

Appendix D – Consolidated Mitigation Measures

SSD-100293708 – Demolition and Excavation for Residential Development, 300 Burns Bay Road, Lane Cove

Ref No.	Mitigation Measures
Construction Noise and Vibration (Appendix N)	
CNV-1	It is recommended that respite period are provided between: • Mon-Fri - 7:00am to 8:00am – No noisy works (Respite Periods); • Mon-Fri - 11:30am to 12:30pm – No Noisy Works (Respite Periods); • Mon-Fri - 3:30pm to 4:30pm – No noisy works (Respite Period); and • Saturday - 8:00am to 9:00am – No noisy works (Respite Period).
CNV-2	• Delivery drivers are to be instructed to mitigate noise impacts including the following: 1. Mitigate engine braking from truck when possible, including deactivating breaks within the vicinity of residential receivers. 2. Reduce aggressive acceleration from the site. 3. Ensure all trucks and equipment are well maintained. 4. Other relevant noise reducing operations where possible. 5. Details of the required driver codes are include in the projects Construction Management Plan.
CNV-3	• The contractor will, where reasonable and feasible, apply best practice noise mitigation measures. These measures shall include the following: • Maximising the offset distance between plant items and nearby noise sensitive receivers. • Preventing noisy plant working simultaneously and adjacent to sensitive receivers. • Minimising consecutive works in the same site area. • Orienting equipment away from noise sensitive areas. • Carrying out loading and unloading away from noise sensitive areas.
CNV-4	• Based on the proposed works to be undertaken as part of the project, the following noise monitoring is recommended: - Attended noise monitoring of construction activities is to be undertaken during the following periods: ◦ Commencement of any rock breaking or sawing on the site. ◦ In response to any ongoing complaints received from neighbours.
CNV-5	• Any vibration generating plant and equipment is to be in areas within the site in order to lower the vibration impacts.
CNV-6	• Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment. • Use lower vibration generating items of construction plant and equipment; that is, smaller capacity plant.

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CNV-7	Minimise conducting vibration generating works consecutively in the same area (if applicable).
CNV-8	Use only dampened rock breakers and/or “city” rock breakers to minimise the impacts associated with rock breaking works.
CNV-9	Conduct attended measurements of vibration generating plant at commencement of works in order to validate the indicative safe working distances advised in Table 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 above. (i.e., criteria for structural damage, human comfort and impact to scientific or medical equipment).
CNV-10	AS 2436-2010 “Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites” sets out numerous practical recommendations to assist in mitigating construction noise emissions. Examples of strategies that could be implemented on the subject project are listed below, including the typical noise reduction achieved, where applicable.
CNV-11	- Adoption of Universal Work Practices: - Regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration. - Regular identification of noisy activities and adoption of improvement techniques. - Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby sensitive receivers. - Where possible, avoiding the use of equipment that generates impulsive noise. - Minimising the need for vehicle reversing for example (particularly at night), by arranging for one-way site traffic routes. Use of broadband audible alarms on vehicles and elevating work platforms used on site. - Minimising the movement of materials and plant and unnecessary metal-on-metal contact. - Minimising truck movements.
CNV-12	- Plant and Equipment: - Choosing quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks. - Selecting plant and equipment with low vibration generation characteristics. - Operating plant and equipment in the quietest and most efficient manner.
CNV-13	- On Site Noise Mitigation: - Maximising the distance between noise activities and noise sensitive land uses. - Installing purpose-built noise barriers, acoustic sheds and enclosures.
CNV-14	- Work Scheduling - Scheduling work to coincide with non-sensitive periods. - Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from the sensitive receivers.

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	- Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours. - Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.
CNV-15	• Some ways of controlling noise at the source are: - Where reasonably practical, noisy plant or processes should be replaced by less noisy alternatives. - Modify existing equipment: Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site. - Siting of equipment: locating noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise. - Regular and effective maintenance.
CNV-16	- Deliveries should be undertaken, where possible, during standard construction hours. - Maximise hammer penetration (and reduce blows) by using sharp hammer tips. Keep stocks of sharp profiles at site and monitor the profiles in use. - It is advised that mobile plant and trucks operating on site for a significant portion of the project are to have reversing alarm noise emissions minimised. This is to be implemented subject to recognising the need to maintain occupational safety standards. - No public address system should be used on site (except for emergency purposes).
Construction Waste Management (Appendix O)	
CWM-1	• As detailed within Appendix O, Contaminated material stockpiled on site will be minimised as far as possible and should be stored on HDPE liner, in a bunded location which is protected from inclement weather;
CWM-2	• Sediment fences should be installed around the base of stockpiles and the stockpiles should be covered. Where excavated material requires validations, samples should be taken for NATA laboratory testing as per the requirements of the contamination assessment prior to restoration works, backfilling exercises and disposal;
CWM-3	• Any trucks carrying contaminated materials should be securely and completely covered immediately after loading the materials (to prevent windblown emissions and spillage) and must be licensed by the NSW Environmental Protection Authority (EPA);
CWM-4	• Decontamination of all equipment prior to demobilisation from the site is important so that contaminated materials are not spread off-site.
CWM-5	• The following measures and safeguards will apply to the development for excavated material:

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	- Wherever practical, excavation material will be reused as part of the development; - Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot; - A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes; and - Transportation routes for excavation material removed from site will be identified and used.
Construction Traffic and Transport (Appendix H)	
TF-1	• The nominated heavy vehicle haulage routes will largely be limited to State Roads and Regional Roads which are designed to accommodate heavy vehicle movements to minimise the impact on immediate local road network.
TF-2	• The Temporary fencing will be established along the construction site perimeter to cordon off the site from pedestrian movements along the site frontages and neighbouring properties where applicable.
TF-3	• During the course of construction, all trucks will approach and depart the site in a forward direction. In the event where construction vehicles are unable to manoeuvre from/to the site, a Works Zone will be established along the site frontage.
TF-4	• All necessary oversized mobile crane/truck access will be subject to a separate permit issued by the Council before the planned event. If reversing is necessary, vehicle movements should be undertaken under the supervision of accredited traffic controllers.
TF-5	• Truck movements associated with the construction processes will approach and depart the site using the existing vehicular access via 300 Burns Bay Road.
TF-6	• No queuing of heavy vehicles is to occur on the surrounding streets unless previously approved by the Council or Transport for NSW.
Arboricultural (Appendix I)	
A-1	• 85 trees on and adjoining the site were assessed as part of the proposed development. Of these, 32 trees are proposed to be removed to facilitate the proposed work. • 53 trees are proposed to be retained and protected. Protection measures during the construction are proposed for the existing trees which are being retained and the establishment of tree protection zones. • The Main Works SSDA proposes 26 new trees on the Ground Floor, and 135 trees (including trees and tree ferns located on structure) across the main works development).
Contamination (Appendix L)	
C-1	• A Hazardous Materials Survey (HMS) to identify any hazardous materials present within the existing building fabrics should be conducted prior to commencement of any demolition works. ◦ All identified hazardous materials on the site must be appropriately managed during the demolition and land clearance works, to maintain worker health and safety and prevent the spread of related contaminants.

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	- Asbestos removal must be conducted in accordance with an approved asbestos Management Plan (AMP). The AMP will remain in force during the initial (bulk excavation) stage of the development, since ACM is known to be present in the south and eastern section of the site (at least). - Where clearance inspection indicates hazardous materials remain on the site, further removal and re-clearance inspection, must be undertaken. - Following building/pavement demolition and removal of associated wastes, an inspection of the exposed surface should be performed by a suitably qualified environmental consultant. This inspection is to form part of the asbestos clearance reporting. - All soil materials that are designated for off-site disposal, including any virgin excavated natural material (VENM), should be managed in accordance with an appropriate waste management plan, which references the POEO (waste) Regulations 2014. The waste classification process will require representative soil sampling and analysis, in accordance with the EPA (2014) Waste Classification Guidelines, with the analytical suite to include the identified COPCs. The soil analytical results from the previous investigations can be utilised for this purpose. - Once appropriately classified, all waste materials are to be transported to EPA-licensed waste facilities by the appointed waste contractors. All tipping dockets supplied by the landfill companies are to be retained, to confirm the appropriate (lawful) disposal of wastes. - Any materials being imported to the site should be pre-validated as suitable for the intended (residential) use, in accordance with EPA guidelines. In particular, imported filling/landscaping material must be certified as meeting the VENM classification, or deemed suitable under an EPA resource recover exemption/order, <u>prior</u> to importation.
Integrated Water Management (Appendix P)	
IW-1	Provide an On-Site Detention system to limit the post developed discharge to pre-developed site conditions;
IW-2	Provide a rainwater tank to collect part of the roof runoff and to re-use on site for irrigation of landscaped areas;
IW-3	Provide a water quality treatment system capable of meeting the pollutants reduction targets as stipulated by Council; and
IW-4	Divert and upgrade (if required) the stormwater infrastructure that traverses the site around the footprint of the proposal.
Geotechnical (Appendix J)	
G-1	Prior to excavation and construction, detailed dilapidation surveys should be carried out on all structures and infrastructure surrounding the site that falls within the zone of influence of the excavation to allow assessment of the recommended vibration limits. The reports would provide a record of existing conditions prior to commencement of the work. A copy of each report should be provided to the adjoining property owner who be asked to confirm that it represents a fair assessment of existing conditions.
G-2	Care should be taken during demolition, particularly the concrete pavement, to avoid damaging neighbouring structures and infrastructures. Demolition of concrete slabs,

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	pavement and floor slabs may require breaking into small size prior to disposal offsite. Saw cut slot should be provided near adjoining buildings to reduce the risk of vibrations being transferred to nearby structures and infrastructure. If possible, the concrete slabs should be removed using hydraulic equipment rather than impact hammers.
Bushfire (Appendix U)	
B-1	At the commencement of development and in perpetuity, all grounds within the site that are not built upon from the front western boundary and for a minimum distance of 27m east of the building footprint are to be maintained as an Asset Protection Zone/ Inner Protection Area as detailed in Appendix 4 of Planning for Bushfire Protection 2019 (PBP 2019).
B-2	- New electrical services should be provided in accordance with Table 5.3c of PBP 2019 as follows: - Where practicable, electrical transmission lines are underground; - Where overhead, electrical transmission lines are proposed as follows: - Lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and - No part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines.
B-3	Any new fencing or gates within the subject site is to be made from non-combustible materials.
Heritage (Appendix S)	
H-1	If archaeological resources are identified during any stage of the project, works in the area must cease, the area adequately protected, and a suitably qualified archaeologist notified so as to carry out more detailed investigation and assessment
H-2	If the archaeological assessment determines that the remains are 'relics' in the meaning of the Heritage Act, the Department of Climate Change, Energy, the Environment and Water must be notified about the discovery of relics in accordance with Section 146 of the Heritage Act. Further approval/s may be required to allow the works to proceed.
H-3	All staff involved in the proposed works, including design professionals and tradespeople, must receive a heritage induction prior to the commencement of works. The heritage induction should cover the historical values of the site and the potential for the project to encounter significant archaeological resources
H-4	The induction should make contractors aware of the recommendations and mitigation methods included in this report, including the procedure to follow in the event that an unexpected archaeological find is encountered. Clear lines of communication must be established for the reporting of any such finds and for procedures to be rapidly implemented.
Aboriginal Heritage (Appendix R)	

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AH-1	No further Aboriginal heritage assessment is required for the works to proceed. However, if changes are made to the proposal that will result in impacts to areas not assessed by this report, additional Aboriginal heritage assessment may be required.
AH-2	An Unexpected Finds Procedure is prepared prior to the commencement of works.
AH-3	A heritage induction be prepared and presented to all site workers.
AH-4	To support the development of the Unexpected Finds Procedure and Heritage Induction, maintained consultation with Registered Aboriginal Parties is recommended.
AH-5	It is recommended that the proponent incorporate recognition of the Aboriginal cultural values of the area through heritage interpretation where possible to celebrate and explain the Aboriginal heritage significance of the area. This could include interpretive elements such as the integration of Aboriginal artworks, landscaping, design and digital interpretation. Development of this content must involve consultation with the project Registered Aboriginal Parties conducted in reference to the principles of the NSW Government Architects 2023 Connecting with Country framework.
AH-6	Any changes made to the project may warrant further investigation and result in changes to the recommended management and mitigation measures.
Biodiversity (Appendix Z)	
B-1	Owing to the nature of the development and bushfire prone nature of the property, complete avoidance of impacts to the vegetation present could not be avoided. Efforts to minimise impacts as much as possible were carried out however, with the project deliberately avoiding areas of intact bushland located in the easternmost extent of the Subject Property. This included a reduction in the originally recommended APZ area which was for the whole property to be maintained as an IPA. The vegetation to be impacted however, is highly altered and disturbed, consisting of areas of native canopy trees within a landscaped setting as well as areas of commonly planted native landscape species, and exotic vegetation. The implementation of the associated landscape plan (Land and Form Studios 2025c) will see a high number of native species planted across the property ensuring that areas of connectivity and ecological features remain across the site post works.
B-2	A CEMP may be required for the construction phase of the project and will be prepared prior to issue of the Construction Certificate. The CEMP would include, as a minimum, industry-standard measures for the management of soil, surface water, weeds and pollutants, as well as site-specific measures, including the procedures outlined below. The proposed mitigation measures would include environmental safeguards for protection of neighbouring properties and nearby waterways in accordance with relevant policy documentation and Government guidelines. In order to address the potential impacts of the proposal on biodiversity, the mitigation and management measures outlined within this table would be implemented as part of the CEMP for the site.
B-3	Australian Standard 4970 (2025) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the

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	tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the SRZ. A Minor Encroachment is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods. Tree protection measures (exclusion fencing) are to be placed around all trees proposed to be retained within the vicinity of the proposed works under the guidance of a qualified arborist, to avoid any accidental damage to retained vegetation
B-4	• Prior to construction, the applicant should commission the services of a qualified and experienced Ecologist Consultant with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to: ▪ Undertake an extensive pre-clearing survey, delineating habitat-bearing trees and shrubs to be retained/removed, as well as inspect buildings prior to demolition for the presence of microbats; and ▪ Supervise the clearance of trees and shrubs (native and exotic) in order to capture, treat and/or relocate any displaced fauna.
B-5	• Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004).
B-6	• Temporary fencing should be erected around retained native vegetation that may incur indirect impacts on biodiversity values due to the construction works.
B-7	• Allocate all storage, stockpile and laydown sites away from any native vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.
B-8	• Potential impacts relating to stormwater and runoff will be managed during construction and operation phases. The CEMP will guide stormwater management during the construction phase of development.