

Appendix C – Mitigation Measures

SSD-89584717 - Lottie Stewart Hospital Redevelopment, 40 Stewart Street, Ermington

Consultant	Mitigation Measure
Design and Operation	
Noise and Vibration Impacts	
E-LAB	- The solid/non-glazed elements of the façade for residential accommodation spaces shall be constructed to ensure the resulting internal noise levels within each space in the proposed development do not exceed the project internal noise limits. - Masonry constructions such as concrete or core-filled blockwork will be satisfactory with no additional acoustic treatment required. - Lightweight constructions are to have an indicative acoustic performance of no less than $R_w 45$ to ensure the resulting internal noise levels within each space in the proposed development do not exceed the project internal noise limits. - Sleeping areas (i.e. bedrooms) with an incident façade noise level of greater than $55\text{dB(A)}_{L_{Aeq,9\text{hour}}}$ will require an alternative means of ventilation to meet the aforementioned requirements. - Other habitable areas (i.e. living rooms) with an incident façade noise level of greater than $60\text{dB(A)}_{L_{Aeq,15\text{hour}}}$ will require an alternative means of ventilation to meet the relevant requirements. - Mitigation measures for the mechanical plant should be considered during the design development stage to ensure compliance with the outlined criteria at the nearest sensitive receiver catchments. These mitigation measures could include but not limited to the following: - Positioning mechanical plant away from nearby receivers - Acoustic attenuators fitted to duct work - Screening around mechanical plant - Acoustic insulation within duct work - It should be noted that the noise reduction requirements will likely be refined and reduced once the mechanical plant and equipment selections and designs have been progressed further during the detailed design of the proposed development. The mitigation measures proposed at this stage of the development are conservative in nature.
Stormwater	
NDY	- Buildings and landscaped area to discharge stormwater to a total of 37m² Filterra Bioscape raingardens by Ocean Protect. - All inlet pits are to be installed with OceanGuard litter baskets (26 total) to filter all stormwater from external areas. - Residential townhouse impervious external areas will sheet flow over landscaped buffer zones.

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	End of line treatment Jellyfish JF-3300-22-4 downstream of all OSD's to treat all stormwater prior to discharge to council stormwater network.
Aboriginal Cultural Heritage	
Austral Archaeology	- No further assessment or works are required to be undertaken for the study area in regard to Aboriginal cultural material, and therefore, the proposed works may proceed with caution. If during the project, unexpected finds or human remains are discovered, please follow the recommendation below. - All Aboriginal objects and Places are protected under the <i>National Parks and Wildlife Act 1974</i> (NPW Act). It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by Heritage NSW. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity, and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying Heritage NSW and Aboriginal stakeholders. - Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must: - Immediately cease all works at that location and not further move or disturb the remains. - Notify the NSW Police and Heritage NSW's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location. - Do not recommence work at that location unless authorised in writing by Heritage NSW.
Construction Management	
Arboricultural Impacts	
Tree IQ	Demolition and Construction - To avoid a net loss of soil area and volume, an area equivalent to the encroachment should be incorporated into the Tree Protection Zone (TPZ). - Construction methodology should avoid over-excavation, benching, or battering within or adjacent to TPZ areas. - To avoid shattering or tearing of roots beyond the TPZ, the project arborist should undertake preliminary excavation and root pruning along the closest line of excavation to the tree, to a depth of 600 mm, prior to bulk excavation works. - Pavements within the NRZ areas should be installed above existing grade, inclusive of any slab and sub-base layers. - Where excavation is required to tie in with existing levels, these works should be undertaken by hand with roots (>25mmØ) retained and protected as required by the Project Arborist. Roots can be incorporated into the sub-base layer where feasible and protected with a minimum 20 mm cover of lightly compacted, washed river sand placed over the root to maintain a separation between the root and the underside of the pavement.

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	• In areas where existing pavements are to be removed and replaced with new pavement, the existing pavement surface should be carefully lifted to minimise disturbance to the underlying sub-base, which should be retained in situ and reused or topped up as required. Roots retained within existing sub-base layers, or within the soil profile immediately beneath the new pavement surface, should be protected by a minimum 20mm layer of lightly compacted washed river sand installed over the roots to maintain separation between the roots and the underside of the pavement. • The use of piers may be considered to support structures, provided they are located outside the SRZ areas or are positioned to avoid significant tree roots, as confirmed by root investigations and approved by the Project Arborist. In addition, permeable paving should be considered where encroachment exceeds 20% of the NRZ. • Where retaining walls are required adjacent to elevated pavements, these should be supported on isolated piers. All other elements of the retaining structure should be constructed above existing grade, avoiding continuous footings or excavation through the NRZ areas. Piers should be located outside the SRZ areas or positioned to avoid significant tree roots, as confirmed by root investigations and approved by the Project Arborist. • The final pavement design and any structural supports should be reviewed and approved by the Project Arborist prior to installation. • Where possible, underground services and associated infrastructure should be routed outside of NRZ areas. Where underground services are located within the NRZ, trenches should be excavated using tree sensitive methods (i.e. hand or hydrovac) with roots (>25mmØ) retained and protected as required by the Project Arborist. Excavation using compact machinery (i.e. <1.8t) and fitted with a narrow, flat bladed bucket) is permissible where approved by the Project Arborist. • Where additional clearance is required for scaffolding/hoarding/piling, branches should be temporarily pushed or tied back and/or the scaffolding/hoarding/access modified and constructed around branches (with appropriate branch protection installed as required). Additional minor pruning for scaffolding/hoarding/piling should only be proposed where no other alternative is feasible.
Traffic	
JMT Consulting	• Trucks to minimise the use of local streets for access to the construction site. • Trucks to enter and exit the site in a forward direction. • Pedestrians near the ingress/egress points will not be held unnecessarily. • At construction vehicle access/egress points, priority is to be given to trucks accessing the site over trucks egressing the site so as to have no impact to traffic flow on surrounding roads (unless exceptional circumstances do not permit). • Trucks to not circulate on the road network to wait to enter the site (unless exceptional circumstances do not permit). • Restrict construction vehicle activity to designated routes which do not utilise any local roads. • Truck drivers will be advised of the designated truck routes to/ from the site. • Construction access from the external road network to mainly occur at signalised intersection. • Pedestrian movements adjacent the construction site will be managed and controlled by site personnel where required. • Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements. • Construction activity to be carried out in accordance with approved hours of work. • Truck loads would be covered during transportation off-site. • Establishment and enforcement of appropriate on-site vehicle speed limits which would be reviewed depending on weather conditions or safety requirements.

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	- Activities related to the construction works would not impede traffic flow along adjacent roads. - Materials would be delivered and spoil removed during standard construction hours. - Construction vehicles not to queue on adjacent streets. - During site induction, workers will be informed of the existing bus network servicing the site.
Noise and Vibration Impacts	
E-LAB	- At least a one-hour respite period, for example between 12:00pm – 1:00pm (or other period to coincide with construction workers lunch time(s)), should be offered per day during the most intensive periods of noisy activities. Limiting these activities outside of sensitive hours (e.g. no noisy works, such as piling, between 7:00am – 8:00am on weekdays) should also be considered. - Frequent and proactive communication with surrounding residents and neighbours is also encouraged and a Community Consultation Strategy should be developed by the contractor. This will allow occupants of surrounding residents to arrange their schedules to accommodate possible noise sensitive activities (like online meetings and conferencing). - Upon any complaints from surrounding residents, the following shall be undertaken: - Vibration monitoring is recommended to be conducted at surrounding sensitive receivers (or at the location of complaint) in accordance with the monitoring program strategy. - Reasonable and feasible measures should be considered to lessen the impact, such as alternative methods or equipment for activities which are causing complaints to achieve the vibration levels required. - To further diminish the vibration impact, the one-hour respite period, for example between 12:00pm – 1:00pm (or other period to coincide with construction workers lunch time(s)), recommended for noise mitigation shall also apply for vibration mitigation. - We recommend that dilapidation reports be prepared on surrounding sensitive receivers and buildings which will be in close proximity to heavy machinery. Guidance for this may be provided by the geotechnical engineer and controlled by ground composition.
Biodiversity Impacts	
Biosis	- The removal of vegetation/habitat will be managed under a CEMP which will mitigate risk of impact to environmental controls during project construction. - A CEMP should be implemented that may include the following sub-plans or protocols: - Vegetation management plan (VMP) that includes retention of native vegetation within landscaping. - Vegetation clearance protocol. - Fauna injury protocol. - Weed Management Plan. - Appropriate stormwater and erosion controls will be implemented on site to avoid impacts to nearby waterways. - Control priority weeds through bush regeneration practices such as manual removal or pesticide. Ensure spread of weeds into and outside of subject land through the movement of people and equipment is minimised. - Where appropriate, native vegetation cleared from the subject land should be mulched for re-use on the site, to stabilise bare ground.

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	• Installation of appropriate exclusion fencing around trees and vegetation to be retained to clearly delineate the clearing limits in the subject land: - The radius of the Nominal Root Zone (NRZ) is calculated for each tree by multiplying its diameter at breast height by 12, in accordance with the Standards Australia Committee (2025). - An NRZ should not be less than 2 m, or greater than 15 m, except where crown protection is required (Council of Australian Standards 2025). - This would include appropriate signage such as 'No Go Zone' or 'Environmental Protection Area'. - Identify the location of any 'No Go Zones' in site inductions and a CEMP. - Where the use of exclusion fencing is not appropriate, other methods of tree protection must be employed in accordance with <i>AS4970- 2025 Protection of Trees on Development Sites</i> (Council of Australian Standards 2025). • All material stockpiles, vehicle parking and machinery storage will be located within cleared areas or areas proposed for clearing, and not in areas of native vegetation that are to be retained. • Removal or substantial pruning of trees to be supported by an Arboriculture Report prepared by an arborist with a minimum AQF level 5. • Implement hygiene measures to prevent the spread of weeds and pathogens into the site, or from the site into the surrounding locality. • Construction works should be restricted to daylight hours. • Implementation and signage of reduced speed limits on access roads associated with the project. • Implementation of temporary stormwater controls during construction to ensure that discharges to the drainage channels are consistent with existing conditions. • Sediment and erosion control measures should be implemented (e.g., silt fences, sediment traps). These should conform to relevant guidelines, should be maintained throughout the construction period and should be carefully removed following the completion of works. • Implementation of an appropriate CEMP during works.
European Heritage	
Weir Phillips	• All retained heritage buildings and structures will be maintained in accordance with the minimum standards of maintenance and repair under the Heritage Act 1977. • Temporary protective measures will be implemented during construction to protect heritage fabric from weather exposure, accidental impact, fire risk, and vandalism. • Site security measures, including fencing and monitored access points, will be implemented to prevent unauthorised access. • Pre-construction dilapidation surveys will be undertaken for all heritage structures and adjoining built elements to record their existing condition prior to works. • Post-construction dilapidation reports will be prepared to confirm that no structural or fabric damage has occurred as a result of the development. • Should damage occur, conservation works will be undertaken in accordance with heritage best practice and supervised by a qualified heritage professional. • All external works to heritage items will be undertaken in accordance with approved architectural and heritage documentation. • Materials, finishes, colours, and detailing must match those approved under the development consent. • Any minor variations will require review and certification by the project heritage consultant prior to implementation to ensure consistency with the approved heritage strategy. • Prior to any demolition or alteration of heritage fabric, an archival recording report will be undertaken.

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	• Recording will be prepared in accordance with the NSW Heritage Division Guidelines for Photographic Recording of Heritage Items. • Documentation will include: - high-resolution photography of external and internal elements, - measured drawings where appropriate, - written historical and descriptive notes. • Copies of the archival record will be lodged with the Parramatta City council to ensure a permanent record of the heritage fabric prior to disturbance.