CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

2-8 LANCELEY PLACE & 14 CAMPBELL STREET

JULY 2024

Authorisation

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Date:	26/07/24	**Date:**	26/07/24

Document Revision History

Revision	Date	Details
0.0	17/05/24	Draft for internal peer review.
1.1	22/05/24	For issue to client.
2.0	26/07/24	Updates from community consultation

Report Name: Construction Nosie and Vibration Management Sub-Plan

Project No.: 1089.

Prepared for:

Goodman Property Services (Aust.) Pty Ltd

Prepared by:

WolfPeak Pty Ltd

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ACRONYMS AND DEFINITIONS

Abbreviation	Expanded Text
A1055	*Standards Australia AS1055–1997™ – Description and Measurement of Environmental Noise*
AADT	Annual average daily traffic
AMM	Amended Mitigation Measures
AMMM	Additional Mitigation Measures Matrix
AVTG	NSW EPA guideline Assessing Vibration: A Technical Guideline
AS2436	Standards Australia *AS 2436–2010™ – Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*
BS 7385	*British Standard BS7385: Part 2-1993 - Evaluation and Measurement for Vibration in Buildings – Part2 – Guide to Damage Levels from Ground-borne Vibration*, dated 1993
CCS	Community and Communication Strategy
CNVIS	Construction Noise and Vibration Impact Statement
CNVG	Construction Noise and Vibration Guideline (TfNSW) 2023
Construction	The demolition and removal of buildings or works, the carrying out of works for the purpose of the development, including bulk earthworks, and erection of buildings and other infrastructure permitted by the consent
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement State Significant Development Application SSD-48478458
EM	Environment Manager
EMS	Environmental Management System
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	NSW Environmental Protection Authority
Evening	The period from 6pm to 10pm
ICNG	*NSW Department of Environment and Climate Change – NSW Interim Construction Noise Guideline*, July 2009
IEC60942	*Standards Australia AS/IEC 60942:2004/IEC 60942:2003 – Australian Standard™ – Electroacoustic – Sound Calibrators*
Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm and which may or may not be, or cause, a non-compliance *Note: "material harm" is defined in this consent*

Abbreviation	Expanded Text
LA90	Background Noise Level
LAeq	Equivalent Continuous Sound Level
LAeq, 15 minute	Equivalent Continuous Sound Level, over a period of 15 minutes
LP or SPL	Sound Pressure Level
LW or SWL	Sound Power Level
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment
Minister, the	NSW Minister for Planning and Public Spaces (or delegate)
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
mm/s	Millimetres per second
m/s	Metres per second
NCA	Noise Catchment Area
NIA	Noise Impact Assessment
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NML	Noise Management Levels
NPI	*NSW Environment Protection Authority, Noise Policy for Industry. 2017*
NSW Vibration Guideline, the	*NSW Department of Environment and Conservation – NSW Environmental Noise Management – Assessing Vibration: a Technical Guideline (the NSW Vibration Guideline),* February 2006
NVMP	Construction Noise and Vibration Management Sub-Plan
NVSRs	Noise and Vibration Sensitive Receivers
OOHW	Out of Hours Works
POEO Act	*Protection of the Environment Operations Act 1997*
PPV	Peak Particle Velocity (in mm/s)
RBL	Rating Background Noise Level
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation, benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements

Abbreviation	Expanded Text
RNP	*NSW Department of Environment, Climate Change and Water – NSW Road Noise Policy*, March 2011
SR	Sensitive Receiver
SSD	State Significant Development
TfNSW	Transport for New South Wales
the Project	Lanceley Place Multi-level Warehouse
VDV	Vibration Dose Value (in m/s)

1. INTRODUCTION

1.1 Project Description

Goodman lodged a State Significant Development Application (SSDA – 48478458) with an accompanying Environmental Impact Statement (EIS) with the Department of Planning, Housing, and Infrastructure (the Department) for the redevelopment of 2-8 Lanceley Place, Artarmon (the Site) in March 2023. The Site is legally described as Lots 11-15 in DP 233037 and covers an area of 14,025 square metres in the centre of the Artarmon Industrial Precinct, Artarmon. On 21 December 2023, consent was granted for the demolition of the existing buildings and the construction of a three-storey warehouse and distribution centre on the Site, including onsite car parking and ancillary offices.

Goodman plans to deliver the works in stages, as follows:

- Stage 1: Site establishment and demolition of buildings and structures (the Project). Stage 1 is anticipated to occur in the second half of 2024, with works expected to take approximately 8-12 weeks.
- Stage 2: Main works construction. Stage 2 will be paused until determination of a second development application (SSDA – 66777221) for the construction of a data centre on the Site. Should SSDA – 66777221 be approved, then Goodman will discontinue works under SSDA – 48478458 and instead develop data centre on the Site under that consent.

1.2 Purpose and objectives of the Plan

This Construction Noise and Vibration Management Plan (NVMP) forms part of the Construction Environmental Management Plan (CEMP) for the Project. The NVMP applies to Stage 1 construction (site establishment and demolition). A separate NVMP will be developed for the construction of the data centre (once approved).

This NVMP has been prepared to manage noise and vibration impacts of the Project.

The key objective of the NVMP is to ensure all Consent conditions, the Amended Mitigation Measures (AMMs) and applicable commitments are described, scheduled and assigned responsibility as outlined in:

- *Environmental Impact Statement State Significant Development Application (SSD-48478458) Lanceley Place Multi-level Warehouse 2-8 Lanceley Place & 14 Campbell Street, Artarmon, March 2023*
- *Submissions Report Lanceley Place Multi Level Warehouse, SSD-48478458,*
- *SSD-48478458 Development Consent, 21 December 2023*, and
- All relevant legislation and other requirements described in Section 2.1 of this Plan.

In accordance with Condition B25(a), this NVMP has been prepared by WolfPeak's Derek Low and Steve Fermio, both of which are suitably qualified and experienced noise experts. Derek has >15 years' experience in construction in NSW and has prepared, implemented or provided technical review of noise and vibration management plans and monitoring programs for WestConnex New

M5 (M8), M6 Stage 1 Motorway, Inland Rail and Sydney Metro West and Western Sydney Airport, and the Botany Industrial Park. Steve has >30 years of experience in construction environmental management and has acted as a noise and vibration technical expert on Local Planning Panels for Lane Cove Council and Wollongong Council. Steve was also part of the technical review committee for the development of the Interim Construction Noise Guidelines.

1.3 Environmental Performance Objectives

Table 1 identifies the Project performance objectives:

Table 1: Performance objectives

Objective	Target	Measurement Tool
Project statutory compliance	The Project receives no Non-compliances	Non-Compliance Register
Environmental protection	No environmental incidents[1] occur throughout the Project delivery	Environmental Incident Register
Management plan conformity	The CEMP and associated sub-plans are implemented by all Project personnel, including contractors	Induction, Training, Audit and Inspection Records

[1] As defined by *SSD-48478458 Development Consent, 21 December 2023*

2. ENVIRONMENTAL REQUIREMENTS

2.1 Relevant Legislation

All legislation relevant to this NVMP is included in Appendix A of the CEMP.

2.2 Guidelines

The main guidelines, specifications and policy documents relevant to this Plan include:

- NSW DEC – Interim Construction Noise Guideline (ICNG, 2009)
- NSW DEC – Environmental Noise Management – Assessing Vibration: a Technical Guideline (the NSW Vibration Guideline), February 2006
- NSW DECCW – NSW Road Noise Policy (RNP), March 2011
- NSW DPIE – Environmental Management Plan Guideline 2020
- NSW EPA – Noise Policy for Industry (NPI), October 2017
- Transport for NSW (TfNSW) Construction Noise and Vibration Guideline (CNVG), July 2023
- Standards Australia AS 2436–2010™ (AS2436) – Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites
- Standards Australia AS1055–1997™ (AS1055) – Description and Measurement of Environmental Noise
- Standards Australia AS IEC 61672.1–2004™ (AS61672) – Electro Acoustics - Sound Level Meters Specifications Monitoring or Standards Australia AS1259.2-1990™ (AS1259) – Acoustics – Sound Level Meters – Integrating/Averaging as appropriate to the device
- Standards Australia AS/IEC 60942:2004/IEC 60942:2003 (IEC60942) – Australian Standard™ – Electroacoustic – Sound Calibrators
- DIN 4150-3 (1992-02) Structural vibration – Effects of vibration on structures (German Institute for Standardization, 1999), and
- British Standard BS7385: Part 2-1993 (BS 7385) - Evaluation and Measurement for Vibration in Buildings — Part 2 – Guide to Damage Levels from Ground-borne Vibration, dated 1993.

2.3 Ministers Conditions of Consent

The requirements of the Consent relevant to this plan are shown in Table 2 Condition requirements for this NVMP, with cross reference to indicate where requirements are addressed.

Table 2: Condition requirements for this plan

Condition No.	Requirement	Document Reference
Hours of Work		

<table>
<tr><th>Condition No.</th><th>Requirement</th><th>Document Reference</th></tr>
<tr><td>B22.</td><td>The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Planning Secretary.
Table 1 Hours of Work
<table>
<tr><th>Activity</th><th>Day</th><th>Time</th></tr>
<tr><td>Construction</td><td>Monday – Friday
Saturday</td><td>7 am to 6 pm
8 am to 1 pm</td></tr>
<tr><td>Operation</td><td>Monday – Sunday</td><td>24 hours</td></tr>
</table></td><td>Construction Hours
Section 5.1</td></tr>
<tr><td>B23.</td><td>Works outside of the hours identified in condition B22 may be undertaken in the following circumstances:
(a) works that are inaudible at the nearest sensitive receivers;
(b) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
(c) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.</td><td>Construction Hours
Section 5.1</td></tr>
<tr><td colspan="3">Construction Noise Limits</td></tr>
<tr><td>B24.</td><td>The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in the Construction Noise and Vibration Management Plan required under condition B25 and in Appendix 2 of this consent.</td><td>Mitigation and Management Measures
Sections, 2.4, 6 and 7</td></tr>
<tr><td rowspan="5">B25.</td><td>The Applicant must prepare a Construction Noise and Vibration Management Plan (CNVMP) for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:</td><td>This Plan</td></tr>
<tr><td>(a) be prepared by a suitably qualified and experienced noise expert;</td><td>Context
Section 1.2</td></tr>
<tr><td>(b) be prepared in consultation with Ausgrid and other surrounding affected owners;</td><td>Consultation
Section 2.5</td></tr>
<tr><td>(c) describe procedures for achieving the noise management levels in EPA’s Interim Construction Noise Guideline (DECC, 2009);</td><td>Mitigation and Management Measures
Section 6</td></tr>
<tr><td>(d) incorporate the mitigation measures listed within the Appendix D of the Noise Impact Assessment by SLR dated 17 August 2023;</td><td>Mitigation and Management Measures</td></tr>
</table>

Condition No.	Requirement	Document Reference
		Sections 2.4, 6 and 7
	(e) describe the measures to be implemented to manage high noise generating works, in close proximity to sensitive receivers;	Mitigation and Management Measures Sections 6 and 7
	(f) include strategies developed in consultation with adjacent properties in order to meet the vibration limits in condition B29 such as any alternative construction methods with lower source vibration levels and respite periods;	Consultation Section 2.5 Mitigation and Management Measures Sections 6 and 7
	(g) include strategies for managing high noise generating works, such as during vegetation clearing, demolition, earthworks, excavation of hard rock and piling that have been developed in consultation with the properties identified in the Noise Impact Assessment prepared by SLR dated 17 August 2023 as having exceedances during construction, including the childcare centres and surrounding commercial receivers (shown in Figure 9 of the consent);	Consultation Section 2.5 Mitigation and Management Measures Sections 6 and 7
	(h) describe the consultation undertaken with directly adjoining sites and nearby properties to develop the strategies in condition B25(f) and B25(g);	Consultation Section 2.5
	(i) describe the community consultation undertaken to develop the strategies in condition B25(g)	Consultation Section 2.5
	(j) include a complaints management system that would be implemented for the duration of the development; and	Enquiries, Complaints and Incident Management Section 7.4 Community Consultation and Complaints Handling Plan (separate document)
	(k) include a Vibration Monitoring system to be installed during demolition, excavation and construction works.	Vibration Monitoring Program Section 7.3
Vibration Criteria		
B29.	Vibration caused by construction at any residence or structure outside the site must be limited to:	Mitigation Measures Section 6

Condition No.	Requirement	Document Reference
	(a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and (b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).	
B30.	The limits in condition B29 apply unless otherwise outlined in the development's Construction Noise and Vibration Management Plan (see condition B25).	Vibration Criteria Section 4.3 Mitigation and Management Measures Sections 6 and 7
B31	The Applicant must offer and prepare (if the offer is accepted) a pre-dilapidation and post-dilapidation survey at the adjacent properties falling within the cosmetic damage buffer zone shown on Figure 8 of the consent: (a) prior to the commencement of construction; and (b) within one month of the conclusion of construction, or as otherwise agreed with the Planning Secretary.	Construction Vibration Section 5.3 Mitigation Measures Section 6
B32	Should the survey at B31(b) identify any damage, the Applicant must discuss the repairs to be undertaken with the relevant property owners, and repair or pay the full costs associated with repairing any part of the building that is determined to be damaged by the carrying out construction works associated with the development.	Construction Vibration Section 5.3 Mitigation Measures Section 6

2.4 Amended Mitigation Measures

The noise and vibration mitigation measures stated in Appendix 2 of the Development Consent are reproduced in Table 3.

Table 3: Construction noise mitigation and management measures (Condition B24)

Impact Area	Mitigation Measure	Relevant Section
Noise and Vibration	Limiting construction hours to the standard construction hours.	Sections 5.1 and 6
	Site environmental inductions with all employees, contractors and subcontractors.	Sections 6 and 7.2
	Construction respite periods during hours of work.	Sections 5.1 and 6

Impact Area	Mitigation Measure	Relevant Section
	Appropriate selection of quieter and less vibration emitting construction methods.	Section 6
	Implementation of a noise monitoring audit program.	Section 7
	Offset distance between noisy levels of plant and equipment items and sensitive receivers.	Section 6
	Locate compounds away from sensitive receivers.	Section 6
	Plan traffic movements to minimise reversing or noisy movements.	Section 6
	Loading and unloading of materials as far as possible from sensitive receivers.	Section 6
	Optimised site layout to minimise noise emissions from the site.	Section 6

2.5 Consultation on this Plan

The noise and vibration minimisation strategies in this NVMP have been developed in consultation with surrounding receivers in accordance with condition B25(b), (f) and (g) and the CCCHP.

A hard-copy letter notifying surrounding receivers of potential noise and vibration impacts, with a link to the Draft NVMP, was delivered to receivers for feedback on 03 July 2024, requesting feedback be provided by 17 July 2024. Notwithstanding this, receivers continued to have an opportunity to provide feedback (and have this considered in the NVMP's development) up until 25 July 2024.

A hard-copy letter detailing potential noise and vibration impacts, with a link to the Draft NVMP, was also delivered to Ausgrid on 03 July 2024 and follow-up consultation was undertaken via email. Ausgrid confirmed on 24 July 2024 that they had no comments on the Draft NVMP or potential impacts. Communication between Goodman and Ausgrid will remain ongoing throughout the Project.

A copy of each letter delivered to receivers is attached to this NVMP as Appendix B. Records of the outcome of that consultation and how matters raised by the receivers were addressed are presented in Appendix C.

The Project Website will contain the approved management plans and will maintain contact details for the community to deliver feedback going forward. Any feedback or complaints will be managed in accordance with the Section 7.4 of this Plan and the CCCHP.

3. EXISTING ACOUSTIC ENVIRONMENT

3.1 Sensitive Receivers

The Noise Impact Assessment (NIA) identified residential and non-residential sensitive receivers in the surrounding area to the project.

The site is situated in the Artarmon Industrial Precinct and is surrounded by commercial premises. The nearest residential receivers are located around 200-metres southwest of the site on Pacific Highway. Other nearby sensitive receivers include TAFE NSW St Leonards, Bradfield Senior College, North Shore Private Hospital, the Twin Towers Inn, and two (2) childcare centres within commercial buildings.

The nearest sensitive receivers are shown in Figure 1 and detailed in Table 4.

Table 4: Surrounding sensitive receivers

Receiver	Type	Distance (m)	Direction
Residential to the west of the Pacific Hwy	Residential	200m	Southwest
TAFE NSW St Leonards	Educational	180m	Southeast
Bradfield Senior College	Educational	170m	South
North Shore Private Hospital	Medical	200m	Southeast
Twin Towers Inn	Hotel	230m	West
Surrounding commercial premises	Commercial	10-50m	Surrounding
Papilio Early Learning Artarmon	Childcare	90m	Northwest
Explore and Develop Artarmon – Early Learning Centre	Childcare	140m	West

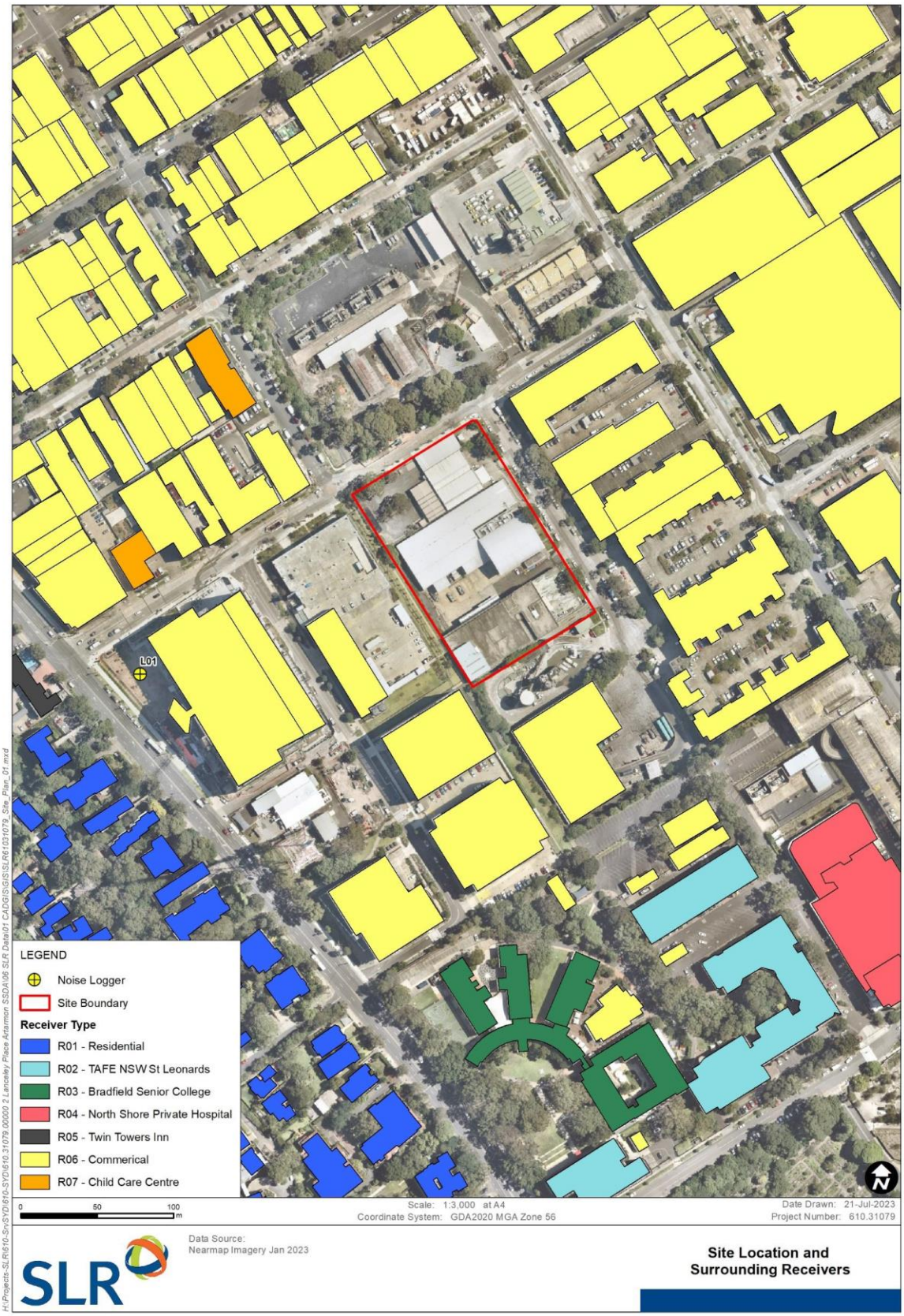

Figure 1: Site location and surrounding receivers (Source: SLR Consulting)

3.2 Background Noise Levels

Unattended noise monitoring was completed adjacent to the nearest residential receivers.[2] The noise monitoring location is shown on Figure 1 and the results are summarised in Table 5.

Table 5: Summary of unattended noise monitoring results

Address	Measured Noise Levels (dB(A))[1]		
	Background Noise (RBL)		
	Day	Evening	Night
2 Broadcast Way, Artarmon	58	55	52

Note 1 The assessment periods include the following hours:

- Day – 7 am to 6 pm Monday to Saturday and 8 am on Sundays and public holidays;
- Evening – 6 pm to 10 pm; and
- Night – 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sundays and public holidays

See the NSW EPA *Noise Policy for Industry*

[2] SLR's NIA utilised the background noise level data collected for a data centre development at 2 Broadcast Way, Artarmon (refer to Aurecon Report '*Main Works – Construction Noise and Vibration Impact Assessment and Management Plan*', reference S3-FAC-AC-REP-01-[1]-INF, dated October 2020).

4. NOISE AND VIBRATION CRITERIA

For residential and other sensitive receptors (human) and potentially sensitive structures (buildings) vibration management levels are fixed values established for either human comfort or structural/cosmetic damage. The levels vary depending on the potential sensitivity of the receptor and do not reply on existing conditions.

4.1 Airborne noise

The *Interim Construction Noise Guideline* (ICNG) sets out guidance for establishing construction noise and vibration levels for assessing and managing noise impacts on residences and other sensitive land uses. For residential receptors, the noise management levels (NMLs) are established based on existing background noise levels i.e., thresholds above which the background noise level may be exceeded. For other sensitive receptors the management levels are fixed values.

4.1.1 Residential receivers

The ICNG approach for determining NMLs at residential receivers is detailed in Table 6.

Table 6: ICNG residential noise management levels

Time of day	Management level $L_{Aeq\ (15\ min)}$*	How to apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences 2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

Time of day	Management level $L_{Aeq\ (15\ min)}$*	How to apply
Outside recommended standard hours	Noise affected RBL + 5 dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.

* Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Table 7 provides the Project specific construction NMLs for receivers nearby the development.

Table 7: Project specific noise management levels

Receiver Type	Noise Management Level ($L_{Aeq\ (15\ min)}$ – dB(A))	
	Standard Construction Hours	Out of Hours (in accordance with B22 and B23)[2]
Residential	68	Inaudible unless otherwise permitted[2]
Educational	65	
Medical	65	
Hotel	70	
Commercial	70	
Childcare	60	

Note 1 RBL = Rating Background Level.

Note 2 Works are only permitted outside of standard construction house under the following circumstances:

- works that are inaudible at the nearest sensitive receivers;
- for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
- where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

4.1.2 Non-residential receivers

Other sensitive land uses, consider noise from construction to be disruptive when the properties are being used. The NMLs for non-residential land uses is shown in Table 8. Internal noise levels are to be assessed at the centre of the occupied room. External noise levels are to be assessed at

the most affected point within 50 m of the area boundary. Where internal noise levels cannot be measured, external noise levels may be used.

Table 8: Noise levels for 'other sensitive' land uses, and commercial and industrial premises

Land Use	Noise Management Level, $L_{Aeq\ (15\ min)}$ (dB(A)) (applies when properties are being used)	
	Internal	External
ICNG 'other sensitive' receivers		
Classrooms at schools and other educational institutions	45	55[1]
Hospital wards and operating theatres	45	65[1]
Passive recreation areas (characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation)	-	60
Industrial	-	75
Non-ICNG 'other sensitive' receivers		
Hotel – daytime and evening[2]	50	70[1]
Hotel – night-time[2]	40	60[1]
Child care centres – sleeping areas[3]	40	60[1]

Note 1 It is assumed that these receivers have fixed windows which conservatively results in internal noise levels being approximately 20 dB(A) lower than the external noise level.

Note 2 Taken from AS2107: Acoustics—Recommended design sound levels and reverberation times for building interiors.

Note 3 Taken from Association of Australian Acoustical Consultants *Guidelines for Child Care Centre Acoustic Assessment*.

4.1.3 Sleep Disturbance

The ICNG requires a sleep disturbance analysis where construction works are planned to extend over more than two (2) consecutive nights (10 pm to 7am). The LA1 noise levels and number of expected LA1 noise events should be predicted in order to determine the likelihood of potential sleep disturbance. The EPA recommends that to minimise the risk of sleep disturbance during the night-time period (10 pm to 7 am), the LA1 noise level outside a bedroom window should not exceed the LA1 (1 min) background noise level by more than 15 dB(A).

Sleep disturbance research presented in the Road Noise Policy concludes that 'Maximum internal noise levels below 50-55 dB(A) are unlikely to cause awakening reactions'. Therefore, given that an open window provides approximately 10 dB in noise attenuation from outside to inside, external noise levels of 60-65 dB(A) are unlikely to result in awakening reactions.

In accordance with conditions B22 and B23, works must adhere to standard construction hours unless they are inaudible at the nearest sensitive receivers or for oversize/overmass deliveries or in the event of an emergency. Consequently, sleep disturbance is considered further within this NVMP.

4.2 Construction Traffic Noise

To assess noise impacts from construction traffic an initial screening test should be undertaken by evaluating whether existing road traffic noise levels would increase by more than 2 dB(A), in line with the Road Noise Policy (RNP). Where the predicted noise increase is 2 dB(A) or less, then no further assessment is required. However, where the predicted noise level increase is greater than 2 dB(A), and the predicted road traffic noise level exceeds the road category specific criterion, then noise mitigation should be considered for those receivers affected. The Road Noise Policy does not require assessment of noise impact to commercial or industrial receivers.

The results of the off-site traffic assessment are shown in Table 9.

Table 9: Traffic noise assessment

Location	Road	RNP Increase Criterion (dB(A))	Predicted Increase (dB(A))	
			Day	Night
Residential receivers on Pacific Highway near Campbell Street	Pacific Highway and Campbell Street	2.0	0.1	0.3

The above assessment shows that the predicted increase in traffic noise levels at the nearest residences on Pacific Highway from development related vehicles is expected to be below 2.0 dB(A). Increases of less than 2.0 dB represent a minor impact that is considered barely perceptible to the average person. The potential impacts from development related traffic on the surrounding roads are expected to be negligible and no consideration of mitigation is required.

4.3 Construction Vibration

Impacts from vibration is considered both in terms of effects on building occupants (human comfort) and the effects on the building structure (structural/cosmetic damage).

4.3.1 Human comfort

The assessment of intermittent vibration outlined in the NSW EPA guideline Assessing Vibration: A Technical Guideline (AVTG) is based on Vibration Dose Values (VDVs). The VDV accumulates the vibration energy received over the daytime and night-time periods. Maximum and preferred VDVs for intermittent vibration arising from construction activities are listed in Table 10. The VDV criteria are based on the likelihood that a person would be annoyed by the level of vibration over the entire assessment period.

Table 10: Vibration dose values for intermittent vibration

Building Type	Assessment Period	Vibration Dose Value[1] ($m/s^{1.75}$)	
		Preferred	Maximum
Critical working areas (e.g., operating theatres or laboratories)	Day or night-time	0.10	0.20
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note 1 The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.

Note 2 Should the contractor wish to alter the criteria, a detailed assessment on building and structural integrity would be required.

4.3.2 Effects on Building Contents

People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents.

Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes, are located in buildings near to construction works. No such items of equipment have been identified in the Project area.

4.3.3 Structural and Cosmetic Damage Vibration

If vibration from construction works is sufficiently high, it can cause damage to structural elements of affected buildings.

At present, no Australian Standards exist for the assessment of building damage caused by vibration. The German standard (DIN 4150) provides recommended maximum levels of vibration that reduce the likelihood of building damage caused by vibration. To achieve the requirements of the CNVG, British Standard BS 7385:1993 is also considered. Both standards provide safe limit guideline values, of these, DIN 4150 is the more stringent and adopted as the primary structural damage guideline for the NVMP, as presented in Table 11. Vibration measurements that are less than the presented management levels are considered insufficient to cause structural or cosmetic damage to buildings. To note is the German standard states that buildings exposed to higher levels of vibration than the recommended management limits would not necessarily result in damage.

Table 11: DIN 4150 Guideline values for short-term vibration on structures

Group	Type of Structure	Guideline Values Vibration Velocity (mm/s)				
		Foundation, all directions at a frequency of:			Topmost floor, horizontal	Floor slabs, vertical
		1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All frequencies	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 **and** are of great intrinsic value (e.g., heritage listed buildings)	3	3 to 8	8 to 10	8	20[1]

Note 1 It may be necessary to lower the relevant guideline value markedly to prevent minor damage

Note 2 Should the contractor wish to alter the criteria, a detailed assessment on building and structural integrity would be required.

The British Standard BS 7385 recommends vibration limits for transient vibration judged to give a minimal risk of vibration induced damage to affected buildings. The limits for residential and industrial buildings are presented in Table 12.

Table 12: BS 7385 Transient vibration values for minimal risk of damage

Group	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.

4.3.4 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in the TfNSW CNVG and are shown in Table 13. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA Vibration Guideline). They are based on empirical data which suggests that where works are further from receivers than the quoted minimum distances then impacts are not considered likely.

Table 13: Recommended minimum working distances from vibration intensive equipment

Plant Item	Rating / Description	Minimum Working Distance		
		Cosmetic Damage		Human Response (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (Typically 1-2 tonnes)	5 m	11 m	15 m to 20 m
	<100 kN (Typically 2-4 tonnes)	6 m	13 m	30 m
	<200 kN (Typically 4-6 tonnes)	12 m	25 m	40 m
	<300 kN (Typically 7-13 tonnes)	15 m	31 m	100 m
	>300 kN (Typically 13-18 tonnes)	20 m	40 m	100 m
	>300 kN (>18 tonnes)	25 m	50 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18t excavator)	7 m	15 m	23 m
Large Hydraulic Hammer	1600 kg (18 to 134t excavator)	22 m	44 m	73 m
Vibratory Pile Drive	Sheet piles	2 m to 20 m	5 m to 40 m	20 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	4 m
Jackhammer	Handheld	1 m (nominal)	3 m	2 m

Consistent with the CNVG, in relation to human comfort (response), the minimum working distances in Table 13 relate to continuous vibration. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels, occurring over shorter periods are allowed (as per *Assessing Vibration: a technical guideline (EPA 2006)).* Where the predicted vibration levels exceed the human comfort objectives, the procedures in Section 6 and 7 of this NVMP are to be followed in order to mitigate the potential impacts at sensitive receivers.

If the predicted ground-borne vibration levels exceed the cosmetic damage screening levels, a different construction method with lower-source vibration levels must be used where feasible and reasonable. In any other circumstances, construction works should not proceed unless attended vibration measurements are undertaken at the commencement of the works to verify the site-specific minimum working distances and/or confirm that damage screening criteria are not exceeded. If there is any risk of exceedance of the cosmetic damage objective, a permanent vibration monitoring system should be installed to warn plant operators (via flashing light, audible alarm, SMS, etc) when vibration levels are approaching the cosmetic damage objective so works can stop and be adjusted as required. Refer to Section 8 of this NVMP for the monitoring program and Appendix A for the Trigger Action Response Plan).

5. ASPECTS, IMPACTS AND RISKS

This section outlines relevant aspects of the construction methodology and the predicted construction noise and vibration impacts. The predicted noise and vibration impacts are discussed as relative to the surrounding community or nearby structures.

5.1 Hours of work

Construction activities for the Project will only be undertaken during the following hours:

- Monday to Friday 7 am to 6 pm
- Saturday 8 am to 1 pm
- No work on Sundays or public holidays

As per B25(b), (f) and (g), specific hours of respite may be established through consultation with affected childcare and surrounding commercial premises for activities that result in these receivers being highly disturbed.

Works outside of the standard construction hours specified above may only be undertaken in the following circumstances:

- Works that are inaudible at the nearest sensitive receivers
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
- Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

Works outside of standard hours (excluding emergency works) must be approved by Goodman prior to commencing. An application to conduct the out of hours works must include a justification. Works deemed to be inaudible must also be supported by a noise assessment detailing the potential noise impact at the nearest receivers.

5.2 Construction works

This NVMP focuses on the construction phases of the Project presented in Table 14.

Table 14: Key phases of the project and equipment required

Phase	Works Activity	Equipment Required
W.01	Vegetation clearing	Chainsaw, chipper, excavator, front end loader, dump truck, water truck
W.02	Demolition	Rock breaker (excavator with hydraulic hammer), dozer, front end loader, dump truck, water truck

The NIA provided a detailed breakdown of the key construction phases, the associated equipment, and their source noise emission. These are presented below in Table 15.

Table 15: Equipment indicative sound power levels per work package

Equipment	Total SWL	Chainsaw[1]	Chipper	Dozer	Dump Truck	Excavator (20t)	Excavator (30t) + Hydraulic Hammer	Front End Loader	Water Truck
Sound Power Level[2] (SWL)		119	120	116	110	105	127	112	107
Estimated on-time in any 15 minutes		5	15	10	10	10	5	10	10
Scenario									
W.01 Vegetation clearing	122	**X**	**X**			**X**		**X**	**X**
W.02 Demolition	123			**X**	**X**		**X**	**X**	**X**

Note 1 Equipment classed as 'annoying' in the ICNG and requires a 5 dB correction.

Note 2 Sound power level data is taken from the DEFRA Noise Database and the TfNSW Construction Noise and Vibration Guideline.

5.3 Predicted Impacts

5.3.1 Airborne Noise

The NIA includes a summary of the predicted construction noise levels generated by the activities listed in Table 15. The predicted noise levels at the most-affected sensitive receivers surrounding the Site are shown in

Table 16. Exceedances of the NMLs are shown in Table 17. The predictions represent a realistic worst-case scenario where the equipment in each scenario is working concurrently and the nearest location to each receiver. It is expected that noise levels would frequently be lower than the worst-case levels presented.

Table 16: Predicted construction noise levels – standard daytime construction hours

Receiver Location	Type	NML	Predicted Noise Level – $L_{Aeq\ (15\ min)}$ (dB(A))	
			W.01 Vegetation clearing	W.02 Demolition
Residential to the west of Pacific Hwy	Residential	68	54	55
TAFE NSW St Leonards	Educational	65	62	63
Bradfield Senior College	Educational	65	57	58
North Shore Private Hospital	Medical	65	62	63
Twin Towers Inn	Hotel	70	55	56
Surrounding commercial	Commercial	70	**79**	**80**
Childcare in commercial premises	Childcare	60	**68**	**69**

Table 17: Predicted exceedance at nearest receivers – standard daytime hours

Receiver Location	Type	NML	Predicted exceedance – $L_{Aeq\ (15\ min)}$ (dB)	
			W.01 Vegetation clearing	W.02 Demolition
Residential to the west of Pacific Hwy	Residential	68	-	-
TAFE NSW St Leonards	Educational	65	-	-
Bradfield Senior College	Educational	65	-	-
North Shore Private Hospital	Medical	65	-	-
Twin Towers Inn	Hotel	70	-	-
Surrounding commercial	Commercial	70	9	10
Childcare in commercial premises	Childcare	60	8	9

	= Minor to marginal (1 to 10 dB exceedance)		= Moderate (11 to 20 dB exceedance)		= High (>20 dB exceedance)

The above worst-case predictions indicate the following:

- Construction noise levels are predicted to comply with the NMLs at residential receivers during all assessed work scenarios. This is due to the significant distance and intervening buildings and terrain between the site and nearest residential receivers.
- Construction noise levels are predicted to comply with the NMLs at TAFE NSW St Leonards, Bradfield Senior College, North Shore Private Hospital and the Twin Towers Inn.
- Construction noise levels are predicted to result in minor to moderate exceedances of the NMLs at some of the nearest commercial and child care receivers.
- Works would only occur during Standard Daytime Construction Hours. There is no expectation that evening or night-time work would be required except as otherwise permitted by conditions B22 and B23.

The presented impacts would only be expected to occur when noisy work is being completed close to the site boundaries, relative to each receiver. When work is further from the receiver, or when less noise intensive equipment is being used, the noise levels would be lower.

Feasible and reasonable construction noise mitigation measures should be applied where exceedances of the NMLs are predicted. Construction noise mitigation and management measures are discussed in Sections 6 and 7.

5.3.2 Construction Vibration

The major potential sources of vibration from the proposed construction activities would likely be during the demolition of buildings.

Vibration offset distances have been determined from the CNVG minimum working distances for cosmetic damage and human comfort (see Table 13) and the assessment is summarised in Figure 2 for the potential worse-case scenario, which is during the use of a large hydraulic hammer (which may be used during demolition). Buildings within the minimum working distances are shown in the Figure 2.

Figure 2: Construction vibration – large hydraulic hammer scenario

Cosmetic Damage Assessment

Figure 2 shows that commercial building to the south and several structures to the south and west are likely to be within the minimum working distance when large hydraulic hammers are in use at the southern and western boundaries of the construction site. Several commercial buildings and structures on the eastern side are also in close proximity to the minimum working distance buffer.

As per conditions B30 and B31, pre-construction and post-construction condition surveys must be offered and prepared (if the offer is accepted) at the adjacent properties falling within the cosmetic damage buffer zone (a) prior to the commencement of construction; and (b) within one month of the conclusion of construction, or as otherwise agreed with the Department. Should the survey at B31(b) identify any damage, the Project team must discuss the repairs to be undertaken with the relevant property owners, and repair or pay the full costs associated with repairing any part of the building that is determined to be damaged by the carrying out construction works associated with the Project.

As per Section 6 of this NVMP, alternative construction methods will be adopted to reduce the impact on these receivers to levels below the adopted criteria. This may be through the use of pulverisers instead of hydraulic hammers or through the use of smaller hammer (or both).

All residential, hotel, educational and medical buildings are sufficiently distant from the site to be outside the minimum working distance and cosmetic damage impacts at these receivers are unlikely.

Human Comfort Vibration Assessment

Figure 2 indicates that the nearest commercial and childcare receivers surrounding the site are within the human comfort minimum working distance and occupants of these buildings may be able to perceive vibration impacts at times when large hydraulic hammers are in use nearby. Where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is in use.

All residential, hotel, educational and medical buildings are sufficiently distant from the site to be outside the minimum working distance.

Feasible and reasonable construction vibration mitigation measures should be applied where vibration intensive works are required within the minimum working distances. Construction mitigation and management measures are discussed further in Sections 6 and 7.

6. MITIGATION AND MANAGEMENT MEASURES

This NVMP has been developed to include all reasonable and feasible safeguards to manage construction related noise and vibration impacts and any complaints which may occur due to construction noise and/ or vibration. This section describes the overall strategies for managing and mitigating predicted noise and vibration impacts identified in the EIS. The Project's mitigation measures have been developed in consultation with neighbouring properties predicted to be impacted.

6.1 Standard Mitigation Measures

The mitigation and management measures discussed in this section are based on the environmental requirements and control measures identified in the conditions, the AMMs, the EIS, and guidelines relevant to the works described. Table 18 contains the specific control measures to be implemented during construction to manage noise and vibration impacts, including to mitigate high noise generating works.

Table 18: Environmental Control Measures

ID	Measure/Requirement	When to implement	Responsibility	Reference	Evidence
NV1	Implement community consultation or notification measures in accordance with the CEMP and Community Consultation and Complaints Handling Plan.	Pre-demolition	Goodman	ICNG, CNVG	Website Contact telephone number for community groups Email distribution list Letter-box drop
NV2	Construction works would be carried out during standard construction hours unless otherwise permitted by condition B23.	During construction	Contractor	Conditions B22, B23, AMM	Site inspection records Consultation records
NV3	Works outside of the standard construction hours specified above may only be undertaken in the following circumstances: • Works that are inaudible at the nearest sensitive receivers; • For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or • Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm. Works outside of standard hours (excluding emergency works) must be approved by Goodman prior to commencing. An application to conduct the out of hours works must include a justification. Works deemed to be inaudible must also be supported by a noise assessment detailing the potential noise impact at the nearest receivers.	During construction	Contractor	Conditions B22, B23, AMM	Site inspection records Consultation records
NV4	Training will be provided to relevant Project personnel, including relevant sub-contractors, on noise and vibration requirements from this NVMP and the Minister's conditions through inductions, toolboxes or targeted training.	During construction	Contractor	Condition A22, AMM, ICNG, CNVG	Training records Toolboxes Pre-starts

ID	Measure/Requirement	When to implement	Responsibility	Reference	Evidence
NV5	All construction plant and equipment used on the site will be operated in a proper and efficient manner.	During construction	Contractor	Condition A24	Plant onboarding and maintenance records
NV6	All construction plant and equipment used on site will be fitted with properly maintained noise suppression devices in accordance with the manufacturer's specifications.	During construction	Contractor	Condition B25, AMM, ICNG, CNVG	Plant onboarding and maintenance records
NV7	Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work. The use of ambient sensitive alarms that adjust output relative to the ambient noise level should be considered	Demolition	Contractor	Condition B25, AMM, ICNG, CNVG	Plant onboarding and maintenance records
NV8	Use alternative construction methodologies where cosmetic damage criteria cannot be achieved. This may include, but not be limited to the use of pulverisers instead of hydraulic hammers or through the use of smaller hammer (or both).	During construction	Contractor	Conditions B25, B29, B30, AMM, ICNG, CNVG	Construction program Site inspection records Monitoring records
NV9	The offset distance between noisy plant and adjacent sensitive receivers is to be maximised. Noise-emitting plant and compounds to be located away from sensitive receivers	During construction	Contractor	Condition B25, AMM, ICNG, CNVG	Site layout
NV10	Noise and vibration monitoring is to be undertaken in accordance with this NVMP.	During construction	Contractor	Condition B25(k), AMM, CNVG	Monitoring records
NV11	Prior to arriving on site, drivers will be advised of designated vehicle routes, parking locations, acceptable delivery hours for the site and other relevant practices (i.e. minimising the use of engine brakes and no extended periods of engine idling).	During construction	Contractor	Condition B7, AMM, CNVG	Induction records Traffic Management Plan Contract notices

ID	Measure/Requirement	When to implement	Responsibility	Reference	Evidence
NV12	All site personnel must adhere to respectable behavioural practices, including no swearing or unnecessary shouting or loud stereos/radios on site and no dropping of materials from height, throwing of metal items and slamming of doors	During construction	Contractor	CNVG	Training records Toolboxes Pre-starts
NV13	Plant used intermittently to be throttled down or shut down.	Demolition	Contractor	Condition B25, AMM, ICNG, CNVG	Toolboxes Pre-starts
NV14	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.	Pre-demolition	Contractor	Condition B25, AMM, ICNG, CNVG	Traffic/ vehicle management plan
NV15	Pre-construction and post-construction condition surveys must be offered and prepared (if the offer is accepted) at the adjacent properties falling within the cosmetic damage buffer zone (a) prior to the commencement of construction; and (b) within one month of the conclusion of construction, or as otherwise agreed with the Department. Should the survey at B31(b) identify any damage, the Project team must discuss the repairs to be undertaken with the relevant property owners, and repair or pay the full costs associated with repairing any part of the building that is determined to be damaged by the carrying out construction works associated with the Project.	Demolition	Goodman	Conditions B30, B31	Pre-construction dilapidation report
NV16	Work generating high noise and/or vibration levels would be scheduled during less sensitive time periods.	During construction	Contractor	Condition B25(b), (e), (f) and (g), AMM, ICNG, CNVG	Site inspection records Consultation records
NV17	Use quieter and less vibration emitting construction methods where feasible and reasonable.	During construction	Contractor	Condition B25, AMM, ICNG, CNVG	Construction program Site inspection records Monitoring records

ID	Measure/Requirement	When to implement	Responsibility	Reference	Evidence
NV18	Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers. Select site access points and roads as far as possible away from sensitive receivers. Dedicated loading/unloading areas to be shielded if close to sensitive receivers.	Demolition	Contractor	Condition B25, AMM, ICNG, CNVG	Site layout
NV19	Only have necessary equipment on site.	Demolition	Contractor	Condition B25, AMM, ICNG, CNVG	Plant/equipment register

6.2 Additional Mitigation Measures

If, following implementation of the standard mitigation measures in Section 6.1, receivers are still subject to high noise and / or vibration impacts, the additional mitigation measures in Table 19 would be applied.

Table 19: Additional mitigation measures

Measure	Description	Abbreviation
Periodic Notification	A high noise works notification is produced and distributed to stakeholders via letterbox drop and distributed to the project email mailing lists. Advanced warning of potential disruptions can assist in reducing the impact on stakeholders.	PN
Verification Modification	Verification monitoring of noise and/or vibration during construction may be conducted at the affected receivers or a nominated representative location. Monitoring can be in the form of either unattended logging (i.e. for vibration with an immediate feedback mechanism such as SMS capabilities) or operator attended surveys (i.e. for specific periods of construction noise). The purpose of the monitoring is to confirm that: • construction noise and vibration from the project are consistent with the predictions in the noise assessment • mitigation and management of construction noise and vibration is appropriate for receivers affected by the works Where noise monitoring finds that the actual noise levels exceed those predicted in the noise assessment then immediate refinement of mitigation measures may be required.	V
Specific Notification	Specific notification in the form of a personalised letter or phone call to identified stakeholders no later than seven calendar days ahead of construction activities that are likely to exceed the noise objectives. Alternatively (or in addition to), communications representatives from the contractor would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities and provide an individual briefing. • Letters may be letterbox dropped or hand distributed • Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and their specific needs • Individual briefings are used to inform stakeholders about the impacts of noisy activities and mitigation measures that will be implemented. Individual briefing provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project. Specific notifications are used to support periodic notifications, or to advertise unscheduled works and must be approved by Goodman prior to implementation/distribution.	SN
Alternative construction methodology	Where the safe working distances for cosmetic/structural damage cannot be achieved, the Contractor will need to consider alternative construction options that achieve compliance with the management levels for damage.	AC

Measure	Description	Abbreviation
Respite Offers	Respite offers should be considered where there are high-noise and vibration-generating activities near receivers. As a guide, work should be carried out in continuous blocks that do not exceed three hours each with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of, and amenity at, nearby receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact.	RO

6.2.1 Airborne noise

Based on the predicted exceedance noise levels at the nearest receivers in Table 17, additional mitigation measures as per the requirements shown in Table 20 have been determined for works during the proposed construction hours.

Table 20: Additional mitigation measures matrix – construction noise

Time Period	dB(A) above RBL	dB(A) above NML	Additional Mitigation Measures Type[1]
Standard Hours: Mon – Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Holiday (Nil)			
Noticeable	5 to 10	0	-
Clearly Audible	> 10 to 20	< 10	-
Moderately Intrusive	> 20 to 30	> 10 to 20	PN, V
Highly Intrusive	> 30	> 20	PN, V
75dB(A) or greater[2]	-	-	PN, V, SN

Note 1 PN = Project notification, SN = Specific notification, individual briefings, or phone call, V = Verification monitoring

Note 2 Applicable to residential receivers only.

What this means in practice is:

- The Periodic Notification (PN) and Verification (V) mitigation measure should be applied to all receivers that have noise impacts greater than 10 dB(A) above the NML during the daytime.
- The Specific Notification (SN) mitigation measure applies to residential receivers with a predicted level greater than or equal to 75 dB(A).

For the commercial and industrial receivers near the site, the NSW Environment Protection Authority's (EPA's) Interim Construction Noise Guideline (ICNG) notes that:

The proponent should assess construction noise levels for the project and consult with occupants of commercial and industrial premises prior to lodging an application where required.

During construction, the proponent should regularly update the occupants of the commercial and industrial premises regarding noise levels and hours of work.

Additionally, the TfNSW CNVG notes regarding commercial and industrial premises that:

Community consultation will be required during the assessment and planning phase of a project (prior to construction) to confirm the location of other sensitive receivers including collecting information on specialised requirements for each receiver (for example education or community facilities that provide Autism-specific services or identifying to location of vibration sensitive equipment in medical facilities). This may be achieved by completing a door-knock exercise or completing specific notifications prior to construction.

The following consultation procedure is therefore recommended for the commercial receivers where noise levels are predicted to exceed 75 dB(A) and 80 dB(A) respectively (as shown in Table 17), or where vibration intensive activities will occur within the minimum working distances provided in Table 13.

- For commercial receivers, specific notifications in the form of a personalised letter should be provided to these receivers at least seven days prior to the commencement of works. In addition to providing the likely noise/vibration impacts and proposed hours (including respite periods), the letter should provide an opportunity to comment on the project as well as a point of contact for complaints.
- The construction contractor should continue to provide notifications to the above receivers in the form of a letterbox drop at monthly intervals, and when new activities are likely to commence. The letterbox drop should indicate the likely noise/vibration impacts and proposed hours (including respite periods) for the upcoming works.

6.2.2 Vibration

The minimum working distances of vibration intensive works from off-site receivers are shown in Section 4.3.4, which is based on recommendations of the TfNSW CNVG. These minimum working distances will be adopted during the Project works. These safe working distances are defined for both cosmetic damage (BS 7385) and human comfort (the NSW Vibration Guideline). Where vibration generating works are required within these distances, additional mitigation measures outline in Table 21 will be implemented for the works.

Table 21: Additional mitigation measures matrix – construction vibration

Construction Hours	Receiver Perception	Reference vibration management level (VML)	Additional management measures
Standard hours Mon – Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Holiday (Nil)	Human disturbance	Table 10	PN, V, RO
	Building damage	Table 11 Table 12	V, AC

6.2.3 Exceedance of Management Levels

Where construction activities are found exceeding management levels, particularly in the case of high noise generating works, the following actions will be undertaken:

- Alternate work methodologies and plant will be investigated and considered to lower noise and vibration levels of construction works at the relevant sensitive receivers.
- Excessively noisy or vibration generating activities will cease or be reduced. Remedial measures would be implemented prior to recommencing works, and monitoring undertaken to verify noise or vibration levels if necessary.
- Plant and machinery condition will be checked and verified for noise levels as required.
- In the event of high vibration levels in relation to cosmetic damage, measures would be put in place to reduce vibration to within acceptable levels. Such measures may include reducing equipment size, changing operational settings, using other plant in lieu of that which is generating the vibration.

Impacts measured or observed to be above that predicted will be managed in accordance with the Trigger Action Response Plan in Appendix A.

All stakeholder communications and investigations processes are detailed in the Community Consultation and Complaints Handling Plan.

7. COMPLIANCE MANAGEMENT

7.1 Roles and Responsibilities

The Goodman Project Team's organisational structure and overall roles and responsibilities are outlined in the CEMP. Specific responsibilities for the implementation of this NVMP are presented in Table 24.

Table 24: Key responsibilities

Role	Responsibilities
Contractor Project Manager	• Ensuring appropriate resources are available for the implementation of this NVMP • Assessing data from inspections and providing project-wide advice to ensure a consistent approach and outcomes are achieved • Providing necessary training for project personnel to cover noise and vibration management • Reviewing and update of this NVMP, where necessary • Commissioning suitably qualified consultants to complete noise and vibration monitoring. Ensuring environmental coordinators appropriately undertake attended noise and vibration measurements required by this NVMP • Assessing and (as required) mitigating risks of high noise and vibration levels before commencing works and ensuring that the appropriate controls are implemented • Ceasing works in the event of excessive noise and vibration generation • In the event that a noise or vibration complaint is received, implementing the procedure outlined in Section 7.4.
Environmental Site Representative	• Coordinating noise and/or vibration monitoring program, where required • Review control measures in accordance with the NVMP • Identifying and reporting any high or non-compliant noise and vibration emissions
Site Personnel	• Observing any noise and vibration emission control instructions and procedures that apply to their work • Taking action to prevent or minimise noise and vibration emission incidents • Identifying and reporting noise and vibration emission incidents.

7.2 Training

All project personnel, contractors and sub-contractors working on site will undergo training relating to Project specific construction noise and vibration issues. The training will include:

- Existence of this NVMP within the CEMP
- Requirement A22 for compliance with the conditions of the SSD Consent as relates to their work
- Standard construction hours

- Noise and vibration sensitive receivers
- Project specific likely noise and vibration impacts and mitigation measures
- Roles and responsibilities
- Corrective actions, management and reporting, and

Further details regarding staff induction and training are outlined in the CEMP.

7.3 Monitoring and Inspections

7.3.1 Noise Monitoring Program

Attended noise measurements will be undertaken at the start of noise intensive works that occur are near sensitive receivers to verify the levels are as predicted and to check the effectiveness of mitigation and management measures.

Attended noise monitoring will also be undertaken in response to multiple complaints for the same activity. All monitoring will be completed by suitably qualified acoustic specialists. The location and extent of attended monitoring will be determined in consultation with project staff and would be dependent on the activities taking place.

The monitoring will take place during the expected noisiest construction periods and be representative/indicative of the impacts at the potentially affected sensitive receivers.

A noise monitoring report will be prepared after each attended monitoring survey.

All items of acoustic instrumentation utilised will be designed to comply with AS/NZS *IEC 61672.1-2004 Electroacoustics – Sound level meters* (AS IEC 61672) and carry current calibration certificates.

7.3.2 Vibration Monitoring Program

Structural Damage Monitoring

Where vibration intensive works (such as large hydraulic hammers) are required within the minimum working distances of sensitive receivers or structures vibration will be monitored continuously for the duration of works within the minimum working distances. Vibration monitoring should be undertaken by an Acoustical Consultant to ensure acceptable levels of vibration are satisfied.

Attended vibration measurements will be undertaken at the start of vibration intensive works within the minimum working distances to confirm the levels of vibration are below the applicable vibration limits (refer to Section 6.2.2).

The identification of a suitable vibration monitoring location will consider the following:

- vibration monitoring equipment shall be placed outside at the footings or foundations of the building of interest closest to the vibrating plant;
- the surface should be solid and rigid to best represent the vibration entering the structure of the building under investigation;

- the vibration sensor or transducer shall not be mounted on loose tiles, loose gravel or other resilient surfaces;
- the vibration sensor or transducer shall be directly mounted to the vibrating surface using either adhesive, double sided tape or a magnetic mounting plate onto a steel washer, plate or bracket which shall be either fastened or glued to the surface of interest; and
- where a suitable mounting surface is unavailable, then a metal ground spike shall be driven into solid ground adjacent to the building of interest, and the vibration sensor or transducer shall be mounted on that.

The vibration monitoring system will be configured to record the peak vibration levels and to trigger an alert (message or audible/visual alarm) when predetermined vibration thresholds are exceeded. The thresholds correspond to an “Operator Warning Level” and an “Operator Halt Level”, where the Warning Level is 75% of the Halt Level.

Exceedance of the “Operator Warning Level” does not require construction activity to cease but rather alerts the construction contractor to proceed with caution at reduced force or load.

An exceedance of the “Operator Halt Level” requires construction activity to cease and the construction contractor to undertake a detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure to determine the applicable safe vibration level. Where the applicable safe vibration level is exceeded, the construction contractor would be required to implement an alternative construction technique.

Actions to be carried out if the exceedance alarms are triggered are detailed in Appendix A.

The vibration monitoring data will be downloaded and reported on a weekly basis whilst vibration intensive works are occurring within the applicable safe working distances.

Attended vibration monitoring will, if required, be conducted by an Acoustical Consultant. Attended vibration monitoring will also be carried out in response to complaints or to structural damage criterion exceedances. This monitoring will provide direct feedback to the operators in order to allow appropriate modification of construction techniques.

All items of vibration instrumentation will be designed to comply with applicable guidelines and carry current calibration certificates.

Human Comfort Monitoring

Attended vibration monitoring will be conducted by an Acoustic Consultant. Attended vibration monitoring will be carried out in response to multiple complaints regarding the same activity. This monitoring will provide direct feedback to the operators in order to allow appropriate modification of construction techniques where required.

Vibration would be measured using an accelerometer located on the floor within the most affected/sensitive room of the affected premises. The accelerometer would be mounted in accordance with the requirements of AS 2775-2004: Mechanical mounting of accelerometers.

7.3.3 Inspections

Inspections would be undertaken to verify the implementation of noise and vibration mitigation measures from this NVMP. Inspections would be conducted weekly in accordance with CEMP.

7.4 Enquiries, Complaints and Incident Management

Enquiries, complaints and incident management will be undertaken as per the Community Consultation and Complaints Handling Plan, including all feedback relating to noise and vibration.

A monthly Complaints Register will be maintained to record any community feedback regarding noise and vibration impacts, including information on location of complainant, time/s of occurrence of alleged noise or vibration impacts (including nature of impact particularly with respect to vibration), perceived source, prevailing weather conditions and similar details that could be utilised to assist in the investigation of the complaint.

All resident complaints will be responded to in the timeframe objectives identified in the Community Consultation and Complaints Handling Plan. Complaints are able to be made via phone and email and contact details will be included on site signage and on the project website. Where required, noise/vibration monitoring will be undertaken as per Section 7.3.

Incidents will be managed in accordance with the Trigger Action Response Plan in Appendix A and the corrective actions set out in the CEMP.

7.5 Auditing

Audits will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, Condition, AMMs and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in the CEMP.

7.6 Reporting

Monitoring reports would be prepared and include the following details, at a minimum:

- Noise/vibration monitoring/measurement locations
- Date, time and length of noise monitoring/measurements
- Weather conditions during the measurements
- Name and position of personnel undertaking measurements
- Serial number of monitoring/measurement equipment
- Construction activities being undertaken during measurements
- Locations of construction equipment and distance from monitoring location
- Tabulation of the measured L_{Aeq} and L_{Amax} noise levels during construction works (for each activity) along with a comparison to the predicted noise levels and notes identifying the noise levels from individual construction sources should be included (noise monitoring only)
- Measured LA90 background noise level in absence of the construction works along with notes on the noise sources driving the levels (noise monitoring only)
- Tabulation of the measured vibration levels during construction works (for each activity) along with a comparison to the relevant vibration criteria together with notes identifying the principal vibration sources (vibration monitoring only)

- Measured background vibration level in absence of the construction works (vibration monitoring only)
- Summary of measurements exceeding the criteria levels and descriptions of the plant or operations causing these exceedances (if available) (noise and vibration monitoring)
- Operator observations noting any extraneous noise/vibration sources or other points of relevance.

8. REVIEW AND IMPROVEMENT

8.1 Continuous Improvement

Continuous improvement of this NVMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. Details on continuous improvement commitments are in the CEMP.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non- conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement identified through the following:
    - As a result of any investigations into any exceedances or non-conformances that determine changes to this NVMP are required to prevent reoccurrences
    - To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, or changes in law, and
    - In response to internal or external audits or annual management reviews.
- Where requested or required by the Department or any other Authority
- Make comparisons with objectives and targets, and
- Meet the requirements of the Consent.

8.2 Update and Amendment

The processes described in the CEMP may result in the need to update or revise this NVMP, and any revisions to the NVMP will be in accordance with the CEMP.

APPENDIX A: TRIGGER ACTION RESPONSE PLAN

The following Trigger Action Response Plan (TARP) shall be used to manage noise and vibration impacts that are higher than expected.

In the event of an incident, response will be carried out as detailed below. All Condition Amber and Condition Red occurrences will be recorded in the Construction Contractor's Monthly Report to the Principal and discussed during the toolbox talks.

The following events constitute an incident in terms of noise and vibration:

- Trigger of Condition Red for noise impacts during the standard daytime construction hours
- Any works occurring outside the standard daytime construction hours, where those works have not been agreed in writing by the relevant regulatory authority
- Trigger of Condition Red for vibration impacts at sensitive receivers.

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
Noise impacts at sensitive receiver location	Trigger	Noise levels do not exceed applicable NMLs	Noise levels exceed applicable NMLs	Noise levels exceed Highly Noise Affected criteria (75 dB(A))
	Response	On-going best practice management measures to minimise noise emissions	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts (aiming to achieve NMLs)	Works exceeding the Highly Noise Affected criteria will be managed in accordance with the strategies for high-noise generating works determined through community consultation, as detailed in Section 6.1 and Section 0.
Vibration impacts at sensitive receiver locations	Trigger	Vibration intensive works undertaken outside minimum working distance for the specific equipment in use	Vibration intensive works undertaken within minimum working distance for the specific equipment in use	Vibration levels exceed applicable cosmetic damage vibration limits
	Response	On-going best practice management measures to minimise vibration emissions	Undertake vibration monitoring for the duration of the works to confirm vibration levels.	Stop work. Undertake all feasible and reasonable mitigation and management measures to ensure vibration levels are below applicable limits. If vibration levels cannot be kept below applicable cosmetic damage limits, then a different

Key Element	Trigger/ Response	Condition Green	Condition Amber	Condition Red
				construction method or equipment must be utilised.

APPENDIX B: COMMUNITY NOTIFICATION LETTERS

03 July 2024

Dear Business Owner,

WORKS NOTIFICATION
2-8 Lanceley Place & 14 Campbell Street, Artarmon

As you may be aware from the newsletters provided by Urbis dated December 2022 and March 2024, Goodman Property Services (Aust) Pty Ltd has received approval for the demolition of existing buildings at 2-8 Lanceley Place and 14 Campbell Street, Artarmon. The site location is presented in Figure 1. This work represents the first stage of the approved State Significant Development of the site (SSD-48478458) and will be undertaken whilst the new application for a Data Centre (SSD-66777221) is assessed by the NSW Department of Planning, Housing and Infrastructure.

What are the activities involved?
The works will involve vegetation clearing, demolition of existing structures on the lots, establishment of site construction offices and environmental controls.

When will the works take place?
The demolition stage is scheduled to commence early September 2024 and is planned for completion by December 2024, weather permitting, during which time you may experience minor disturbances.

The works will be carried out Monday to Friday between the hours of 7am and 6pm, and on Saturdays between 8am to 1pm. There is no expectation that evening or night-time work would be required.

How will this affect me and my business?
Noise and vibration modelling has been undertaken to determine impacts on surrounding receivers under a 'worst-case' scenario. The commercial premises immediately surrounding the site are predicted to experience minor to marginal noise increases above current background levels and minor vibration under this scenario. This may be disruptive at times.

What mitigation measures will be implemented?
To minimise inconvenience during the demolition period, the following mitigation measures are proposed:

- *Pre- and post- dilapidation surveys on properties located within the cosmetic damage zone*
- *High noise and vibration works will be scheduled during less sensitive time periods*
- *Employing quieter and less vibration emitting construction equipment*
- *Non-tonal reversing beepers are fitted on all construction vehicles*
- *Stationary noise sources will be enclosed or shielded where feasible*
- *Verification monitoring of noise and vibration in the form of unattended and attended logging*

Where can I find more information?
The draft Demolition Noise and Vibration Management Plan, prepared to satisfy condition B24 of the SSD conditions of consent, is available on Goodman's dedicated Project Website for the purposes of consultation with affected receivers: https://au.goodman.com/property-lease-site/2-8-lanceley-place .

Goodman will also publish project information, updates, and management plans on the project website when they become available.

The NSW Major Projects website contains information relating to the development approval and Environmental Impact Statement: https://www.planningportal.nsw.gov.au/major-projects/projects/lanceley-place-multi-level-warehouse-artarmon.

How do I provide feedback?
Should you wish to comment on the draft Demolition Noise and Vibration Sub-Plan, please email igay@wolfpeak.com.au by the 17th of July 2024.

Figure 1: Development Site Location

03 July 2024

Dear North Shore Private Hospital,

WORKS NOTIFICATION
2-8 Lanceley Place & 14 Campbell Street, Artarmon

Goodman Property Services (Aust) Pty Ltd has received approval for the demolition of existing buildings at 2-8 Lanceley Place and 14 Campbell Street, Artarmon. The site location is presented in Figure 1. This work represents the first stage of the approved State Significant Development of the site (SSD-48478458) and will be undertaken whilst the new application for a Data Centre (SSD-66777221) is assessed by the NSW Department of Planning, Housing and Infrastructure.

What are the activities involved?
The works will involve vegetation clearing, demolition of existing structures on the lots, establishment of site construction offices and environmental controls.

When will the works take place?
The demolition stage is scheduled to commence early September 2024 and is planned for completion by December 2024, weather permitting, during which time you may experience minor disturbances.

The works will be carried out Monday to Friday between the hours of 7am and 6pm, and on Saturdays between 8am to 1pm. There is no expectation that evening or night-time work would be required.

How will this affect me and my business?
Noise modelling has been undertaken to determine impacts on surrounding receivers under a 'worst-case' scenario. North Shore Private Hospital is not predicted to experience any noise above current background noise levels under this scenario. The draft Demolition Noise and Vibration Management Plan, prepared to satisfy condition B24 of the SSD conditions of consent, is available on the Goodman Project Website for further information: https://au.goodman.com/property-lease-site/2-8-lanceley-place

What mitigation measures will be implemented?
To minimise the potential for noise impacts during the demolition period, the following mitigation measures are proposed:

- *High noise works will be scheduled during less sensitive time periods*
- *Employing quieter construction equipment*
- *Non-tonal reversing beepers are fitted on all construction vehicles*
- *Stationary noise sources will be enclosed or shielded where feasible*
- *Verification monitoring of noise in the form of unattended and attended logging*

Where can I find more information?
Goodman will publish project information, updates, and management plans on the dedicated project website: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

The NSW Major Projects website contains information relating to the development approval and Environmental Impact Statement: https://www.planningportal.nsw.gov.au/major-projects/projects/lanceley-place-multi-level-warehouse-artarmon.

How do I provide feedback?
Should you wish to comment on the attached Demolition Noise and Vibration Sub-Plan, please email igay@wolfpeak.com.au by the 17th of July 2024.

Figure 1: Development Site Location

03 July 2024

Dear Business Owner,

WORKS NOTIFICATION
2-8 Lanceley Place & 14 Campbell Street, Artarmon

As you may be aware from the newsletters provided by Urbis dated December 2022 and March 2024, Goodman Property Services (Aust) Pty Ltd has received approval for the demolition of existing buildings at 2-8 Lanceley Place and 14 Campbell Street, Artarmon. The site location is presented in Figure 1. This work represents the first stage of the approved State Significant Development of the site (SSD-48478458) and will be undertaken whilst the new application for a Data Centre (SSD-66777221) is assessed by the NSW Department of Planning, Housing and Infrastructure.

What are the activities involved?
The works will involve vegetation clearing, demolition of existing structures on the lots, establishment of site construction offices and environmental controls.

When will the works take place?
The demolition stage is scheduled to commence early September 2024 and is planned for completion by December 2024, weather permitting.

The works will be carried out Monday to Friday between the hours of 7am and 6pm, and on Saturdays between 8am to 1pm. There is no expectation that evening or night-time work would be required.

How will this affect me and my business?
Noise modelling has been undertaken to determine impacts on surrounding receivers under a 'worst-case' scenario. Businesses over 150m from the site are not predicted to experience any noise above current background noise levels under this scenario. The draft Demolition Noise and Vibration Management Plan, prepared to satisfy condition B24 of the SSD conditions of consent, can be accessed on the Goodman Project Website for more information: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

What mitigation measures will be implemented?
To minimise the potential for noise impacts during the demolition period, the following mitigation measures are proposed:

- *High noise works will be scheduled during less sensitive time periods*
- *Employing quieter construction equipment*
- *Non-tonal reversing beepers are fitted on all construction vehicles*
- *Stationary noise sources will be enclosed or shielded where feasible*
- *Verification monitoring of noise in the form of unattended and attended logging*

Where can I find more information?
Goodman will publish project information, updates, and management plans on the dedicated project website: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

The NSW Major Projects website contains information relating to the development approval and Environmental Impact Statement: https://www.planningportal.nsw.gov.au/major-projects/projects/lanceley-place-multi-level-warehouse-artarmon.

How do I provide feedback?
Should you wish to comment on the attached Demolition Noise and Vibration Sub-Plan, please email igay@wolfpeak.com.au by the 17th of July 2024.

Figure 1: Development Site Location

03 July 2024

Dear AusGrid,

WORKS NOTIFICATION
2-8 Lanceley Place & 14 Campbell Street, Artarmon

As you may be aware from previous consultation, Goodman Property Services (Aust) Pty Ltd has received approval for the demolition of existing buildings at 2-8 Lanceley Place and 14 Campbell Street, Artarmon. The site location is presented in Figure 1. This work represents the first stage of the approved State Significant Development of the site (SSD-48478458) and will be undertaken whilst the new application for a Data Centre (SSD-66777221) is assessed by the NSW Department of Planning, Housing and Infrastructure.

What are the activities involved?
The works will involve vegetation clearing, demolition of existing structures on the lots, establishment of site construction offices and environmental controls.

When will the works take place?
The demolition stage is scheduled to commence early September 2024 and is planned for completion by December 2024, weather permitting, during which time you may experience disturbances.

The works will be carried out Monday to Friday between the hours of 7am and 6pm, and on Saturdays between 8am to 1pm. There is no expectation that evening or night-time work would be required.

How will this affect me and my business?
Noise and vibration modelling has been undertaken to determine impacts on surrounding receivers under a 'worst-case' scenario. The AusGrid substation at 2/6 Campbell Street falls within the minimum working distance buffer for vibration cosmetic damage and human comfort and is therefore predicted to experience minor to marginal noise increases from current background levels and some vibration impacts under this scenario. This may be disruptive at times.
The draft Demolition Noise and Vibration Management Plan, prepared to satisfy condition B24 of the SSD conditions of consent, can be accessed from the Goodman Project Website for more information: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

What mitigation measures will be implemented?
To minimise inconvenience during the demolition period, the following mitigation measures are proposed:

- *Pre- and post- dilapidation surveys on properties located within the cosmetic damage zone*
- *High noise and vibration works will be scheduled during less sensitive time periods*
- *Employing quieter and less vibration emitting construction equipment*
- *Non-tonal reversing beepers are fitted on all construction vehicles*
- *Stationary noise sources will be enclosed or shielded where feasible*
- *Verification monitoring of noise and vibration in the form of unattended and attended logging*

Where can I find more information?
Goodman will publish project information, updates, and management plans on the dedicated project website: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

The NSW Major Projects website contains information relating to the development approval and Environmental Impact Statement: https://www.planningportal.nsw.gov.au/major-projects/projects/lanceley-place-multi-level-warehouse-artarmon.

How do I provide feedback?
Should you wish to comment on the attached Demolition Noise and Vibration Sub-Plan, please email igay@wolfpeak.com.au by the 17th of July 2024.

Figure 1: Development Site Location

03 July 2024

Dear TAFE St Leonards,

WORKS NOTIFICATION
2-8 Lanceley Place & 14 Campbell Street, Artarmon

As you may be aware from the newsletters provided by Urbis dated December 2022 and March 2024, Goodman Property Services (Aust) Pty Ltd has received approval for the demolition of existing buildings at 2-8 Lanceley Place and 14 Campbell Street, Artarmon. The site location is presented in Figure 1. This work represents the first stage of the approved State Significant Development of the site (SSD-48478458) and will be undertaken whilst the new application for a Data Centre (SSD-66777221) is assessed by the NSW Department of Planning, Housing and Infrastructure.

What are the activities involved?
The works will involve vegetation clearing, demolition of existing structures on the lots, establishment of site construction offices and environmental controls.

When will the works take place?
The demolition stage is scheduled to commence early September 2024 and is planned for completion by December 2024, weather permitting.

The works will be carried out Monday to Friday between the hours of 7am and 6pm, and on Saturdays between 8am to 1pm. There is no expectation that evening or night-time work would be required.

How will this affect me and my business?
Noise modelling has been undertaken to determine impacts on surrounding receivers under a 'worst-case' scenario. Businesses over 150m from the site are not predicted to experience any noise above current background noise levels under this scenario. The draft Demolition Noise and Vibration Management Plan, prepared to satisfy condition B24 of the SSD conditions of consent, can be accessed on the Goodman Project Website for more information: https://au.goodman.com/property-lease-site/2-8-lanceley-place

What mitigation measures will be implemented?
To minimise the potential for noise impacts during the demolition period, the following mitigation measures are proposed:

- *High noise works will be scheduled during less sensitive time periods*
- *Employing quieter construction equipment*
- *Non-tonal reversing beepers are fitted on all construction vehicles*
- *Stationary noise sources will be enclosed or shielded where feasible*
- *Verification monitoring of noise in the form of unattended and attended logging*

Where can I find more information?
Goodman will publish project information, updates, and management plans on the dedicated project website: https://au.goodman.com/property-lease-site/2-8-lanceley-place.

The NSW Major Projects website contains information relating to the development approval and Environmental Impact Statement: https://www.planningportal.nsw.gov.au/major-projects/projects/lanceley-place-multi-level-warehouse-artarmon.

How do I provide feedback?
Should you wish to comment on the attached Demolition Noise and Vibration Sub-Plan, please email igay@wolfpeak.com.au by the 17th of July 2024.

Figure 1: Development Site Location

APPENDIX C: COMMUNITY CONSULTATION RECORDS

Noise and Vibration Consultation Register

Last updated: 26/07/2024

Stakeholder	Address	Unit #	Impact?	Date	Method	Feedback Received?	Primary Contact	Contact Details	Preferred Method	Comment	Actions	Outcome	Resolved?
North Shore Private Hospital	3 Westbourne Street		None	18/07/2024	Email	No							
Tech Trader	3 Lanceley Place	Unit 01	Noise and Vibration	4/07/2024	Letter-box notification	No							
Ausgrid	1 Broadcast Way		Noise and Vibration	4/07/2024	Letter-box notification Email	No	Royce Cox	rcox@ausgrid.com.au	Email	There has been no feedback.	N/A	No additional response received from stakeholder	N/A
EuropCar	1 Campbell Street	Unit 1b	Noise and Vibration	4/07/2024	Letter-box notification	No							
The Carkit Company	1 Campbell Street	Unit 1a	Noise and Vibration	4/07/2024	Letter-box notification	No							
Home HQ	1 Frederick St		None	4/07/2024	Letter-box notification	No							
Evangelical Formosan Church	10 Carlotta Street		None	4/07/2024	Letter-box notification	No							
Hanson Concrete Plant	10 Lanceley Place		Noise and Vibration	4/07/2024	Letter-box notification	No							
Explore and Develop Artarmon	11-13 Campbell Street		None	4/07/2024	Letter-box notification	No							
Quad Services	12 Carlotta		None	4/07/2024	Letter-box notification	No							
Cleanaway Resource Recovery Centre	12 Lanceley Place		Noise and Vibration	4/07/2024	Letter-box notification	No							
Sydney Premium Detailing	16 Carlotta Street		None	4/07/2024	Letter-box notification	No							
Daikin Trade	16/18 Carlotta Street		None	4/07/2024	Letter-box notification	No							
EuropCar	1c Clarendon Street		Noise and Vibration	4/07/2024	Letter-box notification	No							
NextDC	2 Broadcast Way		None	4/07/2024	Letter-box notification	No							
Prestige Wraps	20 Carlotta Street		None	4/07/2024	Letter-box notification	No							
TAFE NSW / Bradfield High	213 Pacific Highway		None	4/07/2024	Letter-box notification	No							
Blue Dot Studios	24 Carlotta Street		None	4/07/2024	Letter-box notification	No							
Twin Towers Inn	260-264 Pacific Highway		None	4/07/2024	Letter-box notification	No							
Storage Works	269 Pacific Highway		None	4/07/2024	Letter-box notification	No							
Bayswater Car Rental	285 Pacific Highway		None	4/07/2024	Letter-box notification	No							
	3 Lanceley Place	Unit 05	Noise and Vibration	4/07/2024	Letter-box notification	No							
Gillespies Hire and Sales	3 Lanceley Place	Unit 06	Noise and Vibration	4/07/2024	Letter-box notification	No							
Jennings Plumbing Services	3 Lanceley Place	Unit 04	Noise and Vibration	4/07/2024	Letter-box notification	No							
Tech Trader	3 Lanceley Place	Unit 02	Noise and Vibration	4/07/2024	Letter-box notification	No							
Twin Loop Binding	3 Lanceley Place	Unit 03	Noise and Vibration	4/07/2024	Letter-box notification	No							
Artarmon Mazda	3-5 Campbell Street		Noise and Vibration	4/07/2024	Letter-box notification	No							
Storage King	5 Laneley Place		Noise and Vibration	4/07/2024	Letter-box notification	No							
Artarmon Deli	6 Carlotta Street		None	4/07/2024	Letter-box notification	No							
Papilio Early Learning Artarmon	6 Clarendon Street		Noise and Vibration	4/07/2024	Letter-box notification	No							
Anis Car and Truck	7 Campbell Street		None	4/07/2024	Letter-box notification	No							
Food Distribute	7-9 Lanceley Place		Noise and Vibration	4/07/2024	Letter-box notification	No							
Lugosi Auctioneers and Valuers	7-9 Lanceley Place		Noise and Vibration	4/07/2024	Letter-box notification	No							
Wyvern Smash Repairs	8 Carlotta Street		None	4/07/2024	Letter-box notification	No							
Storage Works	9 Campbell Street		None	4/07/2024	Letter-box notification	No							
	2-8 Campbell Street	Unit 11	Noise and Vibration	3/07/2024	Letter-box notification	No							
	2-8 Campbell Street	Unit 19	Noise and Vibration	3/07/2024	Letter-box notification	No							
	2-8 Campbell Street	Unit 22	Noise and Vibration	3/07/2024	Letter-box notification	No							
AP	2-8 Campbell Street	Unit 06	Noise and Vibration	3/07/2024	Letter-box notification	No							
Artarmon Tool Manufacturing	2-8 Campbell Street	Unit 03	Noise and Vibration	3/07/2024	Letter-box notification	No							
Australian ….	2-8 Campbell Street	Unit 20	Noise and Vibration	3/07/2024	Letter-box notification	No							
Candela	2-8 Campbell Street	Unit 14	Noise and Vibration	3/07/2024	Letter-box notification	No							
Coffee Pump	2-8 Campbell Street	Unit 23	Noise and Vibration	3/07/2024	Letter-box notification	No							
ColBros Electrical	2-8 Campbell Street	Unit 21	Noise and Vibration	3/07/2024	Letter-box notification	No							
Custom Power	2-8 Campbell Street	Unit 16	Noise and Vibration	3/07/2024	Letter-box notification	No							
Designbuild	2-8 Campbell Street	Unit 09	Noise and Vibration	3/07/2024	Letter-box notification	No							
DNA Connect	2-8 Campbell Street	Unit 13	Noise and Vibration	3/07/2024	Letter-box notification	No							
East Coast Audio Visual	2-8 Campbell Street	Unit 12	Noise and Vibration	3/07/2024	Letter-box notification	No							
Essence Design	2-8 Campbell Street	Unit 05	Noise and Vibration	3/07/2024	Letter-box notification	No							
Geoff Gay	2-8 Campbell Street	Unit 02	Noise and Vibration	3/07/2024	Letter-box notification	No							
Geoff Howden	2-8 Campbell Street	Unit 17	Noise and Vibration	3/07/2024	Letter-box notification	No							
Hard Art	2-8 Campbell Street	Unit 08	Noise and Vibration	3/07/2024	Letter-box notification	No							
Ogalo	2-8 Campbell Street	Unit 18	Noise and Vibration	3/07/2024	Letter-box notification	No							
Owen International Proprietory	2-8 Campbell Street	Unit 15	Noise and Vibration	3/07/2024	Letter-box notification	No							
Powerform Control	2-8 Campbell Street	Unit 01	Noise and Vibration	3/07/2024	Letter-box notification	Yes	Peter McConaghy	peterm@powerform.com.au 9460 8881	Email	Email received 04/07/24 notifying Goodman of the unavailability of the NVMP on the Project Website. Email received 11/07/24: The plan says letters were delivered on 22nd May - I don't think that is true. It was more like the end of June. Sect 3.3 says background noise was measured at 58dB(A) during the day. It then seems to use 60 as the rating background level when coming up with the noise levels in table 7. Why is that? Given decibels are a logarithmic scale 2dB could be significant. Especially because you're planning to exceed it by 12dB which should put it in the moderate exceedance (table 17) for surrounding commerical and childcare. Which buildings are you offering condition surveys to? I'm across Lanceley Place and I don't believe we've heard anything about it.	Email response provided 04/07/24 by Goodman providing a pdf copy of the NVMP and notifying that it will be uploaded to the Project Website. Email response provided 16/07/24 by WolfPeak detailing the updates to the draft noise report will reflect the actual dates of consultation, receiver types, such as commercial premises, offices, and retail outlets, management levels are pre-determined by the NSW Interim Construction Noise Guidelines as 70 dB(A) and Pre-dilapidation and post-dilapidation surveys will be offered to adjacent properties within the cosmetic damage buffer zone indicated on Figure 8 of the development consent (SSD-48478458 Development Consent, 21 December 2023),	No additional response received from stakeholder	Yes
Snap Print Solutions	2-8 Campbell Street	Unit 04	Noise and Vibration	3/07/2024	Letter-box notification	No							
State Interiors	2-8 Campbell Street	Unit 07	Noise and Vibration	3/07/2024	Letter-box notification	No							
	76 Reserve Road	Unit 08	Noise	3/07/2024	Letter-box notification	No							
	76 Reserve Road	Unit 17	Noise	3/07/2024	Letter-box notification	No							
Artact Art and Framing	76 Reserve Road	Unit 03	Noise	3/07/2024	Letter-box notification	No							
Avania	76 Reserve Road	Unit 13	Noise	3/07/2024	Letter-box notification	No							

Ave Pty Ltd	76 Reserve Road	Unit 18	Noise	3/07/2024	Letter-box notification	No							
BDC Services	76 Reserve Road	Unit 09	Noise	3/07/2024	Letter-box notification	No							
Celmec International	76 Reserve Road	Unit 07	Noise	3/07/2024	Letter-box notification	No							
Cosmac Surgical/Axcess Home Health	76 Reserve Road	Unit 21	Noise	3/07/2024	Letter-box notification	No							
Fulcrum 3D	76 Reserve Road	Unit 04	Noise	3/07/2024	Letter-box notification	No							
Haribo Australia	76 Reserve Road	Unit 16	Noise	3/07/2024	Letter-box notification	No							
IRT Access	76 Reserve Road	Unit 15	Noise	3/07/2024	Letter-box notification	No							
Mutoh Australia	76 Reserve Road	Unit 19	Noise	3/07/2024	Letter-box notification	No							
My Coffee Fix	76 Reserve Road	Unit 02	Noise	3/07/2024	Letter-box notification	No							
Play Workshop	76 Reserve Road	Unit 10	Noise	3/07/2024	Letter-box notification	No							
Progressive Risk Management	76 Reserve Road	Unit 14	Noise	3/07/2024	Letter-box notification	No							
Rylock Windows and Doors	76 Reserve Road	Unit 11	Noise	3/07/2024	Letter-box notification	No							
Totalability	76 Reserve Road	Unit 20	Noise	3/07/2024	Letter-box notification	No							
Two Tease Architectural Hardware	76 Reserve Road	Unit 22	Noise	3/07/2024	Letter-box notification	No							
YSS Shower Screens	76 Reserve Road	Unit 12	Noise	3/07/2024	Letter-box notification	No							
	78 Reserve Road	Unit 11	Noise and Vibration	3/07/2024	Letter-box notification	No							
	78 Reserve Road	Unit 03	Noise and Vibration	3/07/2024	Letter-box notification	No							
	78 Reserve Road	Unit 04	Noise and Vibration	3/07/2024	Letter-box notification	No							
Bates Landscapes	78 Reserve Road	Unit 02	Noise and Vibration	3/07/2024	Letter-box notification	No							
Delta Diesel Services	78 Reserve Road	Unit 05	Noise and Vibration	3/07/2024	Letter-box notification	No							
enLighten	78 Reserve Road	Unit 08	Noise and Vibration	3/07/2024	Letter-box notification	No							
hsy autoparts	78 Reserve Road	Unit 07	Noise and Vibration	3/07/2024	Letter-box notification	No							
Hy-Performance Valves	78 Reserve Road	Unit 14	Noise and Vibration	3/07/2024	Letter-box notification	No							
JDV Projects	78 Reserve Road	Unit 16	Noise and Vibration	3/07/2024	Letter-box notification	No							
MultiBase	78 Reserve Road		Noise and Vibration	3/07/2024	Letter-box notification	No							
Rich's	78 Reserve Road	Unit 13	Noise and Vibration	3/07/2024	Letter-box notification	No							
Rotric Constructions	78 Reserve Road	Unit 10	Noise and Vibration	3/07/2024	Letter-box notification	No							
Slate NSW	78 Reserve Road	Unit 06	Noise and Vibration	3/07/2024	Letter-box notification	No							
Texas Productions/GasGas	78 Reserve Road	Unit 11	Noise and Vibration	3/07/2024	Letter-box notification	No							
The Roo Brothers Catering	78 Reserve Road	Unit 09	Noise and Vibration	3/07/2024	Letter-box notification	No							
The Traffic Marshal	78 Reserve Road	Unit 12	Noise and Vibration	3/07/2024	Letter-box notification	No							
Tiger Coffee	78 Reserve Road	Unit 15	Noise and Vibration	3/07/2024	Letter-box notification	No							
Videocraft Equipment	78 Reserve Road	Unit 01	Noise and Vibration	3/07/2024	Letter-box notification	No							
Fluid Seals and Packings	80 Reserve Road	Unit 03	Noise	3/07/2024	Letter-box notification	No							
Go Electrical	80 Reserve Road	Unit 06	Noise	3/07/2024	Letter-box notification	No							
Pacific Mist Watering Systems	80 Reserve Road	Unit 04	Noise	3/07/2024	Letter-box notification	No							
Piper's Plumbing	80 Reserve Road	Unit 04	Noise	3/07/2024	Letter-box notification	No							
Plumbers' Co-op	80 Reserve Road	Unit 01	Noise	3/07/2024	Letter-box notification	No							
The Roofing Specialists	80 Reserve Road	Unit 04	Noise	3/07/2024	Letter-box notification	No							
Vision Building	80 Reserve Road	Unit 02	Noise	3/07/2024	Letter-box notification	No							
Amarisco Picture Framing	82 Reserve Road	Unit 17	Noise	3/07/2024	Letter-box notification	No							
Australian Glass	82 Reserve Road	Unit 07	Noise	3/07/2024	Letter-box notification	No							
Big Picture	82 Reserve Road	Unit 16	Noise	3/07/2024	Letter-box notification	No							
Bristol Paints Artarmon	82 Reserve Road	Unit 08	Noise	3/07/2024	Letter-box notification	No							
Business	82 Reserve Road	Unit 09	Noise	3/07/2024	Letter-box notification	No							
Duagon	82 Reserve Road	Unit 13	Noise	3/07/2024	Letter-box notification	No							
Hyland Printing	82 Reserve Road	Unit 11	Noise	3/07/2024	Letter-box notification	No							
Liquid Asset Management	82 Reserve Road	Unit 14	Noise	3/07/2024	Letter-box notification	No							
Matrix	82 Reserve Road	Unit 12	Noise	3/07/2024	Letter-box notification	No							
Orana Car & Truck Rental	82 Reserve Road	Unit 15	Noise	3/07/2024	Letter-box notification	No							
Sydney Paint Stripping	82 Reserve Road	Unit 10	Noise	3/07/2024	Letter-box notification	No							
National Storage	11 Lanceley Place	Unit 07	Noise		Letter-box notification	No							
Tanaka Real Estate	269 Pacific Highway	Level 1	None		Website	No							
Fox Sports	4 Broadcast Way		None		Website	No							
Bunnings Artarmon	71 Reserve Road		None		Website	No							
Gore Hill Cemetery	Pacific Highway		None		Website	No							

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