

APPENDIX D – MITIGATION MEASURES TABLE

Table 1: Mitigation Measures

Impact	Mitigation Measures
Traffic, Transport and Accessibility	<p>Implement the following mitigation measures recommended in the Transport and Accessibility Impact Assessment prepared by TTW at Appendix S:</p> <ul style="list-style-type: none"> • Footpath upgrades to Pennant Hills Road, Dunmore Avenue, Baker Street, and Felton Road East • New raised zebra crossings at Tintern Avenue, Blenheim Road, and Baker Street • Staff to manage kiss & ride zones on-site • CHS bus link access to be limited to buses and authorised vehicles only • Schools to have staggered start and finish times • School Travel Plan(s) to be prepared
Noise and Vibration	<p>Adhere to all mitigation measures identified in the Noise and Vibration Impact Assessment including:</p> <p><u>Mechanical Services</u></p> <ul style="list-style-type: none"> • Strategic selection and location of plant to ensure the cumulative noise contribution at the receiver boundary is achieved, and/or • Noise control measures to be put in place to minimise noise impacts such as: <ul style="list-style-type: none"> ○ Noise enclosures or barriers/screening as required. ○ Acoustic louvres as required. ○ In-duct attenuation. ○ Sound absorptive panels. <p><u>Public Address Systems</u></p> <ul style="list-style-type: none"> • Limit operation times to daytime only (7am to 6pm). • Implement best practice design, including directional speakers, facing inwards to the school, and focussing on required coverage area. • Noise levels set and limited to the lowest practical level whilst still being audible and intelligible – meeting the requirements for the coverage areas as defined by the EFSG Section DG64 (communications). <p><u>Waste collection</u></p> <ul style="list-style-type: none"> • All waste collection activities are to be undertaken between 7:00am and 10:00pm. • Rear loading of trucks is recommended, where practical, to maximise the noise barrier effect.

Construction Noise

- Construction Noise and Vibration Management Plan (CNVMP) - The engaged Contractor shall prepare a comprehensive CNVMP based on their proposed plant, equipment and construction methodology, including noise mitigation measures that can be reasonably and feasibly implemented prior to the commencement of any works.
- Specify noise controls applicable to each construction activity as outlined in Table 29 of the Noise and Vibration Assessment.
- Noise barriers or screening via local hoarding around the worksite is recommended for all external works. This can reduce noise levels by 5 to 10 dB. When works are moving around the site, including mobile cranes, jackhammers, and concrete saws, local “noise curtains” such as EchoBarrier or Flexshield will assist with reducing noise near the source.
- Scheduling
 - Noisy activities to less sensitive times of the day for each nominated receiver (i.e. daytime hours).
 - Including Respite Periods where activities are found to exceed the 75 dB(A) Highly Affected Noise Level at receivers, such as 3 hours on and 1 hour off.
 - Noise and vibration monitoring to verify noise predictions and confirm actual noise impact (see Section 8.6 of Noise and Vibration Impact Assessment)
 - Alternative construction methodology and equipment - Adopt quieter methodologies. For example:
 - use concrete sawing and removal of sections as opposed to jackhammering.
 - If generators are required for the site set-up, petrol generators or biodiesel / solar hybrid generators should be used instead of conventional diesel.
 - Electric tools are to be selected instead of petrol or pneumatic tools where possible.
 - Communication and complaints management (see Section 8.6.4 of Noise and Vibration Impact Assessment)
 - Further noise and vibration controls are discussed in detail in the following sections.

Construction Vibration

- Modifications to construction equipment used:
 - Avoid the use of large excavators – use the smallest size practicable;
 - Avoid the use of vibratory rollers – switch off vibration mode, or use the smallest size practicable if vibration must be employed;
 - Avoid the use of tracked vehicles on site, where practicable, particularly large tracked excavators and cranes – use vehicles with tyres.
 - Modifications to methods of construction:
 - Saw cutting can be considered for rock removal rather than conventional rock hammering techniques to limit vibration when close to vibration sensitive locations.
 - Schedule noisy activities to occur outside of the most sensitive times of the day for each nominated receiver. For example, residential receivers are likely to be more sensitive to noise before 9 am than the other receivers.

	<ul style="list-style-type: none"> • Consider implementing equipment-specific screening or other noise control Measures • Limit the number of trucks on site at the commencement of site activities to the minimum required by the loading facilities on site. • When loading trucks, adopt best practice noise management strategies to avoid materials being dropped from height into dump trucks. • Avoid unnecessary idling of trucks and equipment. • Ensure that any miscellaneous equipment (extraction fans, hand tools, etc) not specifically identified in this assessment incorporates silencing/shielding equipment as required to meet the noise criteria. • Minimise noise from workers.
Contamination and Remediation	<p>Implement the following mitigation measures recommended in the DSI prepared by Douglas Partners at Appendix M:</p> <ul style="list-style-type: none"> • Undertake a walkover to identify any suspected asbestos containing material (ACM) within any building demolition footprints and nearby surface by a qualified occupational hygienist or suitably qualified environmental consultant; • Detailed asbestos investigation comprising boreholes or test pits (sampling, asbestos sieving and testing) around the existing finds of asbestos at test locations 313, 314, 315, 319 and 320 to further characterise the extent and nature of the asbestos; • Additional investigations (sampling and testing) within building / road footprints after demolition has been completed (See Drawing R.003.D.04 and R.003.D.05 in DSI for proposed test locations shown in yellow); • The development of appropriate contaminant management plans, remediation action plans and procedures (as relevant); and • Appropriate management of any unexpected contamination finds during excavation / development works.
Tree Removal	<p>Adhere to the Tree Management Plan at Appendix DD to ensure the ongoing health and vitality of all trees to be retained including use of trunk protection and tree protection fencing.</p>
Aboriginal Cultural Heritage	<p>Implementation of the recommendations in the ACHA (Appendix J) including:</p> <ul style="list-style-type: none"> • Development of an Aboriginal Cultural Heritage Management Plan prior to ground disturbance. • Maintain consultation with registered Aboriginal parties. • A copy of the ACHA will be lodged with AHIMS and provided to each of the registered Aboriginal parties. • AHIMS Site Recording Forms for the newly identified Aboriginal objects and/or sites within the project area. • Where the heritage consultant changes through the project, suitable hand over will be undertaken.
Biodiversity Impacts	<p>Implementation of the mitigation measures identified in the BDAR (Appendix EE) including:</p> <ul style="list-style-type: none"> • Timing works to avoid critical life cycle events, such as breeding or nursery. • Instigating clearing protocols, including pre-clearing surveys, daily surveys and staged clearing, and using a trained ecologist or licensed wildlife handler during clearing events. • Using hygiene protocols to prevent the spread of weeds or pathogens between infected and uninfected areas.

Construction	Construction to be carried out in accordance with the Preliminary Construction Management Plan (Appendix T) and Construction Traffic Management Plan (Appendix S).
Staging	Staging to be carried out in accordance with the Preliminary Staging Report (Appendix LL) and Staging Plans prepared by Woods Bagot.
Lighting	Lighting to be designed in accordance with the Lighting Design Report at Appendix BB.
Stormwater and Wastewater	Monitoring and Maintenance to be undertaken in accordance with Section 8 of the Integrated Water Management Plan (Appendix Y).
Flooding	<ul style="list-style-type: none"> • All areas of isolated modelled ponding are investigated during detailed design to ensure adequate flow paths and drainage are provided. • Ground shaping in the playing field area will be undertaken in the detailed design stage to assist water to easily flow from east to west. • Shaping of ground surfaces surrounding buildings beside significant flood hazard will be investigated during detailed design, to help reduce flood velocities and depths. Alternatively, consideration is given to providing accessways for those buildings that avoid the flood hazard to the north. • Implementation of the Flood Emergency Response Plan (FERP) by the school to address the safety and wellbeing of the school users. • Implementation of the Flood Risk Management Plan included in the Flood Risk Management Report.
Ground and Water Conditions	<p>A Construction Environmental Management Plan would need to be created to manage and mitigate construction phase surface water and groundwater impacts, including:</p> <ul style="list-style-type: none"> • Erosion and sedimentation management • Spills and leaks management • Stockpile management
Waste Management	Waste Management to be carried out in accordance with the Construction and Demolition and Operational Waste Management Plans.
Social Impact	<p>The following recommendations are provided in the Social Impact Assessment (Appendix GG) to further manage the potential impacts from the proposal:</p> <ul style="list-style-type: none"> • Maintain ongoing consultation with Aboriginal stakeholders as the proposal progresses to ensure approval, design input, and ownership of Aboriginal themed elements of the school. • Adhere to the recommendations provided as part of the ACHAR. • Engage with the City of Parramatta to investigate community use of the school's social infrastructure outside operational hours, potentially including halls, meeting space and other indoor spaces. • Engage with the City of Parramatta to investigate community use of the school's open spaces outside operational hours. • Implement the recommendations of the TAIA.

	<ul style="list-style-type: none"> • Continue to communicate with stakeholders and the community about the implementation of measures to reduce the impacts of traffic and parking around the school. • Continue to engage with both schools and with surrounding residents about the construction program. • Incorporate mitigation measures and recommendations in the NVIA, including development and implementation of a Construction Noise and Vibration Management Plan. • Ongoing communication between Carlingford West Public School and operators, particularly during the construction period, where activities may need to be moved to different school buildings.
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