45-53 Macleay St, Potts Point

Construction Noise and Vibration Management Plan

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E-LAB Consulting

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Document QA and Revisions

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3				
4				

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Authorised by:

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Acoustics & Vibration

Table of Content

1 INTRODUCTION

This Construction Noise and Vibration Management Plan has been prepared for 45-53 Macleay Street, Potts Point NSW for the demolition works of a Concept Proposal for Mixed Use with Affordable Housing under SSD-79316759.

This Construction Noise and Vibration Management Plan provides:

- Identification of nearby noise sensitive receivers
- Determination of applicable guidelines and criteria for the noise and vibration generated during demolition
- A quantitative assessment of the airborne and ground-borne noise generated by the work for the proposed development and its impact on nearby receivers
- Strategies to mitigate the noise and vibration generated during the demolition works phase
- Complaints handling and community liaison procedures

This report has been prepared with the following references:

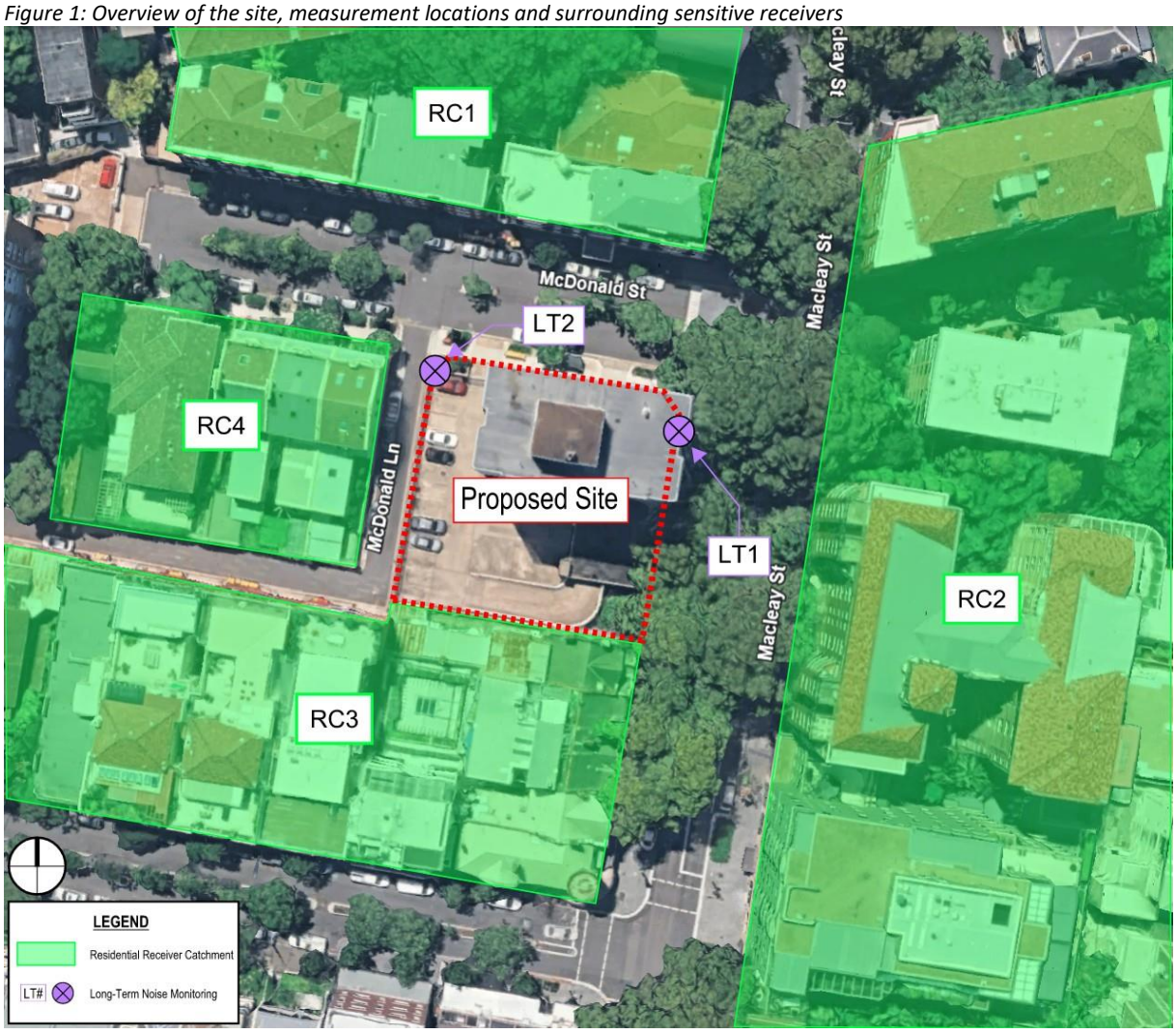
- Demolition Work Plan, prepared by Jabbs Excavations
- Demolition Work Plan prepared by Jabbs Excavation, dated August 2025
- Interim Construction Noise Guideline (ICNG), NSW DECC, 2009
- Construction Noise Strategy, Transport for NSW, 2013
- Noise Policy for Industry (NPI), NSW EPA, 2017
- Assessing Vibration: A Technical Guideline, NSW DEC, 2006
- AS 2436:2010 *Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*
- British Standard BS 5228: Part 1:1997 *Noise and Vibration Control on Construction and Open Sites*
- British Standard BS 7358:1993 *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground-borne Vibration*
- German Standard DIN 4150-Part 3 *Structural vibration in buildings – Effects on structures*

2 PROJECT DESCRIPTION

2.1 SITE DESCRIPTION AND NOISE & VIBRATION SENSITIVE RECEIVERS

For the purposes of this construction noise and vibration management plan, the site location, measurement positions and surrounding noise and vibration sensitive receivers are shown in Figure 1.

Figure 1: Overview of the site, measurement locations and surrounding sensitive receivers



2.2 PROPOSED HOURS OF WORK

For the purpose of this assessment, we have assumed that all works are to be conducted in-line with standard construction hours for outside the city centre, as outlined below:

Table 1: Approved hours of work

DAY OF THE WEEK	APPROVED HOURS OF WORK
Mondays to Fridays	7:30am to 5:30pm
Saturdays	7:30am to 3:30pm
Sundays, Public Holidays	No work permitted

3 BACKGROUND AND AMBIENT NOISE MONITORING

Long-term noise monitoring was undertaken for the project site on 21st July 2025.

Noise monitoring was undertaken at locations shown in Figure 1 to measure the background and ambient noise that is representative of the surrounding noise sensitive receivers. The noise survey results have been provided below in Table 2 for reference.

Table 2: Summary of long-term background noise monitoring

LOCATION	EQUIVALENT CONTINUOUS NOISE LEVEL $L_{Aeq,period}$, dB(A)			BACKGROUND NOISE LEVEL RBL, dB(A)		
	DAY	EVENING	NIGHT	DAY	EVENING	NIGHT
LT1	65	63	60	52	46	39
LT2	58	54	50	47	44	39

4 PROJECT NOISE AND VIBRATION CRITERIA

4.1 CONSTRUCTION NOISE CRITERIA

Airborne Noise – Residential Receivers

The airborne noise criteria for surrounding residential receivers have been extracted from Table 2 in the ICNG and is presented in Table 3 below.

Table 3: NSW ICNG construction noise criteria for surrounding residential receivers

TIME OF DAY	MANAGEMENT LEVEL, $L_{Aeq,15min}$ [1]	HOW TO APPLY
Recommended Standard Hours: Monday – Friday 7am – 6pm Saturday 8am – 1pm No work on Sundays or public holidays	Noise Affected RBL + 10dB	The noise-affected level represents the point above which there may be some community reaction to noise. ▪ Where the predicted or measured $L_{Aeq,15min}$ 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 residences 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 in, taking into account: – 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) – If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Recommended Standard Hours	Noise Affected RBL + 5dB	▪ 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. ▪ For guidance on negotiating agreements see section 7.2.2 (of ICNG).

Based on the procedure outlined in the ICNG, the following noise management levels in Table 4 should be applied to the residential receivers identified in Figure 1.

Table 4: Project Specific Construction Noise Management Levels

LAND USE	RECEIVER	NOISE AFFECTED LEVEL, $L_{Aeq,15min}$	HIGHLY NOISE AFFECTED LEVEL $L_{Aeq,15min}$
Residential	R1	47 dB(A) + 10 dB = 57 dB(A)	75 dB(A)
Residential	R2	52 dB(A) + 10 dB = 62 dB(A)	75 dB(A)
Residential	R3	52 dB(A) + 10 dB = 62 dB(A)	75 dB(A)
Residential	R4	47 dB(A) + 10 dB = 57 dB(A)	75 dB(A)

4.2 CONSTRUCTION VIBRATION CRITERIA

4.2.1 Human Comfort

The office of Environment and Heritage (OEH) developed a document, "Assessing vibration: A technical guideline" in February 2006 to assist in preventing people from exposure to excessive vibration levels from construction and operation of a development within buildings. The guideline does not however address vibration induced damage to structures or structure-borne noise effects. Vibration and its associated effects are usually classified as continuous, impulsive or intermittent.

Continuous and Impulsive Vibration

Structural vibration in buildings can be detected by occupants and can affect them in many ways including reducing their quality of life and also their working efficiency. Complaint levels from occupants of buildings subject to vibration depend upon their use of the building and the time of the day.

Maximum allowable magnitudes of building vibration with respect to human response are shown in Table 5. It should be noted that the human comfort for vibration is more stringent than the building damage criteria.

Table 5: Preferred and maximum weighted RMS values for continuous and impulsive vibration acceleration (m/s^2) 1-80 Hz

LOCATION	ASSESSMENT PERIOD[1]	PREFERRED VALUES		MAXIMUM VALUES	
		z-axis	x- and y-axes	z-axis	x- and y-axes
Continuous vibration					
Residences	Daytime	0.010	0.0071	0.020	0.014
	Nigh time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day- or night time	0.020	0.014	0.040	0.028
Workshops	Day- or night time	0.04	0.029	0.080	0.058
Impulsive vibration					
Residences	Daytime	0.30	0.21	0.60	0.42
	Night time	0.10	0.071	0.20	0.14
Offices, schools, educational	Day- or night time	0.64	0.46	1.28	0.92

LOCATION	ASSESSMENT PERIOD[1]	PREFERRED VALUES		MAXIMUM VALUES	
		z-axis	x- and y-axes	z-axis	x- and y-axes
institutions and places of worship					
Workshops	Day- or night time	0.64	0.46	1.28	0.92

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

Intermittent Vibration Criteria

Disturbance caused by vibration will depend on its duration and its magnitude. This methodology of assessing intermittent vibration levels involves the calculation of a parameter called the Vibration Dose Value (VDV) which is used to evaluate the cumulative effects of intermittent vibration, as shown in Table 6. Various studies support the fact that VDV assessment methods are far more accurate in assessing the level of disturbance than methods which is only based on the vibration magnitude.

Table 6: Acceptable vibration dose values for intermittent vibration ($m/s^{1.75}$)

LOCATION	DAYTIME[1]		NIGHT-TIME[1]	
	PREFERRED VALUE	MAXIMUM VALUE	PREFERRED VALUE	MAXIMUM VALUE
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

4.2.2 Cosmetic Damage

Structural vibration thresholds are set to minimise the risk of cosmetic surface cracks and lie below the levels that have the potential to cause damage to the main structure. Table 7 presents guide values for building vibration, based on the vibration thresholds above which cosmetic damage has been demonstrated outlined within BS7385-Part 2:1993. These values are evaluated to give a minimum risk of vibration-induced damage, where minimal risk for a named effect is usually taken as 95% probability of no effect.

Table 7: Transient vibration guide values for cosmetic damage – BS 7385-2:1993

TYPE OF BUILDING	PEAK PARTICLE VELOCITY IN FREQUENCY RANGE OF PREDOMINANT PULSE (PPV)	
	4 Hz TO 15 Hz	15 Hz AND ABOVE
Reinforced or framed structures Industrial or light commercial type buildings	50mm/s	N/A
Unreinforced or light framed structures Residential or light commercial type buildings	15mm/s	20mm/s (50mm/s at 40Hz and above)

4.2.3 Structural Damage

Ground vibration criteria is defined in terms of the levels of vibration emission from the construction activities which will avoid the risk of damaging surrounding buildings or structures. It should be noted that human comfort criteria are normally expressed in terms of acceleration whereas structural damage criteria are normally expressed in terms of velocity.

Most specified structural vibration levels are defined to minimise the risk of cosmetic surface cracks and are set below the levels that have the potential to cause damage to the main structure. Structural damage criteria are presented in German Standard DIN4150-Part 3 "Structural vibration in buildings – Effects on structures" and British Standard BS7385-Part 2: 1993 "Evaluation and Measurement for Vibration in Buildings". Table 8 indicates the vibration limits presented in DIN4150-Part 3 to ensure structural damage doesn't occur.

Table 8: Guideline value of vibration velocity, vi, for evaluating the effects of short-term vibration – DIN4150-3

LINE	TYPE OF STRUCTURE	VIBRATION VELOCITY, V_i, IN mm/s			
		FOUNDATION			PLANE OF FLOOR OF UPPERMOST FULL STOREY
		AT A FREQUENCY OF			
		LESS THAN 10HZ	10 TO 50HZ	50 TO 100HZ*	ALL FREQUENCIES
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8
*For frequencies above 100Hz, at least the values specified in this column shall be applied					

Based on the Jabbs Excavations *Demolition Works Plan*, no heritage structures have been identified on site. All neighbouring residential receivers and buildings shall be assessed in-line with Category 2 criteria. Review of this criteria shall be undertaken prior to the commencement of the proposed demolition works.

5 CONSTRUCTION NOISE ASSESSMENT

5.1 EXPECTED CONSTRUCTION EQUIPMENT

The noise sources likely to be associated with the works listed are presented in Table 9, based on the Jabbs Excavation *Demolition Work Plan*. The equipment noise levels have been extracted from AS2436:2010 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites" and the "Construction Noise Strategy, Transport for NSW, 2013".

These equipment noise levels are provided as sound power levels (in-line with the documents referenced above) and are the estimated sound power emitted by the equipment, which differs to the sound pressure level rated for equipment at a particular distance.

Table 9: Construction Equipment Noise Levels

STAGES	EQUIPMENT	SOUND POWER LEVEL dB(A)	USAGE IN 15 MINUTE PERIOD (MINS)	TIME CORRECTED SOUND POWER LEVEL dB(A) $L_{AEQ,\ 15MIN}$
Demolition	Mobile Crane	102	7.5	97
	Bobcat/Positracks	107	6	103
	Excavator 30 tonne	107	6	103
	Excavator Breaker	118	6	114
	General Truck	107	4.5	102
	Scissor Lift	100	3	95

5.2 NOISE MODELLING AND ASSUMPTIONS

In order to assess the noise impact from the site during the demolition stage, a desktop noise model was prepared using commercial software SoundPLAN v9.0. The noise model represents the 'reasonable' worst case periods of construction activities, meaning that all the equipment of each stage is operating simultaneously during a 15-minute observation period.

The assumptions that were made within the assessment include the following:

- The predicted noise levels represent the worst-case scenario for each receiver
- The predicted noise levels at the receivers has been assessed at a height of 1.5m above ground level in accordance with the assessment procedures of the ICNG.
- The predicted noise levels at the nearby sensitive receivers have been assessed with the noise mitigation measures provided in Section 7.1 which have been implemented.
- The noise levels have been assessed using neutral weather conditions.

5.3 PREDICTED NOISE LEVELS

The predicted noise levels have been presented in the following table and have been assessed to the construction noise criteria established in Section 4.1. Noise contour maps are also provided in Appendix A.

Table 10: Predicted noise levels – Early works: demolition (with barrier)

ID	RECEIVER TYPE	PREDICTED NOISE LEVEL RANGE, $L_{Aeq,15min}$ dB(A)	NOISE MANAGEMENT LEVEL $L_{Aeq,15min}$ dB(A)	NOISE MANAGEMENT LEVEL EXCEEDANCE, dB	EXCEEDS HIGHLY NOISE AFFECTED LEVEL (YES/NO)
R1	Residential	Up to 61	57	Up to 4	No
R2	Residential	Up to 73	62	Up to 11	No
R3	Residential	Up to 79	62	Up to 17	Yes, see discussion in Section 7.1.1
R4	Residential	Up to 73	57	Up to 16	No

6 CONSTRUCTION VIBRATION ASSESSMENT

Activities and machinery that are considered vibration intensive during the proposed demolition works include the following:

- Excavator mounted hammering
- Jackhammers

Safe working distances for vibration intensive plant and are quoted for both "cosmetic" damage (in accordance with BS 7385) and human comfort (in accordance with Assessing Vibration – a technical guideline), have been provided, based on the Transport for NSW's "Construction Noise Strategy (2013)". The recommended safe working distances for each of the plant listed above are provided in Table 118.

Table 11: Recommended safe working distances for vibration intensive plant

ACTIVITY	SAFE WORKING DISTANCE (METRES)	
	COSMETIC DAMAGE (BS 7385)	HUMAN RESPONSE (OH&E VIBRATION GUIDELINE)
Excavator Mounted Hydraulic Hammer (5 to 12 tonne)	2m	7m
Excavator Mounted Hydraulic Hammer (12 to 18 tonne)	7m	23m
Excavator Mounted Hydraulic Hammer (18 to 34 tonne)	22m	73m
Jackhammer	1m (nominal)	Avoid contact with structure

The approximate distances between sensitive receivers (as identified in Figure 1) to the project boundary where vibration intensive plant may be used during construction is provided in Table 12.

Table 12: Receiver distances from construction works

RECEIVER ID	MINIMUM DISTANCE FROM CONSTRUCTION WORKS
R1	Approx. 25m
R2	Approx. 25m
R3	Approx. 20m
R4	Approx. 20m

We understand that mechanical demolition will be undertaken using excavators of up to 35 tonnes. On this basis, demolition works are expected to occur within the minimum setback distances identified in Table 11, and vibration impacts on adjacent structures and building occupants are considered likely. However, actual vibration levels are difficult to predict and will depend on:

- Ground composition
- Any physical connections between adjoining structures
- Structural condition and age of adjacent buildings
- Depth and stiffness of existing foundations

Accordingly, vibration monitoring should be carried out at the commencement of works to verify the safe working distances. If measured levels remain within the vibration limits outlined in Section 4.2, demolition may proceed in conjunction with the mitigation measures detailed in this report. If exceedances occur, additional reasonable and feasible mitigation measures must be implemented, along with continued vibration monitoring. Measures to prevent cosmetic damage to surrounding structures are provided in Section 7.

7 NOISE & VIBRATION MANAGEMENT STRATEGIES

7.1 PROJECT SPECIFIC RECOMMENDATIONS

Project specific recommendations and required mitigation methods have been listed below within Section 7.1. For general noise and vibration mitigation and management measures, refer to Section 7.2 of this report.

7.1.1 Noise

Intermittent exceedances of construction noise management levels are unavoidable due to the proximity of residential receivers which overlook the project site. Notwithstanding, the following noise management strategies shall be implemented, in-line with strategies noted in the Jabbs Excavations *Demolition Work Plan,* and the Transport Strategies *Preliminary Demolition Traffic Management Plan:*

- External walls of each floor shall be retained until the last stage of demolition to minimise noise emissions from on-floor demolition works within the building. Demolition works carried out within the building while external façade elements are retained will be approximately 25-30dB lower than works carried out externally/with the façade removed.
- Construction equipment/machinery shall be suitably selected based on optimal size and power to minimise equipment sound power levels and associated noise emissions.
- The use of standard A-class/B-Class hoarding of the following materials and construction will suffice to mitigate the impact of the highest predicted noise levels.
    - The hoarding should be impervious of gaps and cracks which would compromise its performance
    - It should be comprised of acoustically suitable materials such as 15 mm plywood
    - Be a minimum of 2.1m high surrounding the site.

  The barrier shall reduce the noise levels experienced at the residential receivers directly adjacent to the project site. Locating site amenities towards the site boundaries further increases the shielding of construction noise.
- Material drop zones shall be located internally within the site, behind perimeter hoarding and to maximise distance to nearby noise sensitive receivers.
- All demolition activities shall be undertaken in accordance with the DA approved construction hours.
- All truck operators are required to adhere to the following to minimise road traffic noise:
    - Engine brakes shall not be used near residences and built-up areas.
    - Reversing should be minimised as much as possible to reduce noise from reversing alarms.
    - Trucks are not to idle when near residential receivers. As much as feasible, engines should be switched off when not in use.
    - Delivery vehicles fitted with straps, as opposed to chains to minimise noise impacts where possible.
    - Where night-time works are required and approved, trucks shall use broadband reversing alarms.
- Frequent and proactive communication with the residences to is also encouraged. More details regarding communication with the community can be found in Section 7.3.

7.1.2 Vibration

There may be exceedances of the human comfort criteria due to the proximity of works to nearby residential receivers. We understand the following mitigation strategies will be implemented as per the Jabbs Excavations *Demolition Works Plan:*

- Physical links from the structure to adjoining buildings will be broken prior to vibration intensive works (i.e. through concrete saw or similar equipment to minimise vibration generation).
- Use of lower vibration generation items/small capacity plant where the structure permits.
- Break-up of slabs, beams and columns into smaller pieces of rubble to minimise vibration generation at material drop zones. All material to be broken down to less than 300mm pieces to minimize vibration and impact during material handling. This will reduce the weight to less than 70kg.
- Use of material hoist to prevent dropping of heavy materials over long distances.
- Use of pulveriser large machines (24/35T excavators), and use of hammer attachments limited to smaller machines (3.5T and 5T).
- Minimise conducting vibration generating works consecutively in the same area.

7.2 GENERAL ACOUSTIC RECOMMENDATIONS FOR CONSTRUCTION

According to AS 2436 – 2010 "Guide to noise and vibration control on construction, demolition and maintenance sites" the following techniques could be applied to minimise the spread of noise and vibrations to the potential receivers.

7.2.1 Noise

If a process that generates significant noise levels cannot be avoided, the amount of noise reaching the receiver should be minimised. Two ways of achieving this are to either increase the distance between the noise source and the receiver or to introduce noise reduction measures such as screens. Practices that will reduce noise from the site include:

- Increasing the distance between noise sources and sensitive receivers.
- Reducing the line-of-sight noise transmission to residences or other sensitive land uses using temporary barriers (stockpiles, shipping containers and site office transportables can be effective barriers).
- Constructing barriers that are part of the project design early in the project to introduce the mitigation of site noise.
- Installing purpose-built noise barriers, acoustic sheds and enclosures.

Physical methods to reduce the transmission of noise between the site works and residences, or other sensitive land uses, are generally suited to works where there is longer-term exposure to the noise. A few of these methods have been introduced below.

Screening

On sites where distance is limited, screening of noise may be beneficial or even the only way to reduce construction noise impacts on the nearby receivers. Below, screening options for various situations have been introduced. Constructing and utilising these screening methods should be taken into account already during the planning stages.

Temporary buildings: One option to introduce screening is to position structures such as stores, storage piles, site offices and other temporary buildings between the noisiest part of the site and the nearest dwellings. Due to shielding provided by these buildings, some of the noise emission from the site can be reduced. If the buildings are occupied, however, sound insulation measures may be necessary to protect site workers inside the buildings.

Hoarding: Another way of implementing screening is to build hoarding that includes a site office on an elevated structure. This option offers superior noise reduction when compared with a standard, simple hoarding. The acoustic performance is further enhanced when the hoarding is a continuous barrier.

Equipment operating 24h: When it comes to water pumps, fans and other plant equipment that operate on a 24-hour basis, they may not be an irritating source of noise during the day but can be problematic at night. They

should therefore be effectively screened by either situating them behind a noise barrier or by being positioned in a trench or a hollow in the ground. Again, generated reverberant noise must be minimised and adequate ventilation should be ensured.

General remarks:

In many cases, it is not practical to screen earthmoving operations effectively, but it may be possible to partially shield a construction plant at the early stages of the project with protective features required to screen traffic noise.

The usefulness of a noise barrier will depend upon its length, its height, its position relative to the source and the receiver, and the material of which it is made. A barrier designed to reduce noise from a moving source should extend beyond the last property to be protected by at least ten times the shortest distance from the said property to the barrier. A barrier designed to reduce noise from a stationary source should, where possible, extend beyond the direct line of sight between the noise source and the receiver by a distance equal to ten times the effective barrier height, which is the height above the direct line between source and receiver.

If the works are already predominantly located within nominally closed structures, careful consideration should be given to reducing noise breakout at any openings.

Reversing and warning alarms

Community complaints often involve the intrusive noise of alarms commonly used to provide a safe system of work for vehicles operating on a site. Beeper reversing alarm noise is generally tonal and may cause annoyance at significant distances from the work site.

There are alternative warning alarms capable of providing a safe system of work that are equal to or better than the traditional “beeper”, while also reducing environmental noise impacts. The following alternatives should be considered for use on construction sites as appropriate:

- Broadband audible alarms incorporating a wide range of sound frequencies (as opposed to the tonal-frequency ‘beep’) are less intrusive when heard in the neighbourhood.
- Variable-level alarms reduce the emitted noise levels by detecting the background noise level and adjusting the alarm level accordingly.
- Proximity alarms that use sensors to determine the distance from objects, such as people or structures, and generate an audible alarm in cabin for the driver.
- Spotters or observers.

The above methods should be combined, where appropriate.

7.2.2 Vibration

Vibration can be more difficult to control than noise, and there are few generalizations that can be made about its control. It should be kept in mind that vibration may cause disturbance by causing structures to vibrate and radiate noise in addition to perceptible movement. Impulsive vibration can, in some cases, provide a trigger mechanism that could result in the failure of building components that had previously been in a stable state.

During the demolition works and the erection of new structures, some vibrations (transmitted through the structure from the demolition sites) are expected, being more of a concern for the surrounding sensitive receivers. Vibrations can also trigger annoyance, which might get elevated into action by occupants of exposed buildings, and should therefore be included in the planning of communication with impacted communities.

It should be remembered that failures, sometimes catastrophic, can occur as a result of conditions not directly connected with the transmission of vibrations, e.g. the removal of supports from retaining structures to facilitate site access. BS 7385-2 provides more information on managing ground-borne vibration and its potential effects on buildings. Where site activities may affect existing structures, a thorough engineering appraisal should be made at the planning stage.

General principles of seeking minimal vibration at receiving structures should be followed in the first instance. Predictions of vibration levels likely to occur at sensitive receivers are recommended when they are relatively close, depending on the magnitude of the source of the vibration or the distance associated. Relatively simple prediction methods are available in textbooks, codes of practice and standards, however, it is preferable to assess site transmission and propagation characteristics between source and receiver locations through measurements.

Guidance for measures available for the mitigation of vibration transmitted can be sought in more detailed standards, such as BS 5228-2 or policy documents, such as the NSW DEC *Assessing Vibration: A technical guideline*. Identifying the strategy best suited to the control of vibration follows a similar approach to that of noise: avoidance, control at the source, control along the propagation path, control at the receiver, or a combination of these. It is noted that vibration sources can include stationary plants (pumps and compressors), portable plants (jackhammers and pavement vibrators), mobile plants, pile-drivers, tunnelling machines and activities, and blasting, amongst others. Unusual ground conditions, such as a high water-table, can also cause a difference to expected or predicted results, especially when considering the noise propagated from piling.

7.3 COMPLAINT HANDLING PROCEDURES AND COMMUNITY LIAISON

7.3.1 Community Consultation to be Undertaken

The builder shall directly contact adjacent noise sensitive receivers and provide them with the following information:

- The contact details for a nominated representative in order to make noise / vibration complaints
- Explain the timeframe for the construction works and the proposed activities, i.e. the proposed start / stop dates of work and a description of the noise producing equipment that will be used
- Notify the noise sensitive receivers and relevant local / state authority in a timely manner should there be any need for an extension to the proposed arrangements
- Provide them with a copy of this report as approved by the relevant local / state authority
- Where noise is demonstrated as being compliant with criteria, this should not limit the proponent in undertaking further additional reasonable and feasible steps to reduce noise emissions.

7.3.2 Complaint Handling Procedures and Community Liaison

To assist in the management of noise and vibration complaints various procedures are to be followed. These include:

- Clearly visible signage identifying any key personnel along with their contact details to be erected along the perimeter of the building site including:
    - A 24-hour contact name, phone number and email address provided for the resident to address any complaint. The signage will declare; “For any enquiry, complaint or emergency relating to this site at any time please contact…”
- Give complaints a fair hearing
- Relevant local / state authority should be notified of the nature and details of complaints received (time, complainant etc.) and what remedial action has taken place, if any
- Have a documented complaints process, including an escalation procedure so that if a complaint is not satisfied there is a clear path to follow
- Call back as soon as possible to keep people informed of action to be taken to address noise problems. Call back at night time only if requested by the complainant to avoid further disturbance
- Implement all feasible and reasonable measures to address the source of the complaint

- A register is to be kept by the contractor to keep a record of complaints and detail any information associated with them. The contents of the register will include:
    - The name and the address of the complainant
    - Time and date of the complaint
    - The nature of the complaint (Noise/Vibration)
    - Subsequent details
    - Remedial action undertaken

The contents of the register will be maintained and updated on a monthly basis with any new complaint without delay. The complaints will be reported to both the relevant local / state authority and the Contractor. The investigation of the complaint and any remedial actions will be performed by the builder and/or client representative on a monthly basis. In the event of noisy works scheduled, the builder will notify residents 5 business days in advance.

7.4 NOISE & VIBRATION MONITORING STRATEGY

7.4.1 General Methodology

Noise and vibration levels should be monitored from time to time to ensure that noise generated as a result of remediation and construction activities does not disturb local businesses and residents.

Monitoring may be in the form of regular checks by the builder or indirectly by an acoustic consultant engaged by the builder and in response to any noise or vibration complaints. Where noise and vibration criteria are being exceeded or in response to valid complaints, noise and / or vibration monitoring should be undertaken. This would be performed inside the premises of the affected property and on site adjacent to the affected receivers.

Monitoring is to be undertaken by an experienced noise and vibration monitoring professional or an acoustic consultant. The results of any noise or vibration monitoring are to be provided to the relevant party or person in a timely manner allowing the builder to address the issue and respond to the complaints.

Noise and vibration monitoring can take two forms:

- Short-term monitoring
- Long-term monitoring

Both of these approaches are elaborated below.

7.4.2 Short-term Monitoring

Short-term monitoring consists of attended monitoring when critical stages of the construction are occurring. This normally provides real-time assistance and guidance to the subcontractor on site, telling them when the noise and vibration criteria are exceeded. Thus, the selection of alternative method on construction or equipment selection is allowed in order to minimise noise and vibration impacts.

7.4.3 Long-term Monitoring

Similarly to short-term monitoring, long-term monitoring provides real-time alerts to the builder / site manager when the noise and vibration criteria are exceeded. Instead of someone being on site measuring, noise and vibration loggers are used.

Typically, the noise and vibration loggers stay on site for a period of several months for the critical construction stages of the project, such as the demolition and excavation phases.

Both methodologies are complementary and normally used simultaneously providing a significant amount of data via the long-term monitoring, but also providing information on the sources of noise and vibration generating exceedances via the short-term or attended monitoring.

7.4.4 Noise & Vibration Monitoring Program

A monitoring programme is proposed in Table 13. The monitoring programme is to be carried out at the nominated receiver locations during the most noise / vibration intensive periods during each construction phase as agreed with the Acoustic Engineer and Contractor.

Refer to Figure 3 for the receiver locations corresponding the monitoring locations.

Locations shall be discussed and agreed between the Acoustic Engineer and Contractor prior to start of works and shall be reviewed regularly as construction works progress.

Figure 3: Proposed monitoring locations

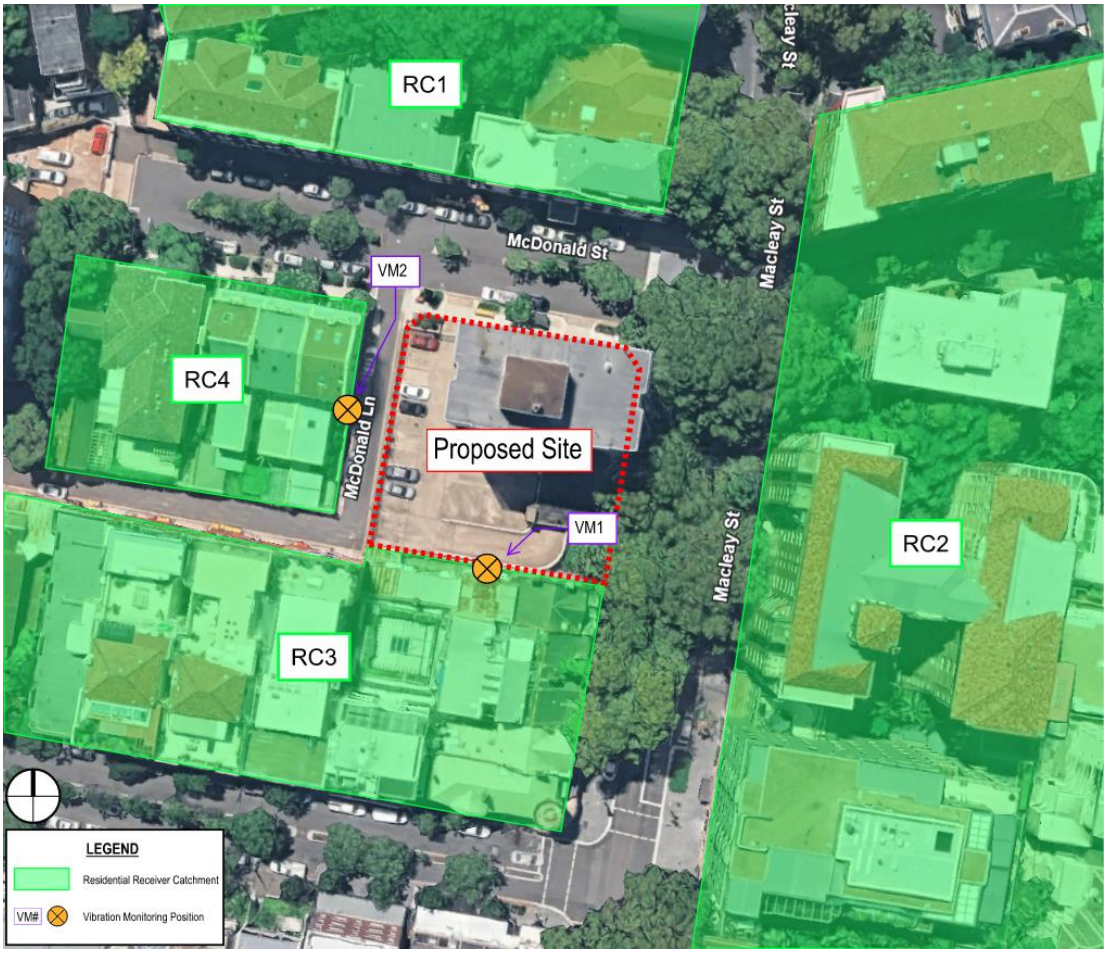


Table 13: Noise and vibration monitoring programme

CONSTRUCTION PHASE	RECEIVER	MONITORING REQUIRED	LOCATION REFERENCE
Demolition	RC3	Noise – Typically undertaken following comments/complaints procedures.	N/A
	RC3, RC4	Vibration	VM1 & VM2

8 CONCLUSION

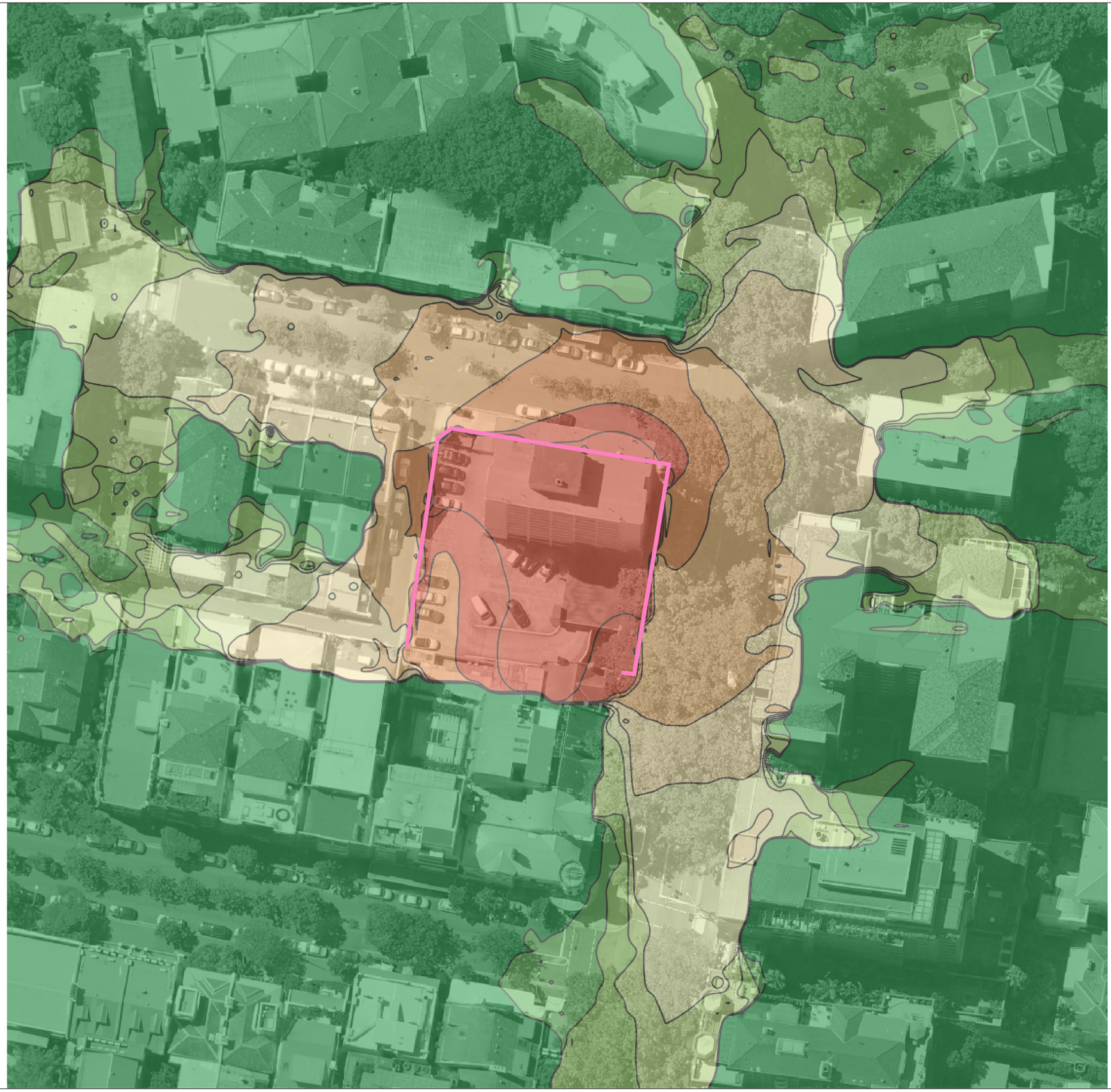
A Construction Noise and Vibration Management Plan has been provided for the demolition works associated with the Concept Proposal for Mixed Use with Affordable Housing under SSD-79316759 at 45-52 Macleay Street, Potts Point.

The details of the noise and vibration modelling and assessment undertaken to predict the impacts on sensitive receivers have been presented in Sections 5 and 6.

To reduce the noise and vibration impacts on the sensitive receivers, noise and vibration management strategies have been proposed in Section 7. Subject to the implementation of the mitigation measures identified in Section 7, the proposed demolition works are considered to have an acceptable level of impact on surrounding noise sensitive receivers with regards to noise and vibration. Furthermore, the verification of safe working distances through attended noise measurements and/or long-term noise monitoring will ensure on-going vibration impacts are within safe limits.

The information presented in this report shall be reviewed if any modifications to the features of the development specified in this report occur, including and not restricted to selection of equipment/machinery and modifications to the construction program.

Appendix A **Construction Noise Contour Map**



E-LAB CONSULTING

ISSUE	DATE	STATUS
1	19/08/2025	FOR INFORMATION

LEGEND

Noise Level, $L_{AEQ, 15min}$ dB(A)

- < 55
- 55 - 58
- 58 - 61
- 61 - 64
- 64 - 67
- 67 - 70
- 70 - 73
- 73 - 76
- 76 - 79
- > 79
- Acoustic Noise Barrier (Hoarding)

NOTES

PROJECT
45-53 MACLEAY ST, POTTS POINT

PROJECT NO.
P00065

ARCHITECT
SJB ARCHITECTS

CLIENT
TIME & PLACE

SCALE
NTS

STATUS
FOR INFORMATION

DRAWING
NOISE CONTOUR MAP - DEMOLITION WORKS

DISCIPLINE
ACOUSTICS AND VIBRATION

DRAWING NUMBER
AC-DWG-100-01-01

REVISION
001