

Appendix V – Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are defined in the table below. These measures have been derived from the previous assessment in the EIS and RTS and those detailed in appended consultants' reports.

Ref No.	Mitigation Measure
Design and Operation	
Visual and Built Form	
D/O-BF1	Measures have been incorporated to reduce the visual impact of the development when viewed from nearby residential development and the public domain.
D/O-BF2	Privacy louvres have been installed to the balconies of units immediately adjoining upper floor communal terraces to provide additional visual privacy.
Tree Removal	
D/O-TR1	Trees 1-3, 6 and 22-34, 40, 42 will be required to be fenced for protection. All fencing shall be installed as specified in Section 5.2 (Tree Protection – Implementation of Tree Protection Zone). Indicative locations of the fencing will be shown in the Tree Protection Plan
D/O-TR2	All tree protection works should be carried out before the start of demolition or building work. It is recommended that chain mesh fencing with a minimum height of 1.8 metres be erected as shown in the Tree Protection Plan. Specifications for this fencing are shown in Tree Protection Fencing Specifications. TPZ fencing shall comply with the Australian Standard Protection of trees on development sites, AS 4970, 2009.
D/O-TR3	Trees 6, 40 and 42 will require trunk protection. This is achieved by attaching lengths of timber (75mm x 50mm x 2000mm) fastened around the trunk. Geotextile fabric or carpet underlay shall be wrapped around the trunk prior to the timbers being attached. These timbers are to be fastened with hoop iron strapping and not attached directly into the bark of the tree. These timbers are only to be removed when all construction is complete. Trunk protection shall comply with the Australian Standard Protection of trees on development sites, AS 4970, 2009.
D/O-TR4	All tree protection works should be carried out before the start of demolition or building work. It is recommended that chain mesh fencing with a minimum height of 1.8 metres be erected as shown in the Tree Protection Plan Specifications for this fencing are shown in Tree Protection Fencing Specifications
D/O-TR5	Ply sheeting should be placed over the root zone of Tree 1-3 and 6 to reduce compaction over the root zone whilst works are occurring. This ground protection allows the TPZ fenced to be placed closer to a tree to allow construction access. The area for ply sheeting can be seen in the Tree Protection Plan.
D/O-TR6	The following activities shall be avoided within the TPZ and SRZ of any tree to be retained. <ul style="list-style-type: none"> • Erecting site sheds or portable toilets. • Trenching, ripping or cultivation of soil (with the exception of approved foundations and underground services). • Soil level changes or fill material (pier and beam or suspended slab construction are acceptable). • Storage of building materials. • Disposal of waste materials, solid or liquid.
D/O-TR7	If the retained trees are damaged, a qualified Arborist should be contacted as soon as possible. The Arborist will recommend remedial action so as to reduce any long term adverse effect on the tree's health.

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D/O-TR8	It is recommended that signage is attached to the tree protection fencing. This sign may be copied and laminated then attached to any TPZ fencing.
D/O-TR9	It is recommended that the developer/Contractor supply Council or the Principal Certifying Authority with certification from the Project Arborist three (3) times during the construction phase of the development in order to verify that retained trees have been correctly retained and protected as per the conditions of consent and Arborist's recommendations.
D/O-TR10	It is recommended that the developer/Contractor supply Council or the Principal Certifying Authority with certification from the Project Arborist three (3) times during the construction phase of the development in order to verify that retained trees have been correctly retained and protected as per the conditions of consent and Arborist's recommendations.
Waste	
D/O-WA1	The waste management recommendations outlined in the Operational WMP are to be followed during the operation of the proposal.
Sustainability	
D/O-ESD	The detailed design of the development is to achieve compliance with the ESD Report prepared by JHA.
Construction Management	
Noise and Vibrations	
CM-NV1	General management measures: Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.
CM-NV2	Project notification: Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.
CM-NV3	Verification monitoring: Monitoring to comprise attended or unattended acoustic surveys. The purpose of the monitoring is to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate for the affected receivers. If the measured levels are higher than those predicted, then the measures will need to be reviewed and the management plan will need to be amended.
CM-NV4	Compliance management system: Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders
CM-NV5	Specific notification: Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them in regards to the noise impact and the mitigation measures that will be implemented.
CM-NV6	Respite offer: Offer provided to stakeholders subjected to an ongoing impact.
CM-NV7	Alternative construction methodology: Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis. It is recommended that the selection of the alternative option should also be determined by considering the assessment of on-site measurements (refer to Verification Monitoring above).
CM-NV8	Any vibration generating plant and equipment is to be in areas within the site in order to lower the vibration impacts.

Ref No.	Mitigation Measure
CM-NV9	Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment.
CM-NV10	Use lower vibration generating items of construction plant and equipment; that is, smaller capacity plant.
CM-NV11	Minimise conducting vibration generating works consecutively in the same area (if applicable).
CM-NV12	Schedule a minimum respite period of at least 30 minutes before activities commence which are to be undertaken for a continuous 4-hour period.
CM-NV13	Use only dampened rock breakers and/or "city" rock breakers to minimise the impacts associated with rock breaking works.
CM-NV14	Conduct attended measurements of vibration generating plant at commencement of works in order to validate the indicative safe working distances advised above and, consequently, to establish safe working distances suitable to the project. Measurements should be conducted at the nearest affected property boundary. These safe working distances should be defined by considering the vibration criteria discussed in Section 4.3 (i.e., criteria for structural damage, human comfort and impact to scientific or medical equipment).
Construction Waste	
CM-CW1	Records of waste volumes recycled, reused or contractor removed are to be maintained. Additionally, dockets/receipts verifying recycling/disposal in accordance with the WMP must be kept and presented to Council or the EPA if and when required.
CM-CW2	Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists/logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.
CM-CW3	Waste audits are to be carried out by the Building Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling/reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training should be undertaken and signage re-examined.
CM-CW4	All environmental incidents are to be dealt with promptly to minimise potential impacts. An incident register must be maintained on-site at all times and should include the contact details of the 24-hour EPA Pollution line. Likely incidents to occur during the construction and demolition stage of the development may involve fuel or chemical spills, seepage or mishandling of hazardous waste, or unlicensed discharge of pollutants to environment.
Hazards Management	
CM-HA	In the event hazardous materials are identified, the recommendations of the Hazardous Materials Survey are to be followed.
Contamination	
D/O-CO1	Detailed sampling and/or testing in the vicinity of BH120 to delineate the extent of asbestos contamination.
D/O-CO2	Sampling and testing of soils beneath the houses, building, and concrete covered areas after demolition and removal of site features.
D/O-CO3	Development of a remedial action plan (RAP) to remediate asbestos contaminated fill, plus any other contamination identified through the recommended additional sampling and testing, followed by appropriate validation
Remediation	
D/O-RE1	Sampling and testing of soils beneath the houses, building, and concrete covered areas after demolition and removal of site features.
D/O-RE2	Revise the RAP, if required, to remediate any other contamination that might be identified through the recommended additional sampling and testing, followed by appropriate validation. If

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	no other contamination is detected beneath the site features after removal, carry out appropriate remediation and validation of only Area 1.
D/O-RE3	A validation report will be produced at completion of successful remediation by the appointed environmental consultant. The format of the report will follow that recommended in the NSW Environment Protection Authority (EPA), "Consultants Reporting on Contaminated Land" – 2020.
Operational Noise	
ON-1	The communal terrace includes external doors to the internal communal areas, which can be closed in the event the internal areas are to be used for high noise generating activities such as amplified music or speech. Additionally, the use of the external communal terraces will include the potential for any high noise activities to be mitigated by staff of the facility such that noise impact to the adjoining residential dwelling will be mitigated.
ON-2	The use of the communal terrace to the northern elevation will include a landscaping buffer to the residential dwellings to the north of the site on Grove Avenue. The use of the terrace will include normal residential use and will include supervision from the staff of the facility to ensure any extraneous noise levels do not result from the use of the external terrace.
ON-3	Ongoing acoustic assessment of the proposed building services proposed for the site will be undertaken to ensure noise emissions from the project will comply with the Project Noise Trigger Levels as detailed within the Noise Impact Assessment submitted with the original EIS.
ON-4	Potential noise resulting from the use of the proposed café to residential receivers to the north of the site on Grove Avenue will include the following acoustic mitigations: <ul style="list-style-type: none"> a. The use of the external areas of the café should not include the use of amplified music. b. There is a solid barrier located to the north of the café (and separating the residence on Grove Avenue) which will result in noise mitigation from the use of the café. c. The use of the café will include supervision from the staff of the facility such that activities resulting in excessive generation of noise can be prevented.
Flood Emergency Response	
FER-1	The RCF will adopt a Shelter-In-Place flood emergency response strategy.
FER-2	A suitable number of trained staff will remain with the residents during Shelter-in-Place.
FER-3	PA systems will be provided to allow management to guide all residents, employees and visitors to a safe Shelter-in-Place and provide them with all necessary warnings and updates.
FER-4	Facility management should maintain several emergency kits including torches with spare batteries, portable radio with spare batteries, first aid kits and high visibility vests and proper signage in public areas.
FER-5	Facility management should follow the advice of SES and police at all times and provide guidance to staff, residents and visitors on site until the floodwaters recede.
Geotechnical	
GE-1	Provide strip drainage at back of retaining walls around basement excavation to divert groundwater to a ditch drain around the base of basement.
GE-2	Divert water in ditch drain to a sump constructed at the lowermost portion of the basement excavation.
GE-3	Pump out groundwater collected in sump to a stormwater system in a controlled manner.