



STATEMENT OF ENVIRONMENTAL EFFECTS

Proposed Redevelopment of Broadwater
Public School

NSW Department of Education

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1 Introduction

1.1 Commission

EPM Projects (EPM) has been commissioned by the Department of Education (DoE) to prepare a Statement of Environmental Effects (SEE) for the proposed demolition of existing buildings and structures and construction of new elevated school buildings and ancillary development at Broadwater Public School, 9 Byrnes Street, Broadwater (the site).

The SEE is to accompany a development application (DA) to Richmond Valley Council (Council). The site is zoned RU1 Primary Production (the RU1 zone) under the *Richmond Valley Local Environmental Plan 2012* (the LEP) with Educational Establishments permitted with consent in the RU1 zone.

1.2 Overview of Proposed Development

The existing buildings at Broadwater Public School, 9 Byrnes Street, Broadwater (Lot 4 & 5, Deposited Plan (DP) 1043232 and Lot 501 DP 755624) were significantly inundated during the February 2022 floods and most of the structures are no longer habitable due to the damages caused by the flood waters. As a result, the NSW Department of Education is proposing to demolish the existing school buildings and construct a new elevated school building to replace it. The floor level of the new building will be located above the flood planning level and the 0.2% Annual Exceedance Probability (AEP) level (1 in 500 year flood level) to increase flood resilience and create useable undercroft spaces.

1.3 Purpose of this Statement

The purpose of this report is to provide Council and relevant NSW State Government Agencies all pertinent information necessary to assess the subject development proposal and to determine the DA in accordance with section 4.16 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (the Regulation). The proposed development is assessable pursuant to Part 4 of the EP&A Act.

Pursuant to section 4.33 of the EP&A Act, the DA will be a Crown Development Application. Section 4.32 of the EP&A Act defines a Crown development application as a “development made by or on behalf of the Crown”. The proposed works are being undertaken by the NSW Department of Education.

Pursuant to section 4.44 of the EP&A Act, a Crown DA is not integrated development under Division 4.8 of the EP&A Act. Following development consent, an application will be made to Heritage NSW for an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the *National Parks and Wildlife Act 1974* (refer to **Section 5.4**).

As the Capital Investment Value (CIV) is greater than \$5 million, pursuant to Schedule 6 of *State Environmental Planning Policy (Planning Systems) 2021*, the proposal is Regionally Significant Development, and will be determined by the Northern Regional Planning Panel.

2 The Site and Context

2.1 Site Location

Table 1 Property Details	
Property Detail	Broadwater Public School
Address	9 Byrnes Street, Broadwater, NSW 2472
Lot and DP	Lot 4 & 5, DP1043232, Lot 501, DP755624
Local Government Area	Richmond Valley Council
Local Aboriginal Land Council	Jali
Site Area (from SixMaps)	8,838m ²

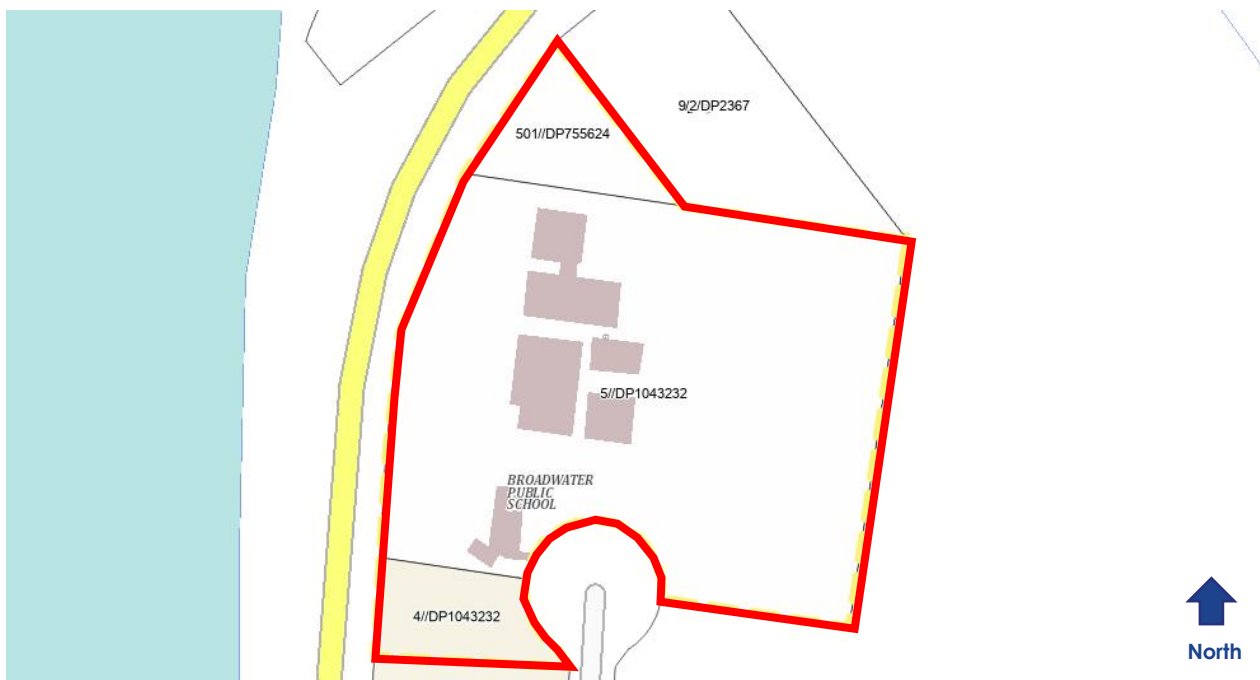


Figure 1: Site Location plan with the site boundary outlined in red (Source: ePlanning portal).

2.2 Site Description

The site is irregular in shape with a gentle slope from a high point of approximately 3m AHD in the south-western corner and a low point of approximately 1.5m AHD in the south-eastern corner. The site has frontage to Baraang Drive (also known as Blackwell Drive) (west) and Byrnes Street (south), it adjoins a residential dwelling to the north and cane fields to the east and south-east. Vehicular and pedestrian access to the site is via the cul-de-sac at the end of Byrnes Street. The site has mature landscaping and native trees along the Baraang Drive frontage and other boundaries of the site. The site is owned by the Minister for Education and Early Learning.

The site is legally described as Lots 4 and 5 in Deposited Plan (DP) 1043232 and Lot 501 in DP 755624.

Figure 2 is an aerial photograph of the site and its immediate surrounds.

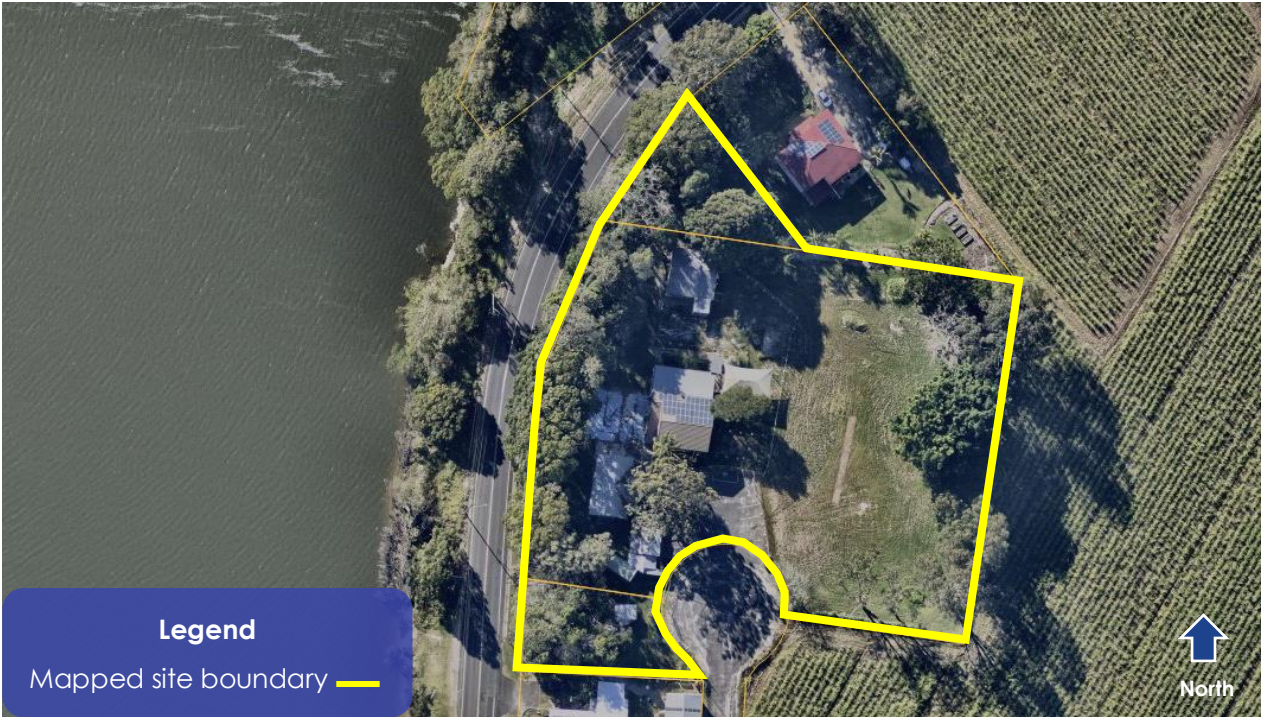


Figure 2: Aerial Image of the existing site (Source: NearMap dated 7 July 2023).

Existing development on the site includes: a two-storey brick classroom building (Building A); two (2) demountable classrooms (D11066 and D15316); a raised single level classroom (Building E); two (2) storage sheds, two (2) toilet blocks, playing courts, play equipment, shade structures, pathways and landscaping (**Figure 3**).

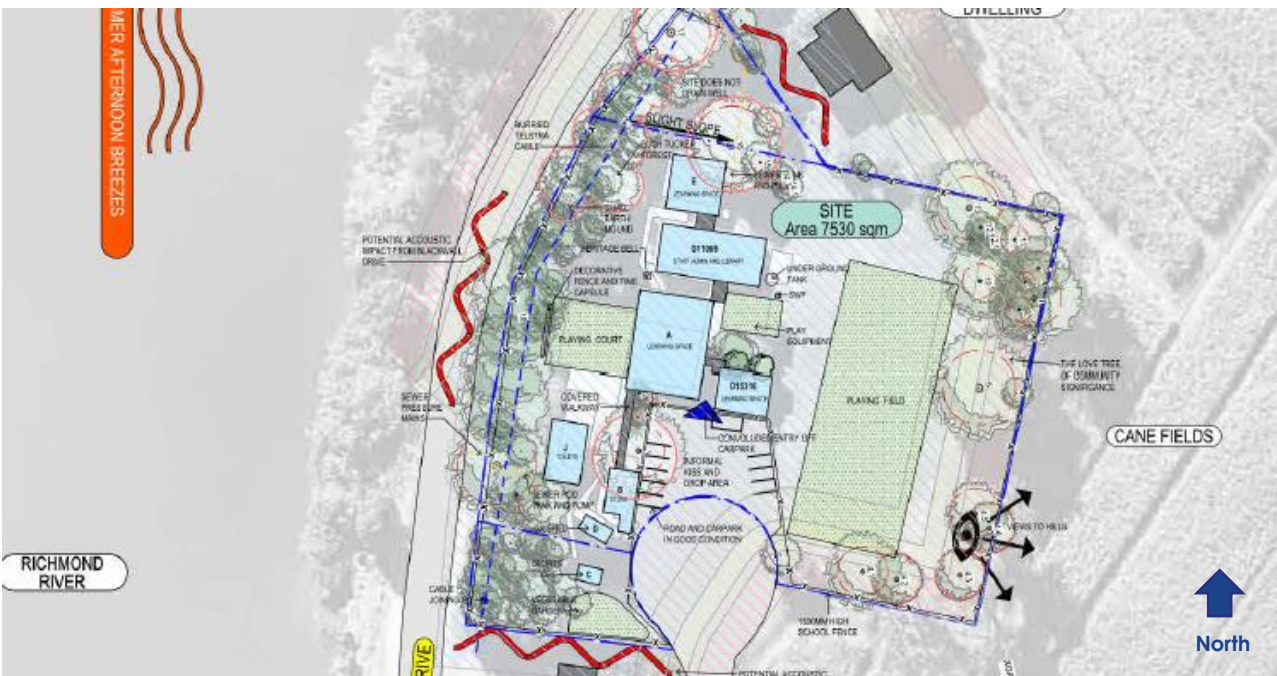


Figure 3: Existing site plan and site analysis (Source: Pedavoli Architects)

Photographs of the existing site are provided in **Figures 4 – 11**.



Figure 4: Existing Block A – Two (2) storey brick building



Figure 5: Playing court and landscaping along Mill Street with the Richmond River beyond



Figure 6: COLA, play equipment looking north toward Building D11066



Figure 7: Building D15316 looking south-west towards Building A



Figure 8: Building E and ramping looking east towards the fields



Figure 9: Building J toilet block



Figure 10: Playing field looking north-east to the residential neighbour.



Figure 11: Residential development to the south along Byrnes Road

2.3 Site Considerations and Constraints

2.3.1 Zoning and Permissibility

The site is zoned RU1 Primary Production (the RU1 zone) under RVLEP 2012 (**Figure 12**) and educational establishments are permitted with development consent in the RU1 zone under the RVLEP 2012. The RU1 zone is not a prescribed zone for the purposes of educational establishments under section 3.34 of the SEPP T&I. However, pursuant to Sections 3.36(3) of the SEPP T&I, school development can be carried out with development consent within the boundaries of an existing school.

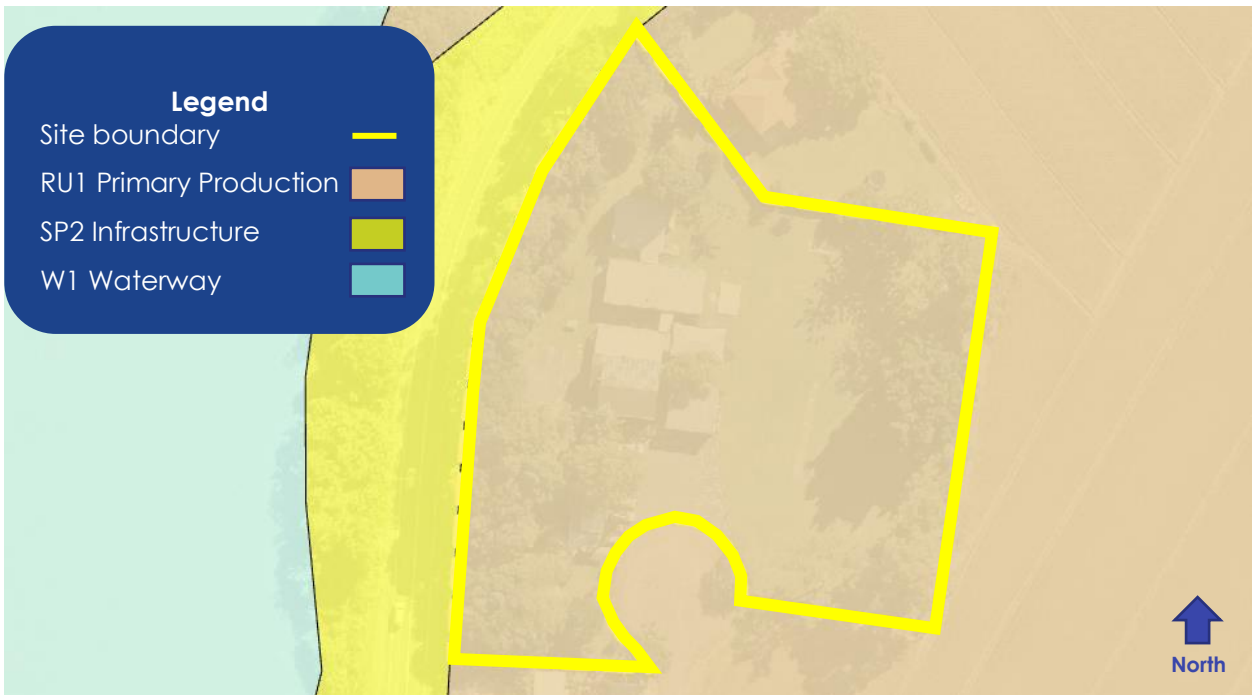


Figure 12: Extract of RVLEP 2012 Zoning Map (Source: ePlanning Spatial Viewer)

2.3.2 Height of Buildings

The site is subject to an 8.5m height of buildings control (**Figure 13**).

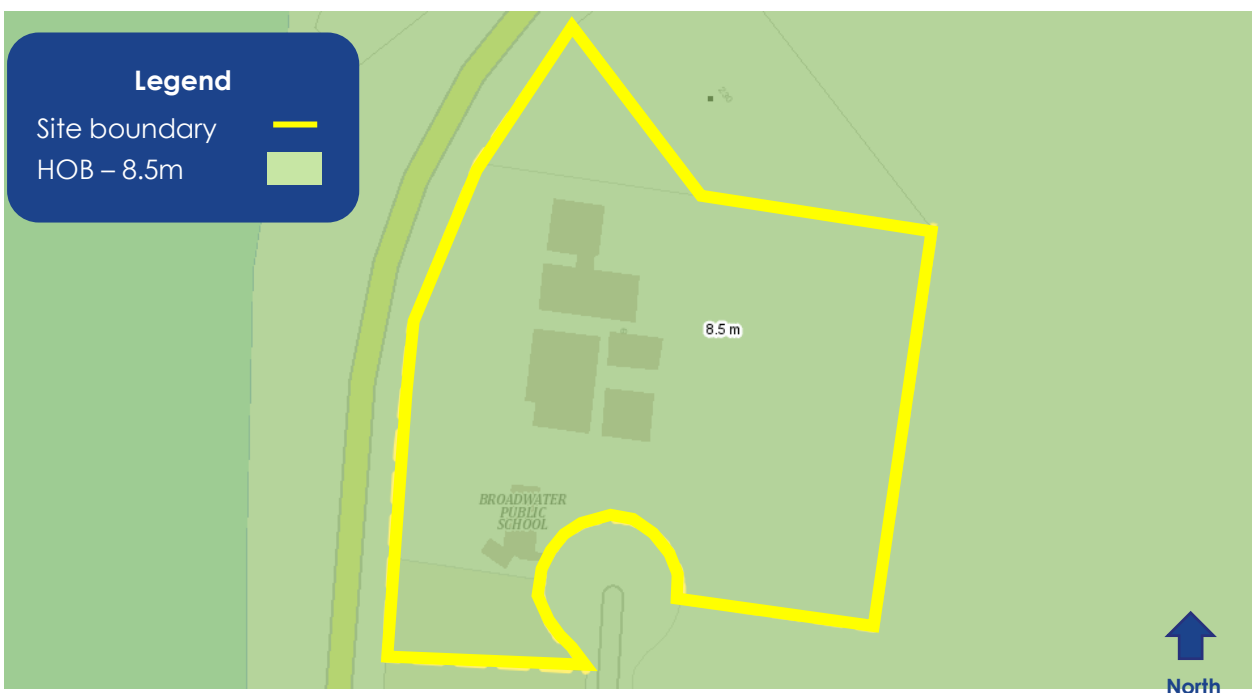


Figure 13: Extract of RVLEP 2012 Height Map (Source: ePlanning Spatial Viewer)

2.3.3 Riparian Lands and Watercourses

This site is partially mapped as Riparian Lands and Waterways “Key Fish Habitat” along the western boundary (**Figure 14**).



Figure 14: Extract of Riparian Lands and Watercourses map (Source: ePlanning Spatial Viewer)

Despite the site being located within 40 metres of a waterway, a Controlled Activity Approval under the *Water Management Act 2000* is not required for public authorities (pursuant to section 41 of the *Water Management (General) Regulation 2018*). However, appropriate mitigation and assessment must be undertaken to ensure the development will not result in unacceptable environmental impacts to the waterway.

2.3.4 Acid Sulfate Soils

The site is mapped as containing Class 3 Acid Sulfate soils under RVLEP 2012 (**Figure 15**).

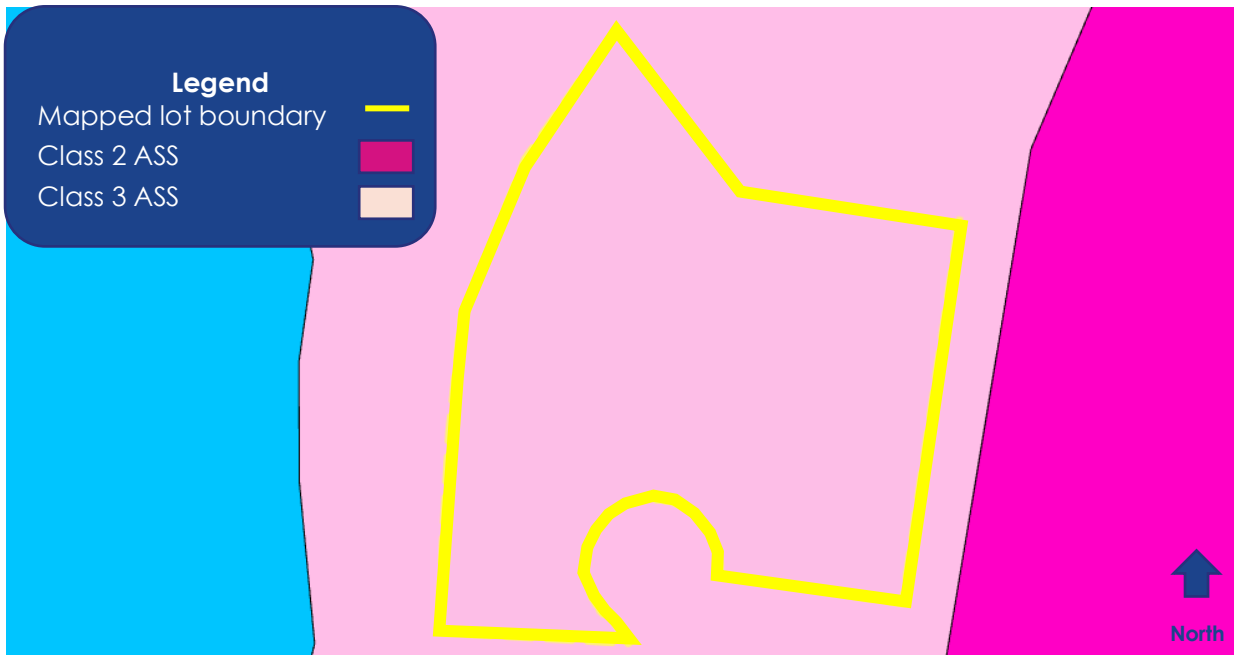


Figure 15: Extract of Acid Sulfate Soils map (Source: ePlanning Spatial Viewer)

2.4 Easements and Encumbrances

EPM has obtained copies of the property files applying to the land (**Appendix C**) to identify any encumbrances that apply outside of the planning controls covered elsewhere in this advice. The documents obtained by EPM include:

- Certificate of Title (CoT)
- Deposited Plan (DP) 1043232

The CoTs for Lot 510 DP755624 and Lot 5 DP1043232 identify the following schedules and notations:

- Land owned by Minister for Education and Early Learning
- Dedicated for public school site gov. Gaz. 30.3.1962 fol 920
- Land excludes minerals (s.171 Crown Lands Act 1989)
- Reservations and Conditions in the Crown Grant

2.5 Development Consents

A request to be provided all development consents applying to the site was submitted to Richmond Valley Council under the *Government Information (Public Access) Act 2009* (GIPA Act). The GIPA request was responded to by telephone on 15 June 2023. The Council representative stated that Council has no development consents/ conditions for the school as all previous development on the site has been done through non-DA pathways by the Department of Education.

2.6 Site Context and Surrounding Development

The site is located at the northern end of Byrnes Street and adjoins low-density residential dwellings to the north and south. To the west is Mill Street/Baraang Drive (zoned SP2 Classified Road) with the Richmond River beyond it. To the east is agricultural land that is used for sugar cane cropping.

Broadwater village is located further to the south of the site and includes the residential and commercial development as well as the Broadwater Sugar Mill.



Figure 16: Aerial image of the site indicating surrounding development (Source: Nearmap dated 7 July 2023).

3 Proposed Development

3.1 Summary of Proposed Development

The existing buildings at Broadwater Public School, 9 Byrnes Street, Broadwater (Lot 4 & 5, Deposited Plan (DP) 1043232 and Lot 501 DP 755624) were significantly inundated during the February 2022 floods and most of the structures are no longer habitable due to the damages caused by the flood waters. As a result, the NSW Department of Education is proposing to demolish the existing school buildings and construct a new elevated school building to replace it. The floor level of the new building will be located above the design flood level to increase flood resistance and create useable undercroft spaces.

3.2 Description of Works

3.2.1 Demolition and Site Preparation

The extent of demolition is shown on the demolition plans prepared by Pedavoli Architects. The proposed works includes the demolition of the following buildings and structures:

- Demolition of Buildings A, B, C, E and J (Building D is being retained).
- Demolition of ancillary structures such as COLA, playing courts, covered walkways.
- Relocation of heritage bell.

The Civil Plans prepared by Henry and Hymas Consulting Engineers (**Appendix H**) and the Landscaping Plans prepared by Taylor Brammer Landscape Architects (**Appendix F**) detail minor benching and grading works, which are required to achieve the floor levels in the undercroft and the sports field and for underground infrastructure. Cut and fill levels are generally less than 100mm.

A total of 28 trees are proposed to be removed as part of the development application (Refer to discussion in **Section 6.3**).

Appropriate sediment and erosion control measures will be implemented prior to the commencement of works.

3.2.2 New Buildings

The proposed development comprises the following:

- Construction of a new elevated school building, with at-grade (undercroft) amenities and storage, including:
 - Ground Level:
 - Open undercroft space for covered outdoor learning and play
 - Male and female amenities and accessible toilet / change room facility.
 - Cleaners Store.
 - Sports Store.
 - Equipment and general store.
 - Elevated Level:
 - New administration comprising interview room, clerical spaces, Principal's office, staff room, sick bay, store and male, female and accessible amenities.
 - School library with computer room, store, main communications room and library office.
 - Three (3) General Learning Spaces (GLS) with learning commons and multi-purpose space.
 - Canteen with open servery space.
 - Store.
 - Male, female and accessible amenities.
 - Mechanical plant.
- New hard and soft landscaping including replacement playing field, playground, vegetable garden and new yarning circle.

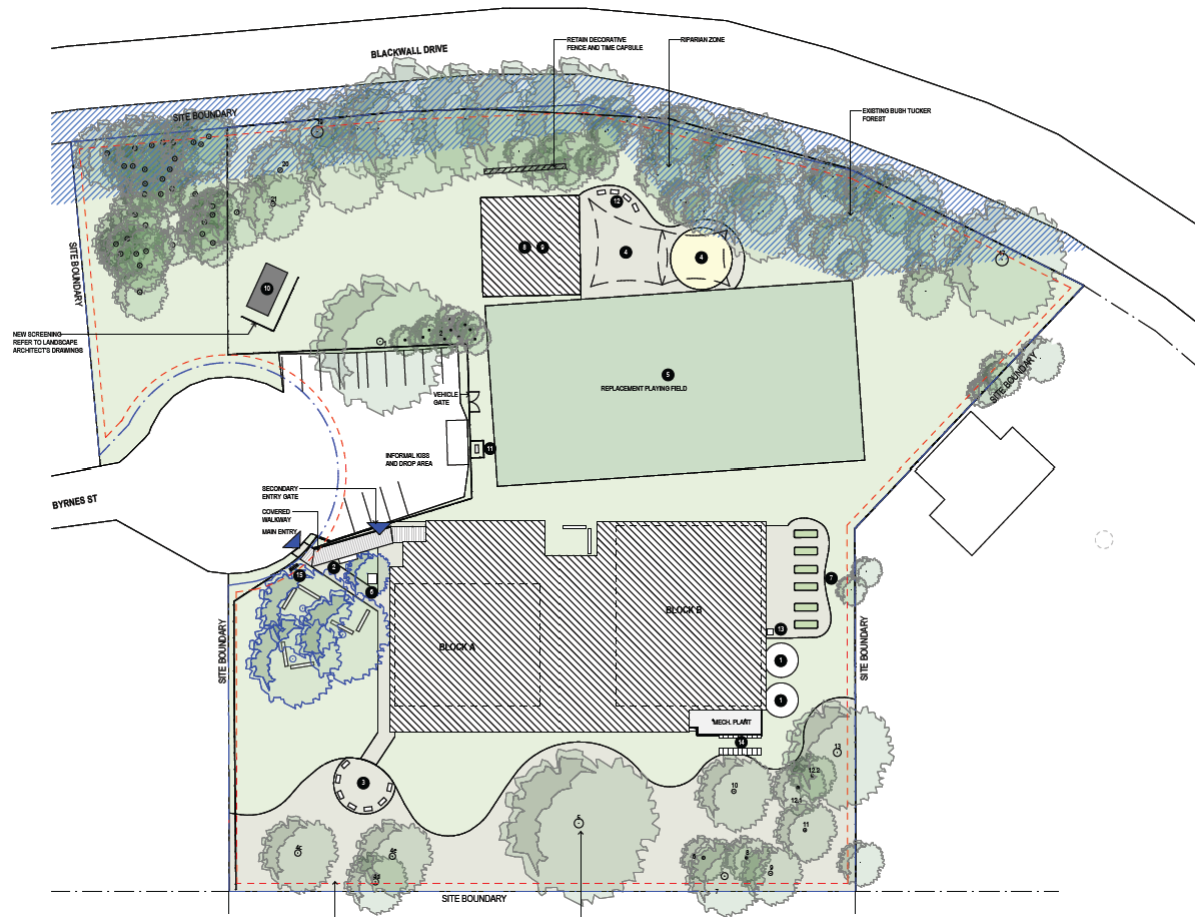


Figure 17: Proposed Site Plan (Source: Pedavoli Architects)

3.2.3 Landscaping

Landscape plans for Broadwater Public School have been prepared by Taylor Brammer Landscape Architects (**Appendix F**). The landscape design seeks to reinstate the landscape features that were damaged during the 2022 floods.

A total of four (4) new trees will be planted on site. All new plants have been selected for their suitability to the local plant communities of the Far North Estuarine Mangrove-Swamp Oak Forest and Far North Floodplain Paperbark-Swamp Oak Forest. These species are permitted in the Richmond Valley Development Control Plan and are indigenous, play-friendly and provide educational opportunities for students. The proposed plantings are suitable for children in accordance with KidSafe NSW guidelines and the NSW Department of Education’s Educational Facilities Standards and Guidelines (EFSG).

The playground area will retain the existing hard courts and provide a range of new passive and active play spaces for students, including sandpit, playing field, yarning circle and seating areas.



Figure 18: Landscape Plan (Source: Taylor Brammer)

3.2.4 Tree Removal

A total of 28 trees, along with one (1) dead tree are proposed to be removed as part of the proposal. All other trees will be protected in accordance with the recommendations of the Arboricultural Report (**Appendix Y**). The trees proposed for removal are set out in the table below.

Table 2 Trees to be removed					
Tree #	Species (common name)	Crown (m)	Height (m)	Significance	Reason
3a	Bottlebrush x 2 trees	6	5-10	Moderate	Playing field
3b	Bottlebrush x 2 trees	6	5-10	Moderate	Playing field
4a	Swamp Mahogany	6	10-15	Moderate	Close to building
4b	Swamp Mahogany	6	10-15	Moderate	Close to building
14a	Bangalow Palm	3	5-10	Moderate	Playing field
14b	Bangalow Palm	3	5-10	Moderate	Playing field
15	Exotic Species	5	5-10	Low	Playing field
16	Camphor Laurel	15	15-20	Moderate	Playing field
18a	She Oak	8	15-20		Underground power line
18b	Dead Tree	-	-	Nil	Underground power line
22	Group of rainforest trees (15 trees)	4	5-10	Low	13 are dead and 2 for services trench
23	Brown Kurrajong	6	5-10	Very Low	Dead

Table 2 Trees to be removed					
24	Firewheel	5	5-10	Moderate	Playing field

3.2.5 Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment has been undertaken (**Appendix K**) to identify the presence of Aboriginal heritage values. One Aboriginal site was identified within the proposed development area during the archaeological field survey. Aboriginal items are protected under the *National Parks and Wildlife Act 1974* and an Aboriginal Heritage Impact Permit (AHIP) will be required prior to any works within 10 metres of the site being permissible. The location of the item and the AHIP curtilage is indicated in **Figure 19**.

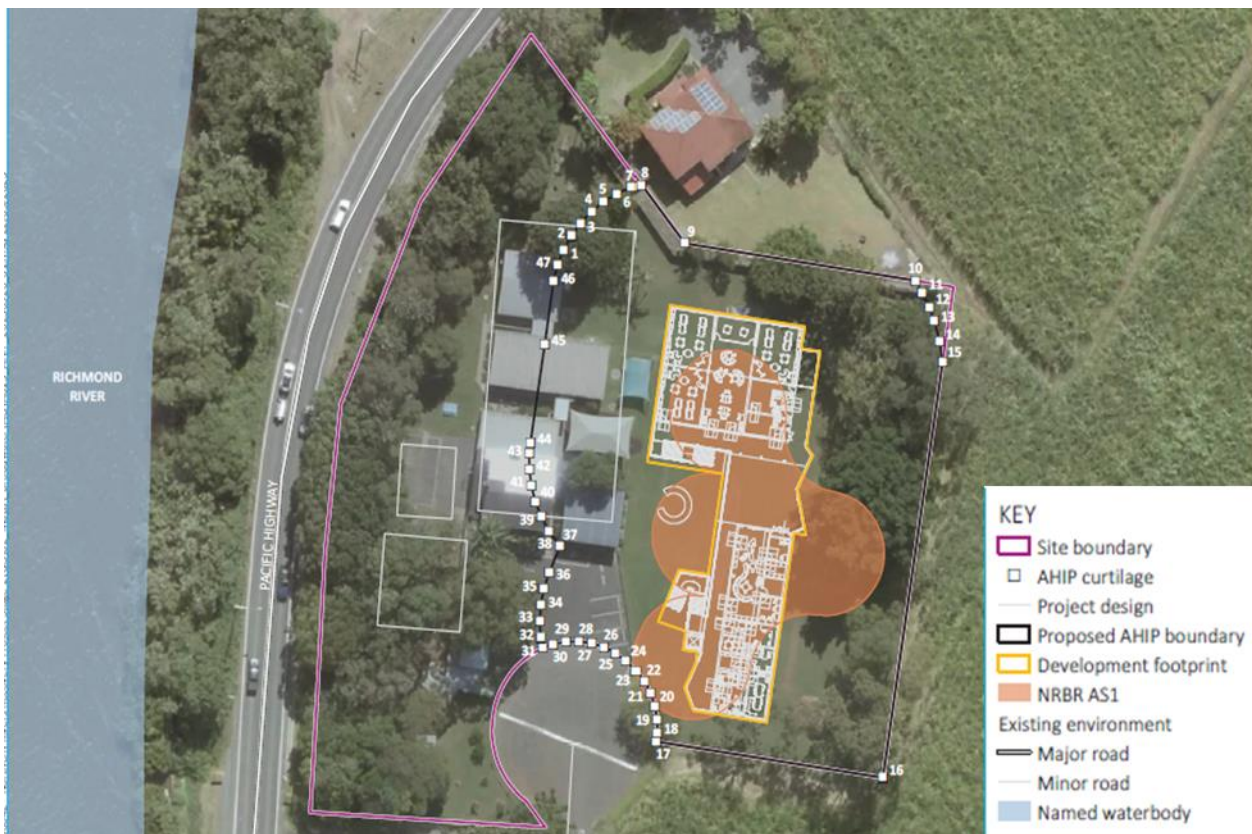


Figure 19: AHIP curtilage and location of Aboriginal site (Source: EMM)

3.2.6 Groundwater

In relation to groundwater, the Geotechnical Investigation found that groundwater was observed at depths between 1.9m and 2.8m below the existing ground surfaces levels. It is anticipated that groundwater levels vary due to climatic conditions and tidal influences from the Richmond River. Therefore, it is unlikely that shallow excavation will encounter groundwater, however, the driven piles may. If groundwater needs to be removed, an approval will be required under the *Water Management Act 2000*.

3.2.7 Stormwater

A Civil Report has been prepared by Henry & Hymas Consulting Engineers, which describes the proposed stormwater system and includes plans (**Appendix G**). The stormwater system will “collect concentrated flows” from impervious areas as well as stormwater runoff from pervious areas such as landscaping up to the 5-year average recurrence interval (ARI) stormwater event.

Stormwater will be conveyed to the north-western corner of the site and on to the existing headwall located downstream of the site, approximately 100 metres along Blackwall Drive (Baraang Drive)

(see **Figure 20** and **Figure 21**). The proposal includes the construction of a pit and pipe system under the existing dish drain and discharged via a headwall to the existing infrastructure downstream.

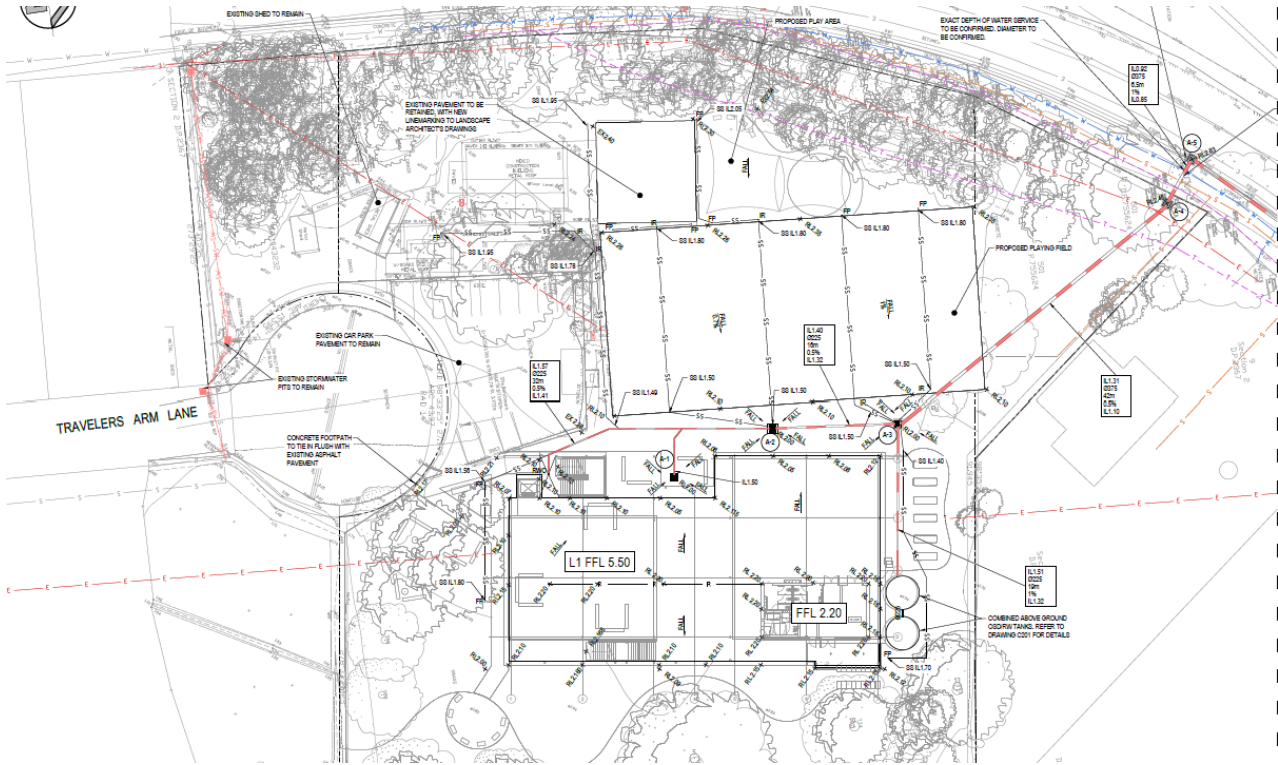


Figure 20: Stormwater drainage system through site (Source: Henry & Hymas)

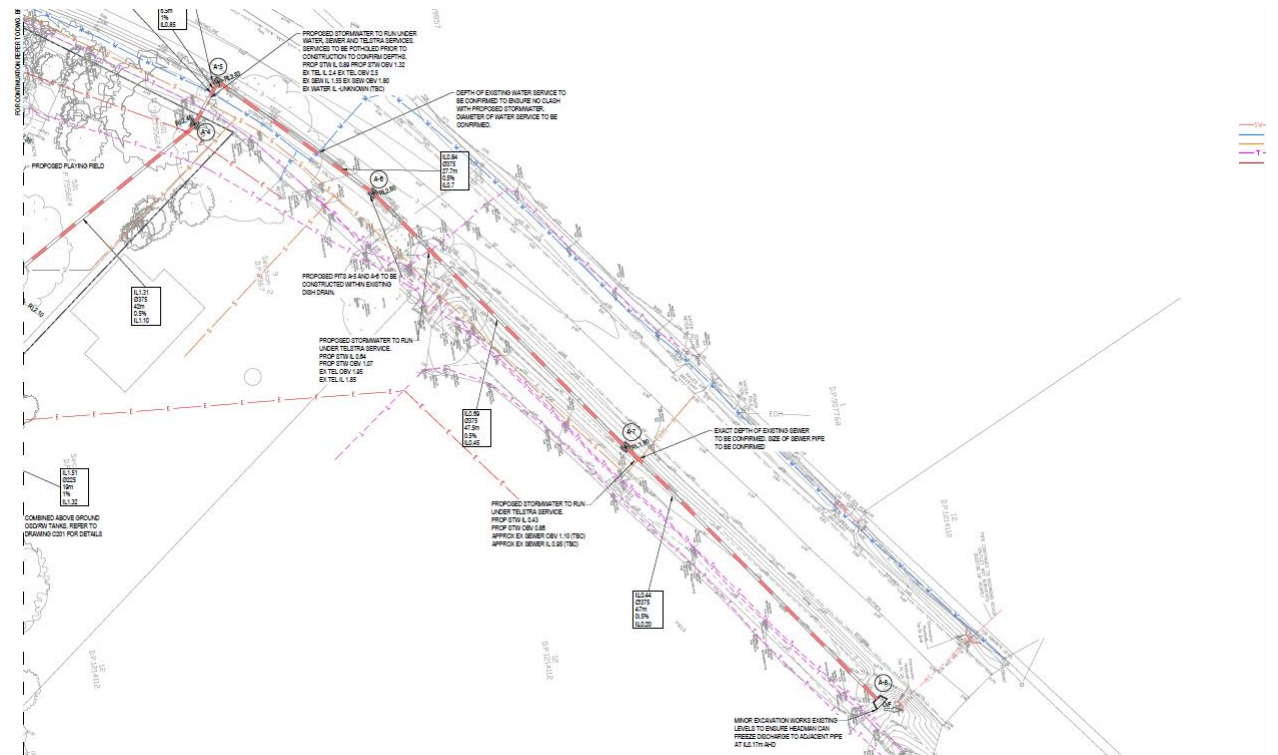


Figure 21: Proposed pipe along Baraang Drive (Source: Henry & Hymas)

Minor site grading of less than 300mm is proposed to improve drainage, it has been designed to ensure overland flow will be directed away from the school building and adjacent dwellings. Grading has been designed in accordance with the Education Facilities Standards Guide (EFSG), however due to the level topography of the site, and the shallow stormwater discharge point, a 1:60

slope could not be achieved in many places. Earthworks batters are included where required in accordance with the grading design.

The stormwater management system includes two tanks (adjacent to the northern façade of the new building), which will provide rainwater detention (14kL) for catchment of roof water and rainwater storage (20kL) (Figure 22).

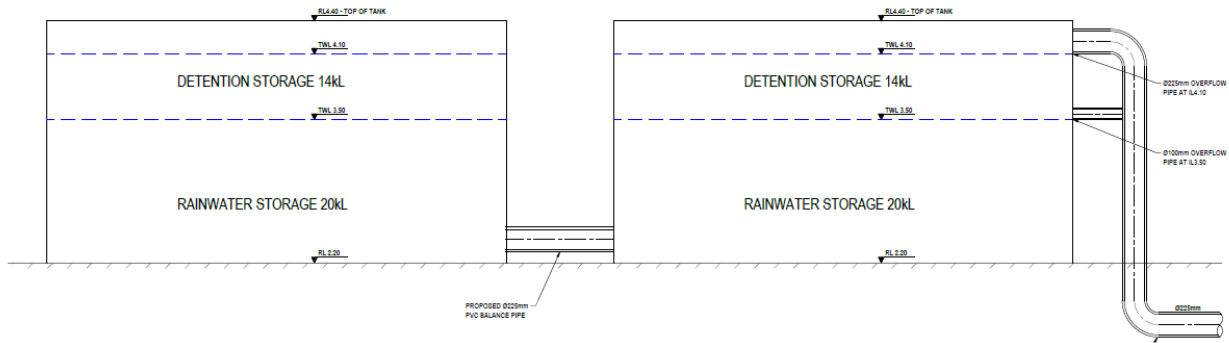


Figure 22: On-site detention and rainwater storage (Source: Henry & Hymas)

Stormwater quality measures will be implemented that aim to minimise pollution such as stormwater pit basket filters.

3.2.8 Ecologically Sustainable Design

A Sustainable Development Plan has been prepared by E-Lab Consulting to describe the ecologically sustainable design (ESD) strategies and measures that have been incorporated into the design of the proposed development (**Appendix U**). The project is seeking to achieve a 4 Star Green Star Design & As Built v1.3 equivalency.

A number of sustainable design initiatives will be implemented as part of the proposal as follows:

- Resilience – including a site-specific climate change risk assessment and adaptation plan.
- Energy and carbon – energy efficiency across the buildings and the use of on-site renewable energy.
- Water management – water efficient fixtures and fittings, collection, and reuse of water and improved stormwater quality.
- Health and wellbeing – maximising daylight and improving indoor quality through the use of low emissions materials.
- Materials – consideration of the whole of life impact of materials and selection to minimise harm to the environment and efficient construction methods.

3.2.9 Access and Parking

There are no changes proposed to the existing vehicular access from the end of the cul-de-sac on Byrnes Street. The carpark is proposed to be reconfigured in accordance with Australian Standards and to provide an accessible car space. A 16-bay bicycle rack is provided within the undercroft area.

3.2.10 Operations

The school had an enrolment of 55 students and 9 full-time equivalent staff. The school hours of operation are between 8.30am and 3.30pm during school terms, with limited usage outside of these hours. The school does not have an out-of-school-hours (OOSH) facility. These works do not propose to increase staff or student numbers at Broadwater Public School. No changes to the school's pre-flood operations are proposed.

Figure 23: Construction compound and access (Source: Adco Constructions)

Construction Hours

Generally, construction hours will be as follows:

- 7:00am to 6:00pm, Monday to Friday
- 8:00am to 1:00pm, Saturday
- No work without prior approval on Sundays and Public Holidays

If works do not exceed background level 5dB, works may carry on till 7pm weekdays and 4pm on Saturdays.

Construction Traffic

Construction vehicle access to the site will be from Byrnes Road. Construction traffic ingress and egress routes are shown in **Figure 24**. The CTMP provides that there will be an average of 28 vehicle/truck movements per day during construction. There will be an average of 10 construction staff on site per day and they will park on the adjacent street as public transport options are very limited.

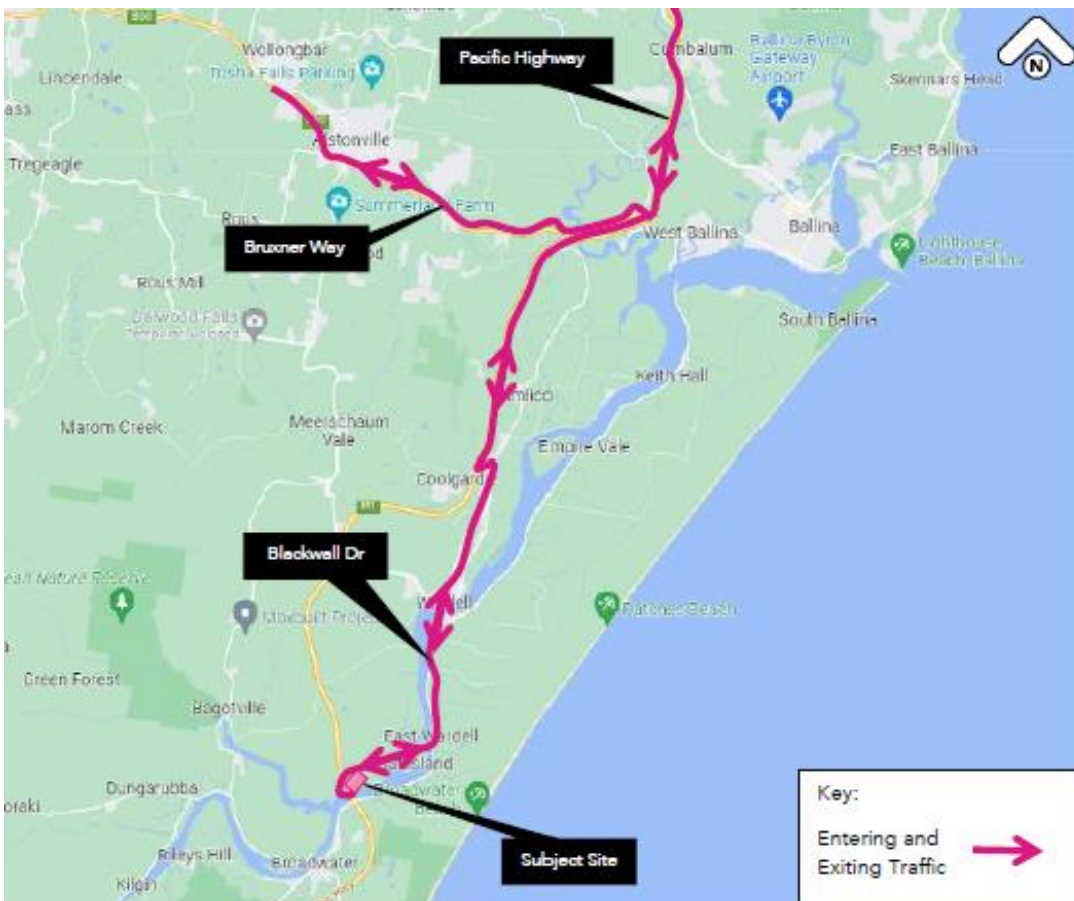


Figure 24: Proposed construction vehicle ingress and egress routes (Source: ptc)

3.2.12 Waste Management

Construction and demolition waste will be managed in accordance with the requirements of the NSW Environment Protection Authority (EPA). Throughout the development process, all materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling process. A waste storage area will be established on site and will be sufficient to store the various waste streams expected during construction. All materials to be removed from site will be analysed and classified by an appropriately

qualified consultation in accordance with the Protection of the Environment Operations (Waste) Regulation 2014 and the EPA's Waste Classification Guidelines.

A Waste Management Plan has been prepared by MRA Consulting Group to describe the proposed operational waste management practices (**Appendix CC**). The proposed works do not seek to increase staff or student numbers; therefore, it is not expected that the works will result in an increase in the total waste generated by the school. Nevertheless, ongoing waste management practices will aim to contribute towards the NSW Waste and Sustainable Materials Strategy 2041 target to achieve an 80% average recovery rate from all waste streams by 2030.

Based on the current school enrolment and the waste generation rates detailed in the NSW Environment Protection Authority (EPA) Better Practice Guide for Resource Recovery in Residential Developments (2019), the school requires the following bins:

- Three (6) x 240L general waste bins.
- Two (4) x 240L comingled recycling bins.

These bins are proposed to be stored at the rear of the new elevated building.

It is not proposed to increase staff or student numbers as a result of these works.

4 Consultation

During the early stages of the project and during design development, consultation was carried out with Richmond Valley Council, NSW State Emergency Service and other stakeholders.

4.1 Richmond Valley Council

On 10 November 2022, a preliminary meeting was held between the Department of Education, project team members and Richmond Valley Council to discuss the options for redevelopment of Broadwater Public School. The key matters discussed at this meeting were:

- The status of the new flood study, flood behaviour and the road network, and impacts following the February 2022 floods
- Site services available
- No tree preservation orders or heritage trees recorded on the site

On 20 September 2023, a meeting was held with Richmond Valley Council to discuss the proposed design and flood response. The key matters discussed at this meeting were:

- The new Richmond Valley Flood Study 2023 had been exhibited and flood levels for the school should be taken from this Study.
- Council requires schools to have a minimum habitable floor level above the 0.2% AEP level to support evacuation needs. This site is not suitable for this purpose as the site and road network will flood in a lesser event.
- Confirmation that the PMF for the site is now 9.37m AHD. Updates have been made to the Civil Report and Flood Emergency Response Plan.
- The visual inspection carried out following the February 2022 floods identified a peak level of 4.7m AHD at the site, however, flood modelling carried out as part of the new Flood Study identified a peak of 5.2m AHD at the site. This is noted.
- Confirmation that the cane fields will be considered Category 3 vegetation, and the site must have a Bushfire Impact Assessment. This has been provided.

The items identified by Council have been incorporated into proposed development and are further assessed in Section 4 of this report.

4.2 State Emergency Services

On 24 January 2023, a meeting was held between representatives of the project team and State Emergency Service (SES) to discuss the Northern Rivers Flood Recovery Schools. Key matters discussed at this meeting that are relevant to Broadwater Public School are identified in the following Table.

Table 3 Meeting with SES 24 January 2023	
Consideration Raised	Discussion
<p>General</p> <ul style="list-style-type: none"> • In order to improve flood resilience and reduce risks, SES encourage investigation of historical flood studies to understand when flood waters have surrounded schools or cut off the road network. In some cases, this can happen at the 5% or 10% Annual Exceedance Probability (AEP) events. • During design development, consider the risk for younger children who have much lower tolerance to emergency events than adults or older children. With regard to the FERP, SES encourage schools to close early, 	<p>The Civil Report (Appendix G) provides historical flood data.</p> <p>In accordance with the FERP, Broadwater Public School will be closed and evacuated when the river height at the Broadwater Gauge is forecast to exceed Minor level or approach Moderate level. This provides 12 hours of flood warning time with an effective warning of six (6) hours. Procedures have been identified in the FERP to assist with evacuation of students and staff well before the onset of flooding causes road closures.</p>

Table 3 Meeting with SES 24 January 2023	
Consideration Raised	Discussion
well before the onset of flooding and closure of roads.	
<p><u>Water velocities</u></p> <p>SES suggest considering water velocities around the proposed elevated buildings. Faster velocities carry more debris possibly impacting the buildings structural integrity.</p>	The Civil Report prepared by Henry & Hymas (Appendix G) has identified that the 1% AEP flood velocity is up to 0.5m/second. The structure has been designed in consideration of all additional forces and loads imposed from flood waters including the impact from debris.
<p><u>Warning times</u></p> <ul style="list-style-type: none"> In terms of triggers for the FEMP, consider if there are better warning systems in the event of sustained heavy rainfall to mitigate flash flood warning timeframe. Road closure information is available for some schools, SES can provide information on this. 	The site has 12 hours of flood warning time, with an effective warning time of six (6) hours. In addition to the publicly available warning systems provided by the SES, Bureau of Metrology (BOM), HazardWatch web application, Council and ABC radio, the FERP requires the school to subscribe to the Early Warning Network. The school will establish communications database to provide information and regular updates to the school community.
<p><u>Shelter in Place</u></p> <ul style="list-style-type: none"> SES do not endorse 'shelter in place' strategies. However, if a refuge is to be provided in the school as an emergency back up, it must be above the estimated PMF level. Any 'shelter in place' strategy must consider: <ul style="list-style-type: none"> The risk of rescue to SES volunteers in addition to the fact that human behaviour is likely to lead parents to cross flood waters to rescue children, thereby exposing both to increased risk; How to manage staff and students on site when all essential utilities and services are lost, especially water, power and sewer. 	A shelter in place strategy is not proposed for Broadwater Public School.

Written notification of the intention to carry out the proposed works was provided in the NSW SES on 29 August 2023 (**Appendix GG**). This written notification included a planning cover letter, copy of the architectural plans and copies of the Civil Report, Flood Impact Assessment and Flood Emergency Response Plan.

On 20 September 2023, SES provide a response to the notification that concluded:

In summary, as the school is subject to high hydraulic hazard flooding, all buildings are vulnerable to failure. Ideally, the school would be situated on a more suitable location, appropriate for sensitive uses. However, noting the site is an existing school, the design should consider this hazard, and where possible be built to withstand the forces of flooding, up to a PMF. Further, as a consequence of the high flood risk, all school occupants must be evacuated prior to the onset of flooding. The preferred emergency strategy for this school is early closure prior to the commencement of flooding and preferably school closure before the start of the school day.

Acor Consultants prepared a response letter dated 6 October 2023 to the matters raised in the SES letter. In addition, Henry and Hymas has reviewed the response and addressed relevant matters in their Civil Report.

4.3 Other Engagement

The Department of Education has undertaken engagement with the community and stakeholders as follows:

- School community engagement – project review meetings, workshops, school tours, design user group sessions
- Community information sessions – face-to-face and online engagement
- Project communications – webpage, information pack, project updates and works notifications)
- Contact channels – emails and project information numbers
- School community notifications – newsletter, P&C meetings
- Department of Education stakeholders have been engaged throughout the process as follows:
 - The Project Reference Group
 - The Project Control Group
 - The Technical Support Group
 - The Expert Review Group
 - The Design Advisory Group
 - School Operations and Performance

Feedback from these stakeholders has been incorporated into the design.

5 Statutory Requirements

The following statutory instruments, documents and matters have been considered in this SEE:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Fisheries Management Act 1994* (FM Act)
- *National Parks and Wildlife Act 1974* (NPW Act)
- *Local Government Act 1993* (LG Act)
- *Local Land Services Act 2013* (LLS Act)
- *Rural Fires Act 1997* (RF Act)
- *Water Management Act 2000* (WM Act)
- *Protection of the Environment Operations Act 1997* (PoEO Act)
- *Roads Act 1993*
- *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation)
- *State Environmental Planning Policy (Planning Systems) 2021*
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
- *State Environmental Planning Policy (Resilience and Hazards) 2021*
- *State Environmental Planning Policy (Sustainable Buildings) 2022*
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*
- *Richmond Valley Local Environmental Plan 2012*

The applicable provisions from each of the above are considered below.

5.1 Environmental Planning & Assessment Act 1979

5.1.1 Evaluation

Section 4.15(1) of the EP&A Act outlines matters that a consent authority must consider in determining a development application. Matters as are of relevance to the proposed development are discussed in the table below:

Table 4 Matters for Consideration under Section 4.15 of EP&A Act	
Section	Discussion
4.15(1)(a)(i) Any environmental planning instrument (EPI)	All applicable environmental planning instruments are addressed at Section 5.
4.15(1)(a)(ii) Any draft (EPI)	All applicable draft environmental planning instruments are addressed at Section 5.
4.15(1)(a)(iii) Any development control plan	The Richmond Valley Development Control Plan 2012 is addressed at Section 5.9.
4.15(1)(a)(iii a) Any planning agreement	There are no planning agreements applicable to the proposed development
4.15(1)(a)(iv) The regulations (as prescribed for the purposes of this section)	See Section 5.7 below.

Table 4 Matters for Consideration under Section 4.15 of EP&A Act	
Section	Discussion
4.15(1)(b) Likely impacts	The likely impacts of the proposed development, including but not limited to environmental impacts on both the natural and built environments, and social and economic impacts in the locality are addressed at Section 6 .
4.15(1)(c) Site suitability	The suitability of the site for the proposed development is addressed at Section 6.20 .
4.15(1)(d) Submissions	EPM understands that Council will notify the proposed development to adjoining and nearby landowners in accordance with the Richmond Valley Development Control Plan 2012. Should any submissions be received by way of objection to the proposal, the applicant seeks to be provided a copy of the submission(s) and be afforded an opportunity to provide a response to the matters raised.
4.15(1)(e) The public interest	The public interest of the proposed development is considered in detail at Section 6.21 .

5.1.2 Crown Development

Pursuant to Section 4.32 of the EP&A Act, as the proposal is being submitted by the NSW Department of Education, it is a 'Crown Development'. Section 4.33(1) provides that a consent authority (other than the Minister) must not refuse consent to a Crown DA without the Minister's approval, and must not impose a condition of consent to a Crown DA without the approval of the applicant or the Minister.

5.1.3 Integrated Development

Notwithstanding that the proposal will require an *Aboriginal Heritage Impact Permit* (AHIP) to be issued under Section 90 of the *National Parks and Wildlife Act 1979*; Section 4.44 of the EP&A Act provides Division 4.8 Integrated development does not apply to Crown development, other than development that requires a heritage approval. Section 4.45 defines a heritage approval as approval required under Section 57(1) of the *Heritage Act 1977*.

Accordingly, the development is not integrated development.

5.2 Environmental Protection and Biodiversity Conservation Act 1999

A Flora and Fauna Assessment has been prepared by Kleinfelder (**Appendix Z**) which considers the proposed works against the requirements of the EPBC Act. No EPBC Act listed threatened species were recorded within the site. The Koala was identified as having a moderate likelihood of occurrence within the site as it has been recorded locally. An assessment was undertaken against the Significant Guidelines of the EPBC Act, which determined that the Koala would not be significantly impacted by the proposed works. An EPBC Act checklist is provided at **Table 8**.

Table 5 Matters for consideration under the EPBC Act	
Consideration	Yes/No
Will the activity have, or likely to have, a significant impact on a declared World Heritage Property?	No
Will the activity have, or likely to have, a significant impact on a National Heritage place?	No
Will the activity have, or likely to have, a significant impact on a declared Ramsar wetland?	No
Will the activity have, or likely to have, a significant impact on Commonwealth listed threatened species or endangered community?	No
Will the activity have, or likely to have, a significant impact on listed migratory species?	No
Will the activity involve any nuclear actions?	No

Table 5 Matters for consideration under the EPBC Act	
Will the activity have, or likely to have, a significant impact on Commonwealth marine areas?	No
Will the activity have any significant impact on Commonwealth land?	No
Would the activity affect a water resource, with respect to a coal seam gas development or large coal mining development?	No

5.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) outlines the framework for addressing impacts on biodiversity from development and clearing. In accordance with section 7.2 of the BC Act, an activity is likely to significantly affect threatened species if it is:

- a) likely to "significantly affect threatened species or ecological communities, or their habitats" in accordance with section 7.3 of the BC Act; or
- b) the development exceeds the biodiversity offsets scheme (BOS) threshold if the BOS applies to the impacts of the development on biodiversity values; or
- c) carried out in a declared area of outstanding biodiversity value.

A Flora and Fauna Assessment Report has been prepared by Kleinfelder that provides an assessment against sections 7.3 and 7.7 of the BC Act (**Appendix Z**). The new disturbance area will be 2,520m² of planted trees but mostly lawn areas. 0.374 hectares will be returned to managed lawns. Kleinfelder made the following conclusion:

The proposed development at BWPS will result in no clearing or impacts to native vegetation communities, but has an area clearing threshold of 1 ha based on the Subject Site's minimum lot size of 40 ha. There are no areas mapped on the BV Map within the Subject Site. As such, the proposed development does not trigger entry into the BOS, thus a Biodiversity Development Assessment Report (BDAR) is not required to support the DA under this criteria

An assessment against the likelihood of occurrence of threatened species and ecological communities listed under the BC Act has been carried out (see **Section 6.1** and **Appendix Z**) and concluded that no threatened communities, flora or fauna species were recorded within the site or are considered to have a moderate to high likelihood of occurrence except the Koala. An assessment of impact found the development would not significantly impact the Koala.

5.4 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act), administered by Heritage NSW, is the primary legislation for the protection of Aboriginal cultural heritage in NSW. The NPW Act gives the Director General of Heritage NSW responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places', defined under the Act as follows:

- an Aboriginal object is any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).
- an Aboriginal place is a place declared so by the Minister administering the NPW Act because the place is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects.

Section 90 of the NPW Act requires an Aboriginal Heritage Impact Permit (AHIP) to be granted by Heritage NSW for any works likely to destroy, deface, damage or knowingly cause or permit the destruction or defacement of a relic or Aboriginal place or object. In addition, section 87 provides that it is a defence to a prosecution if harm or desecration to a relic or Aboriginal place or object was authorised by an Aboriginal heritage impact permit and the conditions to which that permit was subject were not contravened.

The Aboriginal Cultural Heritage Assessment (ACHA) Report prepared by EMM (**Appendix K**) has identified an Aboriginal site containing at least ten (10) items of Aboriginal cultural heritage significance within the proposed area of works. Accordingly, an AHIP will be required prior to commencement of works within the area identified as AHIP curtilage in **Figure 21**. Subject to application for the AHIP under Section 90 of the NPW Act and implementation of the recommendations contained in the ACHA Report, the impacts to Aboriginal cultural heritage can be suitably mitigated.

Detailed discussion is provided at **Section 6.15** of this SEE.

5.5 Local Government Act 1993

Under Section 68 of the Local Government Act 1994 (LG Act), approval is required from Council to:

- Carry out sewerage work
- Carry out stormwater drainage work
- Install, construct or alter a waste treatment device or human waste storage or a drain connected to any such device or facility.
- Operate a system of sewage management (within the meaning of section 68A)

The works include stormwater drainage works as well as a new connection to Council's sewage system that would require approval under Section 68 of the LG Act. However, Section 69 of the LG Act states:

Section 68 does not require the Crown or a person prescribed by the regulations to obtain the approval of a council to do anything that is incidental to the erection or demolition of a building.

As the NSW Department of Education is a statutory body representing the Crown and the proposed stormwater drainage works and sewage connection are incidental to the erection or demolition of a building, approval is not required under s68 of the LG Act.

At a meeting on 20 September 2023, Richmond Valley Council's Environmental Officer, noted that whilst the Department of Education is exempt from requiring Section 68 approval, as the connections are to Council's infrastructure, they have strongly recommended that a Section 68 application be made to ensure technical compliance.

Based on this feedback from Council, it is proposed to lodge a Section 68 with Council. Approval of the Section 68 application will be required prior the stormwater and sewage connections.

Richmond Valley Council have confirmed that no Section 64 contributions are payable for the proposed works.

5.6 Other NSW Acts

The following lists any additional legislation that is required to be considered if it is applicable to the proposed DA.

Table 6 Other Legislative Considerations	
Legislation	Assessment
Fisheries Management Act 1994	The Fisheries Management Act 1994 (FM Act) governs the management of fish and their habitat in NSW. Part 7A of the FM Act regulates the provision of permits required in relation to harm to protected marine vegetation (seagrass, macroalgae, mangroves and saltmarsh), dredging, reclamation or obstruction of fish passage. Section 221ZW of the FM Act provides that a species impact statement is required where it is determined that a development is "likely to significantly

Table 6 Other Legislative Considerations	
Legislation	Assessment
	<p>affect threatened species, populations or ecological communities, or their habitats".</p> <p>The Flora and Fauna Report prepared by Kleinfelder (Appendix Z) assessed the impacts on marine and aquatic flora and fauna and concluded that no threatened species or ecological communities, or their habitats are likely to be significantly affected by the proposed works. Accordingly, a species impact statement is not required.</p>
Local Land Services Act 2013	<p>The Local Land Services Act 2013 (LLS Act) in conjunction with the BC Act regulates the clearing of native vegetation on rural land in NSW. The site is zoned RU1 Primary Production under the Richmond Valley LEP and is therefore classified as rural land. A total of 28 trees along with one (1) dead tree are proposed for removal as set out in Table 2.</p> <p>Section 60O(a) of the LLS Act provides that the clearing of native vegetation in a regulated rural area can be authorised under Part 4 of the EP&A Act 1979.</p> <p>All other trees will be protected in accordance with the recommendations of the Arboricultural Report prepared by Northern Tree Care (Appendix Y).</p>
Rural Fires Act 1997 (RF Act)	<p>The site is not bush fire prone land on a bush fire prone land map. However, pursuant to s63 of the RF Act, public authorities must take all practicable steps to prevent the occurrence and spread of bush fires on or from land vested in or under its control or management. Accordingly, a Bushfire Assessment has been prepared and confirms the proposal is consistent with the bushfire risk on the site. See discussion at Section 6.13.</p>
Water Management Act 2000 (WM Act)	<p>Some minor services works are proposed within 40 metres of a watercourse. Pursuant to Section 41 of the <i>Water Management (General) Regulation 2018</i>, a Controlled Activity Approval is not required for works undertaken by a public authority in, on or under waterfront land.</p> <p>If groundwater is encountered during construction, the approval for removal will be required to be obtained under the WM Act.</p>
Protection of the Environment Operations Act 1997 (PoEO Act)	<p>The PoEO Act seeks to protect, restore and enhance the environment in NSW and promote public access to information and involvement in environmental protection.</p> <p>If a pollution event that causes or threatens harm to the environment occurs while carrying out the activity, the person carrying out the activity must notify the appropriate regulatory authority (as defined under Section 148 of the PoEO Act).</p> <p>A Construction Management Plan has been prepared by ADCO (Appendix DD) to outline the relevant management measures required to ensure that construction activities won't cause a pollution event. A licence under the PoEO Act is not required.</p>

5.7 Environmental Planning and Assessment Regulation 2021

5.7.1 Demolition of buildings

For the purposes of section 4.15(1)(a)(iv) of the EP&A Act, section 61(1) of the EP&A Regulation provides that a determining authority must consider the *Australian Standard AS 2601—2001: The Demolition of Structures* when a proposed development entails the demolition of a building.

All demolition work will be carried out in accordance with AS 2601, conditions of development consent can also seek to ensure compliance with the standard.

5.8 State Environmental Planning Policies

The following table provides an assessment of State Environmental Planning Policies that need to be considered for these works.

Table 7 State Environmental Planning Policies	
Legislation	Assessment
State Environmental Planning Policy (Planning Systems) 2021	The works have a CIV of >\$5 million and <\$50 million. Pursuant to Schedule 6, Crown development with a CIV of >\$5 million is Regionally Significant Development. Accordingly, pursuant to Section 4.5(b) of the EP&A Act the Northern Regional Planning Panel will be the consent authority.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP B&C)	Chapter 3 (Koala Habitat Protection 2020) of the BC SEPP applies to land zoned RU1 located within the Richmond Valley LGA. The aim of Chapter 3 of the BC SEPP is to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline. As identified in the Flora and Fauna Assessment Report prepared by Kleinfelder, the site contains moderate potential for koalas and contains (potential) koala feed tree species (Appendix Z). However, the site is not identified as 'core koala habitat' and is located approximately 700 metres from the nearest koala habitat (disconnected by the River and cane fields). An assessment of significance has been undertaken by Kleinfelder, which confirms the works will not have an unacceptable impact on koalas or their habitat. Notwithstanding, suitable mitigation measures have been identified in Section 6.1 to ameliorate any impacts on koala habitat.
State Environmental Planning Policy (Sustainable Buildings) 2022	Section 3.1 of SEPP SB provides that development on land in the RU1 zone is not development for the purposes of this SEPP. Notwithstanding, the principles of the SB SEPP have been incorporated into this development, as set out in the Ecologically Sustainable Development report at Appendix U and discussed in Section 6.11 of this SEE.
State Environmental Planning Policy (Transport and Infrastructure) 2021	Section 3.36(3) provides that development for the purposes of a school can be carried out on land that is not a prescribed zone if it is within the boundaries of an existing school. The site is an existing school. Section 3.36(6) provides that the consent authority must consider the design quality of the development in accordance with the design quality principles. An Architectural Design Statement is provided at Appendix B and discussed in Section 6.8.1 of this SEE, which confirms the school is designed in accordance with these principles. Section 3.36(9) provides that a provision of a DCP that specifies a requirement, standard or control is of no effect.
State Environmental Planning Policy (Resilience and Hazards) 2021	
Chapter 2 – Coastal Management	The site is mapped as being located within the 'coastal environment area' and 'coastal use area'; and is partially mapped as 'proximity area for coastal wetlands'. This is discussed in more detail in Section 6.5 . The proposed development has been assessed as being consistent with the requirements of this chapter as per the below:
s2.8 Development proximate to coastal wetlands	The site is within 30 metres of Richmond River and is proximate to coastal wetlands. The Flora and Fauna Assessment confirms that the development will have no unacceptable impacts on flora or fauna. Appropriate erosion and sediment control measures will be implemented along with water quality measures for stormwater management.

Table 7 State Environmental Planning Policies	
Legislation	Assessment
s2.10 Development within the coastal environment area	In addition to the measures outlined above, an ACHA has been prepared to mitigate the impacts on Aboriginal cultural heritage and an AHIP will be required.
s2.11 development within the coastal use area	The development will not result in adverse visual impacts to the coastal use area and will not result in any overshadowing or impact access to the coastal use area.
s2.12 development within the coastal zone	The site is subject to tidal inundation in the Highest Astronomical Tide. The Civil Report (Appendix G) notes the proposed activity will not have any effect on tidal inundation
Chapter 4 – Remediation of Land	Contamination investigations have been undertaken and confirm that the site is suitable for the proposed development subject to appropriate mitigation measures. See Section 6.12 and Appendix N . In addition, an Acid Sulfate Soils Management Plan has been prepared to mitigate any risk from ASS or PASS. See Section 6.4

5.8.1 Richmond Valley Local Environmental Plan 2012

The following table provides a summary assessment of the proposed development against the relevant provisions of the LEP.

Table 8 Richmond Valley LEP	
Clause	Assessment
2.2 Zoning – RU1 Zone	Schools are permissible with consent in the RU1 zone under the LEP.
4.3 Height of Buildings – 8.5m	The Architectural Plans prepared by Pedavoli Architects (Appendix A) provide that the existing ground level is 2.2m AHD and the maximum height of the development is 10.17m AHD. This represents a maximum height of 7.97m and will not exceed the height of buildings development standard for the site.
5.21 Flood Planning – Flood Prone Land	The proposal has been designed in accordance with the flood affectation of the site. The minimum habitable floor level exceeds Council's minimum level. Further discussion is at Section 6.1 .
6.1 Acid Sulfate Soils – Class 3	As piling will exceed depths of 1m into Class 3 ASS, an Acid Sulfate Soils Management Plan has been prepared for the proposal and all footings have been designed to be consistent with the soil classifications. Further discussion is at Section 6.4 .
6.2 Essential Services	An Infrastructure Services Statement has been prepared by JHA (Appendix BB), which confirms that the development has access to the required essential services. Further discussion is at Section 6.14 .
6.3 Earthworks	Minor earthworks are proposed to level the site, these are expected to be less than 300mm.
6.8 Riparian Lands and Watercourses – Key Fish Habitat	This site is partially mapped as Riparian Lands and Waterways "Key Fish Habitat" along the western boundary. No works are proposed within the mapped area. The stormwater management report prepared by Henry & Hymas confirms that the works are consistent with Council's water quality and quantity guidelines. Further discussion is at Section 6.6 .

5.9 Non-statutory Requirements

5.9.1 Richmond Valley Development Control Plan (DCP) 2021

Pursuant to Section 3.36(9) of the TI SEPP, provisions in a DCP are of no effect to school developments. Notwithstanding, and assessment of the proposal has been undertaken against the relevant provisions of the Richmond Valley DCP.

Table 9 Richmond Valley DCP	
Clause	Assessment
H-1 Flood Planning	<p>The proposal has had regard to the draft Richmond River Flood Study 2023 and has been designed in accordance with the flood affectation of the site. The minimum habitable floor level will be RL5.5m AHD, which exceeds the revised 0.2% AEP (1 in 500 year) flood level of 5.23m AHD. All construction below the design flood level comprises flood resilient materials.</p> <p>A Flood Emergency Response Plan has been prepared to ensure that the site is closed prior to being affected by flood waters in order to mitigate the risk to staff, students and families. Further discussion is at Section 6.1.</p>
H-2 Acid Sulfate Soils	<p>Geotechnical investigations have confirmed that Acid Sulfate Soils are present on the site. The site is mapped as containing Class 3 ASS, and piling/footings for the new development will exceed depths of 1m. An Acid Sulfate Soils Management Plan has been prepared for the proposal and all footings have been designed to be consistent with the soil classifications. Further discussion is at Section 6.4</p>
H-3 Natural Resources	<p>The site is partially mapped as Riparian Lands and Watercourses "Key Fish Habitat" along the western boundary. No works are proposed in the riparian lands and water quality and quantity measures are proposed in line with Council requirements. Further discussion is at Section 6.1</p>
I-1.12 Aboriginal Cultural Heritage	<p>An ACHAR has been undertaken for the site, which has identified a potential "relic". An Aboriginal Heritage Impact Permit (AHIP) will be required pursuant to s90 of the <i>National Parks and Wildlife Act 1979</i>. Further discussion is at Section 6.15</p>
I-3 Building Setbacks	<p>The DCP provides that development is subject to a 20-metre setback from the primary road frontage and a 5m side and rear setback in the RU1 zone. The main road frontage is Blackwell Drive / Baraang Drive and the works are generally a minimum of 20 metres from Blackwell Drive / Baraang Drive as the building is located on the eastern side of the site and is consistent with the 5m side and rear setbacks. The site is not bushfire prone land, but bushfire risk has been considered in the design and the location of the building has been assessed as suitable in the Bush Fire Impact Assessment. Further discussion is at Section 6.13</p>
I-4 Car Parking Provisions	<p>The DCP sets out parking requirements for primary schools at a rate of 1 space per teacher, plus 1 space per 12 students. This would be 19 spaces (12 teachers and 80 students). There are nine (9) existing off-street parking spaces, including one (1) accessible space. The TI SEPP does not require additional parking for these works as there is no associated increase in students or staff. Further discussion is at Section 6.19.</p>
I-5 Landscaping	<p>The landscape plan prepared by Taylor Brammer is consistent with the species and guidelines set out in this chapter.</p>
I-7 Noise Guidelines	<p>The site is an existing school and the proposal does not involve any increase in students or staff. An Acoustic Assessment has been prepared which confirms the proposal will not have unacceptable noise impacts for neighbours.</p>

Table 9 Richmond Valley DCP	
Clause	Assessment
	Acoustic measures are proposed to mitigate noise impacts during construction. Further discussion is at Section 6.9
I-8 Social Impact Assessment	The proposal will not increase or decrease opportunities or demands in the locality, as it will replace damaged educational infrastructure. The works will have a positive social impact by restoring educational facilities to the community through a design that provides modern learning spaces and is flood resilient.
I-9 Water Sensitive Urban Design	A Stormwater Management Plan has been prepared by Henry & Hymas Consulting Engineers (Appendix G). It has been designed in accordance with the requirements of Richmond Valley Council Water Sensitive Urban Design principles. Further discussion is at Section
I-10 Crime Prevention Through Environmental Design	A CPTED assessment is provided at Section 6.18 , which confirms the suitability of the design.

5.10 Strategic Planning Context

The following table lists any strategic plan that is required to be considered if it is applicable to the proposed works.

Table 10 Strategic Plans	
Plan	Assessment
Richmond Valley Council Local Strategic Planning Statement: Beyond 20-20 Vision	<p>Richmond Valley Council LSPS has been arranged into the following themes and priorities:</p> <p><u>Theme 1 – Our Community</u></p> <ul style="list-style-type: none"> • Priority 1 – well planned and designed space to grow • Priority 2 – align development growth and infrastructure • Priority 3 – improve the delivery of planning services <p><u>Theme 2 – Our Environment</u></p> <ul style="list-style-type: none"> • Priority 4 – look after our environment • Priority 5 – create resilient communities • Priority 6 – celebrate our heritage <p><u>Theme 3 – Our Economy</u></p> <ul style="list-style-type: none"> • Priority 7 – protect productive agriculture land • Priority 8 – diversify services and employment options <p>The proposal will help to support these priorities through the provision of educational infrastructure that has been designed to be resilient to local hazards and minimise environmental impacts.</p>
North Coast Regional Plan 2041	<p>The North Coast Regional Plan 2041 (the Regional Plan) guides the land use planning priorities and decisions to 2041 for the North Coast Region. There is a total of 12 Local Government Areas (LGAs) located within the North Coast Region including Richmond Valley LGA.</p> <p>The Regional Plan identifies three (3) goals for the region:</p> <ul style="list-style-type: none"> • Goal 1: Liveable, sustainable and resilient. • Goal 2: Productive and connected. • Goal 3: Growth change and opportunity. <p>The three (3) goals are supported by 20 objectives, along with strategies, actions and collaborative activities.</p> <p>The proposed activity is consistent with the following objectives under the Regional Plan:</p>

Table 10 Strategic Plans	
Plan	Assessment
	<ul style="list-style-type: none"> Objective 5: Manage and improve resilience to shocks and stresses, natural hazards and climate change. Objective 19: Public spaces and green infrastructure support connected and healthy communities.

6 Environmental Planning and Impact Assessment

The following subsections consider the environmental impact associated with the proposed development including relevant matters for consideration under section 4.15 of the EP&A Act.

6.1 Flooding

The site is flood prone land and was inundated during the February/March 2022 floods, which damaged the existing school buildings and was measured as reaching a height of 4.72m AHD as indicated in **Figure 25** and **Figure 26**.



Figure 25: Building A – with Feb 2022 flood height indicated by blue line (Source: Acor Consultants)



Figure 26: Building D11066 – with Feb 2022 flood height indicated by blue line (Source: Acor Consultants)

In August 2022, Acor Consultants prepared a Flood and Civil Assessment (**Appendix I**) for Broadwater Public School to consider the existing site conditions, and in September 2023 Richmond Valley

Council adopted the new Richmond Valley Flood Study 2023 (RVFS 2023). The following table sets out the relevant flood levels for the site based on the information contained in these two documents.

Table 11 Summary of flood and floor levels for Broadwater Public School	
Description	Level
Flood Levels at the Site as per RVFS 2023 levels (including depth of water above ground level on the site):	5% AEP - 3.2m AHD (up to 1.2m deep) 2% AEP - 3.9m AHD (up to 1.9m deep) 1% AEP - 4.6m AHD (up to 2.6m deep) 0.2% AEP - 5.23m AHD (up to 3.23m deep) PMF - 9.27m AHD (up to 7.27m deep)
February / March 2022 peak flood level (as measured onsite by Acor)	4.72m AHD
Minimum Habitable Floor Level (MHFL) 1% AEP + 0.5m	5.1m AHD
Proposed Minimum Habitable Floor Level	5.5m AHD (0.4m above the MHFL and 0.27m above the 0.2% flood level)
Flood velocity (1% AEP)	0.5m/second (1m/second in PMF event)
Flood Risk Precinct	H5 at the 1% and 0.2% AEP events H6 at the PMF
Highest Astronomical Tide (HAT) (Climate change to 2100)	1.92m AHD

With regard to the flood risk, the site is identified as an H5 flood risk at the 1% AEP event and an H6 flood risk at the PMF event (see **Figure 27** below)

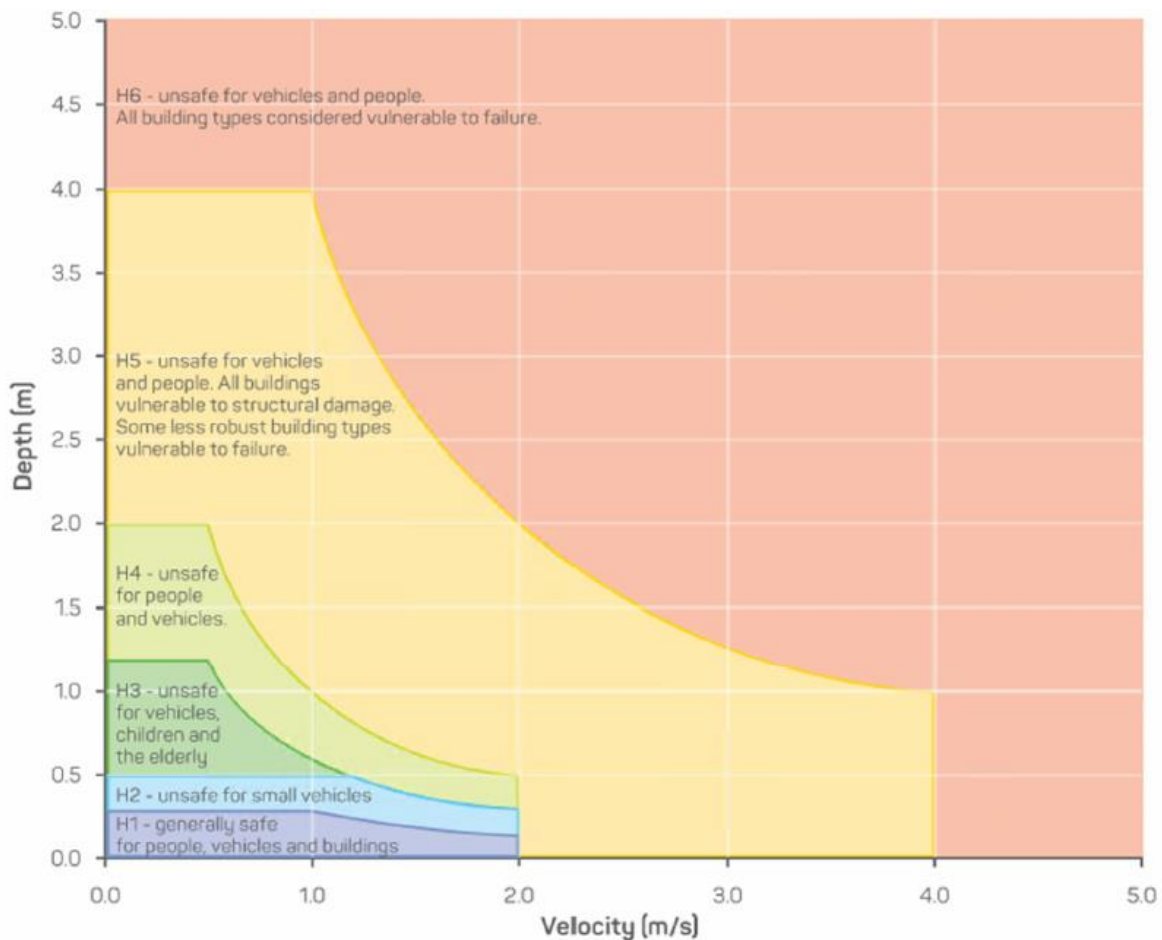


Figure 27: General Flood Hazard Vulnerability Curve (Source: Australian Institute for Disaster Resilience, 2019)

The NSW Flood Inquiry 2022 provided a series of recommendations for flood affected sites, including taking a risk-based approach to setting minimum habitable floor levels (Recommendation #18). The recommendation provides that the 1% AEP level plus 500mm freeboard, which has been traditionally used to set habitable floor levels, is not an adequate measure. The proposed buildings will provide a useable undercroft space with a habitable floor level of 5.5m AHD (**Figure 28**), which is 0.4m above the 1% AEP minimum habitable floor level and 0.27m above the 0.2% AEP level. This level is considered suitable, particularly as the school is unsuitable for an evacuation centre or shelter in place due to the local road network flooding simultaneously with the school site. Accordingly, the minimum habitable floor level is consistent with *Recommendation 18* from the *NSW Flood Inquiry*, and Council's requirements and is therefore considered suitable.

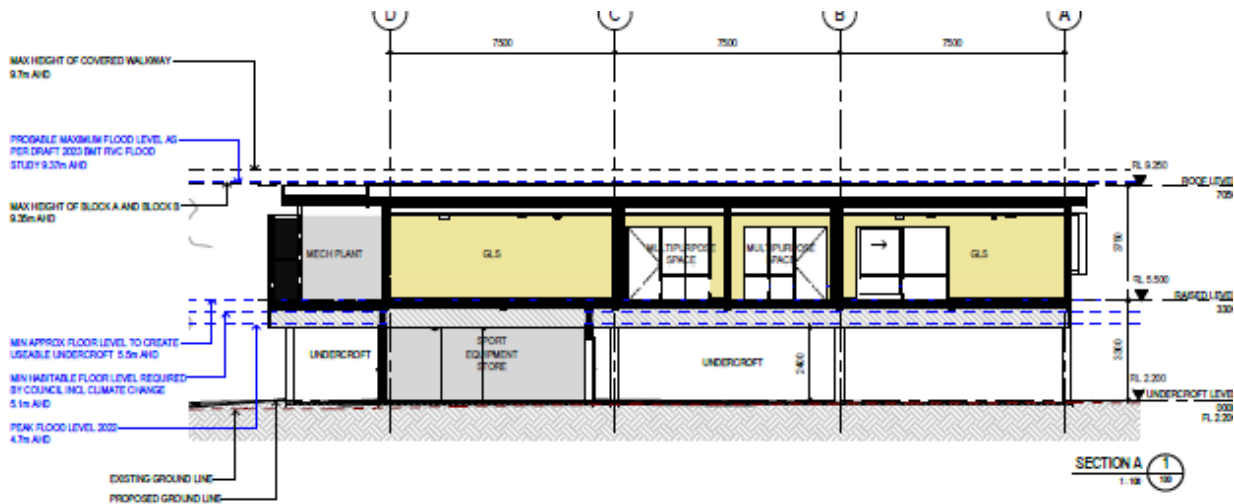


Figure 28: Section through elevated building showing flood levels and proposed elevated flood level (Source: Pedavoli Architects)

A Civil Engineering Report has been prepared by Henry & Hymas Consulting Engineers (**Appendix G**) that provides a review of the Flood and Civil Assessment prepared by Acor, along with an assessment against the following guidelines and studies:

- NSW Department of Planning and Environment (2023) *Flood Risk Management Manual* and associated toolkit including:
 - Flood Impact and Risk Assessment LU01
- BMT (2023) *Richmond Valley Flood Study*
- BMT (2010) *Richmond River Flood Mapping Study*
- BMT (2012) *Ballina Floodplain Risk Management Study*
- NSW State Emergency Services Ballina Shire – Local Flood Plan
- Australian Building Codes Board (2012) *Construction of Buildings in Flood Hazard Areas*.
- Hawkesbury-Nepean Floodplain Management Steering Committee (2006) *Reducing vulnerability of buildings to flood damage: Guidance on Building in Flood Prone Areas*.

6.1.1 Flood Behaviour

In relation to the impacts of the proposed activity on existing flood behaviour, the Civil Report notes that the proposed site works will only generate minor modifications to the existing topography. The proposed new elevated building has undercroft areas without enclosed sides that allow flood waters to pass beneath the building.

A comparison between the existing building footprints (red) and proposed building footprints (blue) is shown in **Figure 29**. The proposed activity results in a reduction in building footprint from 462m² to 168m², which has negligible impact on local flood conveyance and storage.

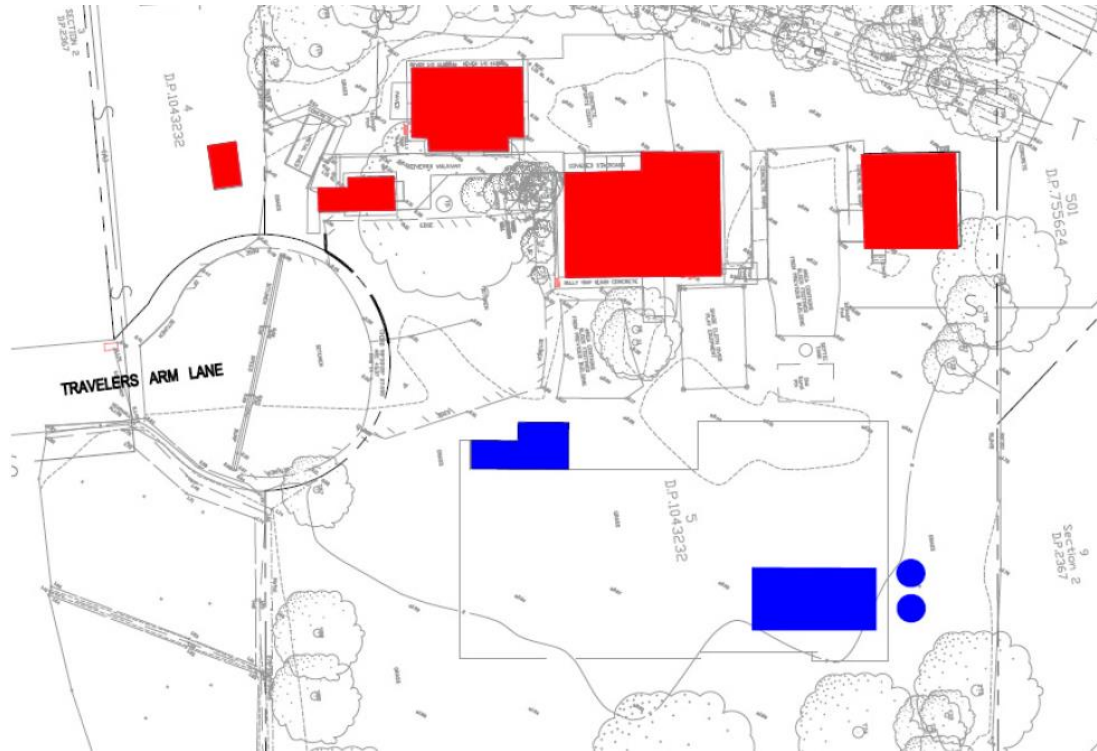


Figure 29: Comparison between existing and proposed footprints at Broadwater Public School (Source: Henry & Hymas 2023)

Accordingly, the Civil Report concludes the following in relation to the impacts of the proposed development on existing flood behaviour:

- The proposed development will not result in significant changes to the existing flood level.
- The proposed development will not result in significant changes to the existing the duration of flooding.
- The proposed development will not result in meaningful or significant changes to existing flood velocity or existing flow path.
- The proposed development does not decrease available warning time and time available for evacuation.
- The proposed development does not increase the frequency of inundation.

6.1.2 Flood Resilience - Structure

In relation to the structural flood resilience of the new elevated building, the undercroft area (including the storage areas and amenities) adopts a 'wet flood proofing' methodology. Under the wet flood proofing methodology, the flood water is allowed to enter the building to reduce the build-up of hydrostatic pressure between the flood water and the inside of the building. The structural materials used below the flood level must be water resistant to minimise the resulting damage (refer to discussion below).

The structural design has taken into account all relevant provisions of National Construction Code (NCC) as well as relevant Australian Standards relating to the design of buildings subject to flooding. The structure has been designed to consider all additional forces and loads from flood waters including hydrostatic actions (buoyancy), hydrodynamic (drag forces), debris actions, wave actions, erosion and scour, as well as combinations of these actions. In addition, consideration has been given to the impacts from debris and the 1% AEP flood velocity of up to 0.5m/s. The structural design is capable of withstanding floodwater up to the habitable floor level of 5.5m AHD.

The following structural elements are included to provide a flood resilient modular design:

- The wall structure is comprised of external and internal reinforced concrete blockwork walls.

- The external reinforced blockwork has been designed to resist the forces imposed by floodwaters and debris impact.
- The external reinforced blockwork wall has been designed to include regular removeable vent blocks or weep holes to equalise water pressures.
- The undercroft floor is proposed to be reinforced concrete raft slab supported on screw piles. External and internal reinforced block walls will be built off this raft slab. The ground floor slab is proposed to include a subsurface drainage system to mitigate uplift forces from receding floodwaters.
- The internal wall systems have been designed using approved flood resilient material and strength suitable to withstand pressure differential forces that will occur between the internal and external water levels. Internal and external walls are proposed to include small weepholes to relieve pressure between external and internal areas minimising pressure differential between internal and external walls. Cavities and internal wall linings (excluding render) are not proposed due to the additional burden of maintenance following a flood event.
- As recommended in the NCC and reference documentation. The design has been undertaken to reduce moisture traps in design of the building. I.e. avoid non ventilated or non free draining cavities etc.

6.1.3 Flood Resilience – Materials & Services

The proposed materials have been reviewed for their suitability and flood resilience. The following materials should not be used:

- Materials that are weakened when wet.
- Materials that are stable but porous and require drying out after a flood.
- Materials that are prone to absorption.
- Materials prone to fouling, rusting or rotting when exposed to water.

Materials selection has been undertaken in accordance with the NCC, relevant Australian Standards and guidelines in particular the Hawkesbury-Nepean Floodplain Management Steering Committee's *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas (2006)* (the Building in Flood Prone Areas Guidance). The *Guidance on Building in Flood Prone Areas* provides detailed information on the vulnerability, absorbency and suitability of materials following prolonged immersion. A detailed assessment of the proposed building materials against these documents is included in the Civil Report to confirm their suitability.

The Civil Report also provides a series of recommendations for electricity and lighting, with particular regard to services required below the flood planning level, have been provided in consultation with JHA Engineers to improve flood resilience, minimise damage during a flood event and reduce requirement replacement, maintenance and cleaning of key infrastructure following a flood event. Measures include separation of circuits between levels.

Flood Resilience at the PMF

Consideration has been given to the impact of a probable maximum flood (PMF) event on the proposed structure and the risks to the environment if part of it were to become floating debris. The building above the flood planning level (1 in 500 year event)/ habitable floor level is modular construction and is not designed to be submerged. Should a PMF event occur, it would result in floodwaters that are approximately seven (7) metres above existing ground level and the school building would be almost entirely submerged.

The PMF is a theoretical flood resulting from the highest intensity rainfall that could possibly occur within the catchment, and therefore is extremely rare and unlikely. If this event were to occur, the impacts of the floodwaters would be catastrophic for all development throughout the region. While, there is a risk that the school building may sustain damage in this event, it is the floodwaters themselves that would significantly affect the environment, not the school building.

6.1.4 Flood Emergency Response Plan

A Flood Emergency Response Plan (FERP) has been prepared by Acor (**Appendix J**) in accordance with *Support for Emergency Management Planning. Flood Risk Management Guideline EM01* (Department of Planning and Environment, 2023), *Flood Emergency Planning for Disaster Resilience and Evacuation Planning Handbook 4* (Australian Disaster Resilience Handbook Collection). The FERP provides a step-by-step sequence of roles, responsibilities, functions, actions and management arrangements for the conduct of emergency operations. The FERP provides:

- description of existing flood behaviour
- description of flood emergency response preparation procedures, responsibilities, warning systems, flood evacuation strategies and methods
- description of flood emergency response plan.

A summary of the key features of the FERP is as follows:

- *An evacuation strategy is adopted for Broadwater Public School due to the flood warning time being approximately 12 hours, and the effective warning time being at least 6 hours.*
- *In an emergency, a direction to evacuate is made by the Incident Controller (NSW SES) in consultation, where possible, with the NSW Police Force. The Department of Education is to co-ordinate the evacuation of schools if not already closed. The school principal may close the school for the purpose of evacuation.*
- *Closure and evacuation of Broadwater Public School is recommended when the river height at Coraki River gauge is forecast to exceed Minor level or approach Moderate level. It is important to understand that the first Flood Warning issued by the BOM may refer to Major flood level being reached (and not refer to Minor or Moderate level). BOM Flood Classifications (metres at gauge) Minor 3.4m AHD, Moderate 5.0m AHD and Major 5.7m AHD*
- *The primary vehicular evacuation route from Broadwater to higher ground is via Baraang Drive (Blackwall Drive), Macdonald Street, Broadwater-Evans Head Road and the Pacific Highway over Richmond River towards Alstonville*
- *The preferred evacuation destination for students is to their homes or homes of relatives if they are not flood prone. Evacuation centres in the vicinity of Broadwater are in Alstonville, Goonellabah, Woodburn and Wardell.*
- *Students are largely unable to self-evacuate and require assistance from parents/carers and multiple methods of evacuation must be available for the FERP to be effective, such as:*
 - *Arrangement with a local bus service to be on-call and available for the evacuation of all students to a pre-determined evacuation location is required.*
 - *By parents and carers*
 - *By teachers and school staff*
- *Evacuation to safe areas must be complete within 6 hours of receiving an 'Evacuate now' warning from the SES.*
- *Procedures for contacting NSW SES if transportation cannot be achieved.*
- *The Flood Emergency Response Plan provides further information around roles and responsibilities of different parties for different stages of the flood responses.*

The FERP identifies the following further actions that should be undertaken to ensure the effective implementation of the FERP:

- School administration to subscribe to the Early Warning Network to provide alerts for severe weather forecasts and catchment river height gauge levels.
- School to undertake annual evacuation preparations prior to the commencement of the wet season (November to April).
- Installation of a flood warning notice (as illustrated in **Figure 30**).

- School administration and staff to be made aware of their roles and responsibilities as detailed in the FERP.

Head contractor to be aware of their responsibilities during the demolition and construction process.

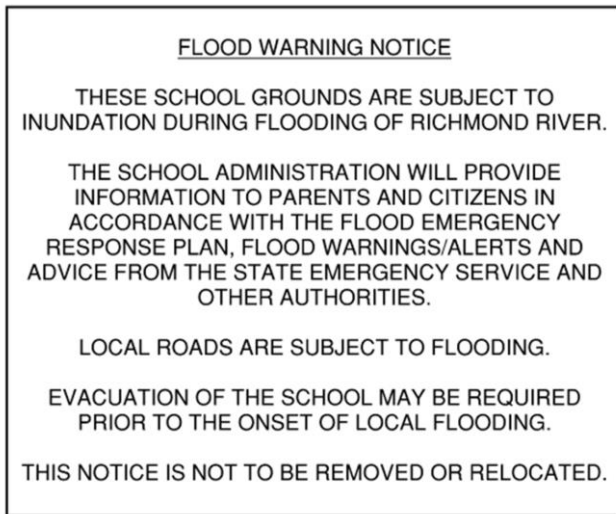


Figure 30: Sample flood warning notice sign to be installed at Broadwater Public School (Source: Acor)

6.2 Flora and Fauna

A Flora and Fauna Assessment has been prepared by Kleinfelder that provides an assessment of the proposed development against the provisions of the EPBC Act, BC Act and FM Act (**Appendix Z**). Based on desktop research and a site survey carried out on 11 August 2022, the following vegetation communities have been identified on the site:

- Zone 1: Planted Vegetation (0.3477 hectares)
- Zone 2: Managed Lawns (0.3428 hectares)

A total of 37 native flora species were detected on the site, none of these vegetation communities correspond to Plant Community Types (PCTs) and there are no Threatened Ecological Communities (TECs) identified on the site. A 'likelihood of occurrence' (LoO) assessment undertaken by Kleinfelder determined that no threatened flora species have a moderate or high likelihood of occurrence within the school site.

All existing vegetation on the site is highly managed and there is little to no leaf litter, logs, trees or shrub cover that would otherwise provide habitat for fauna. A total of 7 native fauna species were identified during the site survey, none of which are threatened fauna species. A LoO assessment determined that one (1) threatened fauna species (Koala) had a moderate likelihood of occurrence within the site.

In relation to Koala habitat, the *Richmond Valley Koala Habitat Atlas* identified secondary Koala habitat proximate to the site, but it is separated by cane fields to the east and Richmond River to the west. The site contains two Koala feed species on the site (*Blue Gum Eucalyptus tereticomis* and *Swamp Mahogany E. robustus*). Kleinfelder states that "it is possible that Koalas could use the site for foraging but it is unlikely". Two of the Swamp Mahogany trees are proposed for removal.

Kleinfelder undertook a *5 Factor Test of Significance* under Section 7.3 of the BC Act (summarised in the Table below) and determined there would be no significant impact on the Koala or any other threatened species or endangered ecological community, or their habitat, as a result of the works.

Table 12 Assessment against section 7.3 of the BC Act		
BC Act – s7.3	Impact Assessment	Satisfied
The following is to be taken into account for the purposes of determining whether a proposed development is likely to significantly affect threatened species or ecological communities, or their habitats -		
<i>Impacts on the life cycle of threatened species</i>	The proposed activity will remove 2 Koala Feed Trees. However, due to the closest Koala habitat being 700 m to the east and separated by Sugar Cane fields, it is unlikely that Koalas would forage in the Subject Site. These loss of 2 koala feed trees in an area without connectivity to the closest koala would not impact on any foraging or potential breeding habitat for this species.	Yes
<i>Impacts on endangered ecological species</i>	No endangered ecological species were identified on the site	Yes
<i>Impacts on the habitat of a threatened species</i>	Activity will not modify any habitat utilised by the koala	Yes
<i>Impacts on area of outstanding biodiversity value</i>	The site is not proximate to an area of outstanding biodiversity value	Yes
<i>Whether the activity is part of, or likely to increase the impact of, a key threatening process</i>	The activity may facilitate the following key threatening processes (KTP) to a minor extent - clearing of native vegetation, removal of dead wood, predation by feral predators, invasion of exotic perennial grasses. But are not considered unacceptable.	Yes

The proposed activity will result in the removal of two (2) koala feed tree species, which are not accessible to Koalas. No impact will occur to any foraging or potential breeding habitat for these species. Potential KTPs are likely to be minimal and can be appropriately controlled.

The Flora and Fauna Assessment (**Appendix Z**) identifies a series of mitigation measures with regard to erosion control, dust control, chemical spills, tree and habitat protection, weed management, and management of displaced fauna to minimise any indirect impacts to biodiversity values on the site and its vicinity.

6.3 Tree/Vegetation Protection and Removal

A total of 28 trees (including one (1) dead tree) are required to be removed to facilitate the proposed development. These trees are identified as having nil, low or moderate landscape significance. No trees proposed to be removed have high landscape significance. The site will retain a significant amount of vegetation and trees, and the removal of trees will be offset by the planting of four (4) new trees to create an entry feature from Byrnes Street.

All other trees are to be retained and protected in accordance with the recommendations of the Arboricultural Report prepared by Northern Tree Care (**Appendix Y**) and the requirements of AS 4970 (2009) *Protection of trees on development sites*. Arboricultural Report identifies the location of tree protective fencing at Broadwater Public School (**Figure 31**).

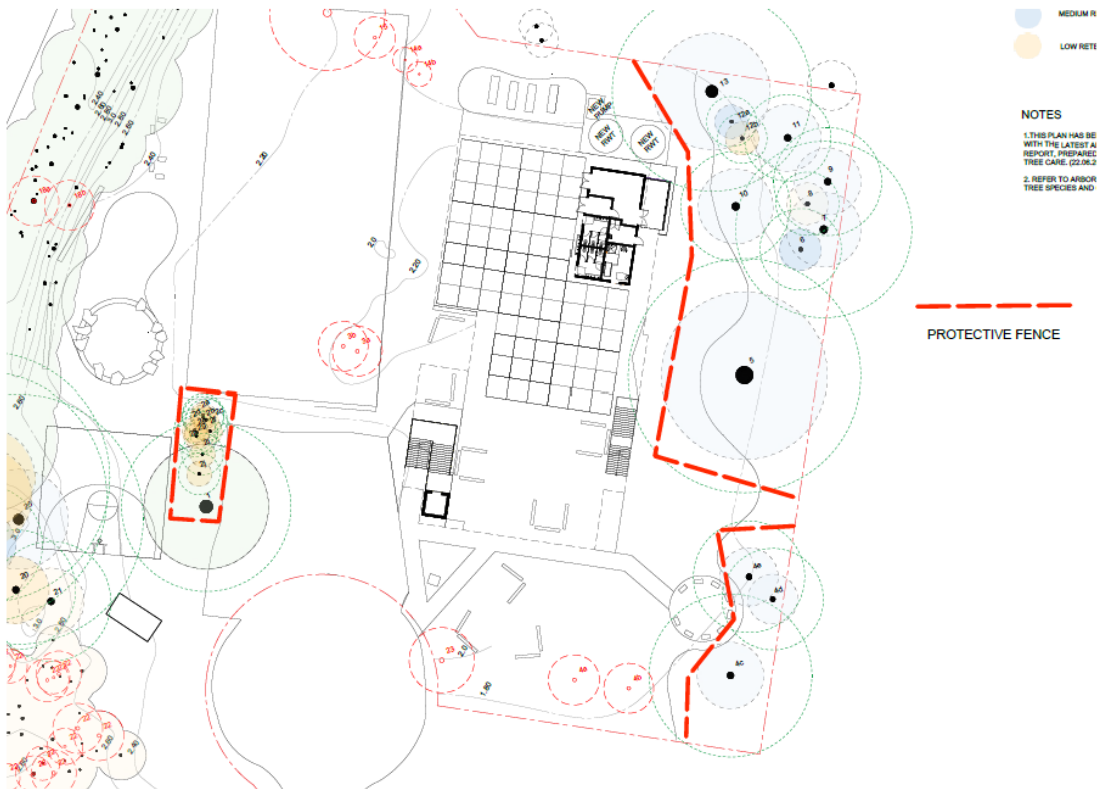


Figure 31: Tree Protection Plan (Source: Northern Tree Care)

The proposed stormwater system has been considered in an addendum to the Arborist report, as the pipe is proposed within the tree protection zone (TPZ) of trees 17 and 26 (**Figure 32**).

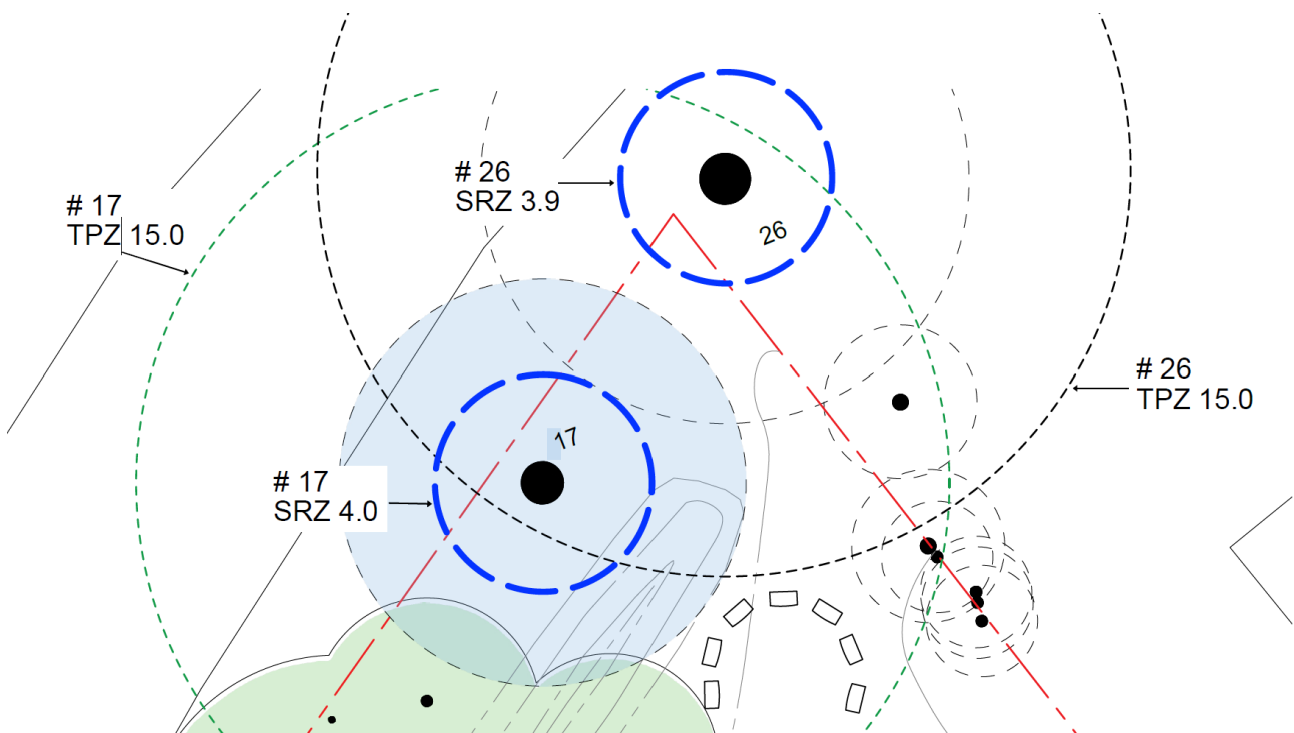


Figure 32: Proposed stormwater pipe encroachment into SRZ of trees 17 and 26 (Source: Northern Tree Care)

The arborist has recommended that as construction of the trench encounters significant roots, hand digging should be employed, and these works should be supervised by the Project Arborist to ensure that damage to the root system is minimised. However, the arborist concludes that *“the stormwater*

pipe connection can be carried out without causing either of these trees [#17 and #26] to become unviable”.

6.4 Soils and Geology

A Geotechnical Investigation Report has been prepared by Tetra Tech Coffey (**Appendix M**) to assess the soil conditions at Broadwater Public School with regard to the proposed development. The geotechnical investigation comprised the drilling of two geotechnical boreholes and two environmental boreholes for environmental within the proposed building footprint.

The regional geology is primarily composed of Quaternary alluvium (Q_{al}), which consists of “fluvially deposited fine to medium grained lithic to quartz-rich sand, silt, clay”.

The boreholes were dug to a depth of 9.45m (refusal at bedrock) BH1 and 12.2m BH2 using a truck mounted drilling rig. Standard Penetration Tests (SPT) were carried out at selected depths to assess soil strength and to obtain samples for logging. Samples were tested at a NATA accredited laboratory testing in accordance with the following standards.

Laboratory Test	Quantity	Method
Moisture Content	3	AS 1289.2.1.1
Atterberg Limits	1	AS 1289.3.1.1 / 2.1
Linear Shrinkage	1	AS 1289.3.4.1
Particle Size Distribution	1	AS 1289.3.6.1
CBR	2	AS 1289.6.1.1
Soil aggressivity suite	4	Inorg-001, Inorg-002 and Inorg-081

The soil profile is detailed in the following table.

Unit / Material	Description	Typical Unit Thickness (m)	Typical Soil Consistency
Unit 2 – Fill (localised)	Silty Sand with gravels (loose)	0 – 0.5	-
Unit 3A – Alluvium	Sandy Clay, Clay, Silt, medium to high plasticity clay, low liquid limit silt	2.4 – 2.6	Very Soft to Firm
Unit 3C – Alluvium	Silty Sand, Sand, fine to medium grained	2.2 – 2.3	Very Loose to Loose
Unit 3D – Alluvium	Silty Sand, Sand, fine to coarse grained	3.3 – 7.2	Medium Dense to Dense
Unit 3E – Alluvium	Silty Gravel, fine to coarse grained, sub-rounded to sub-angular, with fine to coarse sand	>0.8	Dense

Soil aggressivity was assessed as “mild-aggressive to severe-aggressive” for buried concrete elements and “non-aggressive to mild-aggressive” for buried steel elements. The Geotechnical Assessment details design criteria for building foundations including slab on ground and piled foundations and recommends driven piles or screw piles for the elevated school building based on the soil profile.

6.4.1 Acid Sulfate Soils

As the site is identified within the Class 3 Acid Sulfate Soils mapping by Richmond Valley Council, soil testing was undertaken and an Acid Sulfate Soils Management Plan has been prepared by Tetra Tech Coffey (**Appendix O**).

Screening tests reported pH following oxidation (pH_{fox}) from 2.6 to 3.3 in the deeper soils, likely indicating the presence of potential ASS in deeper soils. The screening test results for the shallow soils were borderline with the lowest pH_{fox} at 3.3 (with high reaction rating), possibly indicative of potential ASS in the shallow soils.

The works involve minor excavations up to 0.5 – 1m below ground, except for the lift pit, which may require excavations up to 2m below ground. Driven or screw piles will be utilised for the development which do not generate much spoil. The Management Plan details procedures for excavation and construction in acid sulfate soils (ASS) including:

- i. *Appoint an appropriately qualified person to manage the acid sulfate soil issues during construction activities*
- ii. *Excavation and temporary stockpiling of excavated material;*
- iii. *Assess the potential presence of acid sulfate soils and liming rates within stockpiled soils for treatment and disposal purposes;*
- iv. *Undertaking liming (if required);*
- v. *Dispose of the limed stockpile to an appropriately licensed landfill.*

Adherence to these measures will mitigate the environmental risks associated with ASS or PASS.

6.5 Coastal Risks

The site is adjacent to the Richmond River, the flood risks associated with its proximity to the river are discussed in **Section 5.6**. The site is mapped as being within the coastal environment area (being land that contains coastal features such as coastal waters, lakes and lagoons and land adjoining those features such as headlands and rock platforms) and coastal use area (being land adjacent to coastal waters, estuaries, coastal lakes and lagoons where development is carried out) under the *Coastal Management Act 2016* and Chapter 2 of the RH SEPP.

The new elevated building replaces existing buildings and therefore will affect any coastal environmental values or natural coastal process. Suitable erosion and sediment control measures will be implemented prior to the commencement of the activity to ensure that there are no impacts on the water quality of the marine estate. No marine vegetation is proposed to be removed. Impacts on native vegetation and fauna and their habitats have been assessed by a suitably qualified ecologist who has concluded that the proposed development will not have impacts on any threatened ecological communities.

The proposed development will not impact on existing public open space or impede safe access to, or along, any public open space including foreshores and beaches; and will not result in overshadowing, wind funnelling or loss of views from public places.

There will be short term impacts on the visual amenity and scenic qualities of the area during the demolition and construction works. These will be managed through the implementation of appropriate mitigation measures. Long term, the proposed new elevated building and associated works will have a moderate impact on the visual amenity of the rural character of the precinct. However, this is considered to be appropriate as the design of the building responds to the flood constraints of the site (**Section 6.1**).

Coastal hazards are defined under section 4 of the CM Act as including beach erosion, shoreline recession, coastal lake or water entrance instability, coastal inundation, coastal cliff or slope instability, tidal inundation and erosion and inundation of foreshores caused by tidal waters and the action of waves.

The site is not affected by tidal inundation during the highest astronomical tide (HAT). The HAT for the 2022 at Ballina is 1.16m AHD. (However, the swale to the east of the site is affected by the HAT). It is anticipated that potential sea level rise due to climate change will increase the HAT to RL 2.0m AHD (2100 sea level rise). The finished floor level of the elevated level is at RL 5.5m AHD which is above the HAT.

Therefore, it is considered that the proposed development is unlikely to have an adverse impact on land in the coastal environment and coastal use areas.

6.6 Hydrology and Water Management

6.6.1 Hydrology

The site is located 30 metres east of the Richmond River and has a ground level of approximately 2.2m AHD. Borehole investigations by Tetra Tech Coffey (Coffey) for geotechnical and environmental purposes intercepted groundwater at 2.1m below ground level (bgl) and 2.4m bgl. With regard to hydrology, Coffey state:

It is likely that groundwater flows through permeable and alluvial deposits on site. It is expected that groundwater level varies at this site in response to climatic conditions and tidal influences due to its proximity to Richmond River. Those responses may not be immediate.

6.6.2 Stormwater Management

A Civil Report has been prepared by Henry & Hymas Consulting Engineers that describes the proposed stormwater system (**Appendix G**), which has been designed in accordance with "Australian Rainfall and Runoff" (Institute of Engineers, Australia 2019), Richmond Valley DCP, and AS3500.3 National Plumbing and Drainage Code Part 1 – Stormwater Drainage.

The stormwater system will "collect concentrated flows" from impervious areas as well as stormwater runoff from pervious areas such as landscaping. The site will be inundated in the 20-year storm event by mainstream flooding from the Richmond River, and it is therefore anticipated that the piped system will not be functional in greater storm events due to the flooding conditions. Accordingly, the stormwater network has been designed to cater for the 5-year average recurrence interval (ARI) stormwater event.

The post development site will have an increase in impervious area of 365m², which is predominately due to the increase in roof area. Stormwater from the roof area will be captured and directed into two tanks that will provide rainwater detention storage (14kL) for catchment of roof water and a rainwater storage (20kL). The rainwater storage tank has been sized to accommodate irrigation associated with the playing field and gardens.

Flows from undeveloped, pervious catchments within the site, will continue to discharge towards the grassed swale located at the eastern boundary of the site and the existing stormwater system in Travellers Arm Lane. Pre- and post-development catchment analysis has been undertaken and extracts are provided at **Figure 33** and **Figure 34**.



Figure 33: Pre-development catchment plan (Source: Henry & Hymas)

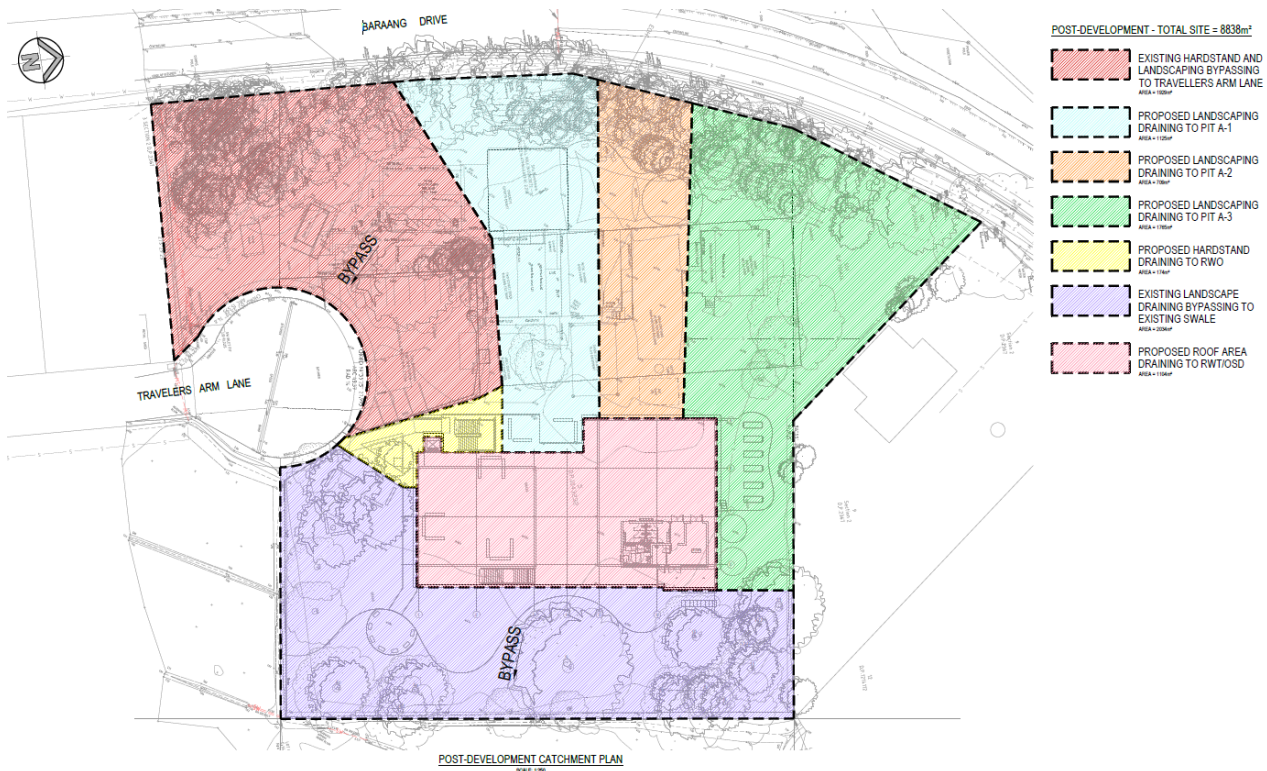


Figure 34: Post-development catchment plan (Source: Henry & Hymas)

DRAINS modelling has been undertaken to estimate pre and post developed flow rates and confirms that the development will achieve Council's detention targets and will result in reduced flows:

Storm ARI	Pre-developed flows (L/s)	Post-developed flows (L/s)
2yr	138	138
5yr	217	209

In addition, MUSIC modelling has been undertaken to confirm that Council's requirement for the development to reduce mean annual stormwater volumes by 10% as compared with pre-development volumes has been achieved.

Pre-developed Mean Annual Volume (ML/yr)	7.91
Post Developed Mean Annual Volume (ML/yr)	7.10
Reduction	10.3%

Accordingly, despite the increase in impervious area, post-development flows are reduced in accordance with Council requirements. Stormwater from the roof of the new school building will be entirely captured within the rainwater detention tanks and fire services tanks.

Overland flow routes will be provided throughout the site to ensure stormwater can be conveyed to the site's discharge point in the event of a complete pipe blockage or a significant storm event greater than the 5-year ARI. The proposed stormwater piping system will convey flows to the north-western corner of the site, and along a new pipe north on Baraang Road to connect with an existing Council stormwater pit approximately 100 metres north of the site. (Figure 35).

The proposed pipe will run within the TPZ of tree #17 and #26, however as discussed in Section 6.3 of this SEE, subject to precautionary measures being implemented during trenching, these trees can be retained.



Figure 35: Proposed stormwater pipe system (Source: Henry & Hymas)

Stormwater quality improvement devices to minimise pollution during operation of the school are incorporated into the design of the roofwater collection system. However, the following site contains noted by Henry and Hymas impact on the ability to fully realise Council's water quality targets:

- Very flat site with little fall across the site.
- Limited depth of stormwater discharge point in relation to the rest of the site.
- Site is within the floodplain, which limits any opportunity in relation to filling of the site.
- The stormwater discharge point (swale) is affected by the Highest Astronomical Tide (HAT).

These site constraints mean that bio-filtration system or underground filter cartridge systems are not suitable due to the insufficient depth of stormwater infrastructure. With regard to the proposed water quality measures, Henry and Hymas provide the following:

When taking a holistic view of the proposed development, there is expected to be a decrease in the generation of pollution associated with the area external to the proposed building. The proposed basketball half court will act as an effectively pervious surface since it will discharge towards a turfed area and filter into the subsoil system in smaller rain events. Similarly, the proposed playing field will direct flows through the soil media and into the subsoil system under, acting as a sort of sand filtration system...

The proposed water quality strategy regarding the rainwater tank and associated irrigation reuse is considered generally in accordance with Richmond Valley Council's DCP, in that although it does not meet the target pollutant reduction, the stormwater system has been designed in a way as to best provide treatment whilst working to the site constraints and not disrupting the safe conveyance of stormwater to the site discharge point.

A sediment and erosion control plan has been prepared (**Appendix G**) to ensure that downstream receiving waters are not impacted by the construction activities. The plan has been prepared in accordance with *Landcom – Managing Urban Stormwater – Soils and Construction*, Volume 1 2004 and Richmond Valley Council requirements.

Richmond Valley Council has confirmed that Section 64 contributions are not required for the proposed works.

6.7 Air and Microclimate

Some dust is anticipated during the construction phase of the proposal, particularly as demolition works are involved. This however can be mitigated and managed through the use of measures such

as wetting down work areas and stockpiles, stabilising exposed areas, preventing material tracking out onto public roadways, covering loads and all departing vehicles and working to weather conditions as appropriate.

The proposal is otherwise not expected to give rise to any long term or adverse impacts on local or regional air quality.

6.8 Visual Amenity and Built Form

The proposed development comprises the demolition of existing one (1) and two (2) storey school buildings and replacement with a new elevated school building that will have prominence in the locality. The school building will be significantly setback from Baraang Drive and filtered views of the new school building will be seen through the existing vegetation that lines the road frontage. The building will be setback over 5 metres from the Byrnes Road cul-de-sac and has significant separation from the nearest dwelling to the north (**Figure 36**).



Figure 36: Birdseye 3D Photomontage (Source: Pedavoli Architects).

It is considered that the visual impact of the proposed new elevated building is acceptable for the following reasons:

- The new elevated building complies with the 8.5m height limit under the Richmond Valley LEP and the finished floor level of the elevated level exceeds the height of the required minimum habitable floor level 0.2% AEP flood event (1 in 500 year).
- The new building adopts a contemporary architectural language that is sympathetic to the rural character of the locality. In particular, the building is reminiscent of the traditional building typology of Northern NSW and Queensland, which comprises elevated buildings with wide verandas.
- The use of the coloured vertical feature screening creates visual interest and assists in articulating the new building.
- The new elevated building is set well back from Baraang Drive (Blackwall Drive) and is more than 5 metres from the cul-de-sac at the end of Byrnes Road.
- The elevated building allows for filtered views through the undercroft towards the cane fields to the east of the school.

- The existing trees and garden along the Baraang Drive boundary will be retained, which soften the appearance of the new elevated building from the public domain.
- The proposed development will ensure the continuing operation of a long-established educational establishment.

The design of the new elevated building along the northern façade, closest to the adjoining residential neighbour, includes horizontal screens on the windows to mitigate overlooking and maintain privacy and amenity for the neighbour.



Figure 37: Extract of northern building elevation (Source: Pedavoli Architects).

6.8.1 Design and Aesthetics

The new elevated building is located on the eastern portion of the site. It replaces the existing classrooms and administration spaces that were damaged by the floods. The new building comprises amenities and storage spaces within the undercroft and the school facilities including administration, three (3) general learning areas (GLA), library, canteen and amenities on the elevated level. Access to the elevated level is via stairs and a lift.

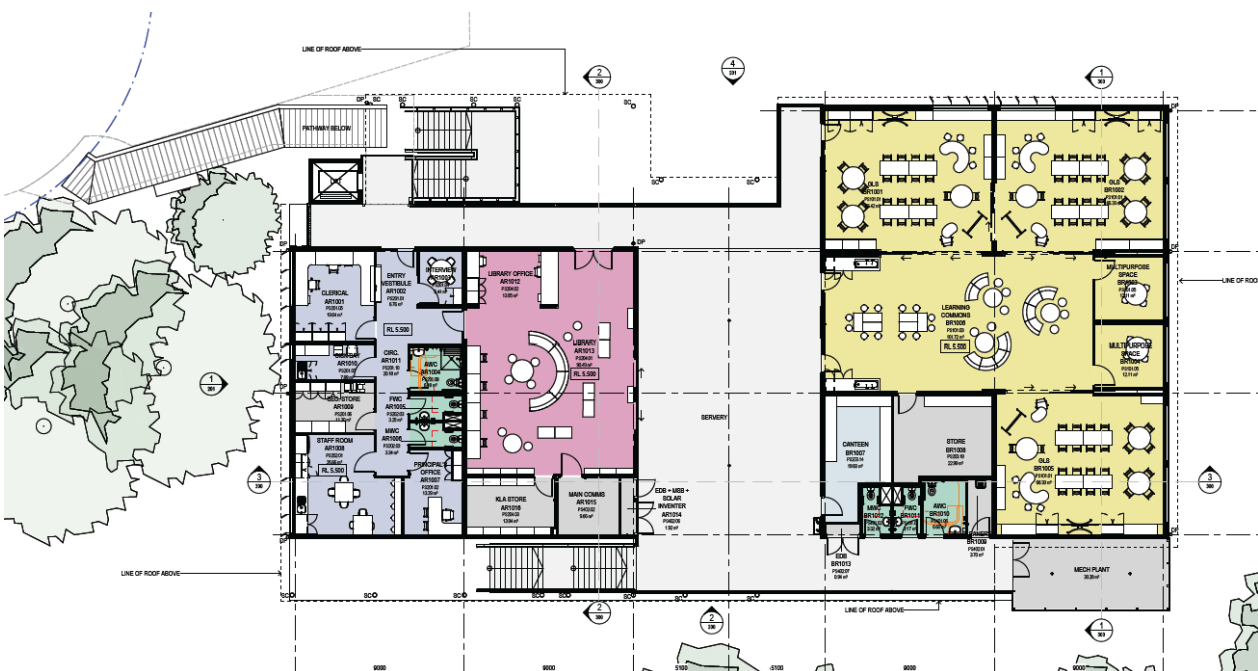


Figure 38: Elevated Floor Plan (Source: Pedavoli Architects)

The new building has a total Gross Floor Area (GFA) of 756m² consisting of 81m² within the undercroft and 675m² on the elevated level. The building has a maximum height of 7.97m to the top of the lift overrun above the existing ground level.

The building has been designed in accordance with the Building Code of Australia (**Appendix R**) and accessibility standards (**Appendix S**).

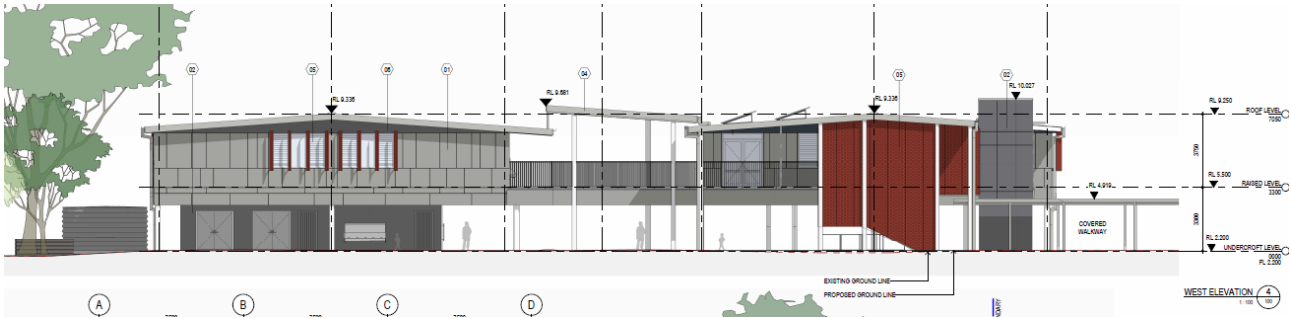


Figure 39: Western elevation indicating maximum height of buildings at RL10.170m AHD (Source: Pedavoli Architects)

The new building utilises modular construction techniques. An elevated platform will be constructed on site, whilst the new GLAs and other school facilities are constructed off-site and craned into place. The off-site manufacturing provides benefits through a standardised approach that maximises design efficiencies and reduces construction impacts. The materials below the flood planning level have been designed using flood resilient construction methods and materials.

External finishes for the new building have been influenced by the colours of country and community including the colours of endemic flora and the school's colours. The use of coloured vertical battens and shading elements creates visual interest and provides articulation. Proposed building materials include fibre cement wall cladding in neutral colours and metal sheet roofing.



Figure 40: Photomontage – birdseye view from Byrnes Street (Source: Pedavoli Architects)



Figure 41: Photomontage of the new school buildings looking east (Source: Pedavoli Architects)

An Architectural Design Statement (**Appendix B**) has been prepared to assess the proposal against the design quality principles in Schedule 8 of SEPP T&I.

Design Quality Principles	
Principle	Assessment
1. Context, Built Form and Landscape	The elevated single storey built form is typical of the architectural style in the Northern Rivers. Aboriginal cultural heritage is recognised through the use of endemic vegetation species, the gathering spaces at the school entry and yarning circle and the colour scheme. The building is well set back from the road which is consistent with the rural context of the site and the servery has been designed around the existing 'Love Tree', which possesses great significance for the school community.
2. Sustainable, efficient and durable	The school has been designed in accordance with environmentally sustainable development to 4-star Greenstar equivalency. Solar panels, water and energy efficient fixtures and fittings are provided throughout. The learning spaces are flexible and adaptive to meet the changing needs of the school community over time. The building is raised above the 0.2% AEP flood level and has considered bushfire threat from the adjacent cane fields to ensure climate resilience.
3. Accessible and inclusive	An accessibility report (Appendix S) has confirmed that the development meets all access requirements. The site is welcoming with a simple layout and direct circulation. Stairs and a lift provides access to the main school building. Directional signage will be provided to support wayfinding around the school.
4. Health and Safety	Mature trees line the road frontage to Baraang Drive, which shields playspaces from the road. Pedestrian and vehicle entries are separate and a secure perimeter fence will prevent students from running onto the road unattended. Passive surveillance opportunities are available from the servery and administration and covered walkways provide weather protection.
5. Amenity	The building design ensures good provision of natural light, ventilation and good acoustics. There are a diverse range of internal and external play and

Design Quality Principles	
Principle	Assessment
	learning spaces to support flexible learning opportunities. Outdoor playspace achieves the minimum requirement of 10m ² per student. The site has good access to ICT/AV to facilitate digital learning.
6. Whole of life, flexible and adaptive	The learning hub design and learning commons creates flexible and adaptive learning spaces to meet the individual needs of schools. The grid layout provides for reconfiguration in future if the needs of the school change. Future community access to the library has also been considered with the large glazed door, which allows that space to be opened up to the servery for community events and school meetings.
7. Aesthetics	The built-form creates a balanced and regular rhythm of building mass and openings. The colour palette is drawn from the natural surroundings. A perforated metal screen provides interest to the street elevation and screens mechanical plant. The landscape design aims to create an aesthetically pleasing school design that celebrates elements of community significance, including the colourful painted fence and the 'Love Tree' which helps the school to retain its unique character and identity.

6.8.2 Solar Access

Shadow diagrams area provided with the Architectural Plans at **Appendix A**, which confirm that the proposal will not result in overshadowing of any neighbouring property and has minimal impact on solar access to the play space.



Figure 42: Extract of shadow diagrams on 21 June (Source: Pedavoli Architects).

6.9 Noise and Vibration

An Acoustic Assessment has been prepared by Acoustic Logic (**Appendix X**) to detail acoustic design measures for the new buildings to ensure external noise is mitigated in the internal school environment and assess the potential noise impacts generated by the proposed development. The Acoustic Assessment has been prepared in accordance with the EFGS (v.2, Nov 2022), DGN003 – Sliding Glazed Doors and Wall Specifications (16/12/2022), Green Star – Design & As Built v1.3, and Australian Standards.

The school is existing, and the proposal will not result in additional students at the site or any changes to the operating times – 8.30am till 3.30pm during school terms. Noise monitoring has been conducted to assess the impacts of the proposal on the nearest residential receivers.



Figure 43: Noise monitoring locations and nearest residential receivers (Source: Acoustic Logic)

The following table provides an overview of the school's maximum external noise levels at the nearest residential receivers and confirms that the proposed elevated school building will not result in unacceptable acoustic impacts.

Assessment Location	Predicted Worst Case Noise Level dB(A) _{Leq}	Operational Activity	Criteria - Day* (7am-6pm)	Compliance?
R1 - Residential receivers	51	All students using indoor classroom with all windows open, 1 of 2 talking	55 dB(A) _{Leq (15min)} - (BG+5)	Yes
R2 - Residential receivers	42			Yes
R1 - Residential receivers	58	All students using outdoor play area	60 dB(A) _{Leq (15min)} - (BG+10)	Yes
R2 - Residential receivers	48			Yes

*Criteria were adopted from AAAC Guideline for Child Care Centre Acoustic Assessment (2020) for Other Noise Emission (including use of indoor classroom: BG+5) and use of outdoor playing area (BG+10).

6.10 Waste Management

A Waste Management Plan (WMP) has been prepared by MRA Consulting Group to identify best practice waste management and promote sustainable outcomes during demolition, construction and operation of the proposed development (**Appendix CC**). The Waste Management Plan has

been prepared in accordance with the requirements under the Richmond Valley DCP and EFSG, along with the relevant EPA guidelines including:

- Better Practice Guide for Resource Recovery in Residential Developments (2019)
- Better Practice Guideline for Waste Management and Recycling in Commercial and industrial Facilities (2012)

6.10.1 Demolition and Construction Waste Management

The WMP provides estimates of the quantities of waste that will be generated during the demolition and construction process. The WMP indicates that over 80% of demolition waste and over 90% of construction waste will be able to be diverted from landfill. This is consistent with the targets established by the NSW Department of Planning and Environment's *NSW Waste and Sustainable Materials Strategy 2041* (June 2021).

An *Asbestos and Hazardous Building Materials Pre-Demolition Assessment* (Hazmat Assessment) has been prepared by Tetra Tech Coffey (**Appendix P**). The Hazmat Assessment indicates that existing buildings proposed for demolition contain the following materials:

- Non-friable asbestos
- Lead-based paint
- Synthetic Mineral Fibre
- Poly-chlorinated biphenyls

The Hazmat Assessment contains detailed mitigation measures to ensure the safe removal and disposal of hazardous materials during demolition.

6.10.2 Operational Waste Management

The proposed development is not expected to result in an increase in the total waste generation at the site. However, ongoing waste management practices will aim to contribute towards the *NSW Waste and Sustainable Materials Strategy 2041* target to achieve an 80% average recovery rate from all waste streams by 2030.

The operational waste volumes have been based on the current student population of 55 students and have been calculated in accordance with the *NSW Practice Guide for Resource Recovery in Residential Developments* (2019).

Waste stream	Waste generation rate	Weekly waste generation (L)	Bin requirement
General Waste	20L / per student	1,100	6
Recycling	15L / per student	825	4
Green Waste	N/A	N/A	2

Figure 44: Broadwater Public School waste generation and bin allocation (Source: MRA Consulting Group).

A waste storage area is located in the in the north-eastern corner of the new building and will have a minimum area of 5.2m². Council will be responsible for bin collection. Prior to collection, the bins will be transferred from the waste storage area to the collection point on Byrnes Street.

6.11 Sustainability and Climate Resilience

A Sustainable Design Report has been prepared by E-Lab (**Appendix U**) to provide an overview of the proposed sustainability targets and initiatives that have been incorporated for the proposed development. The proposed development seeks to achieve a 4 Star Green Star Design & As Built v1.3 equivalency and exceed the requirements under Section J of the National Construction Code 2019

Amendment 1 (see **Appendix V**). The proposed development is benchmarked against the requirements of the EFSG, using industry best practice.

The principles of environmentally sustainable development (ESD) are detailed in section 193 of the EP&A Regulation. **Table 13** provides an assessment against these principles.

Table 13 Environmentally Sustainable Development Principles	
Principle	Assessment
<p>The Precautionary Principle <i>The precautionary principle is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.</i></p>	<p>Where practicable, the proposed development will avoid serious and irreversible damage to the environment by providing improved ecology outcomes and incorporating management measures that reduce resource and energy consumption during the demolition, construction and operational lifecycle. Strategies to reduce impacts from pollution and improve the environmental amenity for staff and students by providing a resilient design that has considered future climate change adaptation needs.</p>
<p>Inter-generational equity <i>The principle of inter-generational equity is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations</i></p>	<p>The proposed elevated building has been designed to achieve a 4 Star Green Star equivalency rating and incorporates design measures that improve the internal environment to enhance health and wellbeing for staff and students.</p> <p>The proposed development involves the replacement of existing school facilities to ensure the ongoing use of the site as an educational establishment, which provides social benefits to the local residents of Broadwater.</p>
<p>Conservation of biological diversity and ecological integrity <i>The principle of the conservation of biological diversity and ecological integrity is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.</i></p>	<p>As assessed in the Flora and Fauna Assessment (Appendix Z), the proposed development will not have an adverse impact on the existing biological diversity and ecological integrity of the site. The Flora and Fauna Assessment includes mitigation measures to protect the ecological values of the surrounding environment.</p> <p>The proposed landscape design includes the planting of endemic vegetation that will contribute to the biological diversity and ecological integrity of the site.</p>
<p>Improved valuation, pricing and incentive mechanisms <i>The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services, such as—</i></p> <p>(a) <i>polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and</i></p> <p>(b) <i>the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste, and</i></p> <p>(c) <i>established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.</i></p>	<p>As described below, the design of the proposed development includes the incorporation of a sustainable and operational measures that will reduce the consumption of materials, energy and water over the lifetime of the new elevated building. The following measures will ensure the effective and efficient use of resources:</p> <ul style="list-style-type: none"> • Energy efficiency across the buildings and use of on-site renewable energy • Water efficient fixtures and fittings, collection and reuse of water <p>Consideration of the whole of life impact of materials and selection to minimise harm to the environment and efficient modular construction methods.</p>

The Sustainable Design Report includes an assessment of project risks associated within the predicted impacts of climate change. Potential strategies to manage climate risks include:

- A site-specific climate change risk assessment and adaptation plan
- Consideration of the impacts of climate change as part of the flood impact system.
- Proposed elevated building and associated systems have been designed to be flood resilient as well as to comply with bushfire requirements.
- Use of passive design and outdoor shading to promote comfort in extreme heat.
- Provision of rainwater storage and energy generation.
- Material selection is focused on improving health and well being through the use of low emissions materials that are durable to climate stress such as extreme heat and wind loads.
- Landscape design to suit climactic conditions and tolerate dry periods.

6.12 Site Contamination

A Contamination Investigation Report has been prepared by Tetra Tech Coffey (**Appendix N**) to assess the suitability of the site for the proposed development in accordance with the *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020) and Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM, 2013).

A conceptual site model (CSM) was developed to identify potential sources of contamination, receptors and exposure pathways. Nine (9) soil samples were taken, with five (5) surface samples and four (4) boreholes ranging in depth from 1 metre to 11 metres below ground level (mbgl). Soil samples were screened in accordance with NEPM 2013. No contaminants were identified at above the laboratory limit of reporting level in any of the samples.

Two deeper samples (approximately 7mbgl) were tested for acid sulfate soils (ASS). The results did not indicate Actual ASS but did indicate Potential ASS.

The report concludes that:

- No unacceptable human health soil impacts were identified in the investigation area
- No unacceptable ecological soil impacts were identified in the investigation area

Accordingly, the site is suitable for use with regard to contamination.

6.12.1 Hazardous Materials

An Asbestos and Hazardous Building Materials Pre-Demolition Assessment (Hazmat Assessment) has been prepared by Tetra Tech Coffey (**Appendix P**). The Hazmat Assessment indicates that existing buildings proposed for demolition contain the following materials:

- Non-friable asbestos
- Lead-based paint
- Synthetic Mineral Fibre
- Poly-chlorinated biphenyls

A detailed Asbestos and Hazardous Materials Register is appended to their report.

Generally, the Asbestos and Hazardous Materials Pre-Demolition Assessment notes that all hazardous materials should be managed in accordance with the requirements of the *NSW Work Health and Safety Act 2011* (WHS Act), *NSW Work Health and Safety Regulation 2017* (WHS Regulation) and all relevant Codes of Practice, Australian Standards and Guidelines. The Assessment provides specific recommendations in relation to each hazardous materials identified on the site.

The Hazmat Assessment contains detailed mitigation measures which must be implemented to ensure the safe removal and disposal of hazardous materials during demolition.

6.12.2 Hazardous Chemicals

A Hazardous Chemicals Assessment has been prepared by Tetra Tech Coffey to identify any hazardous chemicals that are stored on site and evaluate the effectiveness of risk control measures implemented on the site to manage hazardous chemical storage (**Appendix Q**). All hazardous chemicals should be stored on site in accordance with the recommendations of the Hazardous Chemicals Assessment.

Accordingly, subject to the implementation of an unexpected contamination finds protocol, appropriate waste/spoil management and implementation of the Hazmat Assessment's mitigation measures, the site is suitable for the proposed development and will not result in any unacceptable environmental impacts.

6.13 Bush Fire

The site is not mapped as bushfire prone land under the Richmond Valley Bushfire Prone land map. Therefore, a Bushfire Safety Authority (BSA) is not required for the proposed development under section 100B of the *Rural Fires Act 1997* (RF Act). In addition, advice from the NSW Rural Fire Service confirmed by email (23 June 2023) that a draft Bush Fire Prone Land (BFPL) map is currently being reviewed by Richmond Valley Council, and that Broadwater Public School is not identified as BFPL in the draft mapping.

However, the site is bound by sugar cane fields to the east, and section 68 of the RF Act requires public authorities to take all "practicable steps to prevent the occurrence [and spread] of bushfires...". Accordingly, a Bushfire Hazard Assessment has been prepared by BlackAsh Bushfire Consulting (**Appendix W**) to provide an assessment against the relevant provisions of *Planning for Bushfire Protection 2019* (PBP 2019).

Based on the site assessment methodology outlined in section 100B of the RF Act, section 45 of the Rural Fires Regulation 2022 and the PBP 2019, a bushfire threat assessment was undertaken to determine the application of bushfire protection measure such as the location of asset protection zones (APZ) and Bushfire Attack Levels (BAL). The location of the proposed building is within the BAL12.5 area (**Figure 45**).

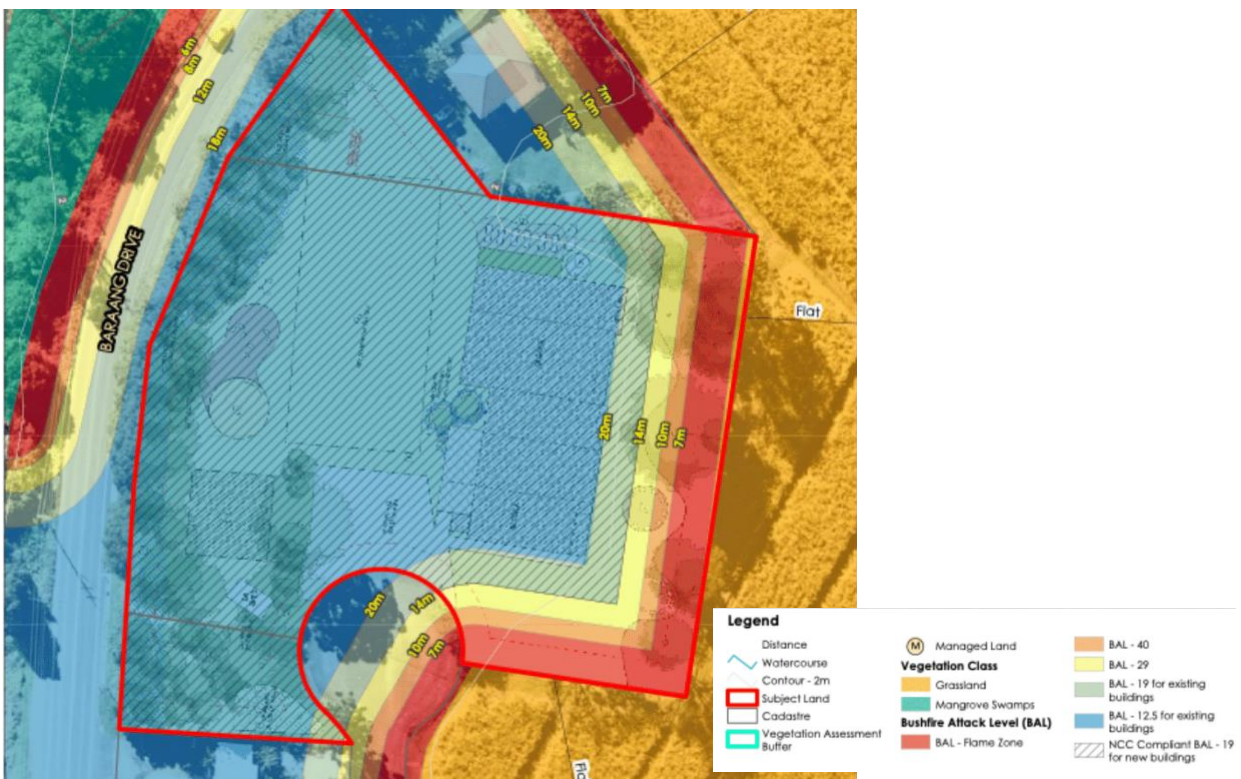


Figure 45: BAL ratings - proposed new buildings are affected by BAL 12.5.

The Bushfire Assessment Report concludes that the proposed development is generally consistent with the relevant aims, objectives and performance criteria set out in Chapter 6 of the PBP 2019, subject to the implementation of the following recommendations:

Recommendation 1: New buildings will be built in accordance with Figure 21 and or to minimum BAL 19 within the site.

Recommendation 2: Any upgrades to water, electricity and gas supplies through the proposed development must comply with section 6.8.3 of PBP (pages 59-60).

Recommendation 3: All Asset Protection Zones and landscaping within the site are to be maintained in accordance with Appendix 4 of PBP 2019 and the NSW RFS "Asset protection zone standards". No trees or additional vegetation is to be removed.

Recommendation 4: A Bush Fire Emergency Management and Evacuation Plan is to be prepared consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan.

6.14 Services and Utilities

An Infrastructure Services Statement has been prepared by JHA Engineers (**Appendix BB**) for the project, which sets out the following utilities and services for the project:

- **Communications** – new connection from the existing pit on Blackwall Drive (also known as Baraang Drive and Mill Street) and reticulate to the new main comms room.
- **Power** – underground cable from existing pole 3750 in the western boundary of the site next to the existing fence.
- **Water** – a new 100mm connection off the existing Richmond Valley Council watermain on Blackwall Drive (Baraang Drive) will be utilised for potable water and fire service requirements.

The fire hydrant connection includes a double detector check valve and an external attack fire hydrant located a minimum of 10m away from the new building.

- **Sewer** – a new sewer connection of 65mm will be branched into the existing council sewer main on Blackwall Drive. Gravity drainage is not achievement due to lack of fall, accordingly a sewer pump-out station is required.

The site is not near to restricted land uses and will not result in unacceptable impacts to services for neighbouring development.

6.15 Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment (ACHA) Report has been prepared by EMM Consulting (**Appendix K**) in accordance with *Aboriginal Cultural Heritage Consultation Guidelines for Proponents* (DECCW 2010), *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a). *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (DECCW 2010b) and the *National Parks and Wildlife Act 1974*.

The ACHA was prepared in response to an Aboriginal Due Diligence which concluded that the site "has potential for Aboriginal objects to occur in either a disturbed or intact state due to the prevalence of sites in the surrounding region and the cultural and archaeological sensitivity of the banks and islands of the Richmond River".

Aboriginal consultation was carried out with four (4) Registered Aboriginal Parties (RAPs) in accordance with the Guidelines.

The findings of the desktop review, which included a search of the Aboriginal Heritage Information Management System (AHIMS) and review of previous studies in the area; and the field survey

indicated there was potential for buried soil profiles of archaeological interest to be present. Accordingly, archaeological investigations were undertaken with the involvement of Aboriginal representatives. Test pits were spaced 20m apart in a grid formation and were manually excavated to an average depth of 42cm and the contents were wet sieved (**Figure 46**).



Figure 46: Location of test pits (Source: EMM Consulting).

A total of ten (10) stone artefacts (**Figure 47**) were recovered during the test excavations and a post-excavation artefact analysis was undertaken.



Figure 47: Subset of stone artefacts recovered during excavation program (Source: EMM Consulting).

A significance assessment was also undertaken in accordance with the Article 1.2 of the Burra Charter (ICOMOS 2013, Australia), which includes consideration of social, historic, scientific and aesthetic values. The results are provided in **Figure 48**.

Site	AHIMS #	Site Type	Significance				Overall
			Scientific	Aesthetic	Historical	Cultural	
NRBR AS1	XX-X-XXXX	Artefact scatter	Low	-	-	Low	Low

Notes:

1. Values are only assigned where the site fulfils that specific criterion.
2. In the case of the cultural criterion, it is ranked in relation to whether the site is important to one individual (low), a mixed view from the Aboriginal participants (moderate) or broad-scale support from all stakeholders (high).
3. The overall significance is comparable with the highest ranking achieved in any of the four main criteria.

Figure 48: Significance of Aboriginal objects and/or sites identified (Source: EMM Consulting).

The impact of the proposed development on the items has been considered and will result in total loss of value of the items. A management strategy and recommendations have been prepared and an Aboriginal Heritage Impact Permit (AHIP) under the NPW Act will be required. However, the ACHA notes:

Given the low significance and secondary context of this site, it is considered that avoidance would be unnecessary and suitable mitigation measures included in the AHIP would allow suitable management of the cultural materials.

The recommendations are:

- No ground disturbance within 10 metres of the identified Aboriginal site without having obtained an AHIP.
- The Construction Environment Management Plan should reinforce how the cultural landscape is considered throughout the project and detail the rehabilitation of the project area.
- To avoid inadvertent impact, the proponent should implement cultural awareness training by RAPs for all relevant personnel and contractors involved in the project of the relevant

heritage considerations, legislative requirements, and recommendations identified in this assessment.

- Consultation should be maintained with RAPs throughout the life of the project and subsequent ground disturbance stages of the project.
- A copy of the ACHA should be lodged with AHIMS and provided to the RAPs.
- AHIMS Site Recording Forms for the newly identified Aboriginal site within the project area should be submitted to the AHIMS database once their validation has been completed.
- If any part of the construction footprint is located outside the areas identified in this ACHA further assessment of these area(s) should be undertaken to identify and appropriately manage Aboriginal objects and/or sites that may be present.
- Where heritage consultant changes through the project, suitable hand over should be undertaken.

6.16 Non-Aboriginal Heritage

Broadwater Public School is not an item of state or local heritage significance and is not proximate to an item of heritage significance. Notwithstanding, a baseline historical heritage assessment was prepared to contribute to the redevelopment of the school. This assessment identified two areas of archaeological potential (**Figure 49**). The southern area is associated with the former school building and former schoolteacher's residence.



Figure 49: Areas of archaeological potential (shaded in yellow) (Source: EMM Consulting).

The proposed new school building is not located proximate to the area of archaeological potential. Some civil works will intersect these areas, however, the construction methodology will introduce fill materials in these areas, which will result in no impacts to the existing ground surface. Notwithstanding, an unexpected finds protocol should be implemented.

6.17 Social and Economic Impacts

The redevelopment of Broadwater Public School will restore an important piece of social and educational infrastructure in the local community. The modern, flexible classroom layouts and climate resilient design will provide high quality public education facilities for current and future

students in the locality. The proposal does not result in unacceptable amenity outcomes with regard to noise, privacy and overshadowing for neighbouring dwellings.

The proposal will provide short term economic benefits through the creation of construction jobs and the flow on effect of this, and by securing long term educational jobs in the regional town.

6.18 Crime and Safety

Crime Prevention Through Environmental Design is a crime prevention strategy that focuses on the planning, design and structure and neighbourhoods. It seeks to reduce the opportunities for crime through the use of design and place management principles. The four (4) key strategies of Crime Prevention Through Environmental Design (CPTED) are:

- Surveillance measures
- Territorial reinforcement
- Access control
- Space / activity movement

Each of these strategies is discussed below.

6.18.1 Surveillance Measures

Opportunities for crime can be reduced by providing effective surveillance. The surveillance principle indicates that offenders are often deterred from committing a crime in areas with high levels of surveillance. From a design perspective, deterrence of crime can be achieved by providing:

- Clear sight lines between public and private places and maximising natural surveillance.
- Appropriate lighting and effective guardianship of communal and/or public areas.
- Landscaping that makes places attractive but does not provide offenders with a place to hide or entrap victim.

The principal entry to the school is from Byrnes Street. This location provides direct access to the lift and stairs for access to the school administration. The ground level of the site is open providing opportunities for passive surveillance of the site by staff across the open play spaces.

There are toilet facilities provided at ground level for use during play times and on the elevated level for use during class time, so that students won't have any need to be at either ground or first floor level unsupervised.

The proposed landscaping has been designed to provide a safe and attractive environment for students.

6.18.2 Territorial Reinforcement

This principle involves the community ownership of public spaces and that staff, students and visitors will be more comfortable in visiting a communal area that is well-cared for and to which they feel they own. Well used places also reduce opportunities for crime and present as a deterrent to criminals. Also, designing with clear transitions and boundaries between public and private spaces, and clear design cues on what the area is used for is recommended.

During school term, the school will be heavily used by staff and students. Outside of school term, the school may be available for community use with fencing and signage clearly identifying accessible areas.

Territorial reinforcement such as fences, signs, doors and other physical thresholds will clearly indicate the separation between public and private spaces, which helps to convey where visitors should and should not be within the school.

6.18.3 Access Control

The principle of access control is to use physical and symbolic barriers to attract, channel or restrict the movement of people to minimise opportunities for crime and increase the effort required to commit a crime.

During school hours, access to the school is restricted with all visitors being required to sign in. The school grounds are fenced. The school will be a secure education facility with access control minimising opportunities for crime. This will also discourage vandalism and activism.

6.18.4 Space / Activity Management

This principle provides that space which is appropriately utilised and well cared for reduces the risk of crime and antisocial behaviour. Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, the replacement of lighting and the removal or refurbishment of decayed physical elements.

Presentation of the school is managed by the school with general repairs and maintenance of replacement lighting, broken equipment and removal of graffiti occurring as required. The proposed school is a high quality contemporary educational establishment that will contribute to neighbourhood amenity, casual surveillance and contribute the sense of security within surrounding precinct.

6.19 Traffic, Transport and Accessibility

6.19.1 Operational Traffic and Parking

A Traffic and Transport Assessment report has been prepared by PTC that provides an assessment of the impacts of the proposed development on the existing and future operation of the nearby road network, as well as other traffic and transport-related issues including access to and from the site, public and active transport accessibility, car parking requirements and service vehicle access (**Appendix AA**).

Access

Vehicular access will be maintained from the Byrnes Street cul-de-sac, and no changes are proposed to the vehicle entry. A separate pedestrian entry is provided from Byrnes Street.

Parking

The existing carpark is proposed to be reconfigured in accordance with Australian Standards and to provide an accessible car space.

As the proposed development comprises replacement of existing facilities damaged during the 2022 floods, it is not proposed to increase the existing provision off-street parking. The existing vehicle access will be retained from Byrnes Street at the south of the site. Parking will be reconfigured to comply with Australian Standards including the provision of an accessible parking space.

A total of 16 bicycle parking spaces will be provided within the undercroft area. These have been designed to comply with the requirements of *AS 2890.3 (2015) Parking Facilities – Part 3: Bicycle Parking*.

Traffic

The proposed development does not seek to increase the number of staff or students at Broadwater Public School and therefore, it is expected that the traffic generated by the proposed development will be consistent with the existing conditions and will not adversely impact upon the existing road network.

6.19.2 Construction Traffic and Parking

A Construction Traffic Management Plan (CTMP) has been prepared by PTC to identify general principles for managing construction traffic and provide an understanding of the likely traffic impacts expected during the demolition and construction period (**Appendix EE**).

Generally, it is anticipated that the works will involve the use of the following construction vehicle types:

- 12.5m Heavy Rigid Vehicle (HRV)
- 20m Articulated Vehicle (AV) (for longer building modules, a trailer extension will be required that increases the length to 24m)
- 300t crane for transferring the modules into place (17m long).

Any oversized vehicles (including the use of mobile cranes) will require the appropriate permits from Council and Transport for NSW (TfNSW) prior to any delivery being undertaken.

The CTMP identifies the following construction traffic volumes during the works.

Description	Trucks/Deliveries Daily Avg	Trucks/Deliveries Peak
Site Establishment / Demolition	3	5
Structure	7	15
Structural & fit out works	15	15
External Works	3	5
Final Commissioning & Handover	1	2

Figure 50: Construction Traffic Volumes (Source: PTC).

Construction vehicle routes to the site will be via the Pacific Highway, southbound along Blackwall Drive and east towards Byrnes Street (Figure 26)

Swept path assessment has been undertaken as part of the CTMP using a 25m AV which confirms the capability of the existing road geometry to accommodate the turn manoeuvres at the following intersections:

- Left turn into Byrnes Street from Blackwall Drive (Baraang Drive)
- Right turn into Blackwall Drive (Baraang Drive) from Byrnes Street

The CTMP describes the proposed Traffic Guidance Scheme (TSG) to inform road users of the changed traffic conditions in the vicinity of the works. The TSG must comply with the requirements under the Australian Standards and the requirements of the TfNSW Traffic Control at Work Sites Guidelines Technical Manual (2022). An extract of the proposed TGS along Blackwall Drive (Baraang Drive) for a 25m AV is shown below.



Figure 51: Proposed Traffic Guidance system along Blackwall Drive (Baraang St) (Source: ptc).

Construction staff is expected to vary from 10 workers on average to a peak of 30 workers. Due to the limited public transport options to the site, construction staff are encouraged to use street parking around the site.

It is considered that subject to the procedures outlined in the CTMP, that the proposed development will have no more than a minimal impact on the road network, or on the safety of the public and workers. The CTMP will need to be continually reviewed throughout construction and amended if required due to changes in the design or request from Council, TfNSW or any other authority requirements.

6.20 Suitability of the Site for the Development

The site is an existing educational establishment servicing the local community in Broadwater. The site is flood prone land, however, as per the discussion in **Section 6.1** above, the built form impacts of flood have been mitigated by raising the structure and flood risk to staff and students has been mitigated with a Flood Emergency Response Plan that will ensure they are not on site in a flood event. The sections above confirm that the site is suitable with regard to natural and built considerations as well as social, heritage and economic considerations.

6.21 The Public Interest

In accordance with Section 4.15(1)(e) of the EP&A Act, the proposed development is considered to be in the public interest as it will restore public educational facilities to Broadwater. The new school building has been designed in accordance with the flood affectation of the site and will provide high quality, flexible learning spaces to meet the needs of existing and future students within an environmentally sustainable development.

The public interest is an overarching requirement, which includes the consideration of the matters discussed in this report. The proposed development is considered to generally meet the provisions of relevant environmental planning instruments, which have been created to protect the public interest.

In addition, the proposal is consistent with Richmond Valley's Local Strategic Planning Statement and Objective 5 – manage and improve resilience to shocks and stresses, natural hazards and climate change and Objective 19 – infrastructure to support connected and healthy communities in Northern NSW Regional Plan 2041. Accordingly, the proposal is not prejudicial to the public interest.

7 Conclusion

The Department of Education is proposing the proposed demolition of flood damaged buildings and redevelopment of Broadwater Public School at 9 Byrnes Street, Broadwater. The redevelopment has been assessed in accordance with the requirements of the EP&A Act and other relevant legislation. The proposal comprises construction of an elevated single storey school building, landscaping and ancillary works. No increase in staff or student numbers is proposed.

The building will have a minimum habitable floor level of 5.5m AHD, which is above the 1 in 500 year flood level and the peak height of the flood of record (February 2022). The building is constructed of flood resilient materials below the flood planning level that have been designed to withstand a flooding. A Flood Emergency Response Plan has been developed, which will ensure that staff and students will not be onsite when a flood event occurs.

Environmental investigations have been undertaken to ensure the development will not result in unacceptable environmental impacts and to confirm the site's suitability. An Aboriginal Heritage Impact Permit will be required prior to the commencement of works.

The redevelopment of Broadwater Public School will support the community by providing modern and climate-resilient, locally based public education infrastructure, which responds to an existing need within the community.

Accordingly, the proposal is considered to satisfactorily respond to the opportunities and constraints of the site, is generally consistent with the relevant legislation and is therefore in the public interest, and worthy of Council support and approval by the Northern Regional Planning Panel.