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11-13 Percy Street, Auburn

Construction Noise And Vibration Management Plan

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1 INTRODUCTION

Acoustic Logic has been engaged to prepare a Construction Noise and Vibration Management Plan for the proposed development at 11-13 Percy Street, Auburn.

The principle objective of this study is to undertake an evaluation of works/activities to be performed during the demolition, excavation and construction of the project and forecast the potential impacts of noise and vibration. This assessment will be used to formulate and streamline effective regulation and mitigation measures.

The principle issues which will be addressed in this report are:

- Identification of the noise and vibration standards which will be applicable to this project;
- Identification of potentially impacted nearby development;
- Identify likely sources of noise and vibration generation and predicted noise levels at nearby development; and
- Formulation of a strategy to comply with the standards identified and mitigation treatments in the event that compliance is not achievable.

Provided all measures outlined in this report are fully implemented, noise and vibration impacts associated with the construction of the development site will be strictly controlled, and the impact on the surrounding environment minimised.

It is also important to note that this is a preliminary Construction Noise and Vibration Management Plan that is to be further iterated during construction if engaged by the builder once construction processes and timelines have been finalised.

2 SITE DESCRIPTION

Demolition, excavation and construction works anticipated are as follows (indicative assumptions):

- Demolition of existing buildings
- Bulk and detailed excavation
- Construction of new buildings
- Limited piling of foundations
- Breaking asphalt with machine mounted drill
- Use of mobile crane
- Erection of building structure (powered hand tools for formwork)

Investigation has been carried out by this office in regards to the existing properties and noise impacts surrounding the proposed development, which is detailed below:

- Existing residential blocks to the west along St Hillers Road;
- Existing Industrial receivers to the east and west along St Hillers Road and Boorea Street; and
- Existing commercial receivers to the north, south and east along Percy Street and St Hillers Road.

The nearest noise receivers around the site include:

- **R1**: Residential Receiver 1 – Multi storey residential dwellings to the west and south west at 30-80 St Hillers Road, Auburn.
- **I1:** Industrial Receiver 1 – Multi storey industrial development to the west at 75-81 St Hillers Road, Auburn;
- **I2:** Industrial Receiver 2 – Multi storey industrial development to the east at 42 Boorea Street, Lidcombe;
- **C1:** Commercial Receiver 1 – Multi storey commercial development to the north at 15 Percy Street, Auburn;
- **C2:** Commercial Receiver 2 – Multi storey commercial development to the south at 7-9 Percy Street, Auburn; and
- **C3:** Commercial Receiver 3 – Multi storey commercial development to the south-west at 57-73 St Hillers Road, Auburn and 42-58 Percy Street, Auburn.

A site map, measurement description and surrounding receivers are presented in Figure 1 below.

Figure 1 – Project Site
Source: NSW Six Maps

Project Site

Residential Receivers

Industrial Receivers

Commercial Receivers

Unattended Noise Monitor

Attended Measurements

3 NOISE DESCRIPTORS

Environmental noise constantly varies. Accordingly, it is not possible to accurately determine prevailing environmental noise conditions by measuring a single, instantaneous noise level.

To accurately determine the environmental noise a 15-20 minute measurement interval is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In analysing environmental noise, three-principle measurement parameters are used, namely L_{10}, L_{90} and L_{eq}. The L_{10} and L_{90} measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement intervals.

The L_{10} parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the L_{90} level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The L_{90} parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the new source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L_{90} level.

The L_{eq} parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the 15 minute period. L_{eq} is important in the assessment of environmental noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of environmental noise.

4 AMBIENT NOISE SURVEY

NSW EPA's Rating Background Noise Level (RBL) assessment procedure requires determination of background noise level for each day (the ABL) then the median of the individual days as set out for the entire monitoring period.

Appendices in this report present results of unattended noise monitoring conducted at the project site. Weather affected data was excluded from the assessment. The processed RBL (lowest 10th percentile noise levels during operation time period) are presented in Table 4-1.

4.1 MEASUREMENT POSITION

One unattended noise monitor was located in the front yard of 56-60 St Hillers Road, Auburn. Refer to Figure 1 for detailed location.

4.2 MEASUREMENT PERIOD

Unattended noise monitoring was conducted from Friday 26th of June 2020 to Friday 10th of July 2020.

Attended noise measurements were undertaken between the hours of 4:00pm and 5:00pm on Firday 10th of June 2020.

4.3 MEASUREMENT EQUIPMENT

Equipment used consisted of an Acoustic Research Laboratories Pty Ltd noise logger. The logger was set to A-weighted fast response and was programmed to store 15-minute statistical noise levels throughout the monitoring period. The monitor was calibrated at the start and end of the monitoring period using a Rion NC-73 calibrator. No significant drift was noted.

4.4 SUMMARISED RATING BACKGROUND NOISE LEVELS

Summarised rating background noise levels for the project site and immediate surroundings are presented below.

Table 4-1 – Measured Noise Levels

Monitor	Time of day	Rating Background Noise Level dB(A)$_{L90(Period)}$
56-60 St Hillers Road, Auburn	Day (7am – 6pm)	60
	Evening (6pm – 10pm)	56
	Night (10pm – 7am)	46

5 CONSTRUCTION HOURS

The assumed construction hours are as follows:

- Monday to Friday: 7:00am-6:00pm; and
- Saturday 8:00am-1:00pm.

Construction works during the above hours have been assessed with reference to the standard hours noise management levels (background + 10 dB(A)) in the NSW EPA Interim Construction Noise Guideline.

Vibration objectives will be assessed to management levels defined in Section 6.2.

6 CONSTRUCTION NOISE AND VIBRATION OBJECTIVES

6.1 NOISE OBJECTIVES

Noise associated with construction activities on the site will be assessed in conjunction with the following guidelines:

- NSW EPA Interim Construction Noise Guideline; and
- Australian Standard 2436-2010 "*Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*".

6.1.1 NSW EPA Interim Construction Noise Guideline

The EPA Interim Construction Noise Guideline (ICNG) assessment requires:

- Determination of noise management levels (based on ambient noise monitoring);
- Review of operational noise levels at nearby development; and
- If necessary, recommendation of noise controls strategies in the event that compliance with noise emission management levels is not possible.

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences:

- *"Noise affected" level. Where construction noise is predicted to exceed the "noise affected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the "noise affected level". For residential properties, the "noise affected" level occurs when construction noise exceeds ambient levels by more than 10dB(A)Leq(15min).*
- *"Highly noise affected level". Where noise emissions are such that nearby properties are "highly noise affected", noise controls such as respite periods should be considered. For residential properties, the "highly noise affected" level occurs when construction noise exceeds 75dB(A)Leq(15min) at nearby residences.*

In addition to the above management levels for residential receivers, the ICNG nominates a Management Level of 70dB(A) $L_{eq(15min)}$ at commercial receiver facades (typical office, retail). And a Management Level of RBL + 5 dB(A) for any work done outside of standard hours.

A summary of the above recommended noise levels from the ICNG is presented below.

Table 6-1 – Noise Emission Goal at Residential Property Boundaries

Location	"Noise Affected" Level - dB(A)$L_{eq(15min)}$ Standard Hours	"Highly Noise Affected" Level - dB(A)$L_{eq(15min)}$
Western Boundary (**R1** Residents)	70 externally at façade	75

Where noise from the construction works is above the "noise affected" level, the proponent should apply any feasible and reasonable work practices to minimise noise. The "noise affected level is representative of a level where there may be some community reaction to noise.

If noise emissions are likely to exceed 75 dB(A)$L_{eq(15min)\ "highly\ noise\ affected"}$ at the boundary of surrounding affected residential receivers, the receiver is deemed to be "highly noise affected". The "highly noise affected" level is representative of a level where strong community reaction to noise is expected. Introduction of management controls such as scheduling of noisy periods, or respite periods is then recommended. Refer to Section 8 for specific recommendations.

Section 4.1.2 and 4.1.3 of the EPA Interim Construction Noise Guideline also nominates management levels for other sensitive land uses (other than residences). Criteria relevant to this assessment is detailed below;

Table 6-2 – Noise Emission Goal at Commercial/Sensitive Property Boundaries

Location	"Noise Affected" Level – dB(A)$L_{eq(15min)}$ Standard Hours
Surrounding Commercial Receivers	70 externally at façade
Surrounding Industrial Receivers	75 externally at façade

6.1.2 Australian Standard AS2436:2010 "*Guide to Noise Control on Construction, Maintenance and Demolition Sites*"

The Australian Standard AS2436 states that where all reasonable and available measures have been taken to reduce construction noise, mitigation strategies may be put in place to reduce levels noise levels to within a reasonable and acceptable level.

For the control and regulation of noise from construction sites, AS2436:1981 nominates the following:

a. That reasonable suitable noise criterion is established,

b. That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes to locations of the site where they can be shielded, selecting less noisy processes, and if required regulating construction hours, and

c. The undertaking of noise monitoring where non-compliance occurs to assist in the management and control of noise emission from the construction site.

The guideline reflects on feasible and reasonable mitigation strategies, management controls and public liaising in the effort to reach realistic comprises between construction sites and potential noise affected receivers.

Based on these criteria the following procedure will be used to assess noise emissions:

- Predict noise levels produced by typical construction activities at the sensitive receivers.
- Adopt management conditions as per AS2436 in the event of a non-compliance.

6.2 VIBRATION OBJECTIVES

Vibration caused by construction at any residence or structure outside the subject site will be assessed with reference to:

- For structural damage vibration, German Standard DIN 4150-3 *Structural Vibration: Effects of Vibration on Structures*; and
- For human exposure to vibration, Department of Environment and Conservation NSW "Assessing Vibration: A Technical Guideline" (Feb 2006) is based on the guidelines contained in BS 6472:1992 *Guide to Evaluate Human Exposure to Vibration in Buildings (1Hz to 80Hz)* for low probability of adverse comment.

The criteria and the application of this standard are discussed in separate sections below.

6.2.1 Structure Borne Vibrations

German Standard DIN 4150-3 (1999-02) provides a guideline for acceptable levels of vibration velocity in building foundations, to assess the effects of vibration on structures. The table give guidance on the maximum accepted values of velocity at the foundation and in the plane of the highest floor of various types of buildings, to prevent any structural damage.

The table below lists the peak particle velocity, which is the maximum absolute value of the velocity signals for the three orthogonal components. This is measured as a maximum value of any of the three orthogonal component particle velocities when measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 6-3 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

TYPE OF STRUCTURE		PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in 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 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

6.2.2 Assessing Amenity

The NSW EPA's *Assessing Vibration – a technical guideline* is based on the guidelines contained in British Standard BS 6472-1992 '*Guide to Evaluate Human Exposure to Vibration Buildings (1Hz to 80Hz*'. This guideline provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings.

The recommendations of this guideline should be adopted to assess and manage vibration from the site. Where vibration exceeds, or is likely to exceed, the recommended levels then an assessment of reasonable and feasible methods for the management of vibration should be undertaken.

Table 6-4 – BS 6472 Vibration Criteria

		RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
Place	**Time**	**Preferred**	**Maximum**	**Preferred**	**Maximum**	**Preferred**	**Maximum**
Continuous Vibration							
Residences	Daytime	0.01	0.02	0.2	0.4	0.28	0.56
Offices	Day or night-time	0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Residences	Daytime	0.3	0.6	6.0	12.0	8.6	17.0
Offices	Day or night-time	0.64	1.28	13	26	18	36
Workshops		0.64	1.23	13	26	18	36

Note 1: Continuous vibration relates to vibration that continues uninterrupted for a defined period (usually throughout the daytime or night-time), e.g. continuous construction or maintenance activity. (DECC, 2006).

Note 2: Impulsive vibration relate to vibration that builds up rapidly to a peak followed by a damped decay and that may or may not involve several cycles of vibration (depending on frequency and damping), with up to three occurrences in an assessment period, e.g. occasional loading and unloading, or dropping of heavy equipment. (DECC, 2006).

7 PROPOSED CONSTRUCTION ACTIVITIES

We have been advised of the typical equipment/processes anticipated to be used for the construction of the subject development. Noise impacts from these activities on the amenity of the surrounding identified sensitive receivers, will be predicted in this section. Typically, the most significant sources of noise or vibration generated during a construction project will be demolition, excavation, civil works (concrete crushing) and piling.

The A-weighted sound power levels for the expected loudest equipment/processes for each stage of development are outlined in the table below.

Table 7-1 – Proposed Construction Activities and Associated Typical Sound Power Levels

Construction Stage	Equipment /Process	Typical Sound Power Level dB(A)
Demolition	Concrete Crusher	123*
	Machine Mounted Hydraulic Drill	113
	Excavator & Trucks	107
	Powered Hand Tools (Electric)	102
Excavation	Piling (bored)	111
	Excavator & Trucks	107
	Mobile Crane	104
	Powered Hand Tools (Electric)	102
Construction	Excavator & Trucks	107
	Mobile Crane	104
	Powered Hand Tools (Electric)	102

***Includes 5dB(A) addition for characteristics of noise source.**

The noise levels presented in the above table are derived from the following sources:

1. On-site measurements;
2. Table A1 of Australian Standard 2436-2010; and
3. *Data held by this office from other similar studies.

Noise levels take into account correction factors (for tonality, intermittency where necessary).

8 NOISE AND VIBRATION ASSESSMENT

8.1 NOISE IMPACT ASSESMENT

The predicted noise levels during excavation and construction will depend on:

- The activity undertaken.
- The distance between the work site and the receiver. For many of the work areas, the distance between the noise source and the receiver will vary depending on which end of the site the work is undertaken. For this reason, the predicted noise levels will be presented as a range.

Predicted noise levels are presented below. Predictions take into account the following:

- Noise reduction as a result of distance.
- Barrier effects resulting from shielding of the surrounding buildings (where applicable).

It is noted that the following predictions are preliminary as construction processes and locations have not been specifically selected at this stage. Further iteration is necessary once construction processes have been finalised.

Table 8-1 – Predicted Noise Generation to R1 Residential Receiver East of Site

Activity	**Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)**	**Comment**
Concrete Crusher	67-71*	Under 70 dB(A) Noise Management Level
Machine Mounted Hydraulic Drill	57-61	
Piling (bored)	55-59	
Excavator & Trucks	51-55	
Mobile Crane	48-52	
Powered Hand Tools (Electric)	46-50	

*A 1-2 dB(A) exceedance is considered imperceptible.

Table 8-2 – Predicted Noise Generation to I1 Industrial Receiver North West of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Concrete Crusher	68-88	Exceeds 75 dB(A) Noise Management Level when working close to the north western boundary (Refer to Recommendations Section 9)
Machine Mounted Hydraulic Drill	58-78	
Piling (bored)	56-76*	Under 75 dB(A) Noise Management Level
Excavator & Trucks	52-72	
Mobile Crane	49-69	
Powered Hand Tools (Electric)	47-67	

*A 1-2 dB(A) exceedance is considered imperceptible.

Table 8-3 – Predicted Noise Generation to I1 Industrial Receiver East of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Concrete Crusher	68-87	Exceeds 75 dB(A) Noise Management Level when working close to the eastern boundary (Refer to Recommendations Section 9)
Machine Mounted Hydraulic Drill	58-77	
Piling (bored)	56-75	Under 75 dB(A) Noise Management Level
Excavator & Trucks	52-72	
Mobile Crane	49-68	
Powered Hand Tools (Electric)	47-66	

Table 8-4 – Predicted Noise Generation to C1 Commercial Receiver North of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Concrete Crusher	70-91	Exceeds 70 dB(A) Noise Management Level when working close to the northern boundary (Refer to Recommendations Section 9)
Machine Mounted Hydraulic Drill	60-81	
Piling (bored)	58-79	
Excavator & Trucks	54-75	
Mobile Crane	51-72*	Under 70 dB(A) Noise Management Level
Powered Hand Tools (Electric)	49-70	

*A 1-2 dB(A) exceedance is considered imperceptible.

Table 8-5 – Predicted Noise Generation to C2 Commercial Receiver South of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Concrete Crusher	70-95	Exceeds 70 dB(A) Noise Management Level (Refer to Recommendations Section 9)
Machine Mounted Hydraulic Drill	60-85	Exceeds 70 dB(A) Noise Management Level when working close to the southern boundary (Refer to Recommendations Section 9)
Piling (bored)	58-83	
Excavator & Trucks	54-79	
Mobile Crane	51-76	
Powered Hand Tools (Electric)	49-74	

Table 8-6 – Predicted Noise Generation to C3 Commercial Receiver South West of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Concrete Crusher	68-87	Exceeds 70 dB(A) Noise Management Level when working close to the south western boundary (Refer to Recommendations Section 9)
Machine Mounted Hydraulic Drill	58-77	
Piling (bored)	56-75	
Excavator & Trucks	52-71*	Under 70 dB(A) Noise Management Level
Mobile Crane	49-68	
Powered Hand Tools (Electric)	47-66	

*A 1-2 dB(A) exceedance is considered imperceptible.

8.2 GENERAL DISCUSSION

Noise

Primarily, the use of concrete crushers, hydraulic drills and bored piling are predicted to be the highest noise generating equipment. All noise predictions have been presented as external noise levels. Internal noise levels at all locations are expected to be 10-20 dB(A) lower dependant on the façade of each receiver. It is also noted that concrete crushers and hydraulic drills are only expected to be used in the demolition/ excavation stage, with piling only expected to be in the excavation stage.

Receivers **C1**, **C2** and **I1** directly share a boundary with the site and therefore are exposed to higher levels of construction noise. Treatment processes are recommended as per Section 9.

Residential Receiver **R1** has line of sight to the site via Hall Street. The residential dwellings located on the corner of Hall Street and St Hillers Road are exposed to higher levels of construction noise as the surrounding residential dwellings are shielded by multiple other buildings. In all cases, predicted noise levels fall under the noise management level as per Table 8-1.

Vibration

Typically, excavation, piling, concrete crushing are the activities with the greatest potential for generation of vibration. Excavation of building footings has the potential to produce vibration levels approaching the criteria set out in Section 6.2.

The primary potential vibration source will be from use of bored piling especially when operating close to adjacent receivers. The vibration impact on all receivers has the potential to be compliant with the criteria in Section 6.2.

9 RECOMMENDATIONS

In light of the above, we recommend:

1. **Community Consultation/Notification:** Notification (leaflet or similar) of all residents within 100m of the development is recommended prior to commencement of works. Notification should advise of anticipate date and duration of excavation.

2. **Respite Periods:** The scheduling of construction activities should be undertaken to reasonably minimise noise impacts to all surrounding land uses.

    a. In this regard, highly noise intrusive works including rock hammering, piling and concrete crushing should not take place prior to 8am where noise levels at surrounding residential receivers would exceed the levels in Table 6-1.

    b. Additionally, a respite period may be considered highly noise intrusive works are required for extended periods and generate noise levels exceeding those in Table 6-1 and Table 6-2. Typically, where noisy works persist for 3 hours or more, a one hour respite period should be provided.

    c. Notification to receivers immediately bounding the site should be undertaken (via flyer or similar), informing tenants of the expected duration and times of noisy works (generally rock hammering and concrete crushing, where required) should be undertaken.

    d. It is noted that respite periods will extend the length of demolition, excavation and construction works and may provide heavier loss of amenity compared to non-imposed excavation.

3. **Quiet Work Methods/Technologies:**

    a. The primary noise generating activity at the site will be the bulk excavation period. As much as practicable, use of quieter excavation methods is to be adopted.

    b. Excavation is conducted initially using excavator with bucket (quietest excavation method), then use of rock saws or rippers. Use of the loudest excavation equipment is used only when other options are not available.

    c. It is recommended to use rock saws near all boundaries to reduce vibration and noise levels.

    d. Materials handling/vehicles:

        i. Trucks and bobcats to use a non-tonal reversing beacon (subject to OH&S requirements) to minimise potential disturbance of neighbours.

        ii. Avoid careless dropping of construction materials into empty trucks.

        iii. Trucks, trailers and concrete trucks (if feasible) should turn off their engines during idling to reduce noise impacts (unless truck ignition needs to remain on during concrete pumping).

4. **Complaints Handling:** In the event of complaint, the procedures outlined in Section 10 should be adopted.

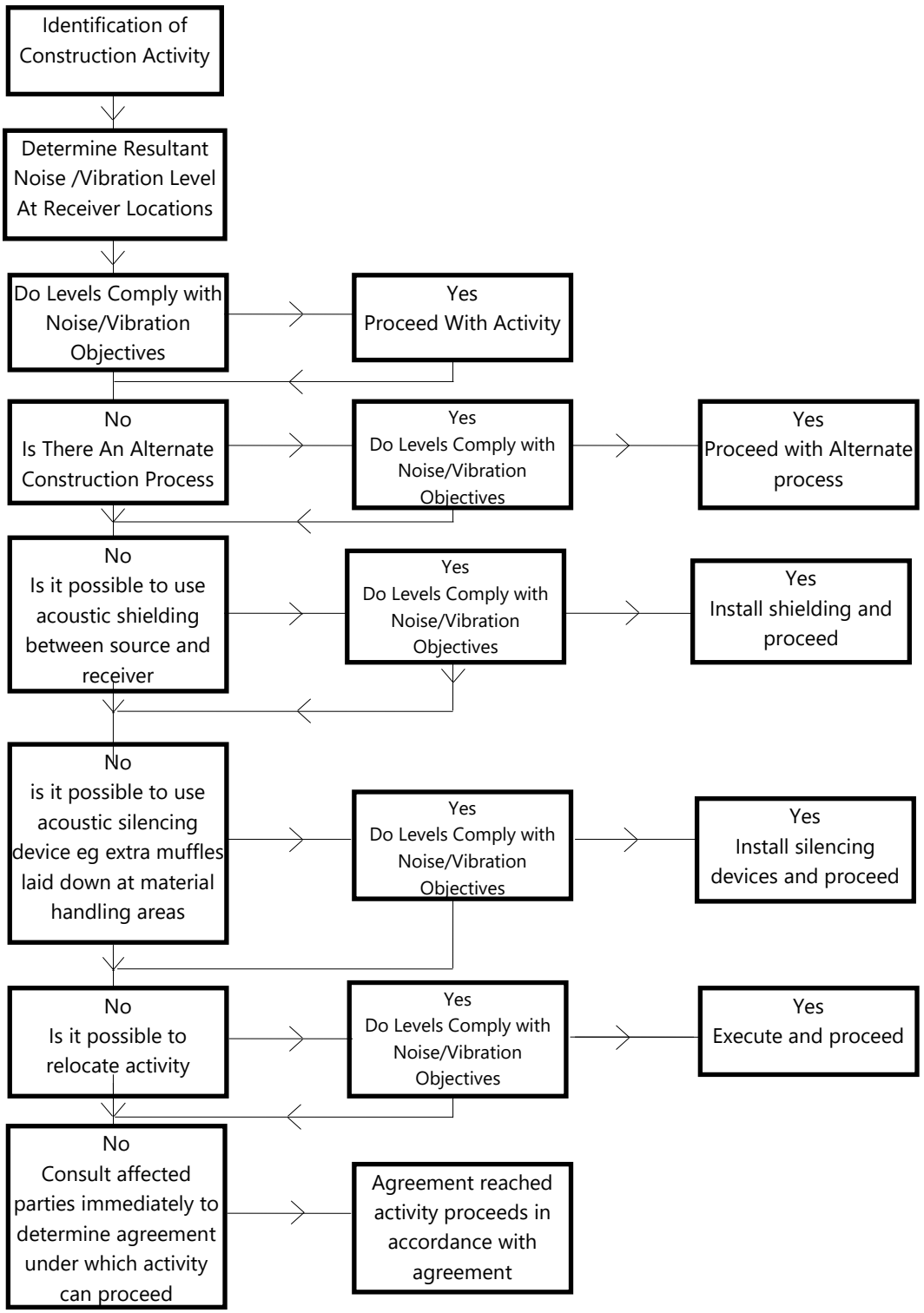
5. **Site Induction:**

    a. A copy of the Noise Management Plan is to be available to contractors. The location of the Noise Management Plan should be advised in any site induction.

    b. Site induction should also detail the site contact in the event of noise complaint.

10 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

The flow chart presented below illustrates the process that will be followed in assessing construction activities.



11 ADDITIONAL NOISE AND VIBRATION CONTROL METHODS

In the event of complaints, there are a number of noise mitigation strategies available which can be considered.

The determination of appropriate noise control measures will be dependent on the particular activities and construction appliances. This section provides an outline of available methods.

11.1 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. Undertaking this activity using bulldozers, ripping and/or milling machines will result in lower noise levels.

11.2 ACOUSTIC BARRIER

Given the position of adjacent development, it is unlikely that noise screens will provide significant acoustic benefit for receivers but will provide noticeable improvement for those on ground level.

The placement of barriers at the source is generally only effective for static plant. Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source.

Barriers can also be placed between the source and the receiver.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15dB(A) can be affected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

As barriers are used to provide shielding and do not act as an enclosure, the material they are constructed from should have a noise reduction performance that is approximately 10dB(A) greater than the maximum reduction provided by the barrier. In this case the use of a material such as 10mm or 15mm thick plywood (radiata plywood) would be acceptable for the barriers.

11.3 MATERIAL HANDLING

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).

11.4 TREATMENT OF SPECIFIC EQUIPMENT

In certain cases, it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted.

11.5 ESTABLISHMENT OF SITE PRACTICES

This involves the formulation of work practices to reduce noise generation. A more detailed management plan will be developed for this project in accordance to the construction methodology outlining work procedures and methods for minimising noise.

11.6 COMBINATION OF METHODS

In some cases, it may be necessary that two or more control measures be implemented to minimise noise.

12 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

12.1 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

In order for any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon, the builder and the regulatory authority. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation process is to:

- Inform and educate the groups about the project and the noise controls being implemented;
- Increase understanding of all acoustic issues related to the project and options available;
- Identify group concerns generated by the project, so that they can be addressed; and
- Ensure that concerned individuals or groups are aware of and have access to a Constructions Complaints Register which will be used to address any construction noise related problems should they arise.

Community consultation is recommended prior to any works commencing on site, with letterbox notifications to all identified surrounding sensitive receivers (refer section 2). This will include a construction management plan detailing the proposed works on site and duration of each stage.

12.2 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration criteria occur immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action; and
- Summary of feedback to the complainant.

A permanent register of complaints should be held. All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of a complaint shall involve where applicable;

- Noise measurements at the affected receiver;
- An investigation of the activities occurring at the time of the incident;
- Inspection of the activity to determine whether any undue noise is being emitted by equipment; and
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

12.3 REPORTING REQUIREMENTS

The following shall be kept on site:

1. A register of complaints received/communication with the local community shall be maintained and kept on site with information as detailed in this report.
2. Where noise/vibration complaints require noise/vibration monitoring, results from monitoring shall be retained on site at all times.
3. Any noise exceedances occurring including the actions taken and results of follow up monitoring.
4. A report detailing complaints received and actions taken shall be presented to the construction liaison committee.

12.4 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process.
2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
3. Implement additional acoustic treatment in the form of localised barriers, silencers etc where practical.
4. Selecting alternative equipment/processes where practical.

13 CONCLUSION

A construction noise and vibration assessment has been undertaken of the proposed construction works to be undertaken for 11-13 Percy Street, Auburn. Potential noise and vibration impacts on nearby developments have been assessed.

Provided that the mitigation techniques and vibration monitoring recommended in Sections 9, 10, 11 & 12 of this report are adopted, noise and vibration impacts on the adjacent buildings are expected to be acceptable.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd
Lillian Lockett