



planning consultants

APPENDIX E

Mitigation Measures Table

SSD-41306367

New Primary School at Gregory Hills

28 Wallarah Circuit, Gregory Hills

Prepared for: Department of Education/ School Infrastructure NSW
November 2022

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
Aboriginal Cultural Heritage	<p>The conditions of AHIP No. 110808 apply to the new primary School at Gregory Hills site. All development activities must comply with these conditions particularly Condition 4 and 5 which are as follows:</p> <p>Condition 4 The AHIP holder must ensure that all persons involved in activities or works covered by this AHIP (whether employees, contractors, sub-contractors, agents or invitees) are made aware of and comply with the conditions of this AHIP.</p> <p>Condition 5 The AHIP holder must ensure that all persons involved in activities or works covered by this AHIP are provided with information relating to the Aboriginal cultural heritage values of the AHIP area, the location of any protected Aboriginal objects, the location of any protected areas and the protocols that are to be followed for the management and protection of any protected area and/or the protected Aboriginal objects specified on Schedule B. In the event that unexpected Aboriginal objects, sites or places (or potential Aboriginal objects, site or places) are discovered during construction, all works in the vicinity should cease and the proponent should determine the subsequent course of action in consultation with a heritage professional and/or the relevant State government agency as appropriate.</p> <p>Protocol for Unexpected finds If an Aboriginal object is discovered during project works, the following actions will be taken:</p> <ul style="list-style-type: none"> • All ground-disturbing works in the area of the Aboriginal object(s) cease immediately on discovery of the Aboriginal object. • The person who identifies the object will notify machinery operators, the site supervisor, the project manager, and the client to ensure work is halted • The Aboriginal object will not be removed from the area and a protection zone with a 10m buffer would be established. • Inform the project archaeologist of the discovery and provide photographic evidence The project archaeologist will advise whether the item is or likely to be an Aboriginal object. • If it is determined that the item is not an Aboriginal object, works can recommence. • If it is determined that it is or likely to be an Aboriginal object, all works will cease in the area and an update to the Cultural Heritage Management Plan (CHMP) will be prepared with a proposed management measure. • The revised CHMP would be distributed to the RAPs for a 14-day review period. • The updated CHMP would be issued to DPE and management measures will be implemented. <p>If human remains, or suspected human remains, are discovered during project works, the following actions will be taken:</p> <ul style="list-style-type: none"> • All ground-disturbing works in the area of the remains will cease immediately following the discovery. The discoverer of the remains will notify machinery operators in the area to ensure work is halted. • The remains will not be removed from the area or disturbed in any other way. • The area will be secured by use of protective barriers to ensure no harm can occur to the remains. • The site supervisor, the project manager, and the client will be immediately informed of the discovery. • The project archaeologist will be informed of the discovery. The project archaeologist will determine if further assessment of the suspected remains is required. A specialist in the identification of human remains will need to be engaged to undertake this assessment. • If it is determined that the suspected remains are not human, work can recommence. • If it is determined that the suspected remains are human, or are likely to be, the following steps must occur, in accordance with the relevant legislation (including the Coroners Act 2009, the National Parks and Wildlife Act 1974, and the Heritage Act 1977). • Notify the following organisations: <ul style="list-style-type: none"> • NSW Police 	Section 6.12 Appendix BB Appendix C

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
	<ul style="list-style-type: none"> Heritage NSW – 1300 361 967 The NSW Police will determine if the suspected human remains are human and if they represent a crime scene. If the human remains are determined to represent a criminal act, the NSW Police will direct proceedings, including deciding when works may continue. If NSW Police determine that the suspected human remains are human and are Aboriginal Ancestral Remains, or non-Aboriginal Ancestral Remains, Heritage NSW will be responsible for determining the next course of action. All activities will be directed by Heritage NSW. Works cannot proceed on site until Heritage NSW determine that it is appropriate to do so. 	
Accessibility	<ul style="list-style-type: none"> Further details will be required such as hardware, construction specifications, service design and manufacturers details as the design progresses towards Building Approval to confirm compliance with the relevant access requirements within the BCA 2019 and Premises Standards. The development is to comply with AS1428.1-2009 and AS1428.1-2009. 	Section 6.17 Appendix J Appendix K
CPTED	<ul style="list-style-type: none"> Surveillance management (i.e. CCTV) be applied to the car parking area and all external and internal areas, where appropriate, including access gates. Lighting shall be designed in accordance with AS1158.1. Where damaged or broken lighting shall be repaired within 48 hours. Emergency lighting shall be installed in accordance with the relevant Australian Standards. Pathways/line of pedestrian travel should be lit with low lighting to mark the path of travel and reduce opportunities for concealment. Ensure landscaping does not create concealment opportunities and landscaping is appropriately maintained. Directional/wayfinding signage to be provided throughout the development. 	Section 2 Section 6.17 Appendix F
Tree Protection	<ul style="list-style-type: none"> In accordance with AS4970 - 2009 (1.4.4) a Project or Site Arborist is to be engaged to monitor, supervise excavation within TPZ setbacks, advise and provide certification of protection works conducted. The project arborist is recommended to hold a minimum Australian Qualification Framework (AQF) Level 5 certification and be competent in methodology of protecting trees on development sites. Prior to demolition works Tree Protection Fencing (TPF) and/or zones as identified within Appendix- A of the arborist report are recommended to be located under the guidance of an appointed site arborist. Unless specified otherwise the location of tree protection fencing is to be positioned to allow for adequate work access and/or be located at the extremity of the TPZ radius, see SRZ & TPZ distance column Appendix- F of the arborist report. Where design & construction access may be restrictive timber beam trunk protection is recommended to be installed, with ground protection mats provided to protect underlying tree roots within tree protection zones or designated protection areas. Unless approved otherwise activities prevented within the TPZ include: machine excavation, including trenching, storage & work preparation, wash down areas, soil level change, utility services and physical damage to trees. The project arborist is to provide final certification outlining tree protection measures with photographic evidence of ongoing works retained for certification purposes (AS4970 S/5.5.2 Final certification). The project arborist is to be familiar with protection measures specific to Australian Standard AS4970 'Protection of Trees on Development Sites' – 2009 requirements with any modification in Tree Protection Fencing (TPF) or Zones (Z) to be compliant with AS4970 Section 4.5 Other Tree Protection Measures. Unless specified otherwise during approved excavation within TPZ setbacks excavation is to be conducted manually (by hand) under the supervision of an appointed project arborist. Where approved by the arborist the pruning of roots at or <30mm(Ø) is to be conducted in accordance with AS4970 – 2009 Section 4.5.4 Root protection during 	Section 4.4.8 Section 6.4.1 Appendix L

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
	<p>works within the TPZ, such that tree roots are not damaged or ripped beyond the point of excavation by site machinery. Where larger roots have been encountered, they are to be referred to an independent Level 5 arborist for further advice. For deep excavations exposed roots at the excavated cut face are to be protected with jute mesh, geotextile fabric or similar being secured in place to avoid drying of roots and the exposed soil profile.</p> <ul style="list-style-type: none"> • During approved excavation within TPZ setbacks there shall be no over excavation beyond the line of cut as shown within construction drawings. Should over excavation be required the extent of excavation should be detailed within approved drawings or a construction management plan for arborist review and certification. • Additional inground services which may include landscape works, fencing, sewer, stormwater, water and electrical services, final design and impact to trees shall be reviewed and endorsed by the project arborist prior to their instalment. Where landscaping (excavation) is required within the SRZ further advice from an appointed project arborist is recommended. • Tree sensitive construction measures such as pier and beam bridging over critical roots, suspended slabs, cantilevered building sections, screw piles and contiguous piling can minimise the impact of encroachment (AS4970). Where Bushfire BAL construction conflicts with tree management a project arborist must be appointed. • Canopy pruning / tree removal: where required tree removal and canopy reductions are to be approved by the Local Government Authority. Works are to be conducted by a suitably qualified AQF Level 3 certified arborist in accordance with AS4373 Pruning Standards, and specifically be conducted in accordance with Safe Work Australia – Guide to managing risks of tree trimming and removal works 2016 (www.swa.gov.au). • To ensure tree(s) are appropriately protected the development site superintendent is recommended to be familiar with all tree protection and ongoing certification requirements. The superintendent is responsible for informing all subcontractors of the responsibilities and requirements of tree protection prior to their engagement. • To ensure tree(s) are appropriately protected the development site superintendent is recommended to be familiar with all tree protection and ongoing certification requirements. The superintendent is responsible for informing all subcontractors of the responsibilities and requirements of tree protection prior to their engagement. • Hold points: specific to no works are to commence without arborist advice, inspections & certifications: <ol style="list-style-type: none"> 1) Prior to construction arboricultural certification is required ensuring that all trees have been adequately protected in accordance with arboricultural recommendations, or as specified within the Australian Standard AS4970 Protection of Trees on Development Sites - 2009. 2) No works (including landscaping) shall occur within the SRZ of any tree without prior arborist advice and certification. Where excavation may be required prior exploratory tree root investigation are to identify the location, distribution and impact to underlying tree roots. 3) No excavation shall occur within the TPZ without prior project arborist notification and/or site supervision. 4) No access or work activity is permitted within fenced or designated tree protection zones or areas (TPA's) without arborist advice. • Should there be any uncertainty with tree protection requirements the development site superintendent shall contact the appointed project arborist for advice prior to works occurring within tree protection zones (TPZ) or specified tree protection areas (TPA). 	
BCA	<ul style="list-style-type: none"> • The proposed development can readily achieve compliance with the BCA subject to design amendments as the design progresses. • The proposal will implement the sustainability strategy outlined by Norman Disney & Young in the Ecological Sustainable Development Report (21 September 2022) and commits to a 5 Star Green Star certification, SISNW EFSG compliance and NCC Section J compliance. 	Section 6.17 Appendix J
Ecological Sustainability	<ul style="list-style-type: none"> • Maximise communication of alternatives to driving to the school community, actively promote the School Travel Plan to achieve mode shift towards active and public transport modes and reduce car travel, and 	Section 6.5 Appendix N

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
	<p>implement a school recognition program to increase active transport journeys to school.</p> <ul style="list-style-type: none"> The proposal will implement the sustainability strategy outlined by Norman Disney & Young in the Ecological Sustainable Development Report (21 September 2022) to commit to achieving 5 Star Green Star certification, SISNW EFSG compliance and NCC Section J compliance. 	
Social Impacts	<ul style="list-style-type: none"> Provide community with estimated delivery timelines for construction and operation of the school to assist with family planning and budgeting Consider needs for public high school places in the local area Ensure safety of school community during operations of the temporary school and building of permanent school Provide support to community in transferring students to other public schools in other catchment areas if needed Engage with families with special needs to ensure design satisfies learning needs Provide extensive information to school communities on eligibility for transferring, how to transfer, and support transitions In the year before opening the new school, work with existing schools to understand which children will transfer and put children transferring in the same classes so they can form friendships with their future cohort. Also, potential to look into having transfer students with teachers that may transfer to new school Appoint new principal for the school as soon as possible (ideally at least 12 months before opening) and engage with existing school community Continue to provide opportunities for community feedback throughout design, planning, construction, and operation of the new schools Social procurement measures supporting employment diversity during construction (e.g., % local supply chain, women participation, Aboriginal workers, disadvantaged youth, people with disabilities, etc.). Provide events open to the broader community such as school fetes. Implement any recommendations of DDA report or adequate specialists regarding the design or operation of the school Maximise communication of alternatives to driving to the school community, actively promote the School Travel Plan to achieve mode shift towards active and public transport modes and reduce car travel, and implement a school recognition program to increase active transport journeys to school Engage early with Council to employ crossing guards for proposed zebra crossings Implement measures in the Preliminary School Travel Plan including Annual Ride 2 Work/ Ride 2 School Days and Health Events (e.g., Bike Week, Walk Safely to School Day, and Health and Wellness Fairs) Signage and communication with families around parking etiquette to mitigate impact on direct neighbours, i.e., no parking/stopping in people's driveways, on footpaths, etc. Implement the NSW Department of Education's Community Use of School Facilities policy to promote utilisation of new facilities Continue to engage with Council on opportunities for shared/joint use arrangements Implement CMP/CTMP Maintain ongoing proactive communication with surrounding residents to identify emergent issues before they escalate Establish complaints handling procedure for any issues arising for surrounding neighbours Proactive and ongoing communication and engagement with the school community to build awareness and preparedness for the construction program and future site design 	Section 6.1.3 Section 7.3 Appendix DD
School Travel Plan	<ul style="list-style-type: none"> Update the Preliminary School Transport Plan to a final School Travel Plan. Review the plan on a regular basis 	Table 4 Appendix P

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
Construction Traffic	<ul style="list-style-type: none"> Provide a construction fence along the site boundaries/works area boundaries to provide safe pedestrian access. Traffic control would be required to manage and regulate traffic movements into and out of the site during construction, with pedestrian priority provided during peak hour periods and to maintain access to public transport facilities. Supervised traffic control will be required where two-way flow is restricted over any length of the roadway, depending on the number of truck movements required and would be managed outside of peak hour vehicle and pedestrian activity. Minimum of 40 spaces are to be provided on site for construction workers to the south of the temporary school and accessed from Wallarah Circuit. 	Section 6.6.4 Appendix O
Construction Waste	<ul style="list-style-type: none"> Construction waste storage is to be contained wholly within the site. The routes for movement of waste between work site and waste storage area are to be kept obstruction-free. The routes for movement of bins and waste between storage and collection points are marked in the site drawing and will be kept obstruction-free (if waste is moved between the waste storage area(s). The waste bin collection point provided will be accessible for waste collection vehicles. There are no obstructions to turning or reversing, pulling up vehicles and lifting bins. Access for waste collection vehicles will not be compromised by construction-related activities vehicles or other consequences of construction staging. All waste not being reused on site will be removed during, or at the completion of, the construction stage. No waste will be left on site unless it is part of valid reuse on site, which is integral to and in place in the design. In order to manage noise levels, collection of waste from the construction site will only occur during hours approved for construction work. All vehicles entering or leaving the site must have their loads covered. All vehicles, before leaving the site, to be cleaned of dirt, sand and other materials, to avoid tracking these materials onto public roads. At the completion of the works, the work site is left clear of waste and debris. Construction Materials and off-cuts can be reused on-site. An area within the materials lay-down area will be allocated for the storage of materials to be reused. All excavation waste removed from site will be classified by a suitably qualified environmental consultant as per Waste Classification Guidelines Part 1: Classifying Waste NSW EPA 2014. A Waste Data File will be maintained on-site and all entries will include hazardous waste. The Waste Data File will be made available for inspection to any authorised officer at any time during the life of the site works. At the conclusion of site works, the designated person will retain all waste documentation and make this validating documentation available for inspection. Should an unexpected find of potential contamination be encountered during the works, it must be documented, and records and volumes and types of materials identified, removed from the site, must be kept on file. 	Section 6.11.2 Appendix AA
Operational Waste	<ul style="list-style-type: none"> Promote the use of Recycling Stations and associated recycling bins Introduce packaging free days, weeks etc. Ban single use plastic items from school canteen (e.g. straws, cups, plastic cutlery etc.) Replace paper towels with either hand dryers or reusable towels. 	Section 6.11.1 Appendix Z
Noise and Vibration Impacts - Construction	<ul style="list-style-type: none"> All employees, contractors and subcontractors are to receive an environmental induction and shall instruct all persons at the site with regard to all relevant project specific and standard noise mitigation measures, including but not limited to permissible hours or work, limitation of high noise generating activities, location of nearest affected noise receivers, construction employee parking areas, designated loading/unloading areas and procedures, site opening/closing times (including deliveries) and environmental incident procedures. 	Section 6.7 Appendix R

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
	<ul style="list-style-type: none"> During extended construction hours, less intrusive works will be scheduled to be carried out and/or works will be carried out away from sensitive receivers. Activities that approach the highly noise affected criteria for the residential receivers to be carried out during times where receivers are less sensitive to noise. Avoid unnecessary revving of engines and turn off plant that is not being used/required. Where possible organise the site so that delivery trucks and haulage trucks only drive forward to avoid the use of reversing alarms. Where possible, avoid using tonal reverse alarm outside standard construction hours. Organise and schedule the equipment operations to limit the noisiest machines operating simultaneously. Site set up/ movement of plant / delivery of material/ waste removal to site should generally be restricted to day period. Truck drivers are to be informed of site access routes, acceptable delivery hours and must minimise extended periods of engine idling. Ensure there is no unnecessary shouting or loud stereo/radios on site. There must be no dropping of metal from heights, throwing of metal items or slamming of doors. Use less noise intensive equipment where reasonable and feasible. Where practical fixed plant should be positioned as far as possible from the sensitive receivers. Use temporary site buildings and material stockpile as noise barrier. Employ the use of solid barrier plywood hoardings if required. Where practical, a partial enclosure shall be used to minimise noise levels. 	
Noise and Vibration Impacts - Operational	<ul style="list-style-type: none"> Public Address (PA) system loudspeakers and electronic school bells for the new buildings will be installed facing away and/or shielded from the neighbouring residences and calibrated and set (with a power limiter) such that the Project Noise Trigger Level criteria at the nearest affected residence LAeq,15min 43 dBA are not exceeded during their operation. Final requirements of engineering services to be reviewed during detailed design when selections of the plant and equipment are available, and will be the responsibility of the design team to achieve set criteria as written in this acoustic report. Building services equipment will be attenuated through the use of typical acoustic treatment items such as internally lined ductwork, attenuators, acoustic louvres, etc., as required. Building services equipment will incorporate vibration isolators according to the equipment operating parameters and the characteristics of the supporting structure. 	Section 6.7 Appendix R
Bushfire	<ul style="list-style-type: none"> The proposed new buildings are to be constructed to comply with BAL-12.5 of AS3959 2018 Construction of buildings in bushfire-prone areas and Sections 7.5 & 7.6 of Planning for Bush Fire Protection 2019. Water, electricity and gas supplies through the proposed development must comply with section 6.8.3 of PBP (pages 59-60) and included in Appendix 4 of the Bushfire Threat Assessment Report. APZs are provided in accordance with Figure 12 within the Bushfire Threat Assessment Report. The APZ is made up of the following: <ul style="list-style-type: none"> Total APZ distance 51m Inner Protection Area distance – 26m Outer Protection Area distance - 25m The area outside the site is buffered by the APZ which will not provide for the transfer of fire into the site. The remainder of the site (outside the APZ) can be revegetated to provide sufficient canopy cover. All Asset Protection Zones and landscaping within the proposed APZ site are to be maintained in accordance with Appendix 4 of PBP 2019 and the NSW RFS “Asset protection zone standards”. A Bushfire Management Plan is to be produced as part of the development to ensure the suite of bushfire measures are managed on an ongoing basis. This shall include at a minimum the APZ maintenance, landscape maintenance, pre-incident planning and Hazard Reduction burn planning 	Section 6.9 Appendix GG

Mitigation Measures submitted with EIS		
Environmental Impact	Mitigation Measure	Further Discussion in EIS and Appendices
Flood	<ul style="list-style-type: none"> Floor levels are to be have a minimum RL of 115.7m 	Section 6.8.1 Appendix V
Geotechnical	<ul style="list-style-type: none"> Additional geotechnical advice should be sought if excavations below the groundwater levels are proposed. Conventional sediment and erosion control measures should be implemented during the earthworks operation, with final surfaces to be topsoiled and vegetated as soon as practicable following the completion of earthworks. Site drainage should be maintained at all times by adopting appropriate cross – falls within the site. Surface drainage should be installed as soon as is practicable in order to capture and remove surface flows to prevent erosion and softening of the exposed soils / weathered bedrock. It is recommended that the site be inspected by a geotechnical engineer following stripping of vegetation, topsoils and uncontrolled filling and during the test rolling undertaken prior to the placement of filling. Geotechnical testing should be carried out in accordance with AS3798: 'Guidelines on Earthworks for Commercial and Residential Developments. As a minimum, placement of controlled filling beneath structures must be to a Level 1 standard as described in AS3798 whilst Level 2 standard is usually considered appropriate for pavement construction and backfilling of service trenches, unless otherwise specified by the designer. It is also recommended that the Geotechnical Inspection and Testing Authority (GITA) should be engaged directly on behalf of the Principal and not by the earthworks contractor. All footings should be inspected by a geotechnical engineer to confirm that foundation conditions are suitable for the design parameters. 	Section 6.10 Appendix S
Hazards	<ul style="list-style-type: none"> Prepare a school emergency plan which must include pipeline rupture as a scenario and develop an appropriate shelter in place policy to prevent the potential for injuries from people exposed to radiated heat flux in the open. 	Section 6.17 Appendix W

School Infrastructure is committed to undertaking all of the above mitigation measures.