BDAR Waiver Approval** *Prepared by NSW Department of Planning, Industry & Environment*

Statement of Veracity

This Environmental Impact Statement (EIS) has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulations 2000*. This Environmental Impact Statement (EIS) has been prepared by:

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In respect of:

State Significant Development Application (SSD-10465) for the proposed Mosman High School Upgrade, including construction of a new school building including demolition, tree removal and landscaping works (as described in Section 3 of this EIS).

Applicant:

Department of Education NSW
C/– Architectus Australia Pty Ltd

Land to be developed:

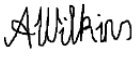
745 Military Road, Mosman NSW 2088. The site is described as Lot 1 DP 1268793.

Declaration:

It is declared to the best of my knowledge that:

- This Environmental Impact Statement has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*;
- This Environmental Impact Statement contains all available information that is relevant to the environmental assessment of the proposed development; and
- The information contained in this report is neither false nor misleading.



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31 March 2021	31 March 2021	31 March 2021	31 March 2021

Executive Summary

Preliminary

This Environmental Impact Assessment (EIS) has been prepared by Architectus Australia Pty Ltd (Architectus) on behalf of the Department of Education NSW (the applicant) in support of a State Significant Development (SSD) Application (SSD-10465) for upgrades to Mosman High School ('Mosman High School') at 745 Military Road, Mosman (the site). Mosman High School is a comprehensive coeducational secondary school with success in the creative and performing arts.

This EIS should be read in conjunction with the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning, Industry and Environment (DPIE) on 18 June 2020 and attached at **Appendix A**, and the supporting technical documents provided at **Appendix E – Appendix AL**.

Site

The site is located at 745 Military Road, Mosman. It is bound by Military Road to the east, Belmont Road to the north, Gladstone Avenue to the west and Avenue Road to the south.

The site has a total site area of 1.45 hectares and comprises one lot known as Lot 1 DP 1268793.

The site currently contains five (5) permanent buildings, two (2) single storey demountables and an at grade car park located at the corner of Gladstone Avenue and Belmont Road. There is one pedestrian access point to the school from each street frontage, providing a total of four (4) pedestrian access points, the main one from Military Road. A bus zone and drop off / pick up zone is located at Gladstone Avenue. Vehicular access into the site is provided from Gladstone Avenue.

Proposed Development

Mosman High School currently accommodates 1,116 students across 85 permanent teaching spaces. The upgrade of Mosman High School is required in order to allow for:

- an increase in enrolment growth;
- improved facilities and teaching spaces; and
- improved outdoor play space.

The proposed development comprises the construction of a new school building including demolition, tree removal and landscaping works.

The objective of the project is to expand Mosman High School to a capacity of 1,200 students in order to meet growth demands by 2031. This will require growth of 6 operational jobs.

Consultation

The proponent team has undertaken consultation with Departments, agencies and stakeholders, as required by the SEARs and consultation with the school community and local community. The issues discussed and raised during these consultations have been addressed as part of the proposal. Consultation and outcomes have been addressed in detail at **Section 4** of the EIS and appended Consultation Report at **Appendix N**.

Planning Framework and Assessment

The proposed development is classified as SSD on the basis that it falls within the requirements of Clause 14 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), being development for the purpose of alterations or additions to an existing school that has a Capital Investment Value (CIV) of over $20 million.

The upgrade of Mosman High School has been assessed in accordance with the requirements of Section 4.15(1) of the Environmental Planning and Assessment Act 1979 and against the SEARs issued for the project. In summary:

Statutory and strategic planning context

The proposal has been assessed against relevant strategic policies and planning controls and is found to be generally consistent with these, as detailed within **Section 5** of this EIS. Additionally, the proposal satisfies the SEARs as demonstrated in this EIS.

Environmental impacts

The proposed Mosman High School upgrade will not cause unacceptable impacts on neighbouring residential properties or the public domain. Subject to the various mitigation measures recommended at **Section 7**, the proposal will not have unreasonable traffic, heritage, economic, social and environmental impacts to adjoining or surrounding properties or the public domain.

Suitability of the site

Mosman High School is an existing school and the proposed upgrades will ensure its longevity as a school is maintained, whilst keeping its heritage significance and integrity of the Military Road Conservation Area intact.

There are no known site conditions which would prevent the development including geotechnical conditions, contamination, flooding, biodiversity, and Aboriginal cultural heritage, and measures in place for historical archaeology. The site is well serviced by public transport.

Where there are environmental impacts, these can be sufficiently ameliorated through mitigation measures and design development.

The site is therefore suitable for the proposed development.

Public interest

The proposed Mosman High School upgrade offers significant public benefits to the users of the school and broader community. Key benefits of the project are:

- It responds to local demand for educational facilities and will deliver important public social infrastructure that will benefit the local community.
- It will provide permanent and state of the art teaching facilities for students and eliminate the need for demountables on site.
- It will provide improved play space, tree numbers, tree canopy, and shade cover for students compared with the existing situation. The proposed landscaping will provide a more appropriate setting for heritage buildings on the site and improve amenity for users of the space.
- Improved community access to site and its facilities (for example the learning spaces and hall have been designed on the ground floor to support after-hours use).
- The new building will be designed to equivalent 4-star Green Star Design, improving environmental performance of existing buildings on site.
- It will generate 70 construction and non-construction Full Time Equivalent jobs during construction phase, and 6 additional jobs during the operational phase. Hence, these jobs, together with the value of the project, will stimulate the economy.
- On balance, accounting for site suitability, environmental impacts, risk assessment and key benefits, the proposed development is in the public interest.

Given the above it is considered that the SSD Application has merit and can be supported by the Department of Planning, Industry and Environment and the Minister for Planning and Public Spaces.

Secretary's Environmental Assessment Requirements

SEARs for the project were issued under Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) by DPIE on 18 June 2020. Refer to the SEARs in full at **Appendix A** to this report.

Table 1 below provides a summary of the SEARs and identifies the section of the report where the relevant requirement is addressed and/or the appendix reference for the specialist consultant's report associated with that requirement.

Table 1 Secretary's Environmental Assessment Requirements

Item/ Description	Document Reference
General Requirements	
Clause 6 of Schedule 2 of EP&A Regulation An EIS must contain the following:	
6(a) EIS author	*Statement of veracity*
6(b) contact details of the responsible person	*Statement of veracity*
6(c) the address of the land	*Statement of veracity*
6(d) development description	*Section 3: Proposed development*
6(e) assessment of impact	*Section 6: Environmental Assessment*
6(f) author's declaration	*Statement of veracity*
Clause 7 of Schedule 2 of EP&A Regulation An EIS must also include:	
(1)(a) summary of EIS	*Executive Summary*
(1)(b) EIS objectives	*Section 1: Introduction*
(1)(c) analysis of feasible alternatives	*Section 3: Proposed development*
(1)(d) analysis of development	*Section 3: Proposed development*
(d)(i) full description	*Section 3: Proposed development*
(d)(ii) general description of the environment likely to be affected	*Sections 2: Site analysis* *Section 3: Proposed development* *Section 6: Environmental Assessment*
(d)(iii) likely impact on the environment	*Section 6: Environmental Assessment*
(d)(iv) mitigation measures	*Section 8: Recommendations and Mitigation measures*
(d)(v) approvals required	*Section 5: Statutory and strategic planning context*

Item/ Description	Document Reference
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	*Section 6: Environmental Assessment* *Section 7: Environmental Risk Assessment* *Appendix E – Appendix AL*
Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: – adequate baseline data – consideration of potential cumulative impacts due to other development in the vicinity (completed, underway or proposed) – measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	*Section 8: Recommendations and Mitigation Measures* *Section 6.23: Cumulative Impacts*
The EIS must be accompanied by a report from a qualified quantity surveyor providing: – a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived – an estimate of the jobs that will be created during the construction and operational phases of the development – certification that the information provided is accurate at the date of preparation.	*Provided under separate cover* *Section 3: Proposed development* *Appendix D*
Key Issues *The EIS must address the following specific matters:*	
1. Statutory and Strategic Context	
Address the statutory provisions contained in all relevant environmental planning instruments, including: – *State Environmental Planning Policy (State & Regional Development) 2011* – *State Environmental Planning Policy (Infrastructure 2007) State Environmental Planning Policy (Educational Establishments 2 and Child Care Facilities) 2017* – *State Environmental Planning Policy No. 64 – Advertising and Signage* – *State Environmental Planning Policy No.55 – Remediation of Land* – *Draft State Environmental Planning Policy (Remediation of Land)* – *Draft State Environmental Planning Policy (Environment) Mosman Local Environmental Plan 2012* <u>Permissibility</u> Detail the nature and extent of any prohibitions that apply to the development <u>Development Standards</u> Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards. <u>Provisions</u> Adequately demonstrate and document in the EIS how each of the provisions in the listed instruments are addressed, including reference to necessary technical documents.	*Section 5: Statutory and Strategic Planning context*
2. Policies	
Address the relevant planning provisions, goals and strategic planning objectives in the following: – *NSW State Priorities* – *The Greater Sydney Regional Plan, A Metropolis of Three Cities* – *Future Transport Strategy 2056* – *State Infrastructure Strategy 2018 – 2038 Building the Momentum* – *Sydney's Cycling Future 2013* – *Sydney's Walking Future 2013* – *Sydney's Bus Future 2013*	*Section 5: Statutory and strategic planning context* *Section 6: Environmental assessment* *Appendix G* *Appendix I* *Appendix P*

Item/ Description		Document Reference
–	*Crime Preventation through Environmental Design (CPTED) Principles*	
–	*Better Placed: An integrated design policy for the built environment of New South Wales* (Government Architect NSW (GANSW), 2017)	
–	*Healthy Urban Development Checklist* (NSW Health, 2009)	
–	*Draft Greener Places Policy*	
–	*North District Plan*	
–	*Mosman Business Centres Development Control Plan 2012* (as it relates to the Mosman Junction business centre)	
–	*Mosman Open Space and Infrastructure Development Control Plan 2012*	
–	*Mosman Local Strategic Planning Statement, March 2020*	
3.	**Operation**	
–	Provide details of the existing and proposed school operations, including staff and student numbers, school hours of operation, and operational details of any proposed before/after school care services and/or community use of school facilities	*Section 3: Proposed Development* *Section 6: Environmental Assessment* *Section 8: Recommendations and Mitigation Measures* *Appendix AH*
–	Provide a detailed justification of suitability of the site to accommodate the proposal	
–	Provide details of how the school will continue to operate during construction activities including proposed mitigation measures and temporary staff parking arrangements.	
4.	**Built Form and Urban Design**	
–	Address the height, density, bulk and scale, setbacks and interface of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces	*Section 2: Site analysis* *Section 3: Proposed development* *Section 4: Consultation* *Section 6: Environmental Assessment* *Appendix F – Appendix J*
–	Consider the impact on local character of the proposed buildings, given the site's location within the Military Road Heritage Conservation Area and proximity to the Mosman Junction Business Centre	
–	Address design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials and colours	
–	Incorporate Aboriginal culture and heritage in the design proposal in consultation with the local Aboriginal community and cultural groups	
–	Provide details of any digital signage boards, including size, location and finishes	
–	Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and the GANSW Design Guide for Schools.	
–	Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	
–	Provide detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development.	
–	Provide a detailed site-wide landscape strategy, including: o Consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation. o Details of the number of trees to be removed and the number of trees to be planted on the site.	
–	Provide a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items	
–	Address CPTED Principles.	
–	Demonstrate good environmental amenity including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility.	
5.	**Environmental Amenity**	

Item/ Description	Document Reference
– Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated. – Conduct a view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building and likely future development). – Include a lighting strategy and measures to reduce spill into the surrounding sensitive receivers. – Identify any proposed use of the school outside of school hours (including weekends) and assess any resultant amenity impacts on the immediate locality and proposed mitigation measures. – Detailed outline of the nature and extent of the intensification of use associated with the increased floor space, particularly in relation to the proposed increase in staff and student numbers.	*Section 3: Proposed development* *Section 6: Environmental Assessment* *Appendix F* *Appendix G* *Appendix AB*
6. Staging	
Provide details regarding the staging of the proposed development (If any) including how construction and operational activities would be managed	*Section 3: Proposed development* *Section 8: Recommendations and Mitigation Measures* *Appendix AF* *Appendix AG* *Appendix AH*
7. Transport and Accessibility	
– Include a transport and accessibility impact assessment, which details, but not limited to the following: o accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development o details of estimated total daily and peak hour trips generated by the existing development and the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area. o the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development. o measures to integrate the development with the existing/future public transport network. o the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (traffic modelling is to be undertaken using SIDRA network modelling for current and future years). o the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays o details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan) and the provision of facilities to increase the non-car mode share for travel to and from the site. o the proposed walking and cycling access arrangements and connections to public transport services. o the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport,	*Section 6: Environmental Assessment* *Section 8: Recommendations and Mitigation Measures* *Appendix P* *Appendix Q* *Appendix AG*

Item/ Description	Document Reference
pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones. o proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance o proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site. o an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development. o an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED. o emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times) – The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: o assessment of cumulative impacts associated with other construction activities (if any). o an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity. o details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process. o details of anticipated peak hour and daily construction vehicle movements to and from the site. o details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle. o details of temporary cycling and pedestrian access during construction. o details of temporary staff parking arrangements during construction. <u>Relevant Policies and Guidelines:</u> – *Guide to Traffic Generating Developments (Roads and Maritime Services, 2002)* – *EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996)* – *Cycling Aspects of Austroads Guides* – *NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004)* – *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development Standards Australia AS2890.3 (Bicycle Parking Facilities).*	
8. Ecologically Sustainable Development	
– Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development. – Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy. – Demonstrate how environmental design will be achieved in accordance with the GANSW Environmental Design in Schools Manual	*Section 6: Environmental Assessment* *Appendix AI*

Item/ Description	Document Reference
(https://www.governmentarchitect.nsw.gov.au/guidance/environmental-design-in-schools) – Include preliminary consideration of building performance and mitigation of climate change, including consideration of Green Star Performance. – Include an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level. – Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change, specifically: o hotter days and more frequent heatwave events o extended drought periods o more extreme rainfall events o gustier wind conditions o how these will inform landscape design, material selection and social equity aspects (respite/shelter areas). <u>Relevant Policies and Guidelines:</u> – *NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.*	
9. Heritage	
– A Statement of Heritage Impact (SOHI) prepared by a suitably qualified heritage consultant in accordance with the guidelines in the NSW Heritage Manual. The SOHI is to address the impacts of the proposal on the heritage significance of the site and adjacent areas and is to identify the following: o all heritage items (state and local) within the vicinity of the site including built heritage, landscapes and archaeology, detailed mapping of these items, and assessment of why the items and site(s) are of heritage significance o compliance with the relevant Conservation Management Plan o the impacts of the proposal on heritage item(s) including visual impacts, required BCA and DDA works, new fixtures, fittings and finishes, any modified services o the attempts to avoid and/or mitigate the impact on the heritage significance or cultural heritage values of the site and the surrounding heritage items and o justification for any changes to the heritage fabric or landscape elements including any options analysis. – If the SOHI identifies impact on potential historical archaeology, an historical archaeological assessment should be prepared by a suitably qualified archaeologist in accordance with the heritage guidelines 'Archaeological Assessment' 1996 and 'Assessing Significance for Historical Archaeological Sites and Relics' 2009. This assessment should identify what relics, if any, are likely to be present, assess their significance and consider the impacts from the proposal on this potential archaeological resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations or salvage programme.	*Appendix J* *Appendix M*
10. Social Impacts	
– Prepare a social impact assessment, which: o identifies and analyses the potential social impacts of the development, from the points of view of the affected community/ies and other relevant stakeholders, i.e. how they expect to experience the project o considers how potential environmental changes in the locality may 7 affect people's: way of life; community; access to and use of infrastructure, services, and facilities; culture; health and wellbeing; surroundings; personal and property rights; decision-making systems; and fears and aspirations, as relevant and considering how different groups may be disproportionately affected	*Section 6: Environmental Assessment* *Appendix O*

Item/ Description	Document Reference
○ assesses the significance of positive, negative, and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest ○ includes mitigation measures for likely negative social impacts, and any proposed enhancement measures ○ details how social impacts will be adaptively monitored and managed over time.	
11. Aboriginal Heritage	
– Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. – Identify and address the Aboriginal cultural heritage values in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage (OEH), 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010). – Undertake consultation with Aboriginal people and document in accordance with Aboriginal cultural heritage consultation requirements for proponents 2010 (Department of Environment, Climate Change and Water). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR. – Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR. – The EIS and the supporting ACHAR must demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to the Environment, Energy and Science Group of the Department of Planning, Industry and Environment.	*Section 4: Consultation* *Section 6: Environmental Assessment* *Section 8: Recommendations and Mitigation Measures* *Appendix K*
12. Noise and Vibration	
– Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land – Identify and assess operational noise, including consideration of any public-address system, school bell, mechanical services (e.g. air conditioning plant), use of any school hall for concerts etc. (both during and outside school hours) and any out of hours community use of school facilities, and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. <u>Relevant Policies and Guidelines:</u> – *NSW Noise Policy for Industry 2017 (NSW Environment Protection Authority* (EPA) – *Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009)* – *Assessing Vibration: A Technical Guideline 2006 (Department of Environment and Conservation, 2006)* – *Development Near Rail Corridors and Busy Roads - Interim Guideline (Department of Planning, 2008)*	*Section 6: Environmental Assessment* *Section 8: Recommendations and Mitigation Measures* *Appendix AD*
13. Contamination	
– Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55 – Undertake a hazardous materials survey of all existing structures and infrastructure subject to demolition or alterations. <u>Relevant Policies and Guidelines:</u> – *Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP, 1998)* – *Sampling Design Guidelines (EPA, 1995)*	*Section 5.4: Environmental Planning Instruments* *Section 6: Environmental Assessment* *Appendix S* *Appendix U* *Appendix V*

Item/ Description	Document Reference
– *Guidelines for Consultants Reporting on Contaminated Land (Contaminated land guidelines) (EPA, April 2020)* – *National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, as amended 2013)*	
14. Utilities	
– Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. – Assess the impacts of the proposal on existing utility infrastructure and service provider assets and describe how any potential impacts would be managed. – Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	*Appendix W* *Appendix X*
15. Contributions	
– Address the Mosman Contributions Plan 2018 and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	*Section 5: Statutory and strategic planning context*
16. Drainage	
– Detail measures to minimise operational water quality impacts on surface waters and groundwater – Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties.	*Section 6: Environmental assessment* *Appendix Z*
17. Flooding	
– Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (DIPNR, 2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation	*Section 2: Site analysis*
18. Biodiversity Assessment	
– Biodiversity impacts related to the proposed development are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the Biodiversity Conservation Act 2016 (s6.12), Biodiversity Conservation Regulation 2017 (s6.8) and Biodiversity Assessment Method. – The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the Biodiversity Assessment Method. – The BDAR must include details of the measures proposed to address the offset obligation as follows: o the total number and classes of biodiversity credits required to be retired for the development/project o the number and classes of like-for-like biodiversity credits proposed to be retired o the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules o any proposal to fund a biodiversity conservation action o any proposal to make a payment to the Biodiversity Conservation Fund. – If seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits. – The BDAR must be submitted with all spatial data associated with the survey and assessment as per the BAM. – The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity	*Section 6: Environmental assessment* *Appendix AK* *Appendix AL*

Item/ Description	Document Reference
Assessment Method Order 2017 under s6.10 of the Biodiversity Conservation Act 2016. – Where a Biodiversity Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal. *Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report unless otherwise specified under the Act.*	
19. Sediment, Erosion and Dust Controls	
– Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. <u>Relevant Policies and Guidelines:</u> – *Managing Urban Stormwater - Soils & Construction Volume 1 2004 (Landcom)* – *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)* – *Guidelines for development adjoining land managed by the Office of Environment and Heritage (OEH, 2013)*	*Appendix AH*
20. Waste	
– Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site. <u>Relevant Policies and Guidelines:</u> – *Waste Classification Guidelines (EPA, 2014)*	*Appendix AF*
21. Construction Hours	
Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	*Section 3: Proposed Development* *Appendix AH*
Plans and Documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following:	
– A section 10.7(2) and (5) Planning Certificates (previously Section 149(2) and (5) Planning Certificate)	*Appendix C*
– Architectural drawings showing key dimensions, RLs, scale bar and north point, including: o plans, sections and elevation of the proposal at no less than 1:200 o illustrated materials schedule including physical or digital samples board with correct proportional representation of materials, nominated colours and finishes o details of proposed signage, including size, location and finishes o detailed annotated wall sections at 1:20 scale that demonstrate typical cladding, window and floor details, including materials and general construction quality o site plans and operations statement demonstrating the after-hours and community use strategy	*Appendix F*
– Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries	*Appendix B*
– Site Analysis and Context Plans, including: o any future development and expansion zones o open space network o active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links	*Appendix F*

Item/ Description	Document Reference
– Sediment and Erosion Control Plan	*Appendix AH*
– Shadow Diagrams	*Appendix F*
– View analysis, photomontages and architectural renders, including from those from public vantage points	*Appendix F* *Appendix J*
– Landscape architectural drawings showing key dimensions, RLs, scale bar and north point, including: o integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed, including articulation of playground spaces o plan identifying significant trees, trees to be removed and trees to be retained or transplanted	*Appendix H*
– Design report to demonstrate how design quality will be achieved in accordance with the above Key Issues including:	
o architectural design statement	*Appendix G*
o diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal	*Appendix G*
o detailed site and context analysis	*Appendix G*
o analysis of options considered to justify the proposed site planning and design approach	*Appendix G*
o visual impact assessment identifying potential impacts on the surrounding built environment and adjoining heritage items	*Appendix G* *Appendix J*
o summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice	*Appendix N & Section 4: Consultation*
o summary report of consultation with the community and response to any feedback provided	*Appendix N & Section 4: Consultation*
– Geotechnical and Structural Report	*Appendix R & Appendix AE*
– Accessibility Report	*Appendix Y* *Appendix AC*
– Arboricultural Impact Assessment including detailed root and canopy impact analysis	*Appendix AJ*
– Salinity Investigation Report	*Appendix T*
– Schedule of materials and finishes	*Appendix G*
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners. In particular, you must consult with: – Mosman Council – Government Architect NSW (through the NSW SDRP process) – Transport for NSW	*Appendix N & Section 4: Consultation*
Consultation with GANSW and TfNSW should commence as soon as practicable to agree the scope of investigation.	*Appendix N & Section 4: Consultation*
The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	*Appendix N & Section 4: Consultation*

1. Introduction

1.1 Project Overview

This EIS has been prepared by Architectus Australia Pty Ltd on behalf of Department of Education NSW in support of SSD Application (SSD-10465) for the upgrade of Mosman High School ('Mosman High School').

The site

The site is located at 745 Military Road, Mosman. It is bound by Military Road to the east, Belmont Road to the north, Gladstone Avenue to the west and Avenue Road to the south. The site has a total site area of 1.45 hectares and comprises one lot known as Lot 1 DP 1268793.

The site currently contains five (5) permanent buildings, two (2) single storey demountables and an at grade car park, located at the corner of Gladstone Avenue and Belmont Road. There is one pedestrian access point to the school from each street frontage, providing a total of four (4) pedestrian access points. A bus zone and drop off / pick up zone is located at Gladstone Avenue. Vehicular access into the site is provided from Gladstone Avenue.

Figure 1 Site Context
The site is outlined in red
Source: Near Maps, September 2020 with Architectus edits

Proposed development

Department of Education NSW propose to undertake an upgrade of the existing Mosman High School in order to achieve capacity of 1,200 students to meet growth demands by 2031. This objective requires new teaching spaces, and a new multipurpose hall and core facilities.

This EIS seeks development consent for the following works:

- Demolition works, including demolition of:
  - existing Building B;
  - existing Building C; and
  - part of existing Building E.
- Removal of trees;
- Construction of new Building G including rooftop play area;
- Landscaping works.

A detailed description of the proposed development is provided at **Section 3.1** of this EIS. Refer also to the architectural plans and landscape plans prepared by Woods Bagot Architects and Black Beetle Landscape Architects at **Appendix F and Appendix G** respectively.

Reason for the proposal

Mosman High School presents the following key shortfalls:

- Site size and location of buildings: The total site area is only 14,300m^2 and is one of the smallest high schools in the region. Existing buildings are located in close proximity to each other, limiting opportunities for expansion and redevelopment.
- Building functionality: Existing facilities are undersized and are in poor condition. The current number of teaching spaces will not sustain future enrolment growth and limited teaching spaces at the school inhibits opportunities for student learning.
- Lack of outdoor space: Mosman High School is severely restricted in student outdoor space. The current average of outdoor play space per student is 6.4m^2, which is below requirements of 10m^2 per student. This also prevents the installation of additional demountables on site to alleviate the pressures.

1.2 Project Objectives

The objective of the proposal is to undertake necessary upgrades to Mosman High School to achieve a capacity of 1,200 students to meet growth demands by 2031.

The core planning principles for the project are to:

- upgrade Mosman High School to provide for a high-quality built environment and improved educational outcomes for students and teachers;
- increase student capacity from 1,116 students to 1,200 high school students;
- increase the number of teaching spaces from 46 learning spaces to 64 teaching spaces; and
- upgrade core facilities.

1.3 Primary Drivers of Service Need

Population: Population driven demand – Projected live-in catchment demand

Current enrolments at Mosman High SchoolHigh School are already higher than the school's capacity. Failing to address growth in the numbers of students at Mosman High SchoolHigh School will lead to further overcrowding in classrooms. This impacts the learning outcomes and poses risks to the health and safety of students and staff. Ultimately, this can negatively affect student lifetime earning potential, and lead to a loss of confidence in the public education system.

If no intervention is provided, the shortfall in capacity will reach 194 students at Mosman High School High School by 2036.

Population: Population driven demand – Spatial alignment

Analysis of spatial alignment between the demand and capacity across the Chatswood School Community Group (SCG) indicates that all schools within the SCG are anticipated to be over capacity from 2021, excluding Cammeraygal High School and Willoughby Girls High School. By 2036, it is projected that there will be 194 more students than there are school places at Mosman High School. From 2021 through to 2036, the total existing SCG demand will exceed the total existing SCG supply. As a result, there are significant interventions which will be required across the SCG, apart from Mosman High School, to address demand.

Additionally, given that Mosman High School is landlocked within the southern border of the SCG, accessibility to the school from the northern end of the SCG is not feasible. Boundary changes are also impractical given the close proximity of its one border, which bounds Cammeraygal High School, would result in students living in site of Cammeraygal High School being required to travel to Mosman High School via the severely congested Military Road.

Population: Population driven demand – Appropriate core facilities

Analysis of Mosman High School showed a number of the required Educational Facilities Standards and Guidelines (EFSG) infrastructure was insufficient to cater to the school population, and the addition of these components will be necessary to bring the school to compliance with EFSG standards.

Currently insufficient spaces from the EFSG requirements include a senior learning unit, general learning spaces, learning spaces for science and general learning spaces for technology, as well as others.

Further to its inadequate existing core facilities, Mosman High School is severely constrained, affecting the delivery of best-practice pedagogies and inhibiting provision of FFP learning spaces.

Population: Population driven demand – Future proofing

Currently, the split of Government to non-Government students in the Mosman High School LIC has been identified by Eagle Eye to be 71% non-Government schools (2,516 in 2036) to 29% to Government schools (1,027 in 2036).

If this split changes, for example due to an economic downturn such as currently being realised with Covid-19, a larger student demand will be required to be accommodated than shown by Eagle Eye's current demand data, due to Department of Education's legislative requirement to allow students access to their local Government school.

Asset suitability: FFP learning – Best practice pedagogy

Learning spaces that are fit for purpose (FFP) incorporate the use of technology and provide flexibility in design to allow for the delivery of modern pedagogies. Modern pedagogies are focused on creating learning environments that students may encounter in the workforce, where there is an enhanced focus on self-direction, self-reflection, evaluation and collaboration.

Temporary Learning Spaces (TLS)

The available evidence suggests that demountable classrooms do not 'provide optimum learning conditions' and can negatively impact student learning outcomes. This suggests that temporary learning spaces cannot be categorised as fit for purpose learning spaces and do not allow for the delivery of future focused pedagogies. Mosman High School currently has two demountables on site.

Permanent Learning Spaces (PLS)

The degree in which a PLS is considered FFP is based on a broad range of factors, which all have the common objective in assessing whether a space can deliver required education outcomes.

For Mosman High School, the EFSG gap analysis undertaken, as well as assessments from DJRD Architects (DJRD) provided assessment of the FFP compliance of spaces within the school. Large number of buildings at Mosman High School are not supportive

of FFP learning and inhibit the delivery of best practice pedagogies. This can somewhat be attributed to the severely constrained size of the site, reducing available space. The addition of new learning spaces at the school will address the educational disadvantage experienced by students, and will increase equitable access to education for students living within the LIC.

Asset suitability: FFP learning – Sufficient play space

Having adequate play space and open space at school, is beneficial to the students, environment, and local community. Recognising the importance of play space, the School Assets Strategic Plan (SASP) outlines that no less than 10 m^2 of usable onsite play space should be maintained at each school.

Mosman High School is placed on a site that is severely limited in size and open space. The average play space available at Mosman High School is approximately 5m^2 per student, compared with the much higher SCG average of just over 17m^2 per student. Due to the space restrictions faced by Mosman High School, they make best use of surrounding facilities for special programs and sporting events which require open space that is unavailable on the school grounds. A key focus throughout the options development process has been increasing open space per student and maximising the benefits of the available space.

Asset suitability: Asset condition – Core infrastructure condition

Core infrastructure assets of schools that are in poor condition can impact school operations and pose considerable health and safety risks to students and staff.

In addition to the functionality assessment, DJRD Architects undertook an asset condition assessment to reflect the most up-to-date assessment of the condition of the school. The results are that all of the buildings at Mosman High School are rated an average of 'poor' or 'fair' condition. This assessment is based on m2 compliance and general condition.

The project scoping document for Mosman High School also indicated that the condition of learning spaces and core facilities, as well as size constraints, are the key motivators driving the need for upgrades at the school.

Due to the condition of existing assets, it is required that additional new, FFP learning spaces be provided. These new learning spaces will enable delivery of best practice pedagogies and improve student outcomes.

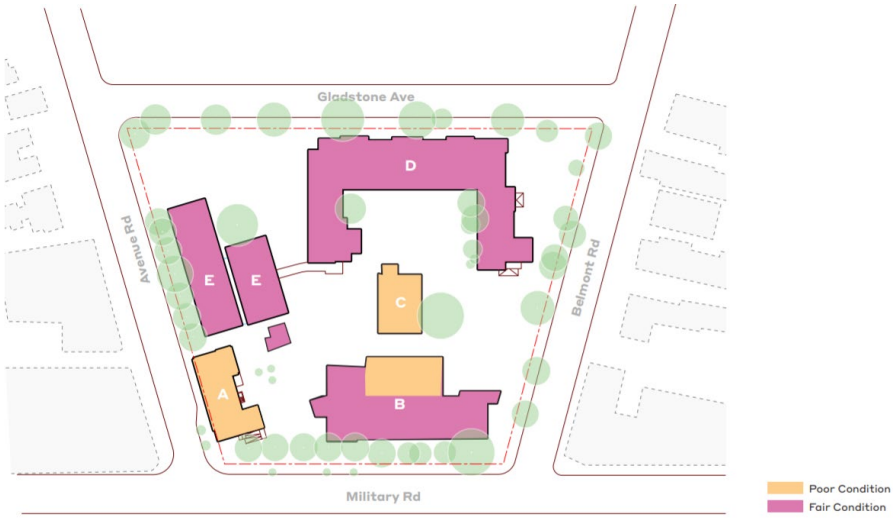


Figure 2 Building Condition
Source: Mosman High School Design Statement, Woods Bagot Architects

1.4 Report Structure

This EIS is structured as follows:

- Section 1: an overview of the site, proposed development, project objectives and project team;

- Section 2: a detailed description of the site and surrounding context, and summary of site constraints;
- Section 3: a detailed description of the proposed development;
- Section 4: a description of the consultation undertaken for the project, including the consultation process, issues raised and how the design of the development has responded to these issues;
- Section 5: an assessment of the proposed development against relevant strategic and statutory planning controls;
- Section 6: an assessment of key issues and impacts generated by the proposed development;
- Section 7: risk assessment;
- Section 8: recommended mitigation measures; and
- Section 9: conclusion.

This EIS should be read in conjunction with the SEARs attached at **Appendix A,** and the supporting technical documents provided at **Appendix E – Appendix AK.**

1.5 Project Team

The project team is set out in **Table 2** below.

Table 2 Project team

Discipline	Consultant
Applicant	Department of Education NSW Schools Infrastructure NSW
Quantity Surveyor	Turner & Townsend
Surveyor	LTS Lockley
Architect	Woods Bagot
Landscape Architect	Black Beetle
Urban Planner	Architectus Australia Pty Ltd
Heritage Consultant	Purcell
Aboriginal Cultural Heritage Consultant	Austral Archaeology
Traffic Consultant	PTC Consultants
Contamination Consultant	Coffey
Geotechnical Engineer	Coffey
Arboricultural Consultant	Birds Tree Consultancy
Social Impact Consultant	RPS Group
Civil Engineer	JHA Services
Ecological Consultant	EMF Griffiths
Accessibility Consultant	McKenzie Group Consulting
BCA Consultant	McKenzie Group Consulting
Structural Engineer	Taylor Thomson Whitting
Acoustic Consultant	JHA Services
Fire Engineer	Stantec
Waste Management Consultant	Ricardo Energy Environment and Planning Pty Ltd
Construction Management Consultant	Multiplex
Consultation Consultant	School Infrastructure Internal Communications Team
Lighting Consultant	JHA Services

1.6 Estimated Capital Investment Value (CIV)

The estimated Capital Investment Value (CIV) for the proposed development exceeds $20 million. A CIV Estimate has been prepared by Turner & Townsend, and is included under separate cover**.**

2. Site Analysis

2.1 Site Context

Mosman High School is located at 745 Military Road, Mosman. The site is located approximately 4 kilometres east of North Sydney CBD and 8 kilometres north of the Sydney CBD. The surrounding areas include Balmoral, Spit Junction, Clifton Gardens, Cremorne and Neutral Bay.

Mosman High School is located within the Mosman Local Government Area (LGA) and forms part of the Mosman Junction local business centre – one of the lower North Shore's local centres - and includes a range of local shops and services. Mosman High School is part of a well-established residential neighbourhood, surrounded by residential development to the north, south and west.

Refer to the site context plan at Figure 1 above, and the local context plan at Figure 3 below.

Figure 3 Aerial View of Mosman local context
Site outlined in red
Source: NearMaps, image dated 28 February 2020

Figure 4 Existing Site Plan
Source: Woods Bagot Architects

Surrounding built form and land use

The built form and land use character surrounding the site can be categorised by four distinct areas:

- Military Road to the east: low scale (predominantly 1-2 storey) fine grain development including shop top housing, characterised by a vibrant retail shopping strip along Military Road (part of the Military Road Conservation Area);
- Belmond Road to the north: predominantly 3-storey residential flat buildings and small-scale businesses including a Westpac bank on the corner of Belmond Road and Military Road, a bowling club and a public school further beyond;
- Gladstone Avenue to the west: low scale, 1-2 storey dwelling houses; and
- Avenue Road to the south: 2-storey shopfronts and 3-storey residential flat buildings with 1-2 storey dwelling houses further beyond.

The surrounding area is well serviced by various bus routes, with bus stops directly in front of the school on Military Road and additional bus stops on Avenue Road. There is a dedicated school bus stop and entry point provided at Gladstone Avenue. There are no train stations within proximity of the site, however there are available bus services that provide connections to Wynyard, North Sydney, Milsons Point and Chatswood train stations.

Mosman High School is located within close proximity to a number of other educational establishments, including Mosman Public School, Mosman Preparatory School and Queenwood School for Girls (Junior Campus).

Legal Description

The site comprises one lot known as Lot 1 DP 1268793.

Note the site previously comprised 14 allotments and these were recently amalgamated into a single lot. This changed the site address to 745 Military Road Mosman.

Ownership

The Mosman High School site is owned in its entirety by NSW Department of Education.

Section 10.7(2)&(5) Planning Certificate

The Section 10.7(2)&(5) Planning Certificate issued for Lot 1 DP 1268793 on the site (Certificate No. 30237) at **Appendix C,** dated 15 March 2021, identifies that the lot is:

- Zoned SP2 – Infrastructure under the Mosman LEP 2012.
- Does comprise an item of environmental heritage.
- Is within the Military Road Heritage Conservation Area under the MLEP 2012.
- Not proclaimed to be in a mine subsidence district.
- Not affected by a road widening or road realignment.
- Not affected by a policy that restricts development of land due to the likelihood of landslip, bushfire, tidal inundation, subsidence or any other risk.
- Does not comprises critical habitat.
- Not affected by any acquisition of land provision.
- Not subject to foreshore building line.
- Not affected by a Scenic Protection Area.
- Not subject to any bio-banking agreement under Part 5 of the Biodiversity Conservation Act 2016.
- Not bushfire prone.
- Not affected by any property vegetation plan.
- Development on the land is not subject to flood related development controls.
- Not significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

2.2 Existing Development

Mosman High School is a co-educational high school and currently accommodates the following buildings and facilities:

- Four (4) main buildings ranging from 2-3 storeys, including two buildings to the east of the site, one building to the north and south and one building in the middle of the site;
- Two demountable buildings;
- Several significant trees that have large structural roots;
- A Covered Outside Learning Area (COLA) and tennis court;
- Staff parking area with 33 car parking spaces; and
- Covered walkways, ramps and grassed areas cover the site.

Photographs of the site are shown at **Figure 5** to **Figure 11.**

Figure 5 Military Road
View along Military Road to the south west including a pedestrian access point to Mosman High School

Figure 6 Military Road
View along Military Road to the south including a bus stop located on Military Road
Source: GoogleMaps

Source: GoogleMaps

Figure 7 Belmont Road
View along Belmont Road to the south west including a pedestrian access point to Mosman High School
Source: GoogleMaps

Figure 8 Gladstone Avenue
View along Gladstone Avenue to the south west
Source: GoogleMaps

Figure 9 Mosman High School Building A
Source: Purcell (2021)

Figure 10 Mosman High School Building D Northern Elevation
Source: Purcell (2021)

Figure 11 Mosman High School Building D
Central exposed roof trusses on the first floor. Now a staff room, this was originally the space between the girls and boys assembly halls.
Source: Purcell (2019)

2.3 Existing facility and Community Use

The school specializes in drama, music and the visual arts.

The existing school is used for various after-hours events. The Social Impact Assessment (refer **Appendix O**) provides that current out of school hours activities include:

- P&C association meetings hosted at the school library above the administration office;
- Mosman Orchestra currently use Mosman High School as a practice space, an arrangement that is likely to be maintained post-occupation of the new facilities.
- Parent and community meetings.
- Drama soirees.
- School concerts.

- Elections (polling station).
- Use by the Northern Beaches Community College for educational classes (such as languages and IT).

2.4 Site Constraints

Mosman High School presents the following key site constraints:

- Site size and location of buildings: The total site area is only 14,300m^2 and is one of the smallest high schools in the region. Existing buildings are located in close proximity to each other, limiting opportunities for expansion and redevelopment.
- Heritage: Mosman High School is listed as a local heritage item (item no. I161) under Mosman Local Environmental Plan 2012 (Mosman LEP 2012), with two buildings on site of heritage significance. The Military Road frontage of the site falls within a heritage conservation area under the Mosman LEP 2012 (Conservation Area C7).
- Building functionality: Existing facilities are undersized and are in poor condition. The current number of teaching spaces will not sustain future enrolment growth and limited teaching spaces at the school inhibits opportunities for student learning.
- Lack of outdoor space: Mosman High School is severely restricted in student outdoor space. The current average of outdoor play space per student is 5.5m^2, which is below requirements of 10m^2 per student. This also prevents the installation of additional demountables on site to alleviate the pressures.
- Significant trees: Mosman High School is lined with mature trees along Avenue Road, Military Road and Belmont Road. There are also several trees located within the site.

2.5 Heritage

The site is listed as a local heritage item under Schedule 5 'Environmental Heritage' of the Mosman LEP 2012, namely *Mosman High School, group of 2 buildings* (item No. I161). The heritage listing specifically applies to Building A and Building D.

Buildings A and D are also included on the Department of Education's Section 170 Heritage Register.

Part of the site along the Military Road frontage forms part of the C7 Military heritage conservation area. The conservation area is of local significance. Buildings A and B are located within the conservation area. The Military Road Conservation Area is typically characterised by two storey fine grain buildings with some three storey elements/incursions. The C7 Military Road Heritage Conservation Area – Statement of Significance includes the following references, "scale is pleasantly moderate" and "'village' atmosphere".

Close to the site is the Keston Avenue Heritage Conservation Area (C4) and Shadforth Street Heritage Conservation Area (C10), both listed under the Mosman LEP 2012 and of local significance. A number of individual heritage items of local significance are located immediately opposite the subject site, on Military Road, Avenue Road, Belmont Road and Gladstone Avenue.

Figure 12 Mosman LEP Heritage map extract
The subject site is outlined in yellow.
Source Mosman LEP 2012, 5350_COM_HER_002_010_20171111

Figure 13 Heritage mapping The whole site is mapped as a local heritage item, however only Building D and Building A are heritage listed buildings.
Source: DJRD Architects Mosman Concept Design Report

2.6 Topography

The site is located near the top of the western slope of a local ridge traversing from the north to the south. Military Road, which forms the eastern boundary of the site, follows the top of this ridge.

The grade across the site gently slopes from east to west at approximately 3% gradient and to the north at approximately 1% gradient. The typical elevations across the site range from approximately 74m AHD to 79 m AHD. Refer to Survey Plan at **Appendix B**.

2.7 Vegetation

The Mosman High School campus is largely developed, with the site covered by permanent buildings, demountable buildings, walkways and structures such as the Covered Outdoor Learning Area (COLA). However, the site also includes a number of established trees, especially within the site's landscaped setbacks along street frontages. The trees are mature individual species and the site is not identified as containing any ecologically endangered communities based on NSW Environment, Energy and Science Group's 'Sydney Metro Vegetation Mapping'.

Refer to the Arboricultural Impact Assessment prepared by Birds Tree Consultancy, dated 30 March 2021 at **Appendix AJ**. The report provides an assessment of existing trees on the site.

Figure 14 Typical vegetation within Mosman High School
Source: NGH Consulting, June 2020

2.8 Flooding

The Section 10.7(2)&(5) Planning Certificate issued for Lot 1 DP 1268793 (Certificate No. 30237) at **Appendix C,** dated 15 March 2021, identifies that the lot is not subject to flood development controls. Therefore, the proposal does not need to include design solutions to mitigate flood risk.

2.9 Bushfire

The subject site is not identified as bushfire prone land.

2.10 Services

The site is connected to all necessary services including water, gas, electricity, communications and sewage.

2.11 Access and Car Parking

Mosman High School has frontage to Military Road, a Regionally classified road between Spit Road and the Taronga Zoo Wharf, but transitions into a State Road at the intersection of Military Road with Spit Road. There is no vehicular access to the school from Military Road.

Vehicular access to the site is provided from Gladstone Avenue. The current onsite carpark accommodates 33 vehicles, which provides for 47% of staff parking with the remaining staff using parking in offsite locations, such as on-street parking. There are segments of unrestricted on-street parking along the northern side of Gladstone Avenue and the portion of Belmont Road adjacent to Mosman Public School.

There is a pedestrian access point to the school from each street frontage, providing a total of four pedestrian access points. The main pedestrian entry is from Military Road.

2.12 Public Transport

Bus

The site is most easily accessible via bus, with services operating along Military Road, providing connectivity to the Sydney CBD and the northern beaches. The closest public bus stop is located immediately adjacent to the school on Military Road.

A bus zone accommodating school bus services is provided on the eastern side of Gladstone Avenue.

Ferry

It is noted that ferry services operate in the locality with the nearest ferry wharf being Mosman Bay Wharf. The wharf is located approximately 1.6km walking distance from the site.

Taxi

A Taxi Zone is located on the southern side of Belmont Road.

2.13 Active Transport

Walking

There is a reasonable high level of pedestrian amenity within the vicinity of Mosman High School with raised pedestrian crossings located adjacent to the intersections of Military Road / Avenue Road and Belmont Road / Gladstone Avenue. Signalised pedestrian crossings are also provided at the intersection of Military Road / Belmont Road, which facilitate pedestrian movement across Military Road.

Cycling

On-road cycle routes are provided to the site which extend across the Mosman LGA, providing connections to Spit Junction, Clifton Gardens, Balmoral and Georges Heights.

3. Proposed Development

3.1 Project Description

The proposed upgrade to Mosman High School will include new building works, including a new building on the corner of Military and Belmont Roads with capacity for up to 1,200 students, associated core infrastructure, new outdoor play areas including roof top play space and associated landscaping works.

This application seeks approval for the following development:

- Demolition of Building B, Building C and part Building E;
- Removal of existing sports court and surrounding retaining walls and nominated trees;
- Construction of a new part 3/ part 4 storey building plus lift overrun and net enclosure to rooftop multi-court (Building G) on the corner of Military Road and Belmont Road providing:
    - administration and staff facilities;
    - multipurpose gym/hall;
    - library;
    - canteen facilities;
    - general and senior learning units;
    - science learning unit;
    - health / PE and performing arts unit; and
    - learning and admin support unit.
- Associated landscaping works including new outdoor play areas, a rooftop play space and rooftop multi-purpose court; and
- Relocation of the main pedestrian entrance from Military Road to Belmont Road.

Refer to the Proposed Site Plan in **Figure 4** and photomontages of the proposed development at **Figure 16** to **20**.

Figure 15 Proposed Site Plan
Source: Mosman High School Design Statement, Woods Bagot Architects

Figure 16 Render – Corner of Military Road and Belmont Road
Source: Mosman High School Design Statement, Woods Bagot Architects

Figure 17 Render – rear view
Source: Mosman High School Design Statement, Woods Bagot Architects

Figure 18 Render– Arts Plaza
Source: Mosman High School Design Statement, Woods Bagot Architects

Figure 19 Entry View (Belmont Road)
Source: Mosman High School Design Statement, Woods Bagot Architects

Figure 20 Façade Detail
Source: Mosman High School Design Statement, Woods Bagot Architects

3.2 Design Principles

The Architectural Design Statement at **Appendix G**, prepared by Woods Bagot Architects identifies the following design principles have informed the design:

- ***Mosman*** *– the building needs to fit within the fabric of Mosman while still creating an identify and as the "new face" of Mosman.*
- ***Open and Closed*** *– due to the fact both Military Road and Belmont Road are busy noisy streets, the idea of a protective crust was an important theme for the design.*
- ***Performance*** *– the architecture in the courtyards become performance spaces everywhere. Performance in the stairs, the exposed balconies, the reveal of the lecture/performance theatre and the breakout of the hall to the external façade with big folding vertical doors.*
- ***Layers*** *– layers are revealed in the brickwork and materiality as we move around the building, revealing what is happening inside the specific spaces with materiality*.

3.3 Numerical Overview

The key numerical information for the proposed development is set out in **Table 3** below.

Table 3 Numerical overview

Component	Existing	Proposal

Site area	1.45 hectares	1.45 hectares
Gross floor area (GFA)	7,800 m^2	11,889m^2
Maximum building height	15.96m (Building A)	Building G has a height of approximately 15.86 metres to the top of Level 4 (RL 93860). The top of the rooftop play fencing is approximately 24.26 metres (RL 102260).
Car parking	33 spaces in staff carpark	No change
Proposed outdoor play area	7,055m^2 (6.4m^2 per student – based on 1,116 students)	8,688m^2 (7.24m^2 per student – based on 1,200 students)
Trees	76 trees	88 trees (remove 20 trees; plant 34 trees)
Tree canopy cover	21.2%	24.6%
Staff	85	91 (+6)
Students	1,116	1,200 students (+84)
Jobs - construction	-	70 jobs

3.4 Construction Staging

The project will be constructed in one stage. The indicative construction timeframe is 15 months for SSD works. Early works approved under a separate planning pathway will precede this over a 5 month timeframe, totalling 20 months.

3.5 Demolition

The following demolition works are proposed:

- demolition of Building B, Building C, part of E including a two-storey roof overhang and separated amenities block, and the existing elevated walkway linking Buildings B and C to D; and
- removal of the tennis court and surrounding landscape elements.

None of the buildings proposed for demolition are listed as heritage items.

Buildings A and D will be retained as part of the school redevelopment due to their heritage value and significance to the site.

Refer to the Demolition Plan prepared by Woods Bagot Architects at **Figure 21**.

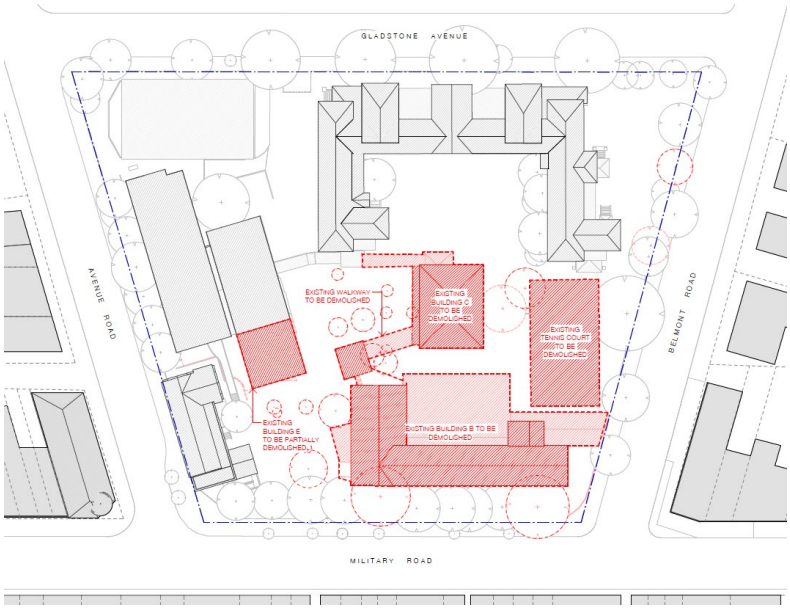


Figure 21 Proposed Demolition
Source: Woods Bagot Architects

3.6 New Building G

Following demolition of Building B, a new building (Building G) is proposed to be constructed at the corner of Military Road and Belmont Road.

Building G is a part three (3) / part four (4) storey building plus lift overrun and rooftop multi-court enclosure.

Building G accommodates expansion in the following learning units:

- A new Gymnasium with Stage
- A new Canteen
- A new Admin unit
- A new Lecture Theatre
- New amenities
- 2 Performing Arts/Fitness Workshops
- 4 Performing Arts/Fitness GLSs
- 4 Science General Learning Spaces
- 9 Senior GLSs and associated informal spaces
- 2 GLSs
- New staff rooms
- A new Library
- A new rooftop Games court

Refer to the elevations of Building G prepared by Woods Bagot Architects at **Figure 22** and **Figure 23**.

Figure 22 Proposed Eastern Elevation (Military Road)
Source: Woods Bagot Architects

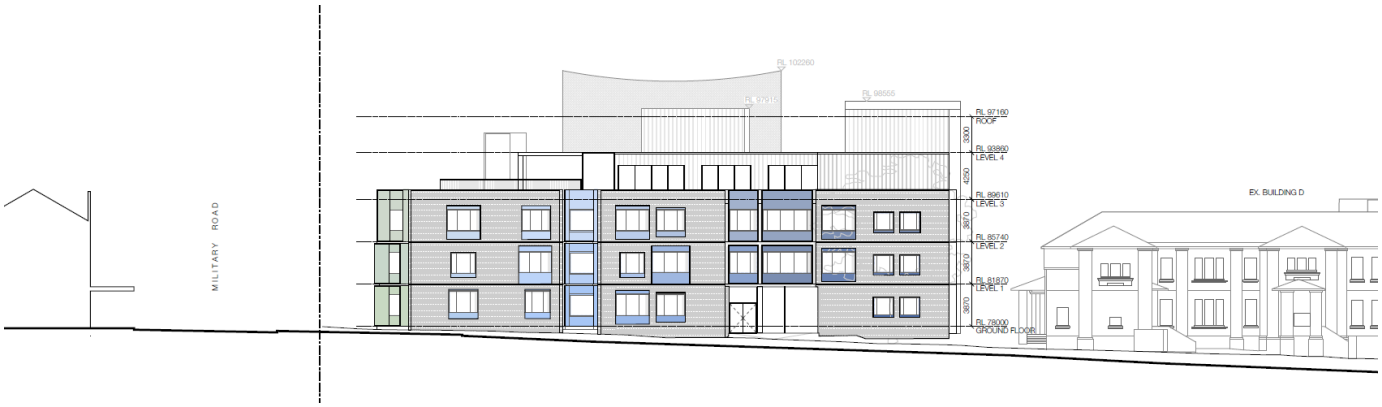
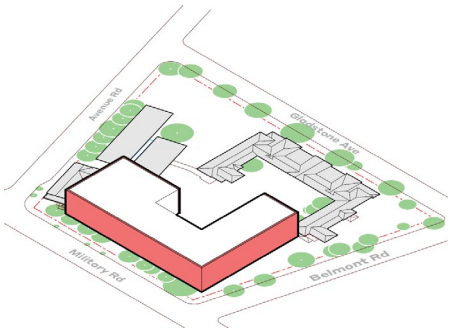
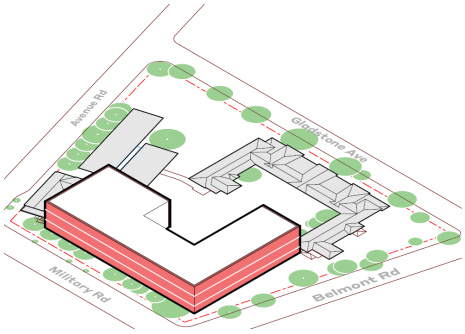


Figure 23 Northern Elevation (Belmont Road)
Source: Woods Bagot Architects

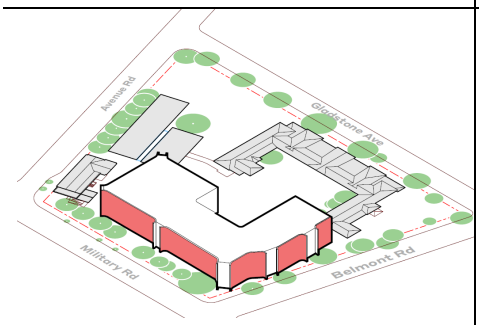
3.7 Built Form



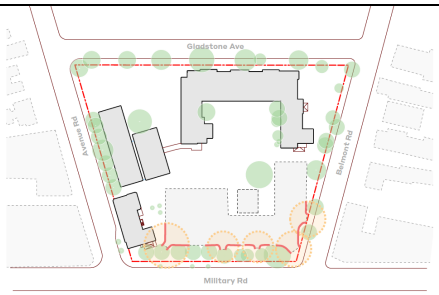
Brick crust concept



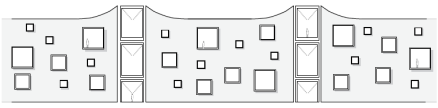
Street rhythm



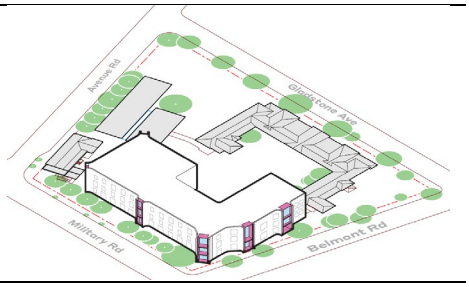
Corner – Peel Open



Learning on display

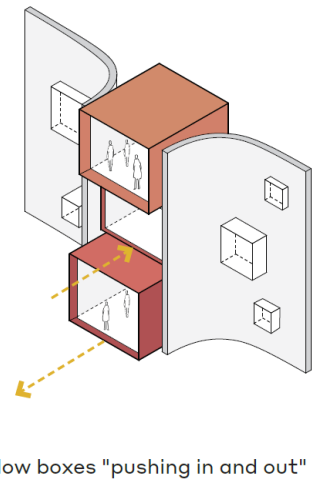


Façade windows



Framing Key Views

Occupiable Window Space



Occupiable Window Space

Figure 24 Proposed Built Form
Source: Mosman High School Design Statement, Woods Bagot Architects

3.8 Key features of scheme

Relocation of main pedestrian entry

The main pedestrian entry has been relocated to Belmont Road.

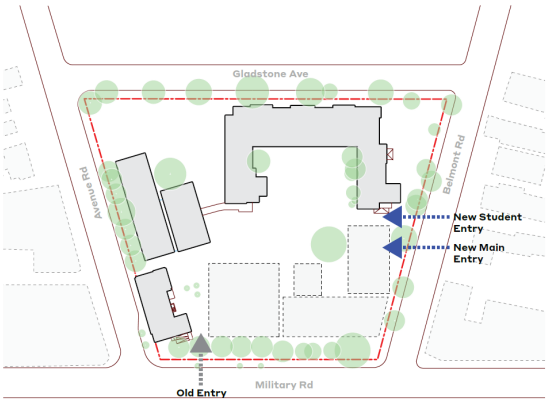


Figure 25 Relocation of Entry
Source: Mosman High School Design Statement, Woods Bagot Architects

Arts courtyard

After-hours access to the school for events can occur via the arts courtyard. This enables the area to be secured off from the rest of the school.

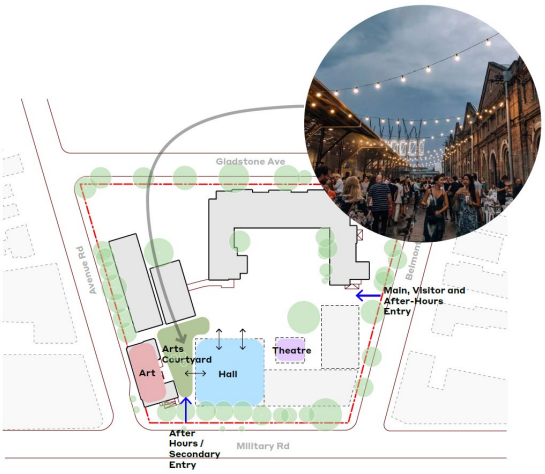


Figure 26 Arts Courtyard
Source: Mosman High School Design Statement, Woods Bagot Architects

Internal courtyard

A larger and contiguous courtyard has been created with the demolition of Building C, enabling greater flexibility of use.

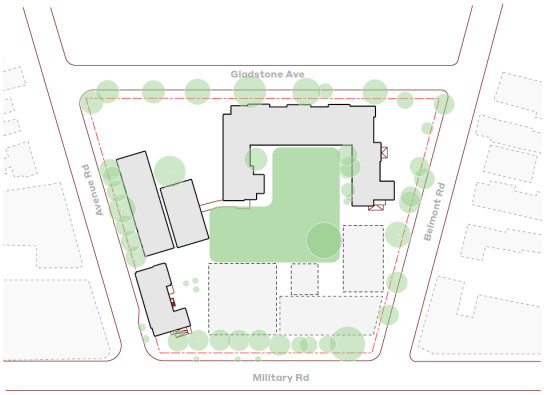


Figure 27 Play Area Courtyard
Source: Mosman High School Design Statement, Woods Bagot Architects

3.9 Building Height

No maximum building height applies to the site under Mosman LEP 2012.

The proposed Building G reads as a part 3/part 4 storey building plus lift overrun and multi-court enclosure to both Belmont Road and Military Road, with the fourth storey mostly recessed back from view.

The effective proposed building height is part 4 / part 5 storey building as the fifth storey is for lift overrun (maximum RL 9855), plus the height of the rooftop playcourt enclosure which represents the maximum proposed building height (RL 102260 / approximately 24.26 metres above existing ground level).

The proposed height strategy for the site has been established by the height of the parapet of the adjacent heritage Building A on site, which has a maximum height of RL89.92m. The proposed street frontage height for Building G is RL90.51m.

The rooftop playcourt enclosure is a tensioned net overhead with minimum 1.8m balustrade to perimeter of playcourt. When viewed from street level it presents as largely transparent or as a “haze” as it is a black permeable material with transparent balustrade to perimeter.

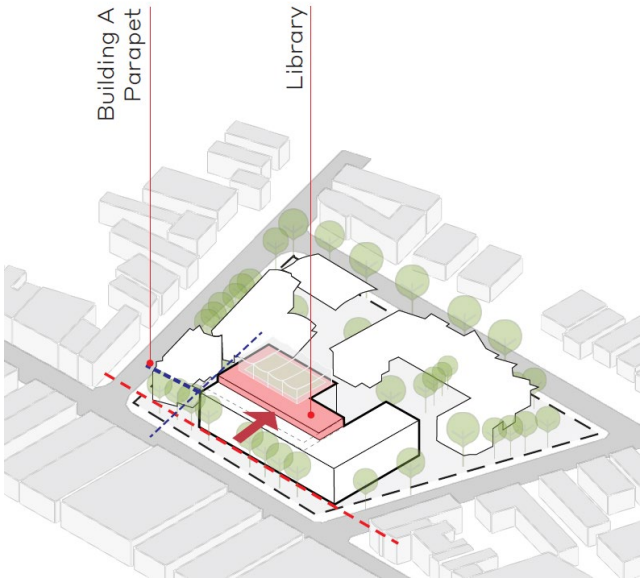


Figure 28 Site Strategies – Alignment
Source: Mosman High School Design Statement, Woods Bagot Architects

Refer to section plans prepared by Woods Bagot Architects at **Appendix F** and **Figure 29** which demonstrate the relationship of the proposed development with the existing height of Building A.

3 SECTION C

Figure 29 Building G Section Plan
Source: Woods Bagot Architects

3.10 Building Setbacks

Building setbacks have been established by the existing heritage listed buildings, known as Buildings A and D, which are proposed to be retained.

The new Building G is proposed to be setback from the Military Road frontage to align with Building A (7.791m). The typical proposed setback of proposed Building G at ground level to Military Road is 9.7m while the minimum distance is 6.85m.

As Building G wraps around the corner of Military and Belmont Road, the setback is reduced to zero metres at one point on Belmont Road, in order to respond to the neighbouring shop frontages that are built to their boundaries. The nil setback further defines the proposed building, as a gateway site into Belmont Road, particularly as it changes from commercial to residential uses.

Furthermore, to maintain the appearance of a 3 storey building, the fourth storey has an upper level setback varying from 13.575m to 17.865m above Level 3 to Military Road.

3.11 External Materials and Finishes

The street facades are typified by a layered approach, proceeding from “textured and rough” brickwork at the base, with varying stratifications of brickwork upwards, to “smooth and even” metal cladding at the top. The facades are punctuated by windows that pop out from the façade in varying colours in a playful manner that reflect the colour palette of native flora and the historical Military Road streetscape.

The internal courtyard features as a potential theatrical space and therefore the internal facades facing this space are given emphasis by structural elements in vibrant colours to reflect its theatrical and artistic use and context.

Refer to Architectural Design Statement prepared by Woods Bagot Architects at **Appendix G** which includes details of the proposed materiality and facade treatments .

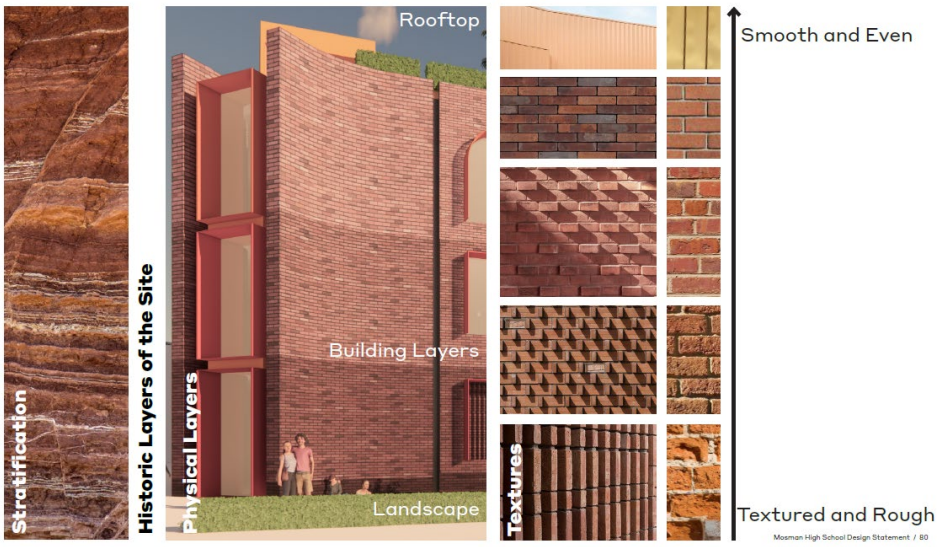


Figure 30 Materials and Finishes – Layers
Source: Mosman High School Design Statement, Woods Bagot Architects

3.12 Tree Removal, Tree Planting & Tree Canopy Coverage

A total of twenty- (20) trees are proposed to be removed to accommodate the proposed development (plus one tree (Tree 39) which will be removed under REF planning pathway)as identified in the Arboricultural Impact Assessment Report by Birds Tree Consultancy at **Appendix AJ**.

Table 4 below provides an overview of the existing trees that are proposed to be removed, retained and proposed additional.

Trees are proposed to increase on site as a result of the proposed development by 12 trees (from 76 to 88).

Table 4 Proposed tree removal, retention & additional trees
Source: Landscape Report, Black Beetle Landscape Architects

Tree Statistics	Numbers
Existing	76
Removed	20
Retained	56
Additional	34
Total trees	**88**

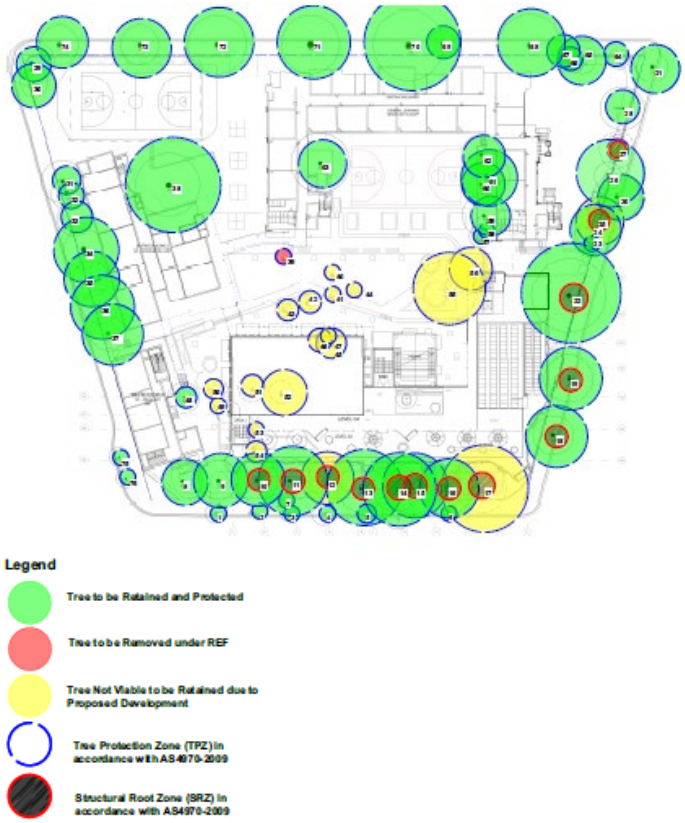


Figure 31 Tree Location Plan
Source: Arboricultural Impact Assessment , Birds Tree Consultancy

Total tree canopy coverage is set to increase on site as a result of the proposed development, from 21.2% to 24.6%.

Table 5 Tree canopy coverage
Note: Site area is 1,4481sqm
Source: Landscape Report, Black Beetle Landscape Architects

Tree Canopy cover	Area (sqm)	%
Existing	3,083	21.2%
Removed	730	5%
Proposed New	1,211	8.4%
Total	**3,564**	**24.6%**

Further discussion of tree removal and ecological impacts is provided at **Section 6**. Refer also to the Arboricultural Impact Assessment prepared by Birds Tree Consultancy at **Appendix AJ**.

3.13 Landscaping and Open Space

Black Beetle Landscape Architects have prepared Landscape Plans and a Landscape Design Report, at **Appendix H** and **Appendix I** respectively.

Vision

The vision is:

'To create an integrated immersive environment providing a variety of flexible spaces for learning and socialising'

Purpose of landscape design

The Landscape Design sets out to:

1. Provide a functional and stimulating environment that is responsive to the site and architecture of the school campus.
2. Maximise tree canopy across the site by maintaining existing trees where possible and introduction of additional canopy where practical and appropriate.
3. Select plant species that are suited to the various microclimatic conditions and desired requirements/characteristics of the site.
4. Develop and provide a functional and usable setting for the proposed school building.
5. Respond to the key objectives of the overall masterplan approach, reflecting the school grounds and local character while giving consideration to the existing and proposed facilities, needs of students and staff and visual aesthetic.
6. Optimise the education, social and wellbeing of all users.
7. Observe Crime Prevention Through Environmental Design (CPTED) Principles.

Landscape Components

The key landscape components include:

- Military Road Landscape;
- Arts Courtyard;
- Hall Forecourt;
- Central Lawn;
- Lower Terrace;
- Curtilage Works;
- Level 3 Library Terrace; and
- Level 4 Rooftop multi-court.

Figure 32 Design Rationale
Source: Landscape Design Report, Black Beetle Landscape Architects

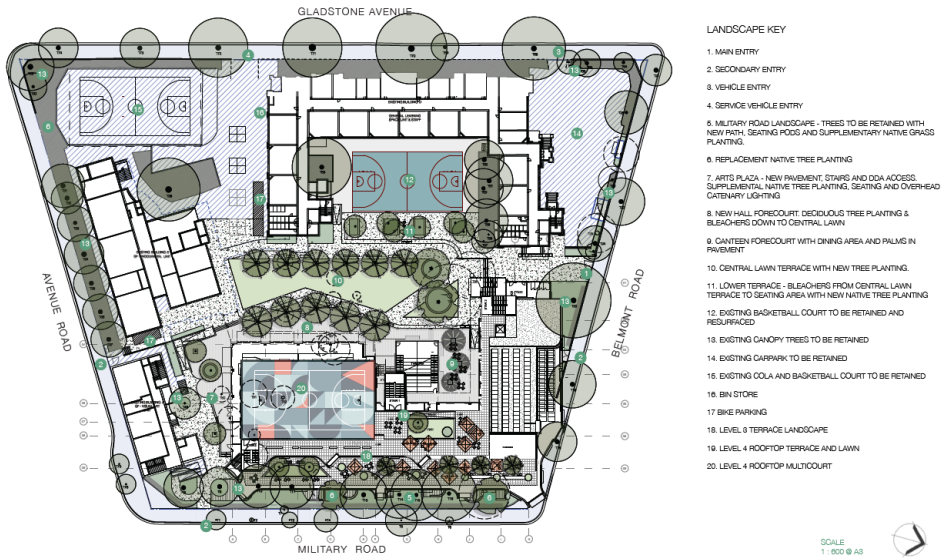


Figure 33 Landscape Masterplan
Source: Landscape Design Report, Black Beetle Landscape Architects

The landscape design for key areas of the site are detailed below.

Central Lawn

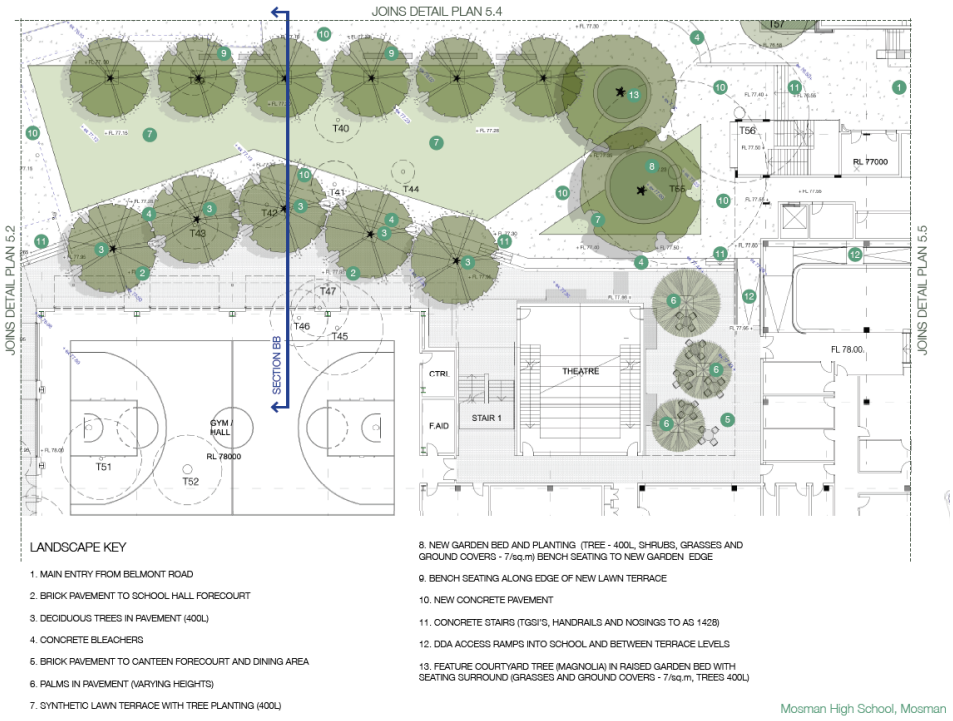


Figure 34 Central Lawn
Source: Landscape Design Report, Black Beetle Landscape Architects

Arts Courtyard

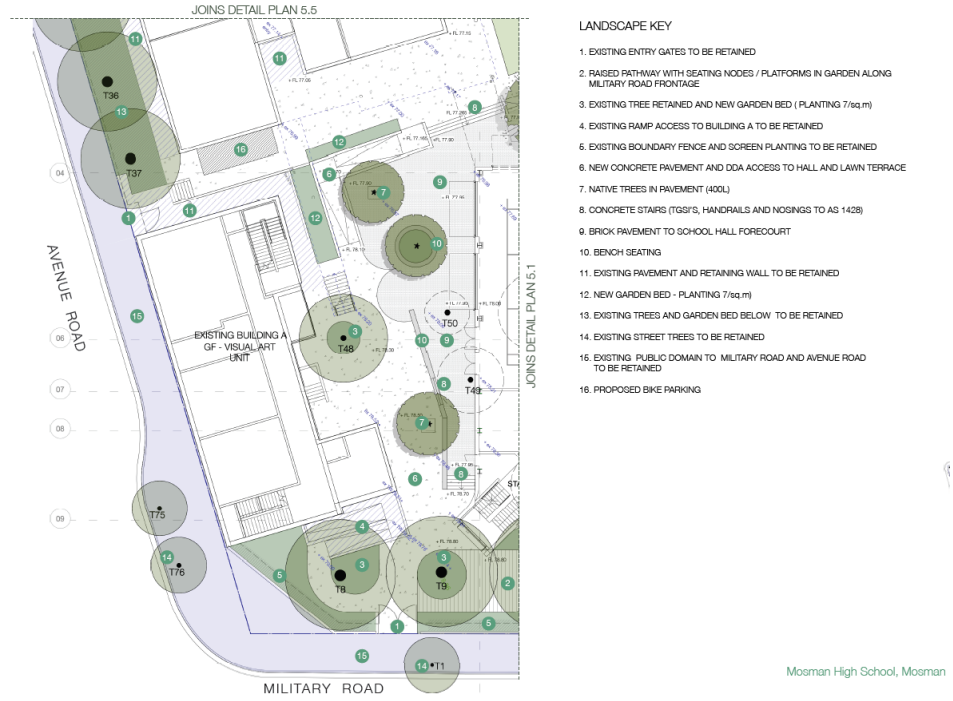


Figure 35 Arts Courtyard
Source: Landscape Design Report, Black Beetle Landscape Architects

Level 4 Roof Terrace

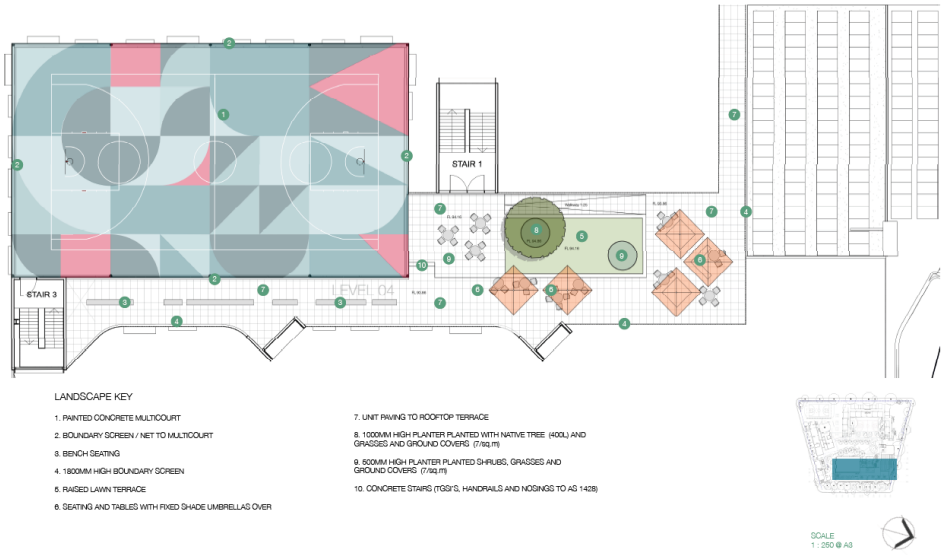


Figure 36 Level 4 Roof Terrace
Source: Landscape Design Report, Black Beetle Landscape Architects

Mosman High School is placed on a site that is severely limited in size and open space. A key focus throughout the options development process has been increasing open space on site and improving quality and its programming.

Table 6 Play Space Provision
Source: Landscape Design Report, Black Beetle Landscape Architects

Play Space	Area (sqm)	%
Existing	-	-
Play space	7,055	48.7%
Sqm play space/student (1,116 students based on EFSG requirements)	6.4	-
Proposed	-	-
Play space	8,688	60.0%
Sqm play space /student (1,200 students based on EFSG requirements)	7.24	-

Notes:
- Note site area is 1,4481sqm
- EFSG = Educational Facility Standards and Guidelines
- EFSG requirement is 10 sqm of play space per student

3.14 Signage

Approval for signage is not sought as part of this application.

3.15 Carparking, Vehicular & Pedestrian Access

Existing staff car park (for 33 spaces) is in the north-western corner of the site. This will be maintained and there is no increase in staff car parking proposed on site. This is justified at **Section 6.7** below and the Traffic Impact Assessment at **Appendix P**.

The existing school vehicular access points, i.e. to carpark and service vehicle access, both from Gladstone Avenue, will be maintained.

The existing main pedestrian entry to the school is form Military Road. This will be maintained as a secondary access and out-of-hours school access, while a new main pedestrian entrance will be created to Belmont Road.

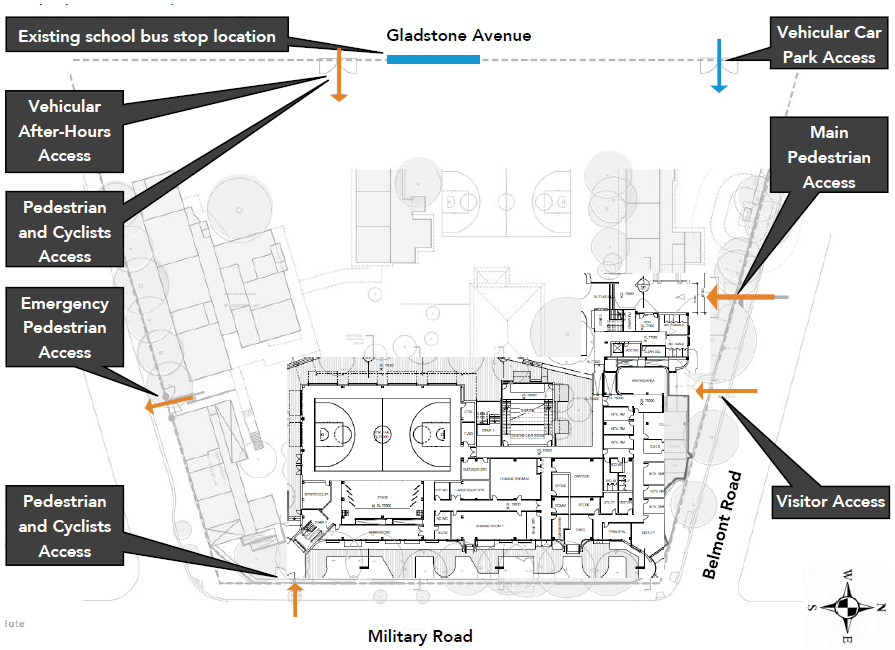


Figure 37 Proposed Access Points
Source: Traffic Impact Assessment, PTC

3.16 Lighting

The external lighting and lighting control strategy, appended at **Appendix AB**, outlines that the external lighting proposed complies with the requirements of the National Construction Code of Australia, including AS 4282, AS/NZS 1680.23 and AS2293.1.

The proposal's external lighting is to be designed, but not limited to:

- Emergency lighting and illuminated existing signage;
- External lighting and lighting control; and
- Obtrusive lighting control.

All external lighting will use LED technology.

3.17 Community Use of School Facilities

The Social Impact Assessment (SIA), prepared by RPS Group is appended at **Appendix O**. The SIA outlines that Mosman High School provides their existing school facilities to several community groups that not only support the educational experience for students but adds to Mosman's integrated and village like community. Refer to **Section 2.3** above for overview of existing school and community groups that use the facilities.

The proposal will ensure that appropriate school facilities are available to P&C and other organisations use during the construction and operational phase. Once operational, the upgraded and expanded school will provide improved facilities for all community uses to promote cohesion.

3.18 Hours of Operation

The current hours of operation of Mosman High School are from 8am to 5:30pm (first to last class of the day), Monday to Friday. It is noted that cleaning staff are on site from 5am to 6pm, Monday to Friday also. These hours are not proposed to change.

Additionally, Mosman High School hosts a range of activities and events which occupies the site at various times, these include:

- Evening events (like election polling stations, parent community meetings, school concerts) finish between 7 and 9pm. School concerts usually conclude around 10:30pm;

- Before and after school sport (basketball and futsal) are held outdoors on the site (conducted by paid coaches);
- Music ensemble takes place for 1 hour in the morning and afternoon (conducted by paid tutors); and
- Northern Beaches Community College hold classes at the school, on a Tuesday evening and Saturday morning (to resume when COVID restrictions are removed).

It also important to note, that no after school care is offered on the site.

3.19 Employment

The proposed development will generate 70 Full Time Equivalent (FTE) jobs during construction phase, and 6 additional jobs during the operational phase. This is reflected in the Capital Investment Value Report which is provided under separate cover.

3.20 Construction Hours and Duration

Construction Hours

The Preliminary Construction Management Plan (CMP) at **Appendix AH**, provides for the following standard construction hours:

- between 7am and 6pm, Monday to Fridays inclusive;
- between 8am and 1pm, Saturdays; and
- No work on Sundays and public holidays

Refer to Acoustic and Vibration impact assessment at **Section 6** below or **Appendix AD**.

Construction Duration

The project will be constructed in one stage. The indicative construction timeframe is 15 months for SSD works. Early works approved under a separate planning pathway will precede this over a 5 month timeframe, totalling 20 months. Refer to the

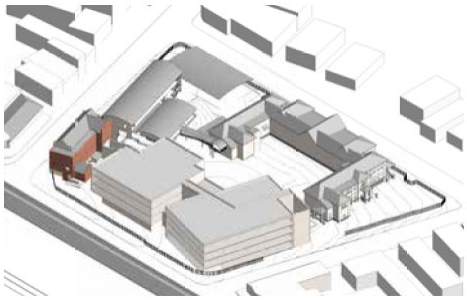
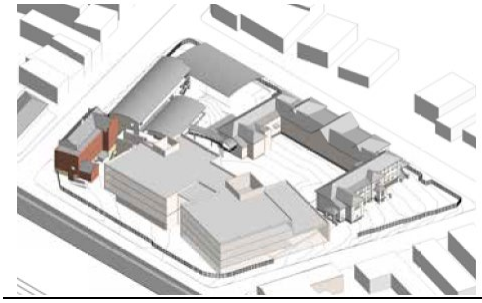
3.21 Preliminary Construction Management Plan at Appendix AH. Analysis of Feasible Alternatives

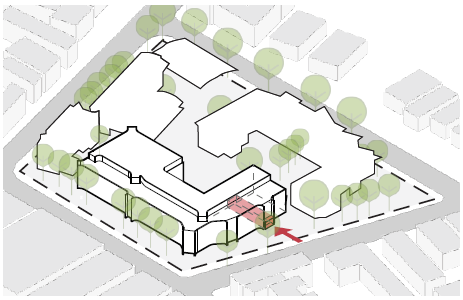
Six (6) development options have been explored in responding to the identified strategic need for the project. Refer to these in the Architectural Design Report at **Appendix G** and a summary at **Table 7** below.

The options explored various built form configurations, as well as various site configurations. The preferred option (being the option that is reflected in this EIS) was selected as it addressed the greatest number of objectives of the design team. This option is supported by the Government Architect NSW.

A summary of the alternative options is provided below.

Table 7 Options Analysis
Source: Mosman High School Design Statement, Woods Bagot Architects

Options	Response
Option 1: 	This option was not selected as the design developed and resolved outstanding issues such as deep structural beams and deep floor plates that restricted natural light and ventilation.
Option 2: 	This option was not selected due to the inefficiency of circulation around the hall at Level 1. In addition, there was limited staged construction potential and deep structural beams across the hall created a taller building that did not respond to the heritage context.
Option 3 	This option was not selected as the floor plates are too deep, resulting sandwiched learning space with poor daylighting and ventilation. The Arts building, performance hall, theatre are disconnected from each other. The majority of street trees along Military Rd will be removed due to building close proximity to east Site Boundary.
Option 4 	This option was not selected due to the negative impacts on height, heritage, overshadowing and lack of cohesive approach to the landscape and outdoor spaces.
Option 5 	This option was not selected as it was not supported by the Government Architects. Several reasons include negative impacts on height, overshadowing and lack of consistency with surrounding heritage context.

Option 6 	This option was selected as it maintains the streetscape of Military Rd and Belmont Rd by keeping the existing mature trees. The arts building, performance hall and theatre are closely located creating an Arts Plaza. Better daylighting and ventilation for the classrooms. This option is supported by School and the Government Architects.

3.22 Consequences of not carrying out the development

The consequences of not carrying out the development is a reiteration of the primary drivers of service need for the project, referred at **Section 1.3** above. I.e. that:

- Current enrolments at Mosman High School are already higher than the school's capacity. By not carrying out the development, it will lead to further overcrowding in classrooms.
- Analysis of Mosman High School showed a number of the required Educational Facilities Standards and Guidelines (EFSG) infrastructure were insufficient to cater to the school population, and the addition of these components will be necessary to bring the school to compliance with EFSG standards. The failed delivery of the development would result in existing and future students learning in poor learning environments, due to lack of future proof planning.
- Potential to not satisfy the Department of Education's legislative requirement that allow students access to their local Government school. Currently, the split of Government to non-Government students in the Mosman High School LIC has been identified by Eagle Eye to be 71% non-Government schools (2,516 in 2036) to 29% to Government schools (1,027 in 2036). By not carrying out the development, future students in the local area may be unable to enrol in their local Government school, due to lack of capacity.
- Mosman High School currently has two demountables on site. Failure to deliver permanent teaching spaces would result in adversely affected learning conditions, which would negatively impact student learning outcomes.
- Failure to carry out the development would result in the continuation of existing educational disadvantage experienced by some students.
- The functionality assessment undertaken by DJRD Architects showed that the buildings at Mosman High School are rated an average of 'poor' or 'fair' condition. The consequences of not carrying out the development would result in further impact to school operations and pose considerable health and safety risks to students and staff.

3.23 Related Works

As the school is required to remain operational during construction works, separate early works are being carried out in advance of the main works to install seven (7) temporary demountables (single storey) on site, and associated utility infrastructure. This was subject to a separate planning approval pathway.

4. Consultation

In accordance with the SEARs issued for the project, consultation was undertaken with relevant public authorities, the community and Council.

4.1 Council and Agency Consultation

Mosman Council

Consultation with Council occurred twice during the early stages of the project. Their feedback led to the development of an alternate scheme, being the preferred scheme, which is scaled back to street frontages and more sensitively responds to surrounding built form and heritage features.

NSW Department of Planning, Industry and Environment

A Scoping Meeting was held with the Department of Planning, Industry and Environment (DPIE) on 7 May 2020.

Transport for NSW

A meeting was held with Transport for NSW (TfNSW) on 10 June 2020.

Refer to **Table 8** for the feedback topics and outcomes resulting from consultation with TfNSW.

Table 8 Transport for NSW consultation

Feedback topics	Outcomes
TfNSW Meeting on 10 June 2020	
– Public traffic management during construction – Construction traffic during construction – Pedestrian routes – Student drop off and pick up zones – Car parking	– Traffic and Accessibility Assessment undertaken (refer Traffic Impact Assessment at **Appendix P**) – Construction Traffic Management Plan (CTMP) prepared (refer Preliminary CTMP at **Appendix AG**). – Construction vehicle access to and from each site modified (refer Preliminary CTMP at **Appendix AG**). – Green Travel Plan prepared to encourage sustainable transport modes (refer Green Travel Plan at **Appendix Q**).

4.2 Local Aboriginal Land Council

As per the Consultation Report appended at **Appendix N,** consultation with the Local Aboriginal Land Council and registered aboriginal stakeholders was conducted between June – August 2020.

An Aboriginal Cultural Heritage Assessment Report (ACHAR) Report has been prepared by Austral Archaeology. This involved consultation with registered Aboriginal stakeholders with an interest in the proposed development, including:

– A1 Indigenous;

– Amanda Hicky Cultural Services;

- Butucarbin Aboriginal Corporation;
- Didge Ngunawal Clan;
- Kamilaroi Yankuntjatjara Working Group; and
- Metropolitan Local Aboriginal Land Council.

Refer to **Section 6.2** below and **Appendix K**.

4.3 Government Architect NSW

School Infrastructure NSW and the architects consulted with the Government Architect NSW Office (GANSW) on four (4) occasions on the 27th November 2019, 17th March 2020, 16th December 2020, and 3rd February 2021. It should be noted this consultation covered two different design schemes, the first by DJRD Architects ("reference design") for meetings held on 27 November 2019 and 17th March 2020 and the second by Woods Bagot Architects ("alternate tender design") for meetings held on 16 December 2020 and 3 February 2021.

Refer to **Table 9** for the feedback topics and outcomes resulting from consultation with GANSW.

Table 9 Consultation with GANSW

Feedback topics	Outcomes
AGNSW Meeting #1 on 27 November 2019	
Generally the preferred masterplan was supported subject to the following items being addressed as the project progresses: – Clarification and illustration of buildings facing Military Rd, creating an urban edge appropriately articulated to address the mass and scale of the surrounding context; – Clarify retention of trees along Military Rd and across the site; – Illustrate how the mass, volume and depth of floorplates will be broken up to allow natural light and ventilation into every level of the building; – Provide shadow diagrams, particularly for the open spaces/play spaces; – Clarify and illustrate indoor/outdoor relationships, and in particular the extension of ground floor areas into the proposed quadrangle; – The landscape approach is instrumental in providing a coherent site character. Provide further details including materials, hard and soft landscape areas, clarity of views and wayfinding; – Investigate opportunities to closely integrate the buildings with the landscape, for example by making	All feedback from Government Architects NSW was noted and responses to the individual elements included in the revised submission noted below.

Feedback topics	Outcomes
use of building edges as landscape elements, seating areas and so on. – Illustrate vertical connections, including circulation zones and access to/from play spaces on various levels; – Clarify and illustrate building planning to enable passive ESD strategies to be incorporated; – Provide details of site wide sustainability strategies;	
AGNSW Meeting #2 on 17 March 2020	
The team was commended for a thorough architecture and landscape presentation and for addressing issues raised at earlier reviews. Generally the preferred masterplan presented is supported, in particular: – Overall landscape concept, retention of trees along street frontages, resolution of levels and access, incorporation of building edges as seating, connection between indoor and outdoor areas; – Overall building massing and scale, integration with existing levels, proposed thermal comfort, natural light and sustainability strategies; – Concept and proposed materiality for Military Rd elevations. The following items should be addressed as the project progresses: – The buildings facing Military Rd require further resolution to create a unified and coherent frontage. This could be achieved through the use of similar proportions to the elevations expressed in different materials, juxtaposition of solids and voids, incorporation of unifying elements along a chosen datum line and other architectural strategies; – The façade treatment proposed along Military Rd should continue along Belmont Rd to simplify and unify the various volumes of the building; – The proposal for a senior students outdoor space located on a terrace rather than at roof level is supported;	– Works to create a unified and coherent frontage along Military Road have been noted and are to be further progressed as the design finalises. – It is noted that the façade treatment proposed along Military Rd should continue along Belmont Rd to simplify and unify the various volumes of the building. – The current design has nominated the senior students outdoor space at roof level to ensure gross floor area is maximised on the constrained site. Sufficient roof area has been allocated to incorporate solar panels, water catchment strategies and various other ESD strategies. – It has been accepted that the northern portion of Building G is not suitable for roof top play space as there are voids, and a saw cut ridge roof to allow light and ventilation throughout this portion of the building.

Feedback topics	Outcomes
– Sufficient roof area should be retained to incorporate solar panels and water catchment strategies	
AGNSW Meeting #3 on 16 December 2020	
The presentation addressed comments raised by GANSW in the two prior consultation sessions in late 2019 and 2020 and illustrated where the design provided an improved architectural outcome for the site in comparison with the reference scheme. The following elements of the design approach are supported, in particular: – The site layout which maintains the landscape setting of the school and prioritises existing trees. – The refined built form and reduced footprint which enables retention of existing trees along Military Road and provides improved solar amenity to the central courtyard. – The cluster of art and performance spaces in the south-east corner of the site, which facilitates direct and legible communal and after-hours access. – The reduced floorplate depth and clarified internal circulation which maximises outdoor play area, improves indoor amenity, and supports passive design strategies, including access to natural daylight and ventilation. – The stepped massing of the upper levels to maintain unobstructed sightlines from the footpath on the east side of Military Road. The simplified materials palette including the use of bricks which are characteristic of the Military Road heritage conservation area. The feedback topics reviewed during this meeting were, as follows: – Connection with Country – Masterplan and Landscape – Built Form – Sustainability	– Indigenous consultant engaged – Built form integrated with landscape elements – Tree retention maximized
AGNSW Meeting #4 on 3 March 2021	
Following the first SDRP session in December 2020, considerable work has been undertaken to address comments in relation to the landscape strategy, and	– Greater consideration around Connection to Country has been

Feedback topics	Outcomes
the landscape architecture presentation illustrated where the design provided improved landscape outcomes for the site. The following elements of the design approach are supported, in particular the: – site layout which maintains the landscape setting of the school and prioritises existing trees, including an increased setback from Military Road – increased tree canopy cover for the site. – improved connection between the hall and the external western forecourt. – developed landscape strategy for the site including the varied opportunities and provision of outdoor learning environments. The feedback topics reviewed during this meeting were, as follows: – Connecting with Country – Landscape – Built Form – Sustainability	implemented within both the façade and landscape. – Tree canopy maximised to its greatest potential. – Indigenous plant species incorporated. – Public presence of façade established, including improved colour palette and creativity within the materiality.

4.4 Community Consultation

Community feedback and consultation has been integral to the development of this proposal.

Numerous consultation and communication channels were undertaken by the project team. These included, online surveys, emails, information numbers, project review group meetings, school tours and school newsletters. The project team also received and responded to numerous email and phone calls regarding the project.

Additionally, the project team undertook 2 local character workshops and meetings with individual stakeholders that provided areas of consideration for the development of the proposal.

Four key themes emerged from the community feedback. These include:

- school enrolments and future capacity of the development;
- design impacts to the school community;
- design impacts to residential and commercial community; and
- impacts to school operation during construction.

This feedback and four themes have informed and shaped the concept design development.

5. Statutory and strategic planning context

5.1 Overview

This EIS includes an assessment of the proposed development against the following strategic plans, policies and guidelines, in accordance with the issued SEARs.

The proposal has been assessed and found to be generally consistent with these, as detailed within **Table 10** below and the following sections of this EIS.

5.2 Strategic Planning

This proposal has been considered against the relevant strategic planning policies in accordance with the issued SEARS.

Table 10 Consistency with relevant strategic plans, policies and guidelines

Strategic planning policy	Response
NSW State Priorities	NSW State Priorities are fourteen priorities unveiled by the NSW Premier, in a commitment to making a significant difference to enhance the quality of life. The 14 priorities are: – Bumping up education result for children; – Increasing the number of Aboriginal young people reaching their learning potential; – Protecting our most vulnerable children; – Increasing permanency for children in out-of-home care; – Reducing domestic violence reoffending; – Reducing recidivism in the prison population; – Reducing homelessness; – Improving service levels in hospitals; – Improving outpatient and community care; – Towards zero suicides; – Greener public spaces; – Greening our city; – Government made easy; and – World class public service. The proposal seeks to redevelop an existing school and create additional educational capacity within Mosman. The development application will contribute to an increase in jobs and education, strengthening the local Mosman economy.
The Greater Sydney Regional Plan – A Metropolis of Three Cities (2018)	The Greater Sydney Region Plan – A Metropolis of Three Cities, was released by the Greater Sydney Commission in March 2018 and is the NSW Government's 40-year plan for the Sydney metropolitan area. The Mosman High School upgrade aims to assist in meeting Sydney's growing educational needs. The proposal is consistent with

the objectives and directions of the Metropolis of Three Cities Plan, including:

- ***Objective 1 – Infrastructure supports the three cities***

The redevelopment is critical in prioritising infrastructure investments for the future of the Mosman community. The upgrade of Mosman High School aligns with Objective 1 through enhancing and providing educational services for students and staff.

- ***Objective 2 – Infrastructure aligns with forecast growth***

The Greater Sydney Region Plan identifies that Sydney's population is to grow from 4.7 million to 8 million by 2056. While Mosman is not the focus of a significant increase in population growth, its proximity to Sydney CBD will impact the Mosman community. The proposed works will help provide jobs and services to the population.

- ***Objective 3 – Infrastructure adapts to meet future needs***

The upgrade of Mosman High School will enhance the school's services to adapt to the ever changing technological environment of the 21st century. The redevelopment works will provide new opportunities for the student and staff.

- ***Objective 5 – Benefits of growth realized by collaboration of governments, community and business***

Extensive collaboration has been undertaken by the project team, to produce good outcomes for the design and function of the site. Collaboration with government, agencies and the community have assured that the proposed works undertaken will respond to the communities changing needs.

- ***Objective 6 – Services and infrastructure meet communities changing needs***

As our population is growing, demographic changes are also occurring – with a projected 333,000 more children and young people than today. With this projected growth, the proposed works to develop Mosman High School will help facilitate and support the needs of Mosman's younger generation.

- ***Objective 12 – Great places that bring people together***

The proposal aims to redevelop the local community facilities located on the Mosman High School site. The proposed works will help facilitate and celebrate the local character of the Mosman local community and supports the wellbeing of students, staff and the wider community.

- ***Objective 13 – Environmental Heritage is identified, conserved and enhanced***

The proposed works identifies and protects the Military Road Conservation area and items within the site. The concept design has responded to the surrounding environment, and incorporated built form and materials and finishes that are sensitive to the environmental heritage identified.

- ***Objective 14 – A Metropolis of Three Cities – integrated land use and transport creates walkable and 30-minute cities***

The Proposal supports the 30 minute city concept through providing educational services and jobs to the Mosman community. The proposed works aim to support the operation of the school within peak times and its effect on the local road network and services, through promotion of active transport options – particularly, walking and cycling.

- ***Objective 30 – Urban tree canopy cover is increased***

The urban tree cover is vital in providing green infrastructure to Mosman High School. Aligned with the Tree Canopy Guide by the

	Government Architect, the proposed landscaping of the site aligns with the urban tree canopy estimate of 20.2%. Refer to the landscape plans appended **at Appendix H**, for further details on proposed canopy cover. Overall, the project aligns with Greater Sydney Region Plan as it will redevelop and provide additional and improved educational facilities to meet the growing needs of the Mosman community.
Future Transport Strategy 2056	The Future Transport Strategy sets out a 40 year vision, direction and outcomes framework for customer mobility in NSW and will guide transport investment over the longer term. The proposal is consistent with the Strategy by providing increased educational student capacity in Mosman.
State Infrastructure Strategy 2018 – 2038 Building the Momentum	The proposal is consistent with the State infrastructure Strategy through: – Delivering school infrastructure to keep pace with student numbers; – Providing modern learning environments; and – Upgrading existing learning spaces.
Sydney's Cycling Future 2013	The goal of Sydney's Cycling Future is to make cycling a safe, convenient and enjoyable transport option for short trips. School Infrastructure is supportive of students and staff using bikes as their main mode of transport to and from the school grounds. The site will provide bike locations for students and staff to park their bicycles.
Sydney's Walking Future 2013	The goal of Sydney's Walking Future is to encourage people to walk more, to make it more convenient, better connected and safer mode of transport. The proposal supports walking by providing multiple pedestrian access points to the site for both students and staff.
Sydney's Bus Future 2013	Sydney's Bus Future Strategy is the NSW Government's long term plan to redesign the bus network to meet customer needs now and into the future. A bus stop is located directly outside the school site on Military Road. This bus stop services multiple bus routes including the 227, 228, 230, 236, 244, 245, 247, 257 and 430. It is proposed to relocate the existing public bus stop and stagger school bus arrival and departure times to ease congestion.
Crime Prevention Through Environmental Design Principles	The Architectural Design Statement provides a CPTED assessment of the proposal at **Appendix G**. The assessment considers the objectives and desired outcomes of the principles/ strategies employed by CPTED, including: **Perimeter Security and Access Control** The site has a distinctive perimeter fencing and includes a buzzer access and video intercom to Reception, consistent with this CPTED principle. Further, the proposal will relocate the main entry closer to the junction of Military Road, in proximity to crossings and the bus stop. Additionally, there are access controlled points from Gladstone Avenue **Natural Surveillance** Clear sightlines, safe lighting, elimination of hiding spots and environmental design have been considered throughout the proposal to provide natural surveillance to the Mosman High School site.

	Natural surveillance has been proposed throughout, including; clear sightlines identified within the new Reception Area, removal of dead end corridors, relocation of student amenities to encourage passive surveillance, installation of safe lighting along pathways and key sightlines from the entry forecourt. **Territorial reinforcement** The proposal creates a clear distinction between public and private property, through main signage, fencing, access control through video intercom and buzzer and well maintained areas to create a sense of 'ownership'. **Maintenance** Maintenance is closely related to principle, territorial reinforcement. Maintenance of school grounds discourages negative social behavior, and is a matter of safety and pride for Mosman High School. Regular removal of waste, graffiti, repair and restoration and garden maintenance will be undertaken to reduce the likelihood of criminal acts.
Healthy Urban Development Checklist, NSW Health	The Healthy Urban Development Checklist prepared by NSW Health assess the built environment factors that impact on health. As NSW undergoes significant population growth over the next 20-30 years, it is imperative that the proposal is well designed to reduce health risks and improve health conditions, to support this growth. The proposal promotes the checklist's 11 themes through the design and function of the site. The Proposal supports the themes of the Checklist, including; – Healthy eating – Physical activity – Housing – Transport and connectivity – Quality employment – Community safety and security – Open space and natural features – Social infrastructure – Social cohesion and connectivity – Environment and health – Environmental sustainability and climate change. The Proposal aims to improve the amenity and wellbeing of students and staff, through improved landscape (**at Appendices H and I),** architectural design (at **Appendices G and F**) and incorporated CPTED principles (at **Appendix G**).
Better Placed: An integrated design policy for the built environment of New South Wales (GANSW, 2017)	Better Placed is an integrated design policy for the built environment of NSW. It seeks to capture our collective aspiration and expectations for the places where we work, live and play. The proposal aligns with the objectives for good design, including; – Better fit: contextual, local and of its place – Better performance: sustainable, adaptable, durable – Better for community: inclusive, connected and diverse – Better for people: safe, comfortable and liveable – Better working: functional, efficient and fit for purpose – Better value: creating and adding value – Better look and feel: engaging, inviting and attractive

	The project team have had two consultation meetings with the Government Architect through the development of Mosman High School. These objectives and consultation meetings have shaped and guided the design. Consultation with the Government Architect is further explained in **Section 4** of this EIS.
Draft Greener Places Policy	The Draft Greener Places policy provides information on how to design, plan and implement green infrastructure in urban areas throughout NSW. The draft guide provides strategies, performance criteria and recommendations to assist planning authorities, and design and development communities to deliver green infrastructure. The Greener Places Design Guide has three main objectives: – Open space for Recreation: green infrastructure for people, – Urban tree canopy; green infrastructure for adaptation and resilience and – Bushland and waterways: green infrastructure for habitat and ecological health. The Draft Greener Places Policy has guided the delivery of green infrastructure of the site together with the NSW Educational Facilities Standards and Guidelines (EFSG). Consultation has been undertaken with the Government Architect and will continue to ensure that the project will deliver and provide the required green infrastructure for Mosman High School and the greater community. The play space provision per student will increase as a result of the proposed development, trees and tree canopy will be increased, and there will be quality embellishments of soft and hard landscaping works.
Greater Sydney Commission's North District Plan	The North District Plan was released by the Greater Sydney Commission in March 2018. The Plan identifies that the North District has an anticipated growth of 21,900 additional students in by 2036, equivalent to a 20 per cent increase. Several planning priorities in the District Plan are relevant to the proposed development including: – ***Planning Priority N1 – Planning for a city supported by infrastructure*** It is considered that the proposed development will contribute to the success of this Planning Priority as it enables optimal land use and allows Mosman High School to increase their student capacity. – ***Planning Priority N3* – Providing services and social infrastructure to meet peoples changing needs** The NSW Department of Education estimates an extra 21,900 students will need to be accommodated by 2036. The Proposal will assist this demand by updating educational facilities on site, to continue to help and provide services to Mosman High School and the surrounding local community. – ***Planning Priority N4 – Fostering healthy, creative, culturally rich and socially connected communities*** Mosman High School has a strong connection with the surrounding local community, providing open spaces and facilities for local sporting clubs extra curricula groups. The Proposal will assist in enhancing these spaces for community use, supporting social cohesion and collaboration of the local Mosman Community. – ***Planning Priority N6 – Creating and renewing great places and local centers, and respecting the District's heritage***

	The Proposal responds to the surrounding heritage environment through sensitive architectural design and built form. In accordance with the Architectural Design Statement provided by DJRD (see **Appendix G**), the height and streetscape scale, setbacks, vertical elements, materials and finishes have all been carefully considered to respond to the Heritage character and surrounding heritage scale. – ***Planning Priority N9 – Growing and investing in health and education precincts*** As the demand for educational services rise to support the population, it is crucial that the proposed works are undertaken to enhance and update the site to assist this demand. Investment in Mosman High School is crucial to sustain future student growth. The project is consistent with the priorities of the North District Plan and will provide additional, modern, educational facilities to accommodate forecast growth and meet future educational needs of the community.
Mosman Local Strategic Planning Statement (LSPS) 2020	The *Mosman Strategic Planning Statement* (LSPS) was publicly exhibited during June-August 2019, endorsed by Council on 3 December 2019, and assured by the Greater Sydney Commission on 4 March 2020. Over the next 20 years, the LSPS aims to guide and maintain the high level of amenity, livability and quality within the Mosman LGA. As the Mosman community grows and changes, Mosman High School is a key piece of infrastructure in the LGA that can respond to the evolving needs and opportunities of the wider community. The redevelopment of Mosman High School is consistent with the following Planning Priorities: – ***Planning Priority 1 – Ensure that Mosman is supported by Infrastructure*** With Sydney's population forecasted to rise significantly, upgrading existing school infrastructure is vital to support and facilitate the educational needs of the community. – ***Planning Priority 2 – Work together with Government agencies and other stakeholders to promote good outcomes for Mosman*** In accordance with the SEARs issued for this project, the project team has had extensive consultation with Mosman Council, Department of Planning, Industry, Environment, Government Architect and Transport for NSW to provide quality built form outcomes for the site. – ***Planning Priority 3 – Provide a range of facilities and services to meet community needs, and foster a culturally rich, creative and socially connected Mosman community*** The Proposal will contribute to Mosman social priorities, particularly facilitating community connections and advocating for local community needs. The proposed works, will develop and enhance the site to provide opportunities for the local Mosman community, assisting community services and programs undertaken on the site. – ***Planning Priority 4 – Design and provide places and spaces that are healthy to live in, work in and to visit*** The natural and built environments have a key role to play in supporting student and staff health and wellbeing for Mosman High School. The architectural design and form has been enhanced to facilitate and support the active wellbeing of the

	school, providing facilities and services for the school and the local community. Additionally, the proposed works will apply CPTED principles to promote positive social behavior. – ***Planning Priority 7 – Enhance local and neighbourhood centres as great, connected places, whilst maintain the village atmosphere in Mosman Junction and neighbourhood centres*** The site is deeply embedded in the local Mosman community, sharing its spaces and facilities to support local community groups. The proposed works aim to enhance the site and help support these groups for years to come. – ***Planning Priority 8 – Protect and conserve the natural, built and Aboriginal cultural heritage of Mosman*** The Proposal will protect and conserve the Aboriginal Cultural Heritage of the site. Please refer to Aboriginal Cultural Heritage Due Diligence report at **Appendix K**, for further detail on how the proposed works will conserve Aboriginal items. – ***Planning Priority 9 – Improve access to, from and within Mosman, and encourage active transport*** As mentioned in the Green Travel Plan (at **Appendix Q**), the site already has strong active transport connections – with majority of students, walking, cycling and taking public transport to school. The proposed works will continue to facilitate and support these active transport options.

5.3 Legislation

This proposal has been considered against the relevant legislation within **Table 11** below.

Table 11 Legislation

Legislation	Response
EP&A Act 1979	The proposed development is consistent with the objects of the EP&A Act, in particular: – Promotes social welfare of the community; – Promotes the sustainable management of built and cultural heritage; and – Promotes good design and amenity of the built environment. The proposed development is consistent with Division 4.7 of the EP&A Act, particularly for the following reasons: – The development promotes education services and stimulates social welfare of the community; and – The development has been evaluated and assessed against the relevant heads of consideration under Section 4.15(1).
EP&A Regulation 2000	The EIS has addressed the criteria within Clause 6 and Clause 7 of Schedule 2 of the EP&A Regulation.
Biodiversity Conservation Act 2016	The site has minimal biodiversity impacts and the proposed impacts are minimal. An assessment of Biodiversity impacts is provided at Section 6. A BDAR waiver and subsequent BDAR waiver approval are appended at **Appendix AK and Appendix AL**.
National Parks and Wildlife Act 1974	The objects of the NP&W Act are the conservation of nature and the conservation of objects, places or features (including biological diversity) of cultural value within the landscape, fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation, and providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.

	An ACHAR has been prepared (**Appendix K**) which confirms that the proposed development will avoid areas of high Aboriginal archaeological potential, essentially having nil impact on Aboriginal Cultural Heritage. The ACHAR concludes that the proposed development is unlikely to further harm Aboriginal objects, if present, given it is already fully developed as part of a school, with most of the ground covering being concrete.
Heritage Act 1977	Two buildings on site are listed under the Heritage and Conservation Register, in accordance with Section 170 of the Heritage Act. Refer to the HIS at **Appendix J** for details.
Roads Act 1993	Temporary works are required to Belmont Road to facilitate construction vehicle swept paths. Specifically, it is proposed to temporarily relocate TFNSW stop line on eastbound approach arm to Military Road/Belmont Road intersection to accommodate 19m Articulated Vehicle (AV). Further it is proposed to temporarily remove parking and taxi zone bays to facilitate a works zone to southern side of Belmont Road and temporarily remove parking bays to Avenue Road and Military Road to facilitate turn circles of a 19m AV. These temporary works will require consent from Transport for NSW under Section 138 of the Roads Act 1993. As this consent is required for the SSD application, Section 4.42 (1)(f) of the EP&A Act provides that the consent cannot be refused if it is authorised by a SSD development consent and is to be substantially consistent with the consent.

5.4 Environmental Planning Instruments

This proposal has been considered against the relevant environmental planning instruments (EPIs) in accordance with the issued SEARS. The proposal has been assessed and found to be generally consistent with these, as detailed within **Table 12.** below.

Table 12 Environmental planning instruments

Relevant EPI	Response
State Environmental Planning Policy (State & Regional Development) 2011	The SRD SEPP identifies development or infrastructure types that are of state or critical significance. Under the Schedule 1, Clause 14 State significant development includes development for the purpose of alterations or additions to an existing school that has a capital investment value (CIV) over $20 million. As the proposal has a CIV of more than $20 million it is therefore state significant development.
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (“Education SEPP”)	The Education SEPP aims to streamline the planning system for education and childcare facilities. Under Clause 35(6) of the SEPP, the consent authority must take into consideration— (a) the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4, of the SEPP and (b) whether the development enables the use of school facilities (including recreational facilities) to be shared with the community. A response to the design quality principles is provided in Section 9 of the Architectural Design Report. The school will continue to offer existing as well as proposed facilities for the use of the community.
State Environmental Planning Policy (Vegetation in Non-Rural	The State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (SEPP Vegetation) seeks to protect and preserve the biodiversity values and amenity of trees and other vegetation in non-rural areas of NSW.

Areas) 2017 (Vegetation SEPP)	The Vegetation SEPP provides for the removal of vegetation in non-rural areas, as well as matters for consideration in the assessment to remove vegetation. It applies to land within the Mosman LGA and land zoned SP2 Infrastructure, the zoning of the subject site.
State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)	The ISEPP provides the legislative planning framework for infrastructure and the provision of services across NSW. Clause 104 and Schedule 3 of ISEPP trigger referral to the Roads and Maritime Services (former – now Transport for NSW) as the proposal is considered as: “Any other purpose” “with access to a road (generally)” with size or capacity of “200 or motor vehicles”. Accordingly, Transport for NSW will be consulted during the preparation of the EIS.
State Environmental Planning Policy No. 64 – Advertising and Signage	State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) applies to advertising and signage within NSW. Consent is not sought for signage as part of this application.
State Environmental Planning Policy No.55 – Remediation of Land	SEPP 55 requires the consent authority to consider whether the subject land of any development application is contaminated and can be made suitable for the proposed use. The Site Contamination Assessment conducted by Coffey, appended at **Appendix S,** identified that there was no significant contamination on the site. The assessment further outlines areas of consideration and attention to be undertaken before construction, including asbestos, waste discharge contamination and fill material. Mitigation measures will take place in order to reduce contamination risks through a Remedial Action Plan (RAP). A RAP was prepared by Coffey and is appended at **Appendix U.** The RAP will help mitigate potential contamination risks associated with the identified asbestos and infill materials.
Draft SEPP 55	Draft SEPP 55 contains similar content that is not dissimilar to the gazetted SEPP 55. The proposal aligns with the aims and objectives of Draft SEPP 55. Refer to attached Contamination Assessment at **Appendix S.**
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (SREP Sydney Harbour)	The Sydney Regional Environmental Plan 2005 (SREP) aims to ensure that the catchment areas, foreshores and waterways of Sydney Harbour are recognized, protected, enhanced and maintained. The site falls within the Sydney Harbour Catchment area however it does not fall within the Foreshores and Waterways area. Waste Management Plans (**Appendix AF**) and a Stormwater Management Plan are appended at **Appendix W**. Their implementation will ensure impacts of the development downstream onto the Sydney Harbour catchment are minimised.
Draft State Environmental Planning Policy (Environment)	The Draft SEPP (Environment) is a proposed new SEPP that will form part of the broader land use planning framework in NSW. The proposed new SEPP aims to deliver a planning framework that protects the four catchments, maintaining: – Water quality and flows within watercourses; – Native plants, animals, habitats and ecosystems; – Recreational, scenic and environmental amenity. The proposal aligns with the aims and objectives of the Draft SEPP (Environment).

5.5 Mosman Local Environmental Plan 2012

Table 13 Mosman Local Environmental Plan 2012

Provision	Consistency	Response
2.3 Land use zoning *Objectives* The objectives of the SP2 zone are: *To provide for infrastructure and related uses.* *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*	Yes	The site is zoned SP2 Infrastructure for the purpose of *'educational establishment'*. As per MLEP 2012, educational establishment includes a school. The proposed development is therefore permitted with consent. The proposal is consistent with the zone objectives as: – It provides educational infrastructure needs to support the existing and future student population in Mosman; and – It will allow for optimal land use and allows Mosman High School to increase their student capacity.
4.3 Height of buildings *Objectives* There are no objectives that apply to the SP2 zone.	N/A	The site is not subject to any height limit pursuant to Clause 4.3 of the MLEP 2012.
4.4. Floor space ratio *Objectives* There are no objectives that apply to the SP2 zone.	N/A	The site is not subject to any floor space ratio limit pursuant to Clause 4.4 of the MLEP 2012.
5.10 Heritage conservation *Objectives* *To conserve the environmental heritage of Mosman,* *To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views, and* *To conserve archaeological sites, to conserve Aboriginal objects and Aboriginal places of heritage significance.*	Yes	The site is identified as a Local heritage item and is known as Mosman High School, group of 2 buildings (Item no. I161). The frontage of the site along Military Road is subject to the '*Military Road' (C7) conservation area*, including Buildings A and B of the school site. The site is surrounded by two other conservation areas known as *'Keston Avenue' (C4), and 'Shadforth Street' (C10).* The proposal aims to conserve the heritage significance of the school and the surrounding heritage conservation area. Refer to the Heritage Impact Statement at **Appendix J**.
6.1 Acid Sulfate Soils *Objective* *To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.*	N/A	The site is not located in an area known to contain Acid Sulfate Soils and is not within 500m proximity of any Class 5 Acid Sulfate Soils.
6.4 Scenic Protection *Objectives* *To recognise and protect the natural and visual environment of Mosman and Sydney Harbour,*	N/A	The site is not identified within the Scenic Protection Area and therefore this Clause does not apply.

To reinforce the dominance of landscape over built form, and To ensure development on land to which this clause applies is located and designed to minimise its visual impact on those environments.			

5.6 Mosman Open Space and Infrastructure Development Control Plan 2012

The Mosman DCP 2012 provides guidance on provisions for design and development controls that should be considered when developing the design for the school. However, Clause 11 of the SRD SEPP states that development control plans do not apply to state significant development.

Notwithstanding, the proposal has been assessed against the key relevant controls of the Mosman DCP 2012 in **Table 14** below.

Table 14 Consistency with Mosman DCP 2012

Provision	Objectives	Compliance	Comment
4.1 Siting and Scale	To have merit consideration of the siting and scale of development, having regard to the existing character of the area, minimizing any adverse effect on neighboring properties, and minimizing loss of public views	Yes	The proposal has been designed to respond to the scale and context of heritage buildings on site and the surrounding Mosman Local Centre. Refer to Architectural Design at **Appendices F and G.**
4.2 Streetscape and building design	To have streetscapes which are compatible with, support and maintain the character of the area.	Yes	The scale of proposed Building G presents as 3 storeys to Military Road, which is consistent with scale of adjoining heritage Building A, and reflects its street setback.
4.3 Heritage Conservation	To have a heritage item or a significant building within a conservation area retained and conserved; To have any works undertaken with a proper knowledge of the heritage significance of the item or conservation area; To have heritage items adaptively reused where appropriate and to ensure that the heritage significance of the item is maintained.	Yes	Building B is not a significant building. It is being replaced with a building of high design quality that responds to surrounding built form. Refer to Heritage Impact Statement attached in **Appendix J.**
4.4 Accessible buildings	Developments are to comply with the Building Code of Australia.	Yes	The proposed works are consistent with

			the Building Code of Australia. See attached report at **Appendix Y.**
4.5 Energy Efficiency	To have energy efficiency principles adopted in the site layout, design, construction and use of buildings; To have buildings that incorporate more sustainable energy sources, fit outs, fixtures and systems; To have the benefits of passive solar design and natural ventilation maximized; To have buildings that decrease water consumption of the occupiers.	Yes	Energy efficiency measures will be implemented into the design of the school. It is being designed to a 4 star Green Star rating. Refer to the ESD report at **Appendix AI**.
4.6 Visual and acoustic privacy	To have adequate visual privacy levels for occupants of buildings and their neighbours; To have adequate acoustic privacy levels for occupants of buildings and their neighbours.	Yes	Given the location of proposed Building G on the corner with Military Road and Belmont Avenue, it is not anticipated there will be privacy impacts as there is sufficient distance to nearby residences.
4.7 Crime Prevention	To have provision for the personal and property security of occupants and visitors, and enhance community safety; To have adequate lighting to provide a sense of security for the occupants and visitors to buildings and to the public areas around the building; To have buildings and spaces designed so that the relationship to and around buildings and spaces engenders a sense of ownership and territorial reinforcement; To have buildings designed and orientated so as to provide opportunities for passive and active surveillance; To have appropriate building forms and materials which minimise opportunities for vandalism.	Yes	The proposed works align with the CPTED objectives. Refer to Crime Prevention Through Environmental Design (CPTED) attached in **Appendix G.**
4.8 View Sharing	To have opportunities for public vistas and public views from streets and public places protected; To have sharing of views whilst not restricting the	Yes	The site is not subject to Clause 6.4 Scenic Protection of Mosman LEP 2012. Refer to the View

	reasonable development potential of a site.		analysis in the Architectural design Report at **Appendix G**.
4.9 Landscaping	To have the existing canopies and vegetated landscapes character of Mosman protected and enhanced; To have existing established trees protected; To have the appearance amenity and energy efficiency of buildings enhanced through innovative landscape design; To have indigenous planting used with new landscaping where appropriate; To have natural ground levels maintained, especially near boundaries; To have landscaping over slabs appropriately designed; To have the streetscape character, context and curtilage of heritage items and conservation areas maintained through appropriate landscaping.	Yes	Landscaping will help create physical and visual connections between buildings on the site and will overall improve the landscape character and quality of Mosman High School. Landscape plans have been developed and are available at **Appendix I.**
4.10 Preservation of trees or vegetation	To have the amenity of the area preserved through the preservation of trees and other vegetation	Yes	The proposed works aim to preserve the trees and vegetation. Tree removal is included in the proposed works.
4.11 Transport, access and parking	To have vehicular access to properties that is safe for both pedestrians and other vehicles and does not detrimentally affect streetscape amenity.	Yes	The proposal will maintain existing vehicular access points to the site. A Transport Impact Assessment is at **Appendix P.**
4.12 Site Facilities	To have adequate provision made for site facilities; To have site facilities that are functional, accessible and easy to maintain; To have site facilities thoughtfully and sensitively integrated into development so as not to be obtrusive, noisy or unsightly; To have telecommunications facilities and technological innovation and incorporated into the	Yes	The proposal will support the construction of new site facilities to support the growing educational needs of the Mosman locality.

	design of new development;		
4.13 Stormwater management	To have the adverse effects of stormwater on the environment minimized, and prevented where possible, including disturbance to existing drainage patterns; To have stormwater and surface water runoff minimised through landscape design. To have stormwater quality and quantity controlled and eliminate stormwater discharge to adjoining properties To have on site stormwater collection and re-use. To have unexpected rises in groundwater level due to development prevented.	Yes	Stormwater works and measures are proposed to accommodate the redevelopment.
4.14 Excavation and site management	To have the integrity of the physical environment preserved and enhanced by ensuring minimal site disturbance and the geotechnical stability of landfill and excavations; To have appropriate controls that safeguard neighbourhood amenity as much as practicable; To have necessary environmental safeguards applied to earthworks in order to conserve important elements of the landscape and protect the surrounding environment.	Yes	No major excavation works will occur due to the proposed structures being supported on grade. However, excavation may be required for shoring and lift pits. A Geotechnical Report is attached at **Appendix R**.
4.15 Waste management	To have waste storage and collection facilities which maximize resource recovery through waste avoidance, source separation and recycling; To have waste storage and collection facilities that are functional, easy to maintain and accessible to all users and service providers; To have waste storage areas provided within development which do no detract from the aesthetics of the streetscape To have waste/recycling storage and collection facilities which minimise adverse environmental impacts associated with waste management; To have demolition and construction activities that	Yes	A Waste Management Plan is appended at **Appendix AF**. The Waste Management Plan includes the management plan for waste streams generated during construction and operation.

	ensure appropriate collection and storage of waste and that, where possible, re-use and recycle resource materials.

5.7 Mosman Business Centres Development Control Plan (DCP) 2012

The Mosman Business Centres DCP 2012 was adopted by Council in 2012 and applies to development proposed on land in Mosman that is zoned for business under the provisions of Mosman LEP 2012. The aim of the Plan is to provide detailed planning and design guidelines for development in business centres.

The Plan does not apply to Mosman High School as the school is located outside of a business centre boundary and is zoned *SP2 – Infrastructure* under the Mosman LEP 2012, which is an excluded land use under the provisions of the Plan (applicable land uses include B1 Neighbourhood Centre; B2 Local Centre; and B6 Enterprise Corridor).

However, given that Mosman High School is situated directly adjacent to the 'Mosman Junction Business Center', the aims of the Mosman Business Centres DCP 2012 (Section 1.5) are considered below. Refer to **Figure 38** below.

The proposed development complies with the aims of the Mosman Business Centres DCP 2012, including the following key aims:

- The upgrades to Mosman High School will contribute to providing an "*enhanced image for Mosman*" by providing a contemporary learning environment with capacity for student demand
- The proposed development will ensure "*a high level of visual amenity*" through sensitive architectural design, an appropriate street frontage height (three-storeys with a setback to the fourth-storey), retention of some of the vegetation along Military Road, and materiality that is complementary to the general character of the Military Road brick shopfronts.
- The upgrades to Mosman High School will "*optimise the potential for viable retail and commercial activities*" by providing a pleasant pedestrian environment for shoppers and ensuring good quality design outcomes that are consistent with the existing streetscape. The increase in student and staff numbers on site will also support retail/commercial uses.
- The Traffic Impact Assessment appended to this EIS demonstrates "*the provision and use of transport, access and parking facilities contribute to a convenient, safe, and sustainable environment*".

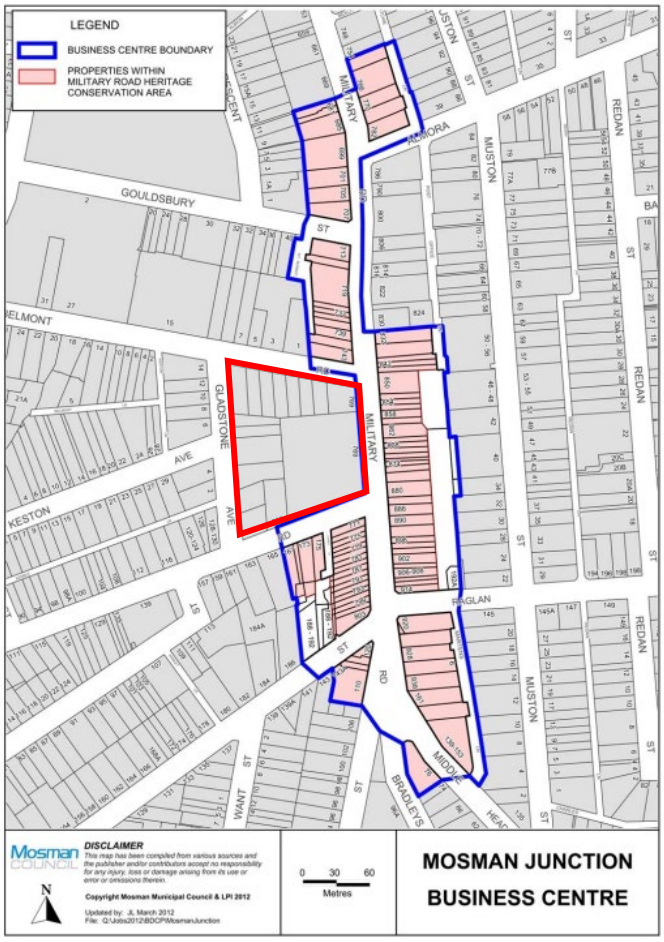


Figure 38 Mosman Junction Business Centre
Site outlined in red
Source: Mosman Business Centres DCP 2012 with Architectus overlay (2020)

5.8 Mosman Contributions Plan 2018

Local infrastructure contributions are legislated under the provisions of Section 7.12 of the EP&A Act and authorise Mosman City Council to levy a monetary contribution which is used towards the provision of public amenities and services.

The Department of Education does not agree to a condition of consent requiring it to pay developer contributions under section 7.11 or 7.12 of the Environmental Planning and Assessment Act 1979. Planning Circular D6 represents the consistently held view that the Department of Education, as a Crown authority, provides critical community infrastructure and that to levy any developer contribution on provision of public education facilities increases the cost of such infrastructure for all taxpayers in the State.

6. Environmental Assessment

This section assesses those matters as required under Section 4.15(1) of the EP&A Act and responds to the matters for consideration set out in the SEARs. The mitigation measures at **Section 7** complement the findings of this section.

6.1 Built Form and Urban Design

The proposed development is primarily for new Building G comprising a part 3 / part 4 storey building plus lift overrun and multi-court enclosure.

Built Form and Scale

Built form and urban design considerations are summarised in the sections below and detailed further above under **Section 3**. Key elements of the built form and scale are:

- The proposed new building (Building G) has been established to respond to the existing heritage Buildings A and D and surrounding built form, particularly those located in the heritage conservation area.
- The new Building G is setback to align with the existing Building A along the Military Road frontage, as well as at the north-west to address the setback of Building D along Belmont Road.
- The proposed 3-storey street frontage height for Building G has been established by the height of the parapet of the adjacent heritage Building A on site.
- The proposed fourth storey is recessed and set back from Military Road and Elmont Road to limit its visibility.
- The part removal of Building E and demolition of Building C improves views into and out of the site which improves the overall appearance of site density.

Built form and urban design are further detailed in the Architectural Design Statement prepared by Woods Bagot Architects at **Appendix G** and above under **Section 3**.

Response to Heritage

As outlined in the Heritage Impact Statement, works are proposed to buildings that are not heritage items. The front of the site to Military Road is in the Military Road Conservation Area. The Statement of Significance for the Conservation Area provides (note extracts only), “scale is pleasantly moderate” and “‘village’ atmosphere”. It is typically characterised by two storey fine grain buildings with some three storey elements/incursions.

Given the physical features of the site and its context it would be unreasonable to expect that development must respond with only two storey (and fine grain-built form), particularly to the Military Road frontage. This is because of the following reasons:

- The subject site is large, with large existing buildings and is therefore an anomaly in the streetscape and the Conservation Area.
- There are precedents for built form over two storeys in height elsewhere in the Military Road Conservation Area. Refer to the Architectural Design Report at **Appendix G** for details.
- The site is zoned for infrastructure purposes (SP2 Educational Establishment), unlike other zoning patterns along the streetscape which are zoned B2 Local Centre, R2 Low Density Residential and R3 Medium Density Residential.

- The site does not form part of the Mosman Junction Business Centre, as mapped in the Mosman DCP 2012 and is therefore not subject to the same DCP development controls unlike the remainder of the Military Road Conservation Area.
- One of the existing buildings on site (known as Building A) is a heritage item, constructed in 1904 and is situated in the Military Road Conservation Area. Building A is a key physical element along the Military Road streetscape, and is built to a larger scale than most of the streetscape and with no setback.
- The proposed height strategy for the site has the fourth storey largely outside of the Military Road Conservation Area boundary.
- Buildings that are effectively three storeys in height are not uncommon, particularly on large, corner sites.
- The street setback of the existing Building A will be maintained, including part of the line of existing trees to provide a natural landscape screening / buffer along Military Road.
- The proposed development will deliver a significant public benefit, for the purposes of important public social/educational infrastructure that will benefit the needs of the local community.

The proposed height strategy for the new building (Building G) has therefore been developed in response to the existing Building A (a heritage item, constructed in 1904) which is a key element along the Military Road streetscape, built to a larger scale than most of the streetscape and with no setback.

The proposed design of Building G has been developed based on a historical precedent on the site. The proposed design seeks to respond to the Military Road Conservation Area through its street frontage height, building rhythm and articulation and its use of materials and colours.

The existing heritage-listed buildings on the site (Building A and Building D) are not physically affected by the proposed works and their streetscape presence will remain largely unaltered.

Although a portion of the site is located within a Heritage Conservation Area with a high level of consistency in terms of height and character, the existing school site has an established presence in the streetscape, with the original school building (Building A, constructed 1904) being a key element in the streetscape but with a much larger scale and no setback. It should also be kept in mind that Building A is built to the property boundary and thus in this respect the proposed design responds to an existing historical precedent on the site.

The streetscape facades have been carefully considered to respond to the Heritage character and residential scale of the neighbourhood. The façade articulation and materiality of the new Building responds to the patterns of the Heritage buildings on site. Datums, fenestration rhythms, and elemental hierarchies are respected, but the language of the new building is contemporary.

6.2 Heritage

Built Heritage

The Heritage Impact Statement (HIS), prepared by Purcell is appended at **Appendix J**. It has been prepared to consider the impact of the proposed works on the Mosman High School and the adjacent heritage items and Conservation Areas in the immediate vicinity of the works, including the Military Road Conservation Area.

The heritage impacts of the proposal to various site elements are summarised in the following table as per the HIS:

Table 15 Summary of Heritage Impacts
Source: Heritage Impact Statement, Purcell

Site Element	Summary of Heritage Impact
Building A (heritage)	– No adverse heritage impacts to the physical building fabric of Building A (no works proposed) or its setting from proposed buildings or structures. – Improved visual connection to central part of the site by demolition of portions of Building E and Building C. – Proposed retention of the existing setback to proposed Building G maintains visual connection along Military Road to Building A. – Material, height, datums (parapets, roofline etc) have informed Building G response to Military Road streetscape. – Future upgrades still possible and not compromised by the proposed scheme.
Building D (heritage)	– No adverse heritage impacts to the fabric of Building A (no works proposed) or its setting from proposed buildings or structures. – Improved visual connection to central part of the site by demolition of portions of Building E and Building C. – Proposed retention of the existing setback to proposed Building G maintains visual connection along Military Road to Building A. – Material, height, datums (parapets, roofline etc) have informed the response of Building G to the Military Road streetscape. – Future upgrades are still possible and not compromised by the proposed scheme.
Building E	– Removal of the proposed portion of Building E will have no adverse heritage impacts. – Reconfiguration of Building E will have a positive heritage impact on the setting of Building A. – Removal of a portion of Building E will not affect current or future planning and operation of this building.
Building G (new)	The following points are measures that have been incorporated into the design of the development and respond to features of heritage items and conservation area context: – Reduced bulk of Building G by introduction of set-backs to the property boundary is of great benefit to the Conservation Area. – Creation of new axis with Building D links sections of site and existing heritage components. – New building material and form (window openings, parapet lines, corner treatment etc) respond to existing patterns and features of the Conservation Area in a contemporary way. – Setback of upper levels consistent with Building A, and will reduce impact on streetscape. – Setback and facade articulation reduces impact of large wall to Belmont Road. – Those materials visible above urban roof scape are transparent in nature. As such the potential impact of a solid form will be mitigated by light and shadow. Potential visual impacts are also lessened by the dense canopy of the streetscape, which elevates the horizon lessening

	– the visual perception of the overall height of the rooftop play area.
Open space and landscape	– Removal of Building B, Building C, and elements of Building E have created new links both through and within the site. – Removal of existing walkways in central playground area allows for coordinated new approach to linking heritage buildings. – New landscape plan should consider impact on heritage items both within and surrounding the site. – Current sporadic planting formalised to reinforce new patterns of movement and site connections. – Retention of the significant Fig Tree to Belmont Road has a positive heritage impact.

HIS Concluding Comments

- The HIS assesses the impact that the proposed demolition of the existing Building B, Building C and partial demolition of Building E (not heritage items) will have upon the site's heritage values, and concludes that this demolition WILL NOT have a negative heritage impact. The existing heritage-listed buildings on the site (Building A and Building D) are not physically affected by the works and their streetscape presence will remain largely unaltered.
- The development provides improved visual connection to central part of the site by demolition of portions of Building E and Building C.
- Proposed retention of the existing setback to proposed Building G maintains visual connection along Military Road to Building A.
- No adverse heritage impacts to the physical building fabric of Building D (no works proposed) or its setting from proposed buildings or structures. Future upgrades (in particular through the removal of later (intrusive) internal walls) is still possible and not compromised by proposed scheme. Improved visual connection has been developed within the central part of the site by demolition of Building C and bridge-link connections. Proposed Building G creates a new visual axis with Building D. The proposed set-back to Building G maintains visual connection along Belmont Road to Building D.
- Removal of the proposed portion of Building E will have no adverse heritage impacts. Reconfiguration of Building E will have a positive heritage impact on the setting of Building A.
- Although a portion of the site is located within a Conservation Area with a high level of consistency in terms of height and character, the existing school site has an established presence in the streetscape, with the original school building (Building A, constructed 1904) being a key element in the streetscape but with a much larger scale and no setback.

The document also assesses the proposed new Building G and concludes that the construction of this new building will have some heritage impact, particularly upon the Military Road Conservation Area, but that with appropriate mitigation measures, such are street scape archival recording, these impacts can be reduced to an acceptable level.

Historical Archaeology

A Historical Archaeology Assessment (HAA) and Archaeological Research Design report has been prepared by Austral Archaeology and can be found at **Appendix M.**

The HAA has identified that the subject site has the potential to contain archaeological relics relating to the late 19th century residential dwellings along the various frontages, including Doak's House in the north eastern corner of the site. Furthermore, the site may also contain relics from the 1883 development of the school.

The report finds the proposed works are likely to impact on areas of both moderate and high archaeological potential, although previous impacts may have already removed much of the remains present within the study area. A research design methodology has been devised for archaeological investigations to be undertaken prior to commencement of construction works, and a suitably accredited archaeologist will oversee excavation.

Aboriginal Heritage

An Aboriginal Cultural Heritage Report (ACHR) Report (**Appendix K**) has been prepared by Austral Archaeology.

The archaeological survey found no Aboriginal objects or sites. It was determined that this was due to the majority of the site being fully developed as part of a school, with most of the ground covering being concrete. There were no areas of archaeological potential identified in the study area as the level of disturbance and development across the site was too high, while the landforms present in the study area are not considered conducive to Aboriginal occupation of the site. Areas of exposure were visible along the boundaries of the school, however these areas had been previously disturbed by housing and the use of the site as a school. It was determined that the construction of the buildings associated with the school would have caused large scale disturbance across the majority of the site.

The following recommendations were made:

- No further investigative works are required to be undertaken in regard to Aboriginal cultural heritage.
- All contractors undertaking earthworks on site should be briefed on the protection of Aboriginal heritage objects under the National Parks and Wildlife Act 1974 and the penalties for damage to these items.
- All contractors undertaking earthworks in the study area should undergo an induction on identifying Aboriginal heritage objects.
- A copy of the ACHR should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project and to the AHIMS Registrar.

6.3 Tree Management and Amelioration

An Arboricultural Impact Assessment (AIA) was prepared for the proposed development by Birds Tree Consultancy. Refer to this at **Appendix AJ**.

The site subject to this AIA contains a total of seventy-six (76) trees. The trees are situated primarily to the site boundaries, and owing to the constrained nature of the site, a number as described below require removal to accommodate the new building and associated works. However compensatory tree planting is proposed as described further below.

Existing Tree Breakdown – Landscape Significance and Proposed Action

Table 16 Summary of Tree Retention Value and Proposed Action (Retain/Remove)

Retention Value	Existing	Retain	Remove
Low	7	2	5
Medium	56	41	15
High	13	13	0
Total	76	56	20

Note one (1) small additional tree is proposed to be removed from the courtyard associated with infrastructure upgrades under a REF.

Tree 22 – *Ficus macrocarpa*

Tree 22, *Ficus macrocarpa,* is identified in the proposed scheme to be retained and has been found viable by the arborist to be retained in their investigations for the AIA.

The AIA provides in relation to the high retention value *Ficus macrocarpa* tree:

> *The Tree Protection Zone (TPZ) of this tree in accordance with AS 4970-2009 Protection of Trees on Development Sites will be encroached by the proposed development by 17% which is slightly greater than the minor encroachment as defined by AS 4970-2009. The Structural Root Zone (SRZ) of this tree is not impacted by the proposed development. Based on consideration of the revised design based on the proposed suspension of the core of the building and entryway within the TPZ of this tree, this tree will remain viable to be retained under the proposed development. The proposed construction will encroach within the canopy of this tree, however the extent of this impact is less than 10% and the branching structure of the tree will permit canopy reduction pruning in accordance with AS4373-2007 Pruning of Amenity Trees that would reduce the canopy without impacting the balance or form of the canopy. Scaffold design is required to minimise the impact on the canopy of this tree and a pruning specification is to be provided by the Site Arborist.*

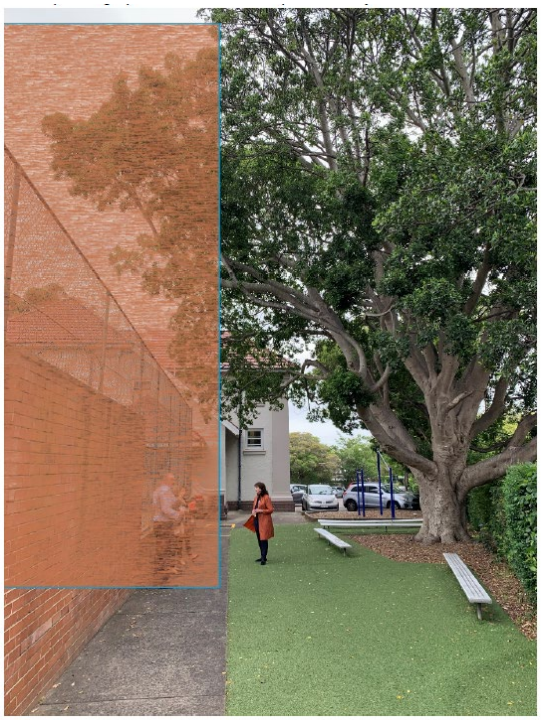


Figure 39 Canopy encroachment Tree 22
Source: Arboricultural Impact Assessment (AIA), Birds Tree Consultancy

Root mapping

The SEARs require “Arboricultural Impact Assessment including detailed root and canopy impact analysis”. Canopy analysis is addressed further below.

The Arboricultural Impact Assessment at **Appendix AJ** provides that Tree Protection Zones (TPZ’s) have been defined for the subject trees in order to define the encroachment of the proposed development in accordance with Australian Standard AS 4970-2009 Protection of Trees on Development Sites. Further to this, Structural Root Zone (SRZ’s) are defined by AS4970-2009 as the area of root development required for the structural stability of the tree. The SRZ is required to be assessed when an encroachment greater than 10% is considered.

New detailed root mapping was not required to be carried out because the overlay of the proposed development footprint to TPZ’s and SRZ’s will not enable respective trees to be retained. The exception is trees 13 and 16 where the AIA provides:

> *There are two isolated sections of the proposed building that extend beyond the existing building line within the TPZ of Trees 13 and 16. Root mapping will be required for these areas using nondestructive excavation. All proposed*

excavation within the TPZ of these trees is to be carried out under the supervision and direction of the Site Arborist. (AIA)

Compensatory Planting

Compensatory tree planting is proposed that will ultimately improve the number of trees and tree canopy cover on site.

A total of 34 trees are proposed to be planted. With 20 trees proposed to be removed, this results in a total of 88 trees on site. (Note: one (1) additional small tree is proposed to be removed as a consequence of utility infrastructure upgrades under approved REF).

The removal of the 20 trees is a consequence of the new building footprint and being a constrained site.

The resulting number of trees (retained/proposed) will increase the canopy cover, and therefore shade cover, on site.

The Landscape Design Report prepared by Black Beetle Landscape Architects at **Appendix I** provides in combination with existing tree canopy the proposed coverage is 21.2%. The proposal results in 24.6% canopy cover on site.

The Draft NSW Greener Places Design Guide sets indicative target of greater than 25 per cent tree canopy cover in urban residential (medium- to high-density) and light commercial areas. Given the urban nature of the site, proposed building footprint and already highly programmed open spaces the further addition of trees across the site would impact the circulation and activities in the open space.

6.4 Play Space

There is a current shortage of play space at Mosman High School . While the DG10 in the Education Standards Facilities Guidelines (ESFG) seeks 10m2/ student, it is a highly constrained site, and is not feasible to achieve this guideline. However, a variety of upgrades and additions of play space amenities, shall create highly designed, considered and quality spaces for students and other users – and increase area of play space per student.

While existing play space will be impacted by the proposed Building G footprint, it is proposed to augment this situation with provision of rooftop playspace.

The Landscape Design Report prepared by Black Beetle Landscape Architects (refer **Appendix I**) specifies Mosman High School currently has a play space area of approximately 6.4m2 per student (for current 1,116 student capacity). The proposed master plan seeks to provide around 7.24m2 per student (for proposed 1,200 student capacity). Further, the quality of the play space will be improved with relationship of new architecture and landscaped spaces, programming of areas, additional trees and shade cover, amenities such as additional seating, and coordinated landscape materials and planting palette.

6.5 CPTED Principles

A Crime Prevention through Environmental Design (CPTED) Assessment has been included in the Architectural Design Statement, prepared by Woods Bagot Architects and is attached at **Appendix G**. The Design Statement outlines the design elements and CPTED principles included in this Proposal that will deter unsocial and criminal behaviour from the site.

Refer to **Table 17** below that highlights the Proposal's consistency with CPTED principles.

Table 17 CPTED Principles

Principle	Proposed development
Perimeter security and access control	– Existing perimeter fencing to be retained and replaced in those sections where removed for construction access.

	–	Main entry relocated to Belmont Road with buzzer access and video intercom to the admin. – Vehicular entry gates are not to be altered and already have access control.
Natural surveillance	–	Clear sight lines, safe lighting and elimination of hiding spots. – The new Reception is located with clear sight lines to the main entry allowing for passive surveillance. – Circulation is rationalised with primary access along wide, open circulation spines that connect directly to vertical circulation nodes. – Constrained, dead-end corridors are minimised. – Student amenities are located to maintain passive surveillance and allow safe use by different age groups and genders. – All stairs are used for both egress and general circulation with either an open type of stair or with all stair doors on 'hold open' only closed during emergency modes. – Safe lighting will be provided along pathways and increased lighting at facility entries. – Entry forecourt has good sight lines from Belmont Road and considered landscape design to eliminate hiding spots.
Territorial reinforcement	–	Clear distinction between private and public property with perimeter fence and access control and monitoring.
Maintenance	–	The selection of materials has considered firstly reducing the likelihood of graffiti and vandalism, but also the ease of removal to facilitate ongoing maintenance. – Regular removal of waste and graffiti. – Regular repair of damaged items. – Ongoing garden maintenance.

The proposed CPTED measures in relation to proposed landscaping is set out at **Figure 40** below.

Figure 40 CPTED and Surveillance
Source: Landscape Design Report, Black Beetle Landscape Architects

6.6 Environmental Amenity

Solar access and overshadowing

Overshadowing and solar access within the site is detailed in the shadow diagrams, prepared by Woods Bagot Architects. Refer to **Appendix F**.

The shadow diagrams illustrate that the proposal does not result in any overshadowing to adjoining properties and minimal overshadowing to Military Road, which is limited to 3pm during mid-winter.

At the summer solstice the shadow impacts are contained within the or marginal impact to roads. From 1pm onwards the Military Road frontage landscaped space starts to be in shade. The renewed seating in this area proposed under the landscape plan will allow respite from the summer sun.

The Western facade is protected by an external circulation corridor reducing impacts of solar radiation and glare in the afternoon.

Visual Privacy

The massing and siting of Building G is massaged back and around the existing significant trees along Military Road and Belmont Road to maintain privacy to school front as well as current streetscape/landscaping.

The proposed new building will form an external brick “crust” to the surrounding Military Road façade, fronting commercial premises. This “crust” will provide a protective element for the school, and improve visual privacy from the busy street.

Additionally, screen planting will be provided to all boundaries, maintaining privacy from street level.

View Loss

View analysis has been prepared by Woods Bagot Architects, and is included in the Architectural Design Statement at **Appendix G**.

The assessment notes Mosman High School’s elevated position on the western side of the Military Road ridge line (approximate RL of 80M AHD). To the east of the site the topography falls away towards Balmoral Beach and to the west to Mosman Bay. As such, view corridors are available towards central Sydney including the Sydney Harbour Bridge and Sydney Opera House to the south-west, and towards Balmoral Beach (Middle Harbour) and the ocean to the east.

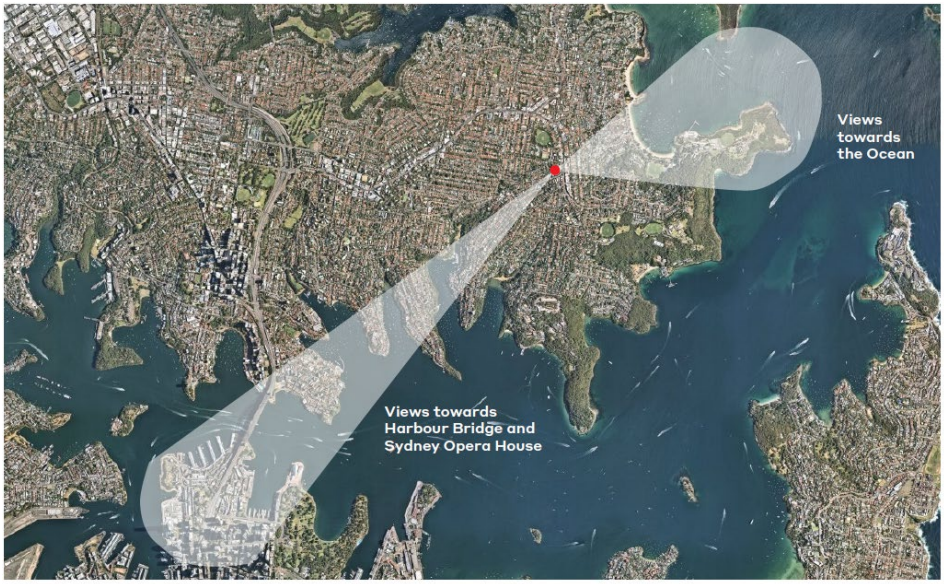


Figure 41 Views from Surroundings
Source: Architectural Design Report, Woods Bagot Architects

The assessment considers any existing developments that may be impacted by the development of the proposed new building at Mosman High School:

Sydney Harbour Bridge / Sydney Opera House views: taller buildings to north of Military Road that are expected to have views of the Sydney Harbour Bridge (and potential Sydney Opera House views) include 695 Military Road and 719 Military Road. While these buildings do have views over the site, the location of the proposed new building on the site will not obscure existing views towards central Sydney, the Sydney Harbour Bridge or Sydney Opera House. Additionally, potential views to the south-west from Allan Border Oval will not be impacted

Mosman High School Site with proposed building location

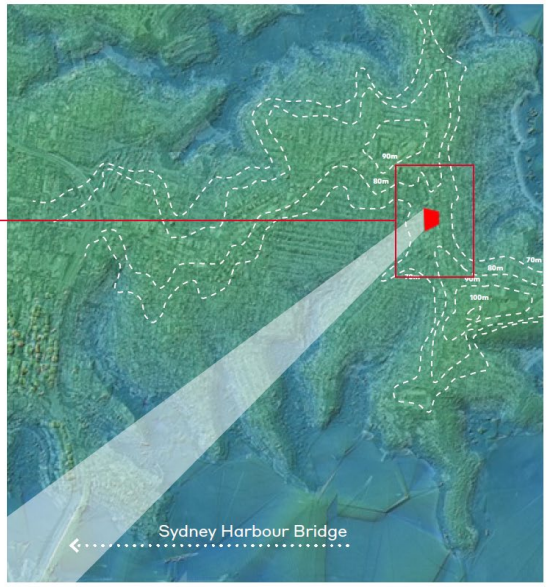
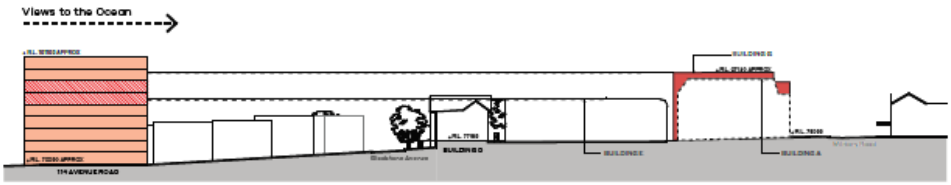


Figure 42 Impact on Surrounding Properties - Harbour Bridge Views
Source: Architectural Design Report, Woods Bagot Architects

Middle Harbour / ocean views: taller buildings to the south-west of the site that are expected to ocean views include 114 Avenue Road and 137 Raglan Street. Woods Bagot's assessment finds ocean views from 137 Raglan Street would not be impacted, however limited apartments within 114 Avenue Road could be impacted. Residential units with views above existing Building E ridgeline and below the proposed new building are potentially impacted. Given the distance between the residential buildings and the proposed school building however, only a portion of a broader panoramic view towards the ocean is impacted and the proportion of the intrusion into the view is considered minimal.



Only residential units above existing Building E ridge line and below Building G (Proposed Building) are potentially impacted.

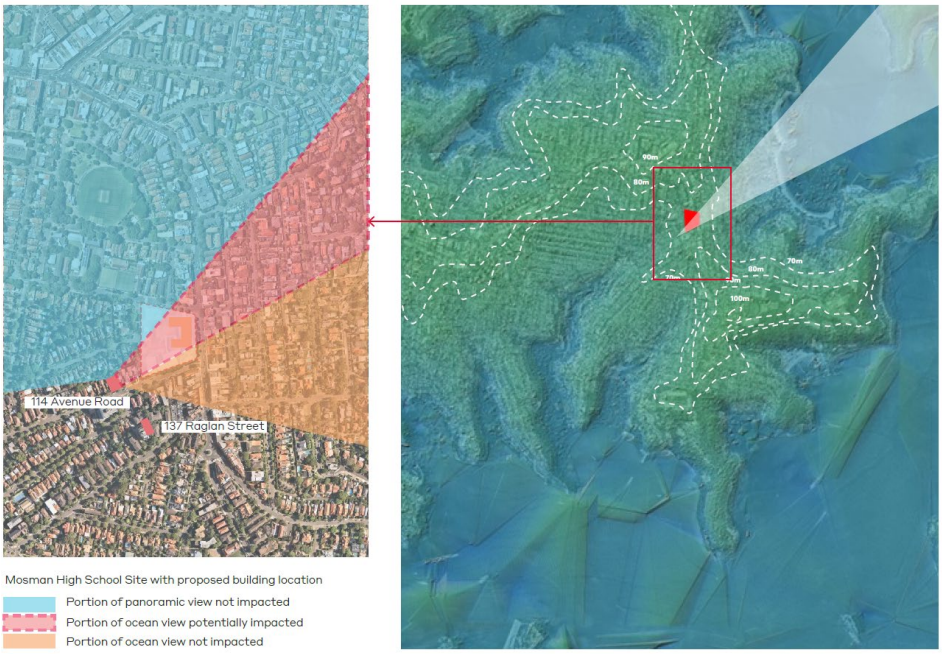


Figure 43 Impact on Surrounding Properties - Ocean Views
Source: Architectural Design Report, Woods Bagot Architects

The topography to the north and south matches the height of the Mosman High School site, therefore view corridors to the north and south will not be significantly impacted by additional buildings.

Visual Impacts

Views have been generated of the proposed new building by Woods Bagot Architects, and is included in the Architectural Design Report at **Appendix G**. Views for assessment have been identified from key vantage points by heritage consultant Purcell to assess the visual impact of the proposal from the Heritage Conservation Area and adjoining properties. These are evaluated separately in the Heritage Impact Statement from a heritage impact perspective.

The visual impact assessment findings are presented below with analysis by Architectus.

View 1: Corner of Military Road and Raglan Street Looking North towards Mosman High School

EXISTING

PROPOSED

Response:

The proposal is hardly visible from this vantage point as it is obscured by existing trees.

Visual impact is marginal-low

View 2: East side of Military Road Looking North towards Mosman High School

EXISTING

PROPOSED

Response:

The upper level and rooftop play area are visible from this vantage point. The multi-court enclosure comprises netting/mesh and so would present as a “haze” or partially transparent rather than as a solid building mass, thereby minimizing visual impact. The lower portion of the building is obscured by trees. The upper height of the multi-court enclosure is a good height transition down from the turreted building at left of photo.

Visual impact is low-moderate

View 3: Military Road Looking South-West to Mosman High School

EXISTING

PROPOSED

Response:

While the proposed building form is larger in scale than the existing building it is replacing, it is in scale with adjoining trees on site. The proposed building addresses the corner and both road frontages with articulation, architectural features and varying materials which add interest, compared with the existing blank facade of the existing building. The visual impact is alleviated by these proposed measures together with the retention of existing trees which partially screen the building.

Visual impact is moderate-high

View 4: Corner of Military Road and Gouldsbury Road Looking South towards Mosman High School

EXISTING

PROPOSED

Response:

The proposed building is barely visible from this vantage point above the existing trees.

Visual impact is marginal-low.

View 5: Corner of Avenue Road and Gladstone Avenue

EXISTING

PROPOSED

Response:

The proposed building is barely visible from this vantage point through existing trees.

Visual impact is marginal-low.

View 6: Keston Avenue Looking East towards Mosman High School

EXISTING

PROPOSED

Response:

The solid buiding form is mostly obscured by existing building D. The enclosure to rooftop multi-court comprises netting/mesh and is therefore semi-permeable, thereby limiting visual impact.

Visual impact is moderate.

View 7: Corner of Belmont Road and Gladstone Avenue

EXISTING

PROPOSED

Response:

The upper floor breaks from the primary form - using light weight materials to distinguish them from the masonry and terracotta materiality of Mosman. This allows the upper core to blend into the background as seen in the view above.

Visual impact is moderate.

In summary, the proposal will result in visual changes from all vantage points when viewed from the surrounding context. While the proposal will result in visual impacts from these 7 vantage points, these impacts have been assessed as negligible/low (3 views), low-moderate (1 view), moderate (2 views), moderate-high (1 view). Overall, the visual impact of the proposal is acceptable.

Wind Impacts

The Architectural Design Statement prepared by Woods Bagot Architects (**Appendix G**) provides that the Winter prevailing wind comes from the west (May – September) and the warmer wind from the east (November – March).

Given the existing and proposed buildings and trees form a perimeter to the site with creation of internal courtyard this will assist in creation of central internal spaces that are largely protected and suitable for congregation of pedestrians.

It is considered that wind conditions at the majority of locations around the site would be expected to be classified as suitable for pedestrian standing with locations such as the rooftop play area suitable for sitting and walking activities.

6.7 Transport, Traffic and Accessibility

A Traffic Impact Assessment has been prepared by PTC and is appended at **Appendix P**. The assessment includes details of the surrounding road network and traffic movements, including an analysis of the impacts associated with this proposal.

Existing situation

Bus services

In terms of STA bus services, based on the frequency of services and the number of routes operating within the vicinity of MHS, the school is considered to be generally well connected via bus for staff who live outside of Mosman. However, some students would need to change buses, which is inconvenient and therefore public transport may not be an attractive travel mode. In regard to the network of services offering a 1-seat trip, the buses provide a wide coverage of the southern and eastern parts of the catchment area. The north and west sections are not serviced at all by 1-seat trip routes, meaning that students are more likely to choose private transport as a means of getting to and from school. There are no direct buses between the western enrolment area and the school. This is seen as a gap, and it would be beneficial if new bus routes were provided to cater for more students.

In terms of school bus services, the existing school bus routes provide coverage within the catchment area primarily south and east of the school. Most of the bus routes are directed through Military Road and Split Road. There is a lack of routes which go through local roads north and west of the school.

Bus stops

The closest public bus stop is located immediately adjacent to the school on Military Road.

Currently school buses set-down and pick-up at a bus stop located on Gladstone Avenue. PTC note this is too short as the scheduled buses queue along Gladstone Avenue while blocking a travel lane. This is seen as a safety issue, as visibility is reduced and drivers may undertake hazardous manoeuvres. It is therefore recommended that the current parking restrictions be amended to provide a longer bus bay. Another option would be to investigate the possibility of amending the bus schedules.

Car pick-up and drop-off

A designated pick-up/drop-off area is provided within the Gladstone Avenue school frontage. This pick-up/drop-off zone accommodates a total of 4 car spaces.

Active transport infrastructure

On-road cycle paths extend across the Mosman LGA, providing connection to Spit Junction, Clifton Gardens, Balmoral and Georges Heights. However, it has been noted that the topography within Mosman is hilly, and in combination with the on-road arrangement of the majority of bicycle lanes, cycling is not likely to become the main transportation mode for students.

A review of the pedestrian infrastructure around the school indicates that most of the approaches are provided with good facilities in the form of footpaths on both sides of the road and pedestrian crossings, both signalised and as zebra/wombat crossings. However, there is currently a lack of a pedestrian connection across Gladstone Avenue at the intersection of Avenue Road/Gladstone Avenue. This was identified to be a key pedestrian desire line for students travelling along Avenue Road. As such, to bridge this connection, SINSW will investigate the feasibility of the provision of a wombat crossing at this location, subject to further pedestrian/traffic surveys and a detailed RMS warrants assessment.

Travel mode

A travel mode usage questionnaire was undertaken by students and staff at Mosman High School. The results are set out at **Tables 18** and **19** below.

Table 18 Travel mode – students travelling to school on typical morning
Source: Traffic Impact Assessment, ptc

Mode Share	Percentages
Bus only	49%
Walk only	27%
Car (as passenger)	15%
Car (as driver)	2%
Bicycle	1%
Ferry and bus	0%
Other	6%

Table 19 Travel mode – staff travelling to/from school
Source: Traffic Impact Assessment, ptc

Mode Share	Percentages
Bus only	11.4%
Walk only	4.3%
Car (as passenger)	1.4%
Car (as driver)	71.4%
Motorcycle/scooter	1.4%
Other	10%

It is noted that the peak arrival time of staff mostly coincides with the network AM peak hour of 7:45am – 8:45pm. However, in the afternoon, the peak departure period does generally not overlap with the network PM peak hour of 2:45pm – 3:45pm.

On-site parking

A total of 33 car spaces are provided within the Mosman High School grounds, which are reserved for school staff. The spaces are occupied throughout the day, with the car park reaching its capacity at around 9:30am. Of the staff who drive, approximately 47.1% of staff parks within the school car park with the remaining 53% parking in an adjacent car park or street. A small area in the on-site carpark is dedicated to motorcycle parking.

On-street parking occupancy

Existing on-street car parking provision and survey of occupancy is provided in the following graph (**Figure 44**).

It shows that on-street parking spaces are never fully utilised, even at peak school times (drop-off, pick-up and operation).

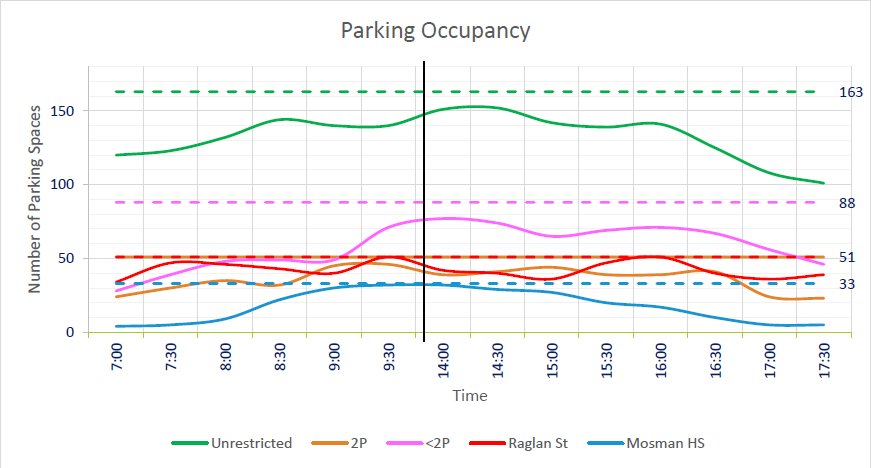


Figure 44 Existing On-Street Parking Occupancy Survey Results
Source: Traffic Impact Assessment, ptc

Traffic volumes on road network

Surveys were conducted for existing traffic volumes for five intersections adjoining the site. Based on the total traffic volumes for each hourly time interval at each intersection, the overall network peak hours have been determined by calculating the total traffic volumes across the network. The network peak hours are outlined below:

- Network AM School Peak: 7:45am - 8:45am; and
- Network PM School Peak: 2:45pm – 3:45pm.

The road network peak times also coincide with the school's start and finish times.

SIDRA analysis was undertaken for the five intersections adjoining the site based on existing situation, to understand their performance. The results are set out in **Table 20** below.

Table 20 SIDRA Results for existing scenario
Source: Traffic Impact Assessment, ptc

Intersection	Peak Period	Level of Service	Highest Degree of Saturation (v/c)	Highest Delay[8] (s)	95% Back of Queue Length (m)
1. Military Road / Belmont Road	AM Peak	A	0.609	11.0	86.9
	PM Peak	A	0.562	10.8	72.8
2. Military Road / Avenue Road	AM Peak	C	0.498	32.7	31.4
	PM Peak	C	0.562	42.5	49.1
3. Avenue Road / Gladstone Avenue	AM Peak	A	0.192	6.1	3.4
	PM Peak	A	0.179	6.0	2.8
4. Gladstone Avenue / Keston Avenue	AM Peak	A	0.097	4.5	1.5
	PM Peak	A	0.099	4.5	1.0
5. Belmont Road / Gladstone Avenue	AM Peak	A	0.229	11.1	7.3
	PM Peak	A	0.209	10.8	8.1

Proposed Development

Car parking

Given the minimal staff increase as a result of the proposed development (from 85 to 91), the employment of operational strategies such as car pooling is a suitable mitigation measure. Operational strategies are proposed to be employed such as promotion of car pooling and other alternate sustainable travel initiatives. Refer to discussion on the Green Travel Plan below for details and the Detailed Green Travel Plan at **Appendix Q**.

Trip generation

The trip generation for the proposed development, accounting for existing mode share, is set out at **Table 21** below.

Table 21 Trip Generation Summary – Students and Staff
Source: Traffic Impact Assessment, ptc

Type of Trips	AM Peak Additional Trips	PM Peak Additional Trips
Students	11	6
Staff	4	-
Total	15	6

Considering the low additional trip generation associated with the proposed development, in combination with the acceptable results of the existing situation, it is considered that the impact of the increased student and staff numbers on the road network will be insignificant. The determined 15 additional trips in the morning would result in one additional vehicle every three minutes, which falls under the daily fluctuation. Considering the above, SIDRA modelling is not considered required for this development application.

Car pick-up and drop-off

A queueing analysis was undertaken to determine adequacy of the pick-up and drop-off provisions. This resulted in the following pick-up and drop-off demand for the post-development scenario as set out in **Table 22**.

Table 22 Poisson Distribution Queuing Analysis – Future
Source: Traffic Impact Assessment, ptc

Period	Peak Time Period (minutes)	Forecast Pick-up/Drop-off Demand (veh)	Service Time (seconds/car)	Model Result Required No. Pick-up/Drop-off Bays
AM Peak	30	154	30	6
PM Peak	30	71	120	9

This requires additional 6 pick-up / drop-off bays in the morning peak and 9 pick-up /drop-off bays in the afternoon peak.

However, there are no changes proposed to the current pick-up and drop-off areas as part of this application. PTC have provided the following reasoning for this:

- *"During our site observation, no queuing related to pick-up and drop-off was observed. Also, from the online surveys it is known that parents undertake pick-up and drop-off along adjacent streets meaning that the traffic is distributed across the perimeters of the school.*
- *The anticipated increase in pick-up and drop-off demand is considered to be minor.*
- *SINSW is in the process of actively promoting alternative transport modes, meaning that a shift away from cars may be achieved.*
- *The student population will increase gradually, and it is not expected that the new student enrolment capacity will be reached immediately.*
- *Should pick-up and drop-off related queuing occur in the future, a feasibility of changes to parking restrictions or staggered school start / finish times could be undertaken.*
- *It is recommended that the utilisation of the pick-up/drop-off zone on Gladstone Avenue be monitored and if required, future works may be implemented to support the additional pick-up/drop-off demand."*

Changes to pedestrian access points

The number of access points is proposed to be maintained, but some of them are proposed to be shifted. The development proposes to relocate the main student entry to

Belmont Road, and thereby remove one access point from Military Road. A secondary gate along Belmont road will be allocated to visitors. The southern access off Military Road will be operational for student entry / exit.

Vehicular access

No new vehicular access points are proposed.

The southern access off Gladstone Avenue will be used by waste collection vehicles after hours and for students throughout the school hours.

The access point along Avenue Road will remain a secondary access point, generally used in emergencies only.

Car park entry is to remain at the northern end of Gladstone Avenue.

School bus stop

In regard to the bus zone along Gladstone Avenue (refer to Section 5.5), SINSW is assessing options to mitigate the existing bus congestion during the afternoon pick-up time. One option would be to increase the bus zone along Gladstone Avenue; However, SINSW will also be in discussions with bus providers to review school bus timetables and bus arrival and departure times as these could be further staggered and the number of buses more evenly spread. This will form the final strategy for bus zones to the school.

Key Findings

A review of the available public transport services operating within the vicinity of the school indicates that bus is most easily accessible, with numerous services operating along Military Road, providing connectivity to the Sydney CBD and the northern beaches. MHigh School is also serviced by a number of school bus services, some of which stop at the bus zone along Gladstone Avenue.

In terms of active transport, the on-road cycle paths extend across the Mosman LGA, providing connection to Spit Junction, Clifton Gardens, Balmoral and Georges Heights. However, it has been noted that the topography within Mosman is hilly, and in combination with the on-road arrangement of the majority of bicycle lanes, cycling is not likely to become the main transportation mode for students.

A review of the pedestrian infrastructure around the school indicates that most of the approaches are provided with good facilities in the form of footpaths on both sides of the road and pedestrian crossings, both signalised and as zebra/wombat crossings. However, there is currently a lack of a pedestrian connection across Gladstone Avenue at the intersection of Avenue Road/Gladstone Avenue. This was identified to be a key pedestrian desire line for students travelling along Avenue Road. As such, to bridge this connection, SINSW will investigate the feasibility of the provision of a wombat crossing at this location, subject to further pedestrian/traffic surveys and a detailed RMS warrants assessment.

It has been determined that the proposed development will likely increase the traffic generation by 15 trips in the morning and 6 trips in the afternoon peak hours. This, in combination with acceptable results of the existing traffic situation, it is considered that the impact of the increased student and staff numbers on the road network will be insignificant. Therefore, SIDRA modelling is not considered required for this development application.

It is proposed to relocate the main pedestrian entry from Military Road to Belmont Road.

No changes are proposed to the existing staff car park as part of the development.

No modifications are proposed to the existing pick-up/drop-off zone along Gladstone Avenue. The projected increase in the number of students is minor, will occur gradually and it is therefore not anticipated that this will result in a major increase in private vehicle pick-up and drop-off traffic. In addition, with SINSW actively investigating and adopting sustainable travel processes, a shift in travel behaviour may be observed. Therefore, it is proposed to retain the existing arrangement, and only if required in the future, further investigation in additional provision of pick-up and drop-off areas can be investigated.

Green Travel Plan

A detailed Green Travel Plan (GTP) has been prepared by PTC**,** and is appended at **Appendix Q**. This report is to be read in conjunction with the Traffic Impact Assessment, appended at **Appendix P**.

The GTP aims to increase active travel and transport for students and staff, providing reduced parking costs, less congestion on Military Road and the surrounding road network and increased health and environmental benefits. It is noted that the majority of students and staff already use active transport options, with 49% of the site using public transport to travel to the school.

The GTP outlines a range of proposed action items including;

- Advocating the use of end of trip facilities provided for staff to encourage more walking and cycling;
- Promote the use of the new bicycle parking facility on site;
- Implement a walking and cycling buddy scheme;
- Provide bus timetables on site to promote public transport usage; and
- Converting 2 spaces along the school boundary to car share spaces (needs to be discussed by Council).

Construction Traffic and Parking

A Concept Construction Traffic Management Plan (CCTMP) has been prepared by PTC for the proposed development to outline the construction traffic measures to improve site safety to the public and workers during the construction process. Refer to the CCTMP at **Appendix AG.**

Construction Vehicle Size

The construction during the SSDA stage will involve vehicles limited up to a 19 m Articulated Vehicle (AV) for all phases.

Approach routes of construction vehicles

- Considerations have been undertaken in regard to the approach and departure routes for construction vehicles. Upon communication with Council and TfNSW, the use of the Spit Junction as a means of getting to the site has been ruled out. Therefore, an alternative option was prepared, which is described below.
- All construction vehicles from all directions will arrive via Military Road from the west and then turn right into Belmont Road. To access the site vehicles travelling from Belmont Road will turn right into Gladstone Avenue, left into Avenue Road, left into Military Road and left once again into Belmont Road to access the work zone.
- Leaving the site, vehicles will travel back along Belmont Road back towards Military Road.

Figure 45 Construction vehicle routes
Source: CCTMP prepared by PTC

A swept path assessment was carried out and this found all swept path movements for a 19m vehicle are possible.

Stop Line

Temporary works are required to Belmont Road to facilitate construction vehicle swept paths. Specifically, it is proposed to temporarily relocate TFNSW stop line on eastbound approach arm to Military Road/Belmont Road intersection to accommodate 19m Articulated Vehicle (AV). This will require approval from Transport for NSW under Section 138 of the Roads Act 1993.

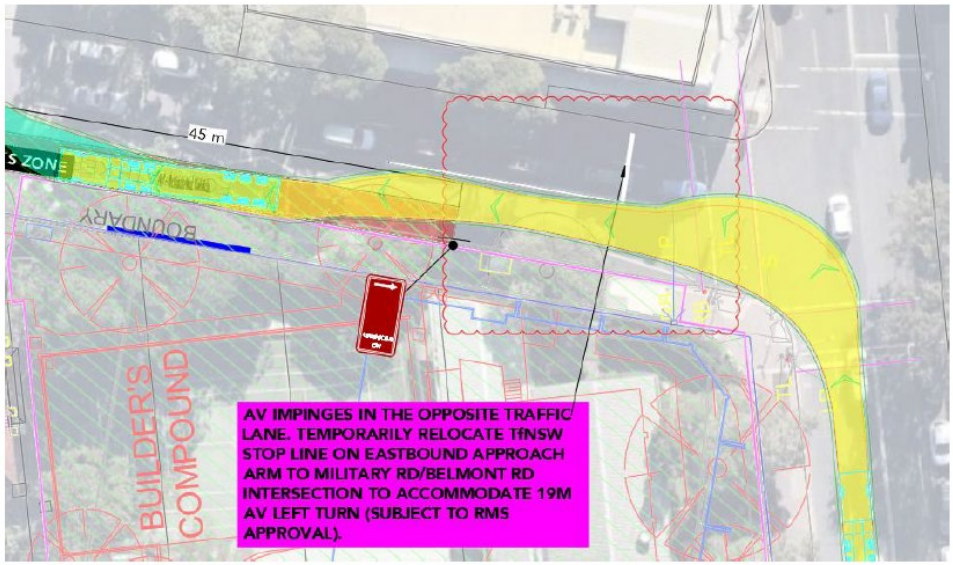


Figure 46 Stop Line Relocation
Source: CCTMP prepared by PTC

Other temporary on-street parking changes

A 'Work Zone' will require the conversion of nine existing car parking spaces and two taxi zone spaces on the southern side of Belmont Road to assist in construction activity. There is also temporary removal of parking spaces proposed to facilitate construction vehicle movements on Avenue and Military Roads on Military Road. One car parking space and motorcycle spaces on Military Road, as well as one car parking space on Avenue Road will need to be temporarily removed to cater for the turning path of an AV.

The existing three Taxi Zone spaces to Belmont Road will be relocated to the western side of the Work Zone while the remaining space on the eastern side will be converted to

"No Stopping". All the temporary changes to parking will require approval from Transport for NSW under Section 138 of the Roads Act 1993.

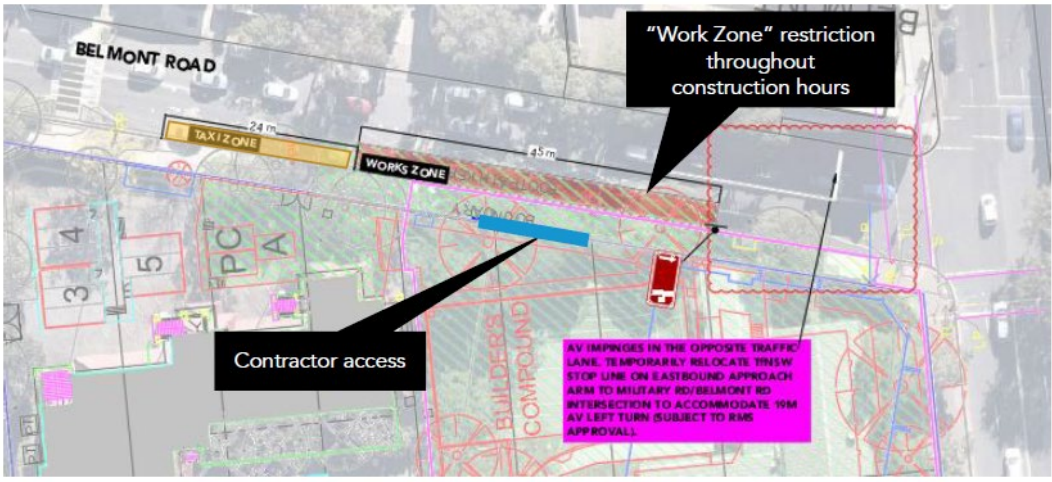


Figure 47 Work Zone
Source: CCTMP prepared by PTC

The CCTMP also addresses Parking Controls, Pedestrian Management, Staff Parking, Emergency Vehicle Access, and more.

PTC found that with the measures described in the concept CTMP in place, the construction activity is anticipated to have minimal disruption to the daily activities within the vicinity of the site.

It is envisaged that this document will be reviewed during the construction stage and amended if required, due to changes in design, TfNSW, Councils or any other authority requirements.

6.8 Ecologically Sustainable Development (ESD)

In accordance with the SEARs requirements pursuant to Part 4 of the EP&A Act, this EIS is accompanied by an ESD report prepared by EMF Griffiths and is appended at **Appendix AI.**

The proposed development aligns with targeted initiatives under the Green Star scorecard and proposes a 4-star Green Star Design and As Built equivalency design. Please refer to the Green Star Scorecard appended to the ESD report, at **Appendix AI.**

ESD initiatives for the proposed development include:

- A building design that is responsive to the local climate and includes passive design measures to provide high quality indoor environments that are thermally comfortable and have adequate access to fresh air and natural light.
- Façade optimisation to ensure the project meets the energy efficiency requirements of NCC 2019 Section J while providing adequate levels of daylight and visual connection to nature.
- Measures to reduce potable water consumption including water efficient fixtures and fittings and a rainwater tank to enable rainwater reuse for irrigation.
- Measures to reduce energy consumption including energy efficient building systems and controls, including LED lighting and efficient mechanical systems coupled with occupancy sensors.
- A landscaping strategy that focuses on the retention of existing trees and provides adequate shading and a diversity of spaces for equitable access to outdoor play and learning.
- Provisions for the future installation of a 41kW PV system by SINSW.

The project has considered general building form, orientation, and shading, as well as roof space for renewable energy as required:

- The orientation and shading have been considered to ensure solar gain is managed appropriately for heating and cooling.
- Orientation and façade design will consider daylighting requirements and views for improved cognition, health and wellbeing of students, teachers, and staff. Deep plan forms have been avoided so natural lighting is most effective.
- The building is being designed to meet the stringent energy efficiency requirements of NCC 2019 Section J. This applies to both building fabric and services, including insulation, glazing, and shading which will be designed to ensure spaces require minimal additional heating and cooling.
- The proposed design provides spatial allowance for a 41kW rooftop photovoltaic electricity system to be incorporated to reduce greenhouse gas emissions and reliance on mains power.

The four principles of ecological sustainable development have been incorporated into the proposal. The proposal's response to these principles are analysed below.

Precautionary Principle

Adequate due diligence has been conducted to understand the local environment and investigate any risks the project may pose. The proposed development will be constructed on previously developed land, as it a redevelopment of the existing school. During the design and construction phases, the main contractor will implement an Environmental Management Plan (EMP) demonstrating formalised systematic and methodical approach to environmentally friendly construction that answers to site specific environmental risks and hazards. Project ESD responses align with the targeted initiatives under Green Star scorecard. Potential threats of serious or irreversible damage on the local environment have not been identified.

Intergenerational equity

The proposed development ensures the health, diversity and productivity of the environment are maintained through the implementation of passive and active design measures that reduce operational energy and water use from the project.

Energy consumption will be designed to achieve compliance to the National Construction Code NCC 2019 Section J requirements. The reduction in water use will be established through high WELS rated water fixtures and fittings, and provision of a rainwater capture and reuse system. Waste generated during the construction phase will be separated in multiple streams to enable recycling and reuse with a consequent reduction in the amount of waste sent to landfill. Reducing energy, water and waste ensures that the health, diversity, and productivity of the environment is maintained for the benefit of future generations.

Conservation of biological diversity and ecological integrity

The proposed development being in previously developed land alleviates much of the biological diversity concern for the development. Tree preservation has been established as a high project priority and most trees will be retained. In addition, new trees and vegetation will be planted as part of the landscaping strategy to increase tree canopy cover and ecological value. During the design phase an Environmental Management Plan (EMP) will be developed to ensure that construction works do not adversely affect the biological diversity and ecological integrity of the site, including for example, measures to protect existing trees. The EMP will be monitored via an Environmental Management System (EMS) to ensure adherence by all contractors and mitigate any risks to the environment. Climate risks have been considered to help future proof the development to withstand the effects of climate change.

Improved valuation, pricing and incentive mechanisms

The valuation of the project's assets and services consider environmental factors through the implementation of various ESD initiatives.

Environmental aspects are key criteria in the design and selection of building systems and materials. For example, the building façade is being designed for good daylighting, thermal comfort, glare mitigation and energy performance rather than the lowest cost façade system. The mechanical system, lift(s) and lighting system are being designed for low energy consumption and their components will be selected considering whole-of-life costs, i.e., including operational energy use in the equation. Materials will be selected based on the Educational Facilities Standards and Guidelines (EFSG) which are based on a whole-of-life approach that incorporates environmental aspects.

6.9 Social Impacts

The SEARs requested an assessment of the consequences of the redevelopment of Mosman High School to its immediate surrounding context and the opportunities for the school and Mosman LGA. A Social Impact Assessment has been undertaken by RPS Group at **Appendix O**.

As per the Department of Education's policy of 'Community Use of School Facilities Implementation Procedure"**,** schools are encouraged to share facilities with their local community. This policy encourages members of the community and education groups to use school facilities for appropriate uses and purposes when they are not required by the school. Schools are a community resource, that provides both benefits to both schools and their communities.

Table 23 below assesses the social impacts resulting from the proposed development.

Table 23 Social Impact of proposed development

	Social Impact
Land Use	On balance, the proposal once constructed and operational, will result in improved utilisation of the land for the zoned purpose of Educational Establishment. It will greatly enhance student capacity and improve the quality of the facility for the local area which will result in a better utilisation of the land. The reduced accessibility to playing fields facilities during the construction phase is considered a low-medium impact. Those facilities will be upgraded as part of works, providing long term benefits to the students of Mosman High School.
Access to Education and Social Infrastructure	Once the proposal is in operation, it will have a high likelihood of providing improved access to education and social infrastructure. It will support the children and teenagers in the Mosman SA2 area, and the overall catchment of the school. The school hall has been placed near the entrance to the school, allowing ease of accessibility while maintaining school security. The proposal will have low-medium impacts during the construction. Complaints registers will identify concerns and ensure they are rectified in a timely manner. The proposal will have a medium level of impact to neighbouring residents due to the increase of students when in operation. The Operational Traffic and Access Management Plan and Green Travel Plan will support improved access to students and teachers using the school and reduced impacts on the surrounding neighbourhood.
Economy	The proposal is highly likely to provide economic benefits to Mosman and Greater Sydney. It is also highly likely that the proposal will provide long term economic benefits as it will provide better education for its students and an enhanced working environment for its staff.

Community values and cohesion	The proposal will have low-medium impacts. Mitigation measures will ensure that organisations such as the P&C will be able to continue to function during the construction phase. Once operational, the upgraded and expanded school will promote community cohesion and values. Refer to **Section 8.**
Crime and safety	Once the proposal is in operation, it will have a high likelihood of reducing preventable risk.
Accessibility	Once the proposal is in operation, it will have a high likelihood of improving accessibility for students and teachers. The proposal has been designed having regard to BCA and Accessibility requirements.

Overall, it is considered that the proposal will have medium to long term positive social impacts, subject to the successful implementation of the recommended mitigation measures.

6.10 Noise and Vibration

A Noise and Vibration Impact Assessment has been prepared by JHA Services, and is attached at **Appendix AD.**

Noise monitoring locations were selected to characterise the existing noise environment at the site. Attended and unattended noise surveys were conducted to assess noise impacts from the proposed development to the nearby affected noise sensitive receivers; hence, noise survey locations are at the following nearby noise sensitive receivers:

- M1: 19 Keaston Avenue, Modman
- M2 / L1: Mosman High School, Gladstone Avenue Boundary
- M3 / L2: Mosman High School, Military Road Boundary
- 40 Muston Street, Mosman

Refer to **Figure 48** for the noise survey locations.

Figure 48 Noise survey locations and boundary of the site.
Source: JHA Services

Various standards and guidelines have been used to derive project noise level criteria. Refer to the Noise and Vibration Impact Assessment for details.

Construction Noise and Vibration

A preliminary construction noise assessment has been carried out based on typical plant and machinery expected throughout the construction stages. The preliminary noise assessment has been considered at the nearest existing residential receivers.

The noise associated with the normal construction works is expected to exceed the noise limits for highly noise affected receivers within standard hours. This assessment is based on typical noise levels associated with construction sites and machinery.

Nevertheless, compliance with the relevant construction noise criteria can be achieved through specific noise mitigation measures (refer to **Section 8**). Additionally, a Construction Noise and Vibration Management Plan (CNVMP) will be required once the contractor is appointed and construction management is finalised before construction commences on site.

For any vibration intensive plant expected to be within close proximity of the minimum distances described above, the contractor must engage a qualified engineer to carry out a vibration survey in order to assess any potential risks. The vibration survey and assessment will determine whether the vibration levels might exceed the relevant criteria then vibration mitigation and management measures will need to be put in place to ensure vibration impacts are minimized as far as practicable.

Construction working hours

The following construction hours are proposed as follows:

- Monday to Friday: 7am to 6pm.
- Saturday: 8am to 1pm.
- Sundays and Public Holidays: No excavation or construction works.

It is noted that the proposed construction hours are within the recommended EPA hours. Noise control measures are to be implemented during these hours following consultation and engagement with the community. Refer to **Section 8**.

High noise level works – i.e. piling, excavation, etc. – shall be scheduled to not occur during shoulder periods of the recommended standard hours – i.e 7am to 8am and 5pm to 6pm.

A detailed CNVMP shall further assess the noise impact of construction works, and shall include a protocol to minimise any potential noise impacts to identified sensitive receivers, and ensure that appropriate noise control measures are defined and implemented to comply with all relevant noise guidelines.

Operational Noise and Vibration

External Mechanical Plant

Mechanical plant will operate continuously during school operational hours (day time and evening time periods). At this stage, final mechanical selections have not been made; therefore, it is not possible to undertake a detailed assessment of the mechanical plant noise emissions.

Considering the distance from the proposed mechanical plant areas to the nearest noise sensitive receivers, the worst case scenario has been deemed to be the residential receiver along Belmont Road. Therefore, the maximum allowable cumulative noise emissions from the external mechanical plant to the worst-case receiver, have been predicted to be limited to the following noise levels at 1 metre from the plant boundary:

- Mechanical Plant Base A: $L_{Aeq,15min}$ 70dB(A).
- Mechanical Plant Base B: $L_{Aeq,15min}$ 73dB(A).

Noise controls will be incorporated with the design of the mechanical plant rooms to ensure that the cumulative noise levels from plant areas to the nearest noise sensitive receivers meets the NSW NPI noise level criteria. Refer to **Section 8**.

Public address and School Bell Systems

At this stage, public address and school bell systems selections have been not made; therefore, it is not possible to undertake a detailed assessment of the public address and school bell noise emissions.

The Public Address and School Bell Systems shall be designed, installed and operated such that the systems do not interfere unreasonably with the comfort and repose of occupants of nearby residences. Recommendations have been provided to minimise the impact of external noise emissions associated with the public address and school bell systems of the proposed development to the nearest sensitive receivers. Refer to **Section 8**.

Multi-Purpose Hall

The Multi-Purpose Hall is anticipated to host events that include amplified music outside of school operating hours. 3D acoustic modelling for external noise breakout from events using the Multi-Purpose Hall was conducted to assess worst case noise generating scenario, which is considered to be live music events during evening/night time periods between 6pm to 11pm.

Operational noise from the Multi-Purpose Hall is expected to meet the required criteria during the evening time (6pm – 10pm) at both receivers with windows and doors open. However, it is expected that noise levels will exceed the required noise level criteria during the night-time period (10pm – 11pm), therefore, during events, the Multi-Purpose Hall windows and doors are required to be closed after 10pm.

Acoustic design of the façade shall be continued during the detailed design stage to confirm that noise levels will be met during the operation of the Multi-Purpose Hall.

Outdoor Playground & Rooftop Sports Activities

The noise impacts from the use of the outdoor playground and rooftop sports area are expected to meet the established noise level criteria at the nearest noise sensitive receivers. The key noise source will be students using the outdoor playgrounds during recess or lunch periods and before / after school. It has been assumed that the outdoor playgrounds are only likely to be at full capacity during recess or lunch times and the vocal effort of the students communicating will be generally considered as ‘normal’ speech.

The rooftop sports area of the proposed new building has the potential to impact on the nearest noise sensitive receivers to the East. The rooftop sports area is expected to be in use during School hours until 5pm.

The noise assessment found that noise generated by the outdoor playgrounds and rooftop sports area at the nearest noise sensitive receivers meet the required noise level criteria.

Offensive noise

An offensive noise assessment has been carried out, which concludes that the development is able to satisfy the requirements of the Protection of the Environmental Operations Act 1997 for “offensive noise”.

Traffic Generation Noise

A traffic generation noise assessment has been undertaken in order to determine the potential noise impact of traffic generated by the proposed development. This assessment considers the additional vehicle trips from the School post development and the expected traffic volumes and noise impacts on Belmont Road, Gladstone Avenue and Avenue Road. Traffic generated as a result of the proposed school development is not expected to exceed the criteria of 2.0dB increase as per the NSW Road Noise Policy.

6.11 Contamination

Coffey Services Australia Pty Ltd (Coffey) has prepared a Contamination Assessment (a hybrid preliminary site investigation (PSI) and detailed site investigation (DSI)) for the proposed development and this can be found at **Appendix S**.

Coffey undertook a desktop study which comprised a range of regulatory record reviews, historical maps, historical aerial photograph review and a site walkover. The resulting desktop study identified historical land-use was largely limited to use as a school since at least 1903. Identified contaminants of potential concern (COPC) and areas requiring investigation included areas

of fill material, impacts from historical use of pesticides and lead contamination resulting from poor demolition practices.

Following the desktop study, Coffey carried out a limited intrusive site investigation involving the drilling of five boreholes in conjunction with the Coffey geotechnical investigation. Sampling locations were largely selected to target potential future building locations proposed together with addressing potential contamination identified during the desktop study. Selected samples collected were submitted to the laboratory for the analysis of identified contaminants of potential concern (COPC).

Analytical results of the soil sampling were assessed against relevant criteria within the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013) with the following key points noted:

- All samples results reported concentrations of BTEX, TRH, PAHs, PCBs, OCPs and OPPs below the laboratory LOR.
- Detectable concentrations of heavy metals were reported at most locations, however all were below respective assessment criteria, where applicable. Some minor exceedances of ecological criteria were obtained at sample location BH03_0.2-0.4 for copper.
- Detectable concentrations of PAHs were reported in two samples only (BH01_0.2-0.4 and BH04_0.2-0.4). Sample location BH04 reported exceedances of the following criteria:
    - Benzo(a)pyrene was in exceedance of ecological criteria for both commercial/industrial and urban residential/public open space land use setting at sample location BH04.
- B(a)P TEQ was in exceedance of human health assessment criteria at sample location BH04.

Based on these results, Coffey concluded the following:

- The site walkover identified some potential fill material present at the site particularly at the location of the COLA. The investigation identified fill in some boreholes, ranging in thickness up to 0.8 m (where present). No odours or staining were observed within the fill materials encountered during the site investigation. One suspected ACM fragment was identified during the walkover in the south eastern portion of the site. The fragment was notified to the school's GA who removed it from the soil. Site records also indicated that ACM had been identified in areas surrounding Block D.
- Samples of fill material submitted for laboratory analysis reported contamination above human health assessment criteria for B(a)P TEQ and above ecological assessment criteria for copper and benzo(a)pyrene. These detections are in areas where pavement would be retained in the preferred development concept, thereby restricting the potential for exposure. It is noted that the concentrations of copper and B(a)P TEQ indicate these soil do not pose potentially unacceptable risks to construction workers in the event that pavement is disturbed during the site's redevelopment
- Evidence of pesticides or hazardous materials were not identified at detectable levels in samples of fill collected from areas adjoining existing buildings.

- Soil materials encountered at BH03 did not exhibit visual/olfactory indications of potential contamination from the waste sump located nearby. Samples of fill material collected from BH03 submitted for laboratory analysis were largely below laboratory detection limits.

In summary, based on the findings of the desktop study and limited soil investigation completed, it is assessed that the site can be made suitable for the proposed development in accordance with State Environment Planning Policy No. 55 – Remediation of Land.

The following key recommendations were made based on the conclusions made above:

- It is recommended that a Remedial Action Plan (RAP) is developed to mitigate potential risks from ACM in fill during site development, and a plan to manage unexpected finds of contamination. Given that existing buildings restrict the ability to complete further investigations within the site, it is recommended that the RAP outlines a scope for supplementary investigations to address the areas of uncertainty, and a procedure to incorporate the findings of these investigations into site development activities (i.e. as an addendum to the RAP).

A RAP has been prepared for the proposed development by Coffey. Refer to this at **Appendix U**. This provides the recommended remedial strategy for the site is excavation and off-site disposal, with provisions for minor areas of the site to remain undisturbed or subject to encapsulation. Based on the implementation of this RAP, Coffey considers that potential risks from asbestos contamination can be successfully mitigated such that the site can be made suitable for the proposed redevelopments in accordance with SEPP 55. Where asbestos impacted fill is retained on site below a Cover Layer, implementation of an Environmental Management Plan would be required to ensure the site remains suitable for its intended use.

The RAP document presents the basis for completing a programme of supplementary investigation to reduce uncertainties associated with the quality of fill material within the site. These investigations must be conducted in advance of the remediation works. The outcome of these investigations shall be used to determine whether modification to the RAP is required.

6.12 Salinity

A Salinity Site Investigation report was prepared to assess the potential for salinity on the site, and is attached at **Appendix T**.

The salinity rating for the site soils is considered to be negligible. Based on the assessment no special salinity precautions or management procedures are considered necessary for this site.

6.13 Utilities

An Infrastructure Management Plan has been prepared by JHA Services and is attached at **Appendix X.** The Plan describes existing hydraulic, electrical and communication services for the site and outlines upgrade and augmentation strategies to serve the proposed development.

6.14 Drainage

In-ground stormwater system

Stormwater management plans have been prepared for the proposed development in the civil documentation package by TTW. Refer to these at **Appendix Z**.

It includes a Site Works Plan inclusive of stormwater planning and stormwater details. Roof drainage has been to designed to 1:100 years to first external pit and to 1:20 years for landscaped and paved areas.

Hydraulic – above-ground stormwater system

The Integrated Water Management – Hydraulic Services report prepared by JHA Services (refer to **Appendix W**).

An alternative non-potable water supply is provided to the site via a new and existing rainwater tanks supplementing the supply for landscape drip irrigation.

It is noted an existing above ground 10kL rainwater tank is provided against Building D which provides hose taps to supply landscape irrigation which will be retained.

Calculations undertaken from the available historical rainfall data, available roof collection area for the new Building G while taking into consideration the project limitations which indicated the project will benefit by implementing a site wide reuse system.

A new 5kL rainwater tank is intended to be provided to collect the roof water from the lightweight metal roof via a conventional stormwater drainage system and discharged into an in-ground rainwater tank located in the central courtyard.

The remaining outdoor play areas that are subject to rainfall will be drained via a combination of siphonic and conventional stormwater drainage systems however is not intended to be collected and reused on the site due to the additional sediment collection and maintenance associated with the filtration equipment for this type of development and will be discharged directly to the stormwater drainage network.

A water balance study has been conducted based on the 550m2 of roof area and a 7.5kL tank which will be installed to maximise rainwater capture.

In the event of significant storms, overflow from the rainwater tank will discharge into the civil stormwater infrastructure to permit safe management of this water to downstream areas (refer to Stormwater Management SSDA Report by TTW).

Reuse water collection and distribution to other non-potable applications such as toilet flushing have been discounted due to risks associated with maintenance and infection control measures within this type of project.

6.15 Sediment, Erosion and Dust Control

Soil Erosion and Sediment Control measures have been prepared for the proposed development in the civil documentation package by TTW. Refer to this at **Appendix Z**.

6.16 Accessibility

An Accessibility Design Review report has been prepared for the proposed development by McKenzie Group. Refer to this at **Appendix Y**.

The report provides a compliance overview of the project with respect to achieving compliance with the Building Code of Australia (BCA) and the Disability Discrimination Act (and Disability Standards) (DDA), within the project scope.

The Accessibility Design Review report provides a compliance overview of the project with respect to achieving compliance with the above legislation. In the next phase of the design process it is anticipated that as additional detail is provided – particularly floor plans, dimensions and features- the accessibility of this development can be further detailed.

Subject to addressing the actions identified, McKenzie Group Consulting confirm that the project documentation provides appropriate accessibility capable of complying with the BCA & Disability (Access to Premises – Buildings) Standards 2010 and the spirit and intent of the DDA.

Black Beetle Landscape Architects have documented the paths of travel around the site (refer **Figure 49** below) and defined DDA compliant access to key required areas of the site.

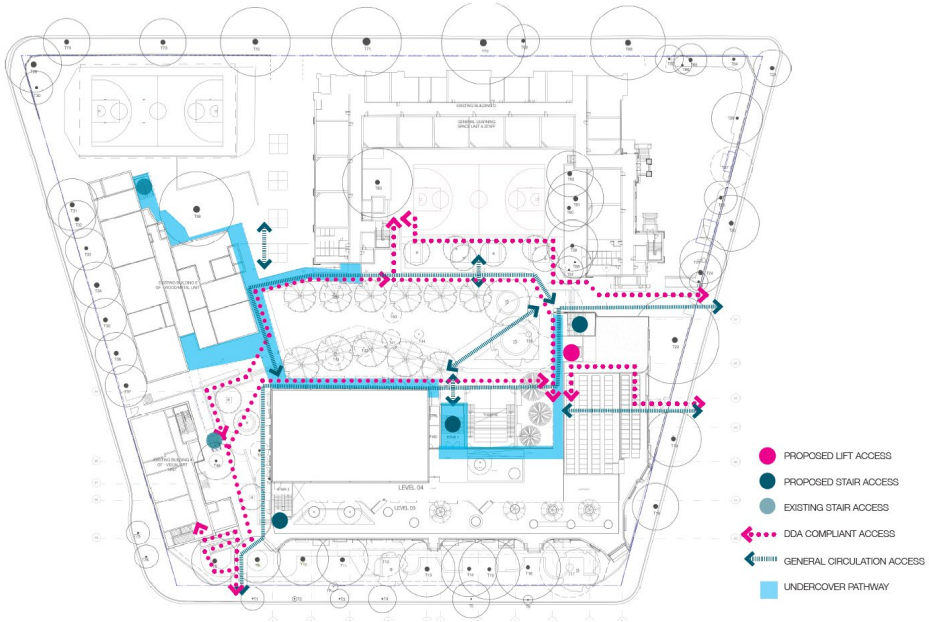


Figure 49 Circulation and Access (noting DDA compliant access)
Source: Landscape Report, Black Beetle Landscape Architects

6.17 Hazardous Building Materials

A Limited Asbestos and Hazardous Materials Pre-Demolition Survey has been prepared for the site by Coffey. Refer to this at **Appendix V**. A full pre-demolition survey could not be undertaken, as the school is operational and occupied by staff and pupils.

This report is relevant to the proposed demolition scope of works on site, i.e of Building B, Building C, part of E including a two-storey roof overhang and separated amenities block, and the existing elevated walkway linking Buildings B and C to D.

Asbestos and hazardous materials were identified or suspected to be present at the time of assessment. The Survey report presents a series of recommendations for management and removal of hazardous materials.

6.18 Geotechnical

A Geotechnical Investigation Report has been prepared for the proposed development by Coffey. Refer to this report at **Appendix R**.

Building G is proposed to be constructed at grade and no basement levels are proposed.

Intrusive sub-surface investigations were carried out including a total of five boreholes and testing to determine sub-surface conditions and make recommendations for construction methodology for the proposed building.

Geology

The Sydney 1:100,000 Geological Sheet 9130 indicates the site locality is underlain by Hawkesbury Sandstone, characterised by medium to coarse-grained quartz sandstone with very minor shale and laminite lenses.

Groundwater

The site is located on a crest with an elevation of over 70 m AHD. Groundwater is expected to be deep within the sandstone bedrock.

The absence of groundwater observed during field investigation suggests that excavations will not encounter groundwater inflow. Recommendations are made to manage groundwater inflow should it occur.

Soil landscape

The soil landscape of the site and its surrounds is classified as a Lambert/Gymea Erosional Landscape which comprises undulating to rolling rises and low hills on Hawkesbury Sandstone.

Acid Sulfate Soils

The site has “no known occurrences of acid sulfate soils” in accordance with the Department of Land and Water Conservation Prospect/Parramatta River Acid Sulfate Soil Risk Map 1997 (2nd Edition).

It is also suggested that the site has no known occurrence of acid sulfate soils, and that the soil aggressivity is non-aggressive and suitable for concrete or steel foundations.

Subsurface profile

Following site investigations the subsurface profile was found to be as follows:

- Fill was typically encountered below paved surfaces or at surface where pavement was absent. The fill depths encountered in the boreholes ranged from 0.2 m below ground level (BGL) to 0.7 m BGL;
- Below fill was natural residual soil comprising fine to medium grained clayey sand with fine to coarse subangular gravel;
- The residual soil graded quickly into very low strength sandstone bedrock.

Recommendations

The report then makes recommendations for construction methodologies for the proposed building on the basis of testing, relating to foundations, excavations and earthworks. Refer to the report for details.

6.19 Structural

A Structural SSDA Report has been prepared for the proposed development by TTW. Refer to this report at **Appendix AE**. The report includes structural concepts.

Footings

All columns and walls need to be founded on similar materials to reduce the potential for differential settlement and consequential structural damage. Columns on ground floor supported by pad footings, founded on Class IV rock or better, is the proposed footing system. There are no basements proposed for this project, so shallow excavations are required for the pad footings.

Gravity Load Resisting Systems

The gravity load resisting system comprises slab, beams, and columns. Specific details of elements are as follows:

- Ground floor slab will be a conventional slab on ground (not suspended) and prepared in accordance with the recommendations in the geotechnical report.
- For suspended floors, the current schematic design provides post-tensioned concrete (PT) slab sizes, which is typically used throughout.
- The roof structure will consist of a 280mm thick PT flat plate for the basketball court featuring an additional acoustic slab to limit noise and vibration to the library area below.
- In situ reinforced concrete columns are proposed but can be substituted with precast concrete columns with similar size.
- A change in layout between floors and the requirement for large open space on ground floor necessitates a transfer element below the library floor, and above the sports hall. The open space, circa 20m span results in a steel truss being the most pragmatic solution.
- Other recommendations are made for stairs, walkways, interface with existing structures.

Lateral Loading Resisting Systems

The structure is required to withstand wind and earthquake loads through the lateral force resisting system. The proposed bracing system is a concentrically braced steel

frame comprising of steel beams, braces, and columns on each level of structure and connected into the foundations.

6.20 Biodiversity

A Biodiversity Development Assessment Report (BDAR) Waiver Request was submitted to DPIE on 4 March 2021 by School Infrastructure NSW.

The BDAR Waiver Request was prepared by NGH Consulting, dated March 2021 and provides evidence that the proposed works to Mosman High School is not likely to have any significant impact on biodiversity values within the site. Refer to the BDAR Waiver Request at **Appendix AK**.

BDAR Waiver approval was granted by DPIE on 18th March 2021. Refer to the waiver approval at **Appendix AL**.

6.21 Waste

A Waste Management Plan (WMP) has prepared by Ricardo Energy Environment and Planning Pty Ltd and is attached at **Appendix AF**. The WMP includes provisions that will inform operational and construction waste management measures required on site once planning approval is sought.

Construction waste

The Waste Management Plan provides an informed framework to maximise resource recovery and minimize waste during the demolition process. In accordance with the *Mosman Waste Minimisation Policy 2012,* waste will be managed by the site contractor through completion of a Site Waste Minimisation and Management Plan (SWMMP). Any waste generated at the demolition and construction stage will be reused and recycled where possible, with landfill disposal undertaken when required. Additionally, a construction waste management procedure has been included in the Preliminary Construction Management Plan, attached at **Appendix AH**.

Operational waste

The WMP mentions that the operational waste requirements will continue to stay in line with the waste management framework currently being undertaken by the school.

The operation of the School has and will continue to generate a variety of waste streams, including general waste, paper recycling, comingled recycling, shredded paper, e-waste and printer cartridges.

The waste will be separately collected from drop off points outside the school office and within the school grounds. Waste and recycling will be transferred by staff from the point of generation to an on site bin storage area.

6.22 Economic Impacts

The economic impacts of the proposed development are positive as jobs will be created (70 FTE jobs during construction, and additional six (6)) operational staff jobs). The construction works have a CIV in excess of $20 million which will stimulate the economy. Government infrastructure works are particularly important in this Covid-19 environment to generate jobs and stimulate the economy.

6.23 Cumulative Impacts

The Mosman Development Application Tracker and Department of Planning, Industry and Environment's Major Projects website do not identify any completed, underway or proposed developments in the immediate vicinity of the school site at the time of writing.

Early works were recently approved under Part 5 of the EP&A Act by School Infrastructure NSW as 'development without consent' under ISEPP. Other works are proposed as 'Exempt Development' under ISEPP. These works allow for additional demountables on site and associated site utility infrastructure upgrades and are proposed to immediately precede the school upgrade under this SSDA. This will allow the school to remain operational while the demolition and construction works under this

SSDA are carried out on site. This will necessitate temporary closure of the staff carpark and result in temporary loss of play space given the temporary land take of the demountables and site compound. There will be construction vehicles travelling to and from site for the early works, although this will be limited. The largest vehicles will be one-off to deliver and crane in demountables to site.

The anticipated construction period for these early works is 5 months, which will add to the anticipated construction timeframes on site under this SSDA (15 months), resulting in a total timeframe of approximately 20 months of construction on site. It is noted that the precise duration and timeframe will be confirmed once a contractor is appointed for the proposed works. Note it will be the same contractor appointed for both the early and SSDA works.

While the early works will add to the cumulative impacts to surrounding residents and community, all are necessary to keep the school operational and facilitate construction. A Detailed PCMP and Detailed CT&PMP will be prepared for the SSDA. This could be conditioned to account for the cumulative impacts of early works on site, although note it is anticipated all early works will be complete on site before the SSDA ones commence.

The CCTMP prepared by PTC at **Appendix AG** provides that during the construction stage, liaison with adjacent developments (if any) will be undertaken to mitigate the cumulative effect of the concurrent works. This will include the coordination of truck movements to prevent the combined impact of construction activities.

6.24 Site Suitability

There are no known site conditions which would prevent the development including geotechnical conditions, contamination, flooding, biodiversity, Aboriginal cultural heritage or other. There are existing historical archaeology constraints on site. A research design methodology has been devised for investigative works and a suitably accredited archaeologist will oversee excavation.

While existing trees will be impacted, and this is a consequence of being a constrained site, their removal will be compensated by proposed tree planting to increase the number of trees on site and tree canopy cover.

There is an existing shortfall of outdoor play space for students on site, and limited opportunity for new buildings without building upwards and providing indoor and rooftop play space. The proposed development will increase play space on the site from 7,055sqm (48.7% site coverage) to 8,688sqm (60% site coverage). The proposed development will deliver 7.24sqm of play space per student (based on 1,200 student enrolment), from the existing 6.4sqm of play space per student (based on 1,116 student enrolment).

The impacts on surroundings during construction and operation are not significant and can be adequately ameliorated.

The site has long been used as a school and its redevelopment will ensure its longevity as a school is maintained, whilst keeping its heritage significance and integrity of the Military Road Conservation Area intact. There are existing precedents in the Military Road Conservation Area both within the site and elsewhere in the streetscape for large footprint buildings and over two storeys in height. However proposed Building G will sensitively respond to this conservation area context through building form, scaling it down to surroundings, and in its use of compatible materials and finishes.

The site is therefore suitable for the proposed development.

6.25 Public Interest

The proposed Mosman High School upgrade offers significant public benefits to the users of the school and the broader community.

Where there are environmental impacts these can be sufficiently ameliorated through mitigation measures and design development. There will be impacts on the local community during construction particularly from construction traffic and partial temporary road closures, however this will be closely managed in accordance with the CCTMP and

the Detailed Construction Traffic and Pedestrian Management Plan that is required to be prepared.

Generally, the proposal will deliver a significant public benefit because it is for the purpose of important public social infrastructure that will meet the educational and social needs of the local community. It will result in increased quality of education and improve student outcomes and staff satisfaction.

Other key benefits of the proposed school upgrade include:

- It responds to increase in demand for educational facilities. Without the development, the shortfall in capacity will reach 194 students at Mosman High School by 2036 which cannot be accommodated at other schools elsewhere within the Chatswood Secondary SCG.
- It will provide permanent facilities for students and staff that meet current standards and best practice requirements. It will eliminate the need for demountables on site. The current school has inadequate core facilities that do not meet required standards.
- Existing Building B on the site (fronting Military Road) is an example of poor architecture for such a prominent frontage in the Mosman village centre. The proposed new Building G has been designed to sensitively respond to its context. It will align with setbacks and scale of surrounding heritage buildings on site and reflect the rhythm, form and materiality of its built form context. It has been subject to a design review process with Government Architect NSW and will be subject to their further expert design advice and refinement during design development.
- Improved quantum of play space, tree numbers, tree canopy and shade cover for students compared with the existing situation. The proposed development will provide 7.24sqm of play space per student (based on 1,200 student enrolment), compared to the existing 6.4sqm of play space per student (based on 1,116 student enrolment). Improved and coherent landscaping strategy for the site which will provide a more appropriate setting for its heritage buildings and provide amenity benefits for users and visitors.
- Improve community access to the site and its facilities, for example, the learning space and hall have been designed on the ground floor to support after-hours use.
- The new building will be designed to equivalent 4-star Green Star Design, improving environmental performance of buildings on site.
- It will generate 70 construction and non-construction Full Time Equivalent jobs during construction phase, and 6 additional jobs during the operational phase. Hence, these jobs, together with the value of the project, will stimulate the economy.
- The site has been long used as a school and its redevelopment will ensure its longevity as a school is maintained, whilst keeping its heritage significance and its heritage conservation context, intact.

On balance, accounting for site suitability, environmental impacts, risk assessment and key benefits detailed further above, the proposed development is in the public interest.

7. Environmental Risk Assessment

In accordance with the SEARs, this section addresses the following significant environmental risk issues:

- Adequate baseline data;
- Consideration of potential cumulative impacts due to other development in the vicinity; and
- Measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.

The following table sets out the anticipated impacts, the level of respective impact in terms of severity (low, medium, high), identifies mitigation measures, and once these measures are applied, identifies residual risks (low, medium, high).

Table 24 Environmental Risk Assessment

Impact Theme	Impact Detail	Level of Impact	Mitigation Measures	Residual Risk
Traffic				
Construction	As mentioned in the Concept Construction Traffic Management Plan (CCTMP), PTC identifies that the construction activity is anticipated to have minimal disruption to the daily activities within the vicinity of the site. On-street Parking - A 'Work Zone' will require the conversion of nine existing car parking spaces and two taxi zone spaces on the southern side of Belmont Road to assist in construction activity. There is also temporary removal of parking spaces proposed to facilitate construction vehicle movements on Avenue and Military Roads on Military Road. One car parking space and motorcycle spaces on Military Road, as well as one car parking space on Avenue Road will need to be temporarily removed to cater for the turning path of an AV.	Medium	Construction Traffic and Pedestrian Management - A Detailed Construction Traffic and Pedestrian Management Plan will be required to be prepared as a condition of consent. This is to address cumulative impacts of other on-site and surrounding development including truck movements. Parking Controls –The existing three Taxi Zone spaces to Belmont Road will be relocated to the western side of the Work Zone while the remaining space on the eastern side will be converted to "No Stopping". All the temporary changes to parking will require approval from Transport for NSW under Section 138 of the Roads Act 1993. Emergency Vehicle Access – A detailed Emergency Management Plan will be further developed by the contractor once SSDA determination is received. Temporary Stop Line Relocation - it is proposed to temporarily relocate TFNSW stop line on eastbound approach arm to Military Road/Belmont Road intersection to accommodate 19m Articulated Vehicle (AV). This will require approval from Transport for NSW under Section 138 of the Roads Act 1993.	Low
Operation	The proposed development will increase traffic generation by 15 trips in the morning and 6 trips in the afternoon peak hours. This increase of student and staff numbers will be insignificant to the surrounding road network. In addition, the school's reliance on active transport options will relieve impact and stress on traffic.	Low	Pedestrian crossing infrastructure - SINSW are actively investigating the feasibility of the provision of a wombat crossing at the intersection of Avenue Road and Gladstone Avenue. Other proposed measures - include: – Increased pick up and drop off areas – Extension of existing bus zone – Incentives for promoting sustainable transport modes	Low

Noise & Vibration				
Construction	Based on the results of the preliminary assessment, the noise associated with the normal construction works is expected to exceed the noise limits for highly noise affected receivers within standard hours. For any vibration intensive plant expected to be within close proximity of the minimum distances described in the Noise & Vibration Impact Assessment, the contractor must engage a qualified engineer to carry out a vibration survey in order to assess any potential risks. The vibration survey and assessment will determine whether the vibration levels might exceed the relevant criteria then vibration mitigation and management measures will need to be put in place to ensure vibration impacts are minimized as far as practicable.	Medium	A Detailed Construction Noise and Vibration Management Plan (CNVMP) will be prepared for construction. The Proposal will align with noise and vibration mitigation measures outlined in the Noise and Vibration Assessment report, prepared by JHA Services (**Appendix AD**), dated 30 March 2021: – Plant and equipment; – On site noise management; – Work scheduling; and – Consultation, notification and complaints handling.	Medium
Operation	Noise emissions associated with operation of the school includes mechanical plant, Public Address and School Bell Systems, multi-purpose hall, outdoor playground, rooftop sports activities and traffic noise generated by the proposed development.	Low	Acoustic assessment of all mechanical plant shall continue during the detailed design phase of the project in order to confirm any noise control measures to achieve the relevant noise criteria at the nearest noise sensitive receivers. The Public Address and School Bell Systems shall be designed, installed and operated in accordance with the recommendations in the Acoustic & Vibration Impact Assessment. The operational noise impacts of the multi-purpose hall, outdoor playground, rooftop sports activities and traffic noise generated by the proposed development, have been evaluated and no amelioration is required.	Medium
Built Heritage				
Construction	The Heritage Impact Statement concludes that demolition of Building B, C and E will not have a negative heritage impact on the site's heritage value. It concludes that the construction of this new building will have some heritage impact, particularly upon the Military Road Conservation Area, but that with appropriate mitigation measures, such are street scape archival recording, these impacts can be reduced to an acceptable level.	Medium	The Heritage Impact Statement's advice has been incorporated into the proposed design. The Military Road Conservation Area, in the vicinity of the site, should be recorded by means of photographic archive prior to the commencement of works.	Medium
Operation	Refer response above on impact on Conservation Area.	Medium	Refer above	Medium
Historical Archaeology				
Construction	The Historical Archaeology Assessment and Archaeological Research Design found that given that parts of the study area have been assessed as having high archaeological potential, and relics of local significance are likely to be impacted during the proposed construction works, it will be necessary to undertake investigative works prior to commencement of construction works.	Low	A research design methodology has been devised for archaeological investigations to be undertaken prior to the commencement of construction works. Additionally, a suitably accredited archaeologist will oversee excavation.	Low
Operation	There is very low likelihood of historical archaeology on site being impacted during operation.	Low	None required	Low
Aboriginal Heritage				
Construction	The ACHR identified that given the very high level of disturbance that is evident across the study area it is therefore considered that the impact associated with the proposed development will consist of a very low risk of impacting Aboriginal archaeological material.	Low	The ACHR provides mitigation measures for the unlikely event that Aboriginal artefacts were to be found. Site contractors will be briefed on the protection of Aboriginal heritage objects and an induction on identification of artefacts will take place once approval is sought and construction begins.	Low

Operation	N/A to archaeological objects on site given very low potential they will be present.	N/A	N/A	N/A

8. Recommendations and Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed upgrade works are detailed in **Table 24** below.

These measures have been derived from the previous assessment in **Section 6** and those detailed in appended consultant's reports.

Table 25 Mitigation Measures

Item	Mitigation Measures
Heritage	The proposed upgrade works will be in accordance with the recommendations of the Heritage Impact Assessment prepared by Purcell, dated 30 March 2021 (**Appendix J**), i.e. "The Military Road Conservation Area, in the vicinity of the site, should be recorded by means of photographic archive prior to the commencement of works.
Aboriginal Heritage	As required by the Aboriginal Cultural Heritage Report (ACHR) (Appendix K) and Aboriginal Archaeological Report (**Appendix L**), prepared by Austral Archaeology, dated 30 March 2021, the proposed upgrade works will respond to mitigation measures, including: – No further Aboriginal archaeological works are required to be undertaken. – All contractors undertaking earthworks on site should be briefed on the protection of Aboriginal heritage objects under the National Parks and Wildlife Act 1974 and the penalties for damage to these items. – All contractors undertaking earthworks in the study area should undergo an induction on identifying Aboriginal heritage objects; and – A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project and to the AHIMS Registrar.
Historical Archaeology	– The proposed upgrade works will be delivered in accordance with the recommendations in the Historical Archaeology Assessment and Archaeological Research Design (**Appendix M**) prepared by Austral Archeology, dated 30 March 2021. – Undertake investigative works prior to commencement of construction works. – A suitably accredited archaeologist who is approved by Heritage NSW to oversee the excavation of sites of local significance will need to be nominated as Excavation Director.
Traffic and Accessibility	Traffic and accessibility management measures will be addressed in accordance with the Traffic Impact Assessment prepared by PTC, dated 30 March 2021 (**Appendix P**), and the Green Travel Plan prepared by PTC, dated 30 March 2021 (**Appendix Q**).
Construction Traffic	Construction and operational traffic measures will be addressed in accordance with the Construction Traffic Management Plan prepared by PTC, dated 31 March 2021 (**Appendix AG**). A detailed Construction Traffic and Pedestrian Management Plan will be required to be prepared as a condition of consent. This is to address cumulative impacts of other on-site and nearby developments and account for their truck movements.
Geotechnical	The proposed development is in accordance with the geotechnical model and recommendations in the Geotechnical Investigation Report prepared by Coffey, dated 30 March 2021 (**Appendix R**).
Contamination	The proposed upgrade works will be delivered in accordance with the recommendations in the Remedial Action Plan (RAP) prepared by Coffey (**Appendix U**) dated on 30 March 2021 and the Contamination Assessment prepared by Coffey (**Appendix S**) dated on 30 March 2021.

Salinity	Due to the site not having any salinity issues, no special salinity precautions or mitigation measures are considered necessary for the site.
Arboricultural	The proposed upgrade works will be delivered in accordance with the recommendations described in Sections 8 to 11 of the Arboricultural Impact Assessment Report dated 30 March 2021, attached at Appendix AJ.
Ecologically Sustainable Development	The proposed upgrade works will be delivered in accordance with the Ecologically Sustainable Development Report prepared by EMF Griffiths and is attached at Appendix AI.
Accessibility	The proposed upgrade works have been designed in accordance with the Building Code of Australia 2019 Standards. The proposal will be delivered in accordance with the recommendations provided in the Accessibility Design Review Report, prepared by McKenzie Group and is attached at Appendix Y.
Waste	Construction and operational waste will be managed in accordance with the measures identified in the Waste Management Plan by Ricardo Energy Environment and Planning Pty Ltd, attached at Appendix AF.
Infrastructure Management	The proposed upgrade works have been designed in accordance with the measures outlined in the Infrastructure Management Plan (**Appendix X**) and Civil Plans (**Appendix Z**) prepared by JHA Services and TTW respectively.
Hydraulic Services	The proposed upgrade works have been designed in accordance with the Integrated Water Management Plan prepared by JHA Services (**Appendix W**).
Noise and Vibration	– A detailed Construction Noise & Vibration Management Plan (CNVMP) shall further assess the noise impact of construction works, and shall include a protocol to minimise any potential noise impacts to identified sensitive receivers, and ensure that appropriate noise control measures are defined and implemented to comply with all relevant noise guidelines. – A qualified engineer will be engaged to carry out a vibration survey in order to assess any potential risks. The vibration survey and assessment will determine whether the vibration levels might exceed the relevant criteria then vibration mitigation and management measures will need to be put in place to ensure vibration impacts are minimised as far as practicable. – The Proposal will align with noise and vibration mitigation measures outlined in the Noise and Vibration Assessment report, prepared by JHA Services (**Appendix AD**), dated 30 March 2021: o Plant and equipment; o On site noise management; o Work scheduling; and o Consultation, notification and complaints handling. – High noise level works – i.e. piling, excavation, etc – shall be scheduled to not occur during shoulder periods of the recommended standard hours – i.e 7am to 8am and 5pm to 6pm.
Construction management	– Construction will be managed in accordance with the measures identified in the Preliminary Construction Management Plan prepared by Multiplex and appended at Appendix AH. – A Detailed Construction Environmental Management Plan (CEMP) is to be prepared prior to construction commencing on site.
Construction Staging	– To maintain school operations, temporary accommodation (demountable buildings) will be required throughout the duration of the works – Hoarding/fencing will be installed to optimise public safety and to prevent public access to, and maintain security of the works – A Preliminary Construction Management Plan has been prepared in accordance with the SEARs and can be found at Appendix AH

9. Conclusion

This Environmental Impact Statement has been prepared for the proposed upgrade works to Mosman High School in accordance with the SEARs issued by DPIE on 18 June 2020 (**Appendix A)**, Schedule 2 of the EP&A Regulation, and Section 4.15(1) of the EP&A Act. It includes assessment of the proposal against the relevant strategic and statutory planning framework, undertakes a merit assessment of the environmental impacts including assessment of site suitability, a risk assessment, and an evaluation of the public interest.

Having regard to the above, the carrying out of the project is justified for the following reasons:

- The assessment of this proposal has demonstrated that the proposed upgrade works will not generate environmental impacts that cannot be appropriately managed and is consistent with the relevant planning controls for the site.
- The development will provide a significant new piece of social and educational infrastructure to the area, providing an upgraded school with permanent teaching spaces to accommodate 1,200 students. The provision of a new teaching and education building for the school will improve the quality of education.
- The proposal allows for the provision of new teaching and educational facilities that meet the special design requirements for the proposed uses, whilst not resulting in any significant adverse impacts on the site or surrounding uses.
- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation 2000.
- The proposed upgrade works are anticipated to create 70 jobs during the construction phase and 6 full time jobs during the operational phase.
- The proposed upgrade works will not have a significant impact on any threatened flora or fauna species.
- The proposed upgrade works will not result in any adverse traffic impacts on the surrounding road network, and parking demand associated with the proposed development can be accommodated.

On balance, accounting for site suitability, environmental impacts, risk assessment and key benefits, the proposed development is in the public interest.

Given the above it is considered that the SSD Application has merit and can be supported by the Department of Planning, Industry and Environment and the Minister for Planning and Public Spaces.