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Coffs Harbour Cultural & Civic Centre

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 Coffs Harbour Cultural & Civic Centre.

The principal issues which will be addressed in this plan 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 if compliance is not achievable.

We note that demolition has already been completed on site, this report addresses the proposed noise and vibration impacts regarding excavation and construction phases only.

The Construction Noise and Vibration Management Plan outlines the development of controls and safeguards that would be applied to all activity on the Coffs Harbour Cultural & Civic Centre site during excavation and construction phases. The objective of these controls is to ensure that all work is carried out in a highly controlled and predictable manner that will minimise emissions and protect the amenity of the sensitive receivers surrounding the site including commercial and places of worship. 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.

2 SITE DESCRIPTION

Excavation and construction works anticipated are as follows:

- Bulk and detailed excavation in clay soils
- Construction of new buildings
- bored piling of foundations
- Use of mobile crane
- Erection of building structure (powered hand tools for formwork)

Investigation has been carried out by this office regarding the existing properties and noise impacts surrounding the proposed development (23-31 Gordon Street Coffs Harbour), which is detailed below:

- **C1:** Existing commercial buildings to the north-east at 33-37 Gordon Street, Coffs Harbour.
- **C2:** Existing multi-storey commercial buildings to the south at 26-36 Gordon Street, Coffs Harbour.
- **W1:** Existing two-storey place of worship to the south-west at 19A-21 Gordon Street, Coffs Harbour.

A multi-storey carpark is located to the north of the site at 8-20 Castle Street, Coffs Harbour. A site map, measurement description and surrounding receivers are presented in the figure below.

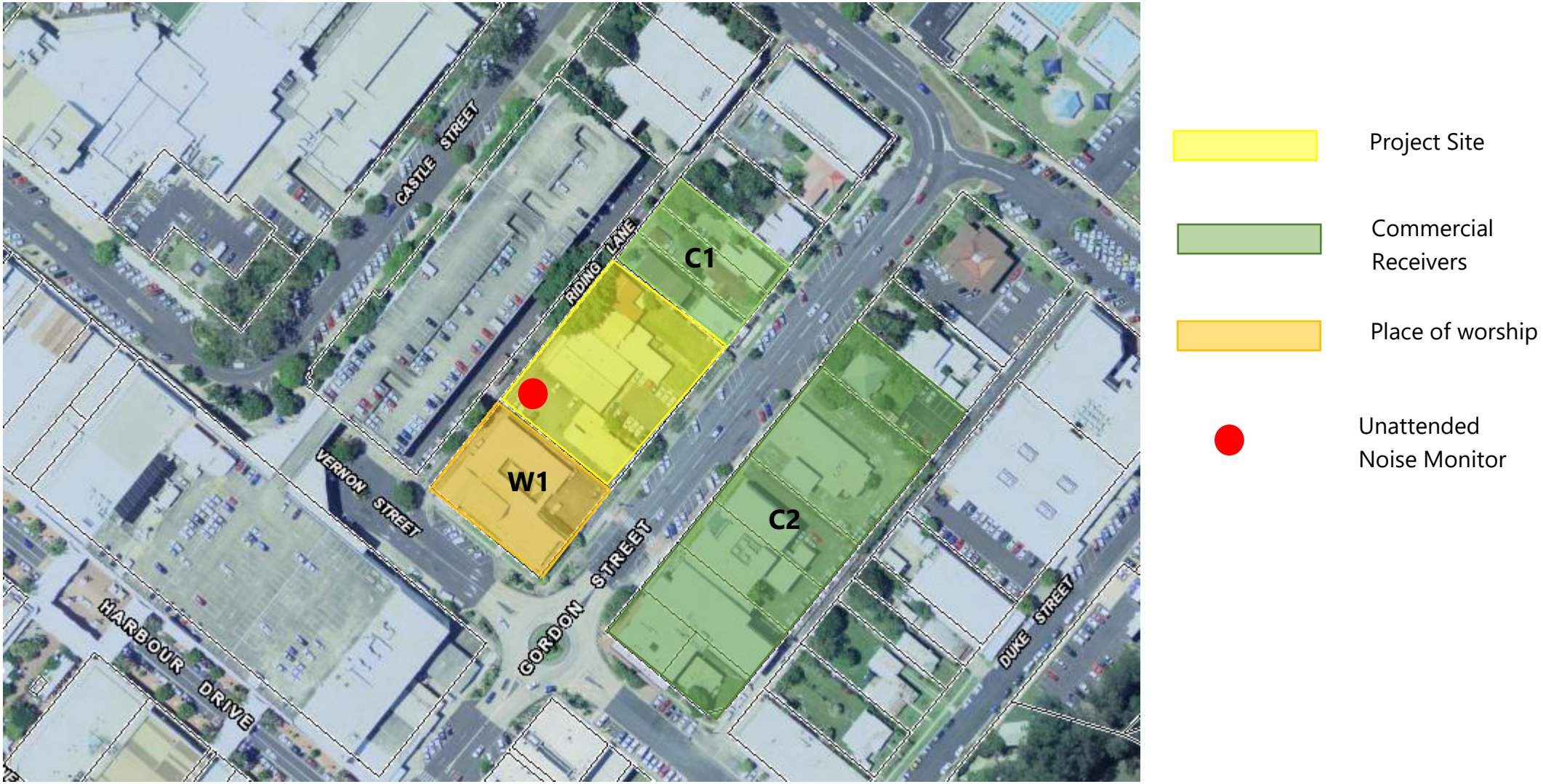


Figure 1 – Project Site
Source: NSW Six Maps

3 CONSENT CONDITIONS

This review has been conducted in accordance with Condition of Consent C14, D2-6 and D8-14 of Application SSD 10300. Further reviews will be undertaken through the excavation and construction period, as required, in response to revised methods and equipment, as well as in response to the monitoring and evaluation of actual impacts. This management plan outlines the procedures that would be adopted by the contractor during the detailed demolition, excavation and construction planning and execution phases. Conditions of Consent state the following:

CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

C14. Prior to the commencement of work. a Construction Noise and Vibration Management Plan (CNVMP) prepared by a suitably qualified person. The CNVMP shall address (but not be limited to):

a) the EPA's interim Construction Noise Guideline;

See Section 5 of this plan for recommendations to achieve the noise management levels in EPA's Interim Construction Noise Guideline

b) identify nearby sensitive receivers and land uses;

See Section 2 of this plan for a detailed site description

c) identify the noise management levels for the project;

See Section 5 of this plan for noise management levels formulated from relevant standards

d) identify the construction methodology and equipment to be used and the key sources of noise and vibration;

See Section 6 of this plan for identified construction activities and proposed equipment

e) details of all reasonable and feasible management and mitigation measures to be implemented to minimise construction noise and vibration;

f) be consistent with and incorporate all relevant recommendations and noise and vibration mitigation measures outlined in the Acoustic Report, prepared by Pulse Acoustic, dated 20 June 2019;

See Section 8 of this plan for all recommendations

g) ensure all potentially impacted sensitive receivers are informed by letterbox drops prior to the commencement of construction of the nature of works to be carried out, the expected noise levels and duration, as well as contact details for a construction community liaison officer; and

h) include a suitable proactive construction noise and vibration monitoring program which aims to ensure the construction noise and vibration criteria in this consent are not exceeded.

Prior to the commencement of works, details demonstrating compliance with the above requirements (Condition 14 (a)-(h)) must be submitted to the Certifier. A copy of the CNVMP must be submitted to the Certifier, Council and the Planning Secretary.

HOURS OF CONSTRUCTION

D2. Construction, including the delivery of materials to and from the site. may only be carried out between the following hours:

a) between 7 am and 5.30 pm, Mondays to Fridays inclusive; and

b) between 8 am and 1 pm, Saturdays.

D3. No work may be carried out on Sundays or public holidays.

D4. Activities may be undertaken outside of these hours if required:

a) by the Police or a public authority for the delivery of vehicles, plant or materials; or

b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.

D5. Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

D6. Rock breaking, rock hammering. sheet piling, pile driving and simiiar activities may only be carried out between the following hours:

a) 9.00 am to 12.00 pm Monday to Friday;

b) 2.00 pm to 5.00 pm Monday to Friday; and

c) 9.00 am to 12.00 pm Saturday.

CONSTRUCTION NOISE AND VIBRATION MANAGEMENT

D8. The development must be constructed with the aim of achieving the construction noise management levels detailed in the interim Construction Noise Guideline (Department of Environment and Climate Change, 2009). All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the ***CEMP*** *and* ***CNVMP****.*

D9. If the noise from a construction activity is substantially tonal or impulsive in nature (as described in the NSW Noise Policy for industry), 5 dB(A) must be added to the measured construction noise level when comparing the measured noise with the construction noise management levels.

D10. The Applicant must schedule intra—day 'respite periods' for construction activities predicted to result in noise levels in excess of the "highly noise affected" levels, including the addition of 5 dB to the predicted levels for those activities identified in the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers.

D11. Any noise generated during the construction of the development must not be offensive noise within the meaning of the Protection of the Environment Operations Act 1997 or exceed approved noise limits for the Subject Site.

D12. All work, including demolition, excavation and building work must comply with Australian Standard 2436—1981 'Guide to Noise Control on Construction, Maintenance and Demolition Sites'.

D13. Vibration caused by construction at any residence or structure outside the subject site must be limited to:

a) for structural damage vibration to buildings (excluding heritage buildings), British Standard BS 7385 Part 2-1993 Evaluation and Measurement for Vibration in Buildings;

b) for structural damage vibration to heritage buildings. German Standard DIN 4150 Pan' 3 Structural Vibration in Buildings Effects on Structure;

c) for human exposure to vibration, the evaluation criteria presented in British Standard BS 6472- Guide to Evaluate Human Exposure to Vibration in Buildings (1 Hz to 80 l-tz) for tow probability of adverse comment;
and

d) *these limits apply unless otherwise outlined in the* ***CNVMP***.

4 CONSTRUCTION NOISE AND VIBRATION OBJECTIVES

4.1 NOISE MANAGEMENT LEVELS

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*".

4.1.1 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.

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). Noise management levels relevant to this assessment is detailed below;

Table 4-1 – Noise Emission Goal at Non-Residential Property Boundaries

Location	"Noise Affected" Level – dB(A)$L_{eq(15min)}$
Surrounding Commercial Receivers	70 externally at façade
Surrounding Places of Worship	55 externally at façade* (45 internally)

*Adjusted to external levels from internal (10dB(A) added)

4.1.2 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 guidelines 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.

4.2 VIBRATION OBJECTIVES

Vibration caused by construction at any 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.

4.2.1 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 4-2 – 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

4.2.2 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 4-3 – 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).

5 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 from excavation and bored 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 5-1 – Proposed equipment adopted sound power levels dB(A)

Equipment / Process	Sound Power Level dB(A)
Excavator & Trucks	105
Powered Hand Tools (Electric)	95
Piling (bored)	111
Brick/ block Saw	117
Tower Crane	105
Concrete Pump	110

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 consider correction factors (for tonality, intermittency where necessary).

6 NOISE AND VIBRATION ASSESSMENT

6.1 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.
- The below site map details the extent of the construction works area and proposed location of the tower crane.

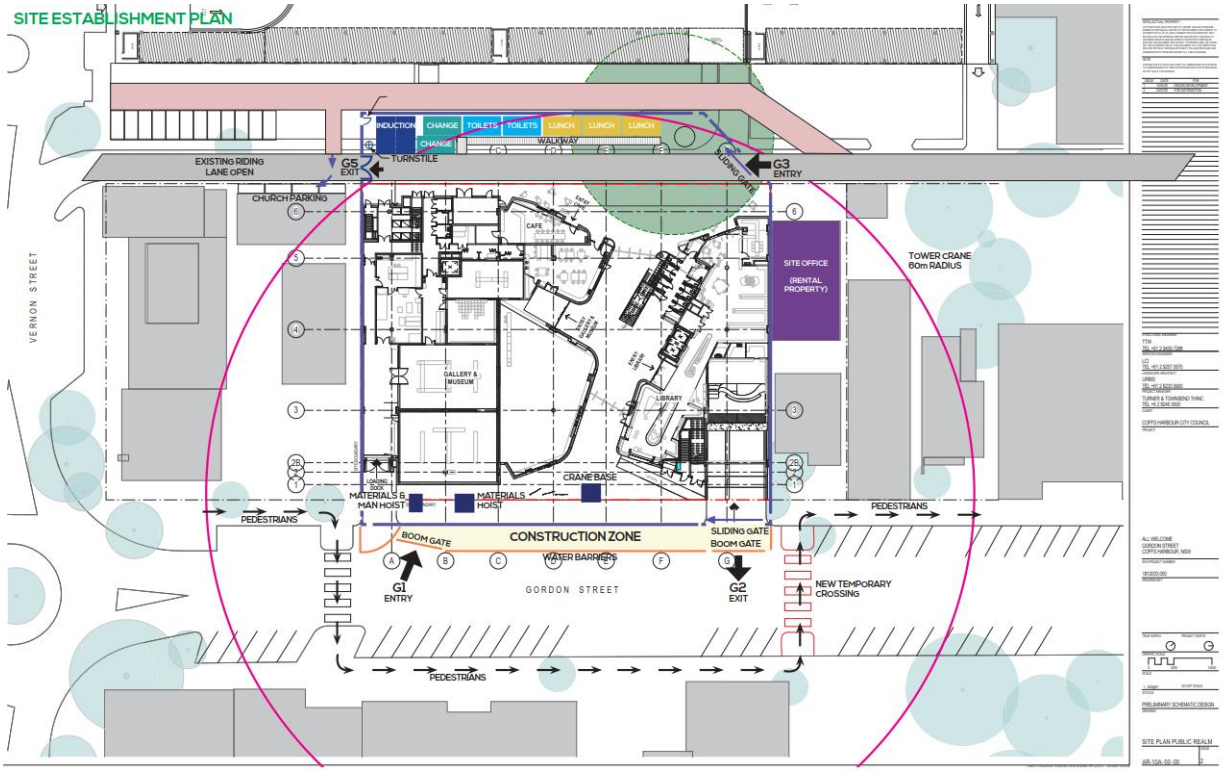


Figure 2: Site Establishment Map

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 6-1 – Predicted Noise Generation to C1 Commercial Receiver north-east of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Tower Crane	67	Under the 70 dB(A) Noise Management Level
Powered Hand Tools (Electric)	51-73	Exceeds 70 dB(A) Noise Management Level when working close to the eastern boundary (Refer to Recommendations Section 7)
Piling (bored)	67-83	
Excavator & Trucks	61-83	
Concrete Pump	66-82	
Brick/ Block Saw	73-89	Exceeds 70 dB(A) Noise Management Level (Refer to Recommendations Section 7)

Table 6-2 – Predicted Noise Generation to W1 Place of Worship Receiver south-west of the Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Tower Crane	65	Exceeds 55 dB(A) Noise Management Level (Refer to Recommendations Section 7)
Powered Hand Tools (Electric)	51-70	Exceeds 55 dB(A) Noise Management Level when working close to the western boundary (Refer to Recommendations Section 7)
Piling (bored)	67-83	Exceeds 55 dB(A) Noise Management Level (Refer to Recommendations Section 7)
Excavator & Trucks	61-80	
Brick/ Block Saw	73-89	
Concrete Pump	66-82	

Table 6-3 – Predicted Noise Generation to C2 Commercial Receiver south of the Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
Tower Crane	64	Under the 70 dB(A) Noise Management Level
Powered Hand Tools (Electric)	48-55	
Piling (bored)	64-70	
Excavator & Trucks	58-65	
Concrete Pump	63-69	
Brick/ Block Saw	70-76	Exceeds 70 dB(A) Noise Management Level when working close to the southern boundary (Refer to Recommendations Section 7)

6.2 GENERAL DISCUSSION

Noise

Primarily, the use of concrete pumps, brick/block saws 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.

Receivers **C1** and **W1** directly share a boundary with the site and therefore are exposed to higher levels of construction noise. Treatment processes are recommended as per Section 7.

Commercial Receiver **C2** has line of sight to the site via Gordon Street. The commercial blocks located along this road are exposed to higher levels of construction noise due to the line of sight. In all cases, predicted noise levels fall under the noise management level as per Table 6-1.

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 4.2.

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 4.2.

7 RECOMMENDATIONS

In light of the above, we recommend following all noise mitigation measures detailed in the Pulse Acoustic development application purposes (ref: *20190604_All Welcome Coffs Harbour_Acoustic SEARs Report,* dated 20/06/2019), as well as the following:

1. **Barrier:** If works will be conducted regularly within 10-meters of commercial receiver 1 or place of worship receiver 1's adjoining boundaries, construct/retain a 1.8-meter high solid barrier long the adjoining boundary side of each receiver (W1 and R1).

2. **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.

3. **Respite Periods:** To protect the amenity of nearby receivers, it is proposed to introduce respite periods where construction activities exceed the 'noise affected level' (55/70 dB(A) $L_{eq(15min)}$) based on the predicted noise levels presented in Section 6.1 it is evident that respite periods are to be imposed, it is recommended to consider respite hours as follows:
    a. To minimise noise impacts on W1 – Place of Worship receiver, it is recommended that a respite period be in place during main church services.
    b. To minimise noise impacts on surrounding commercial receivers, a respite period from 12pm-1pm should be implemented.
    c. It is noted that the construction plant which is predicted to exceed the 'noise affected level' would only be in use intermittently during the excavation stage. As part of any proposed respite conditions, it is recommended to limit excavation works to not be carried out on Saturdays.
    d. It is noted that respite periods will extend the length of excavation and construction works and may provide heavier loss of amenity compared to non-imposed excavation.

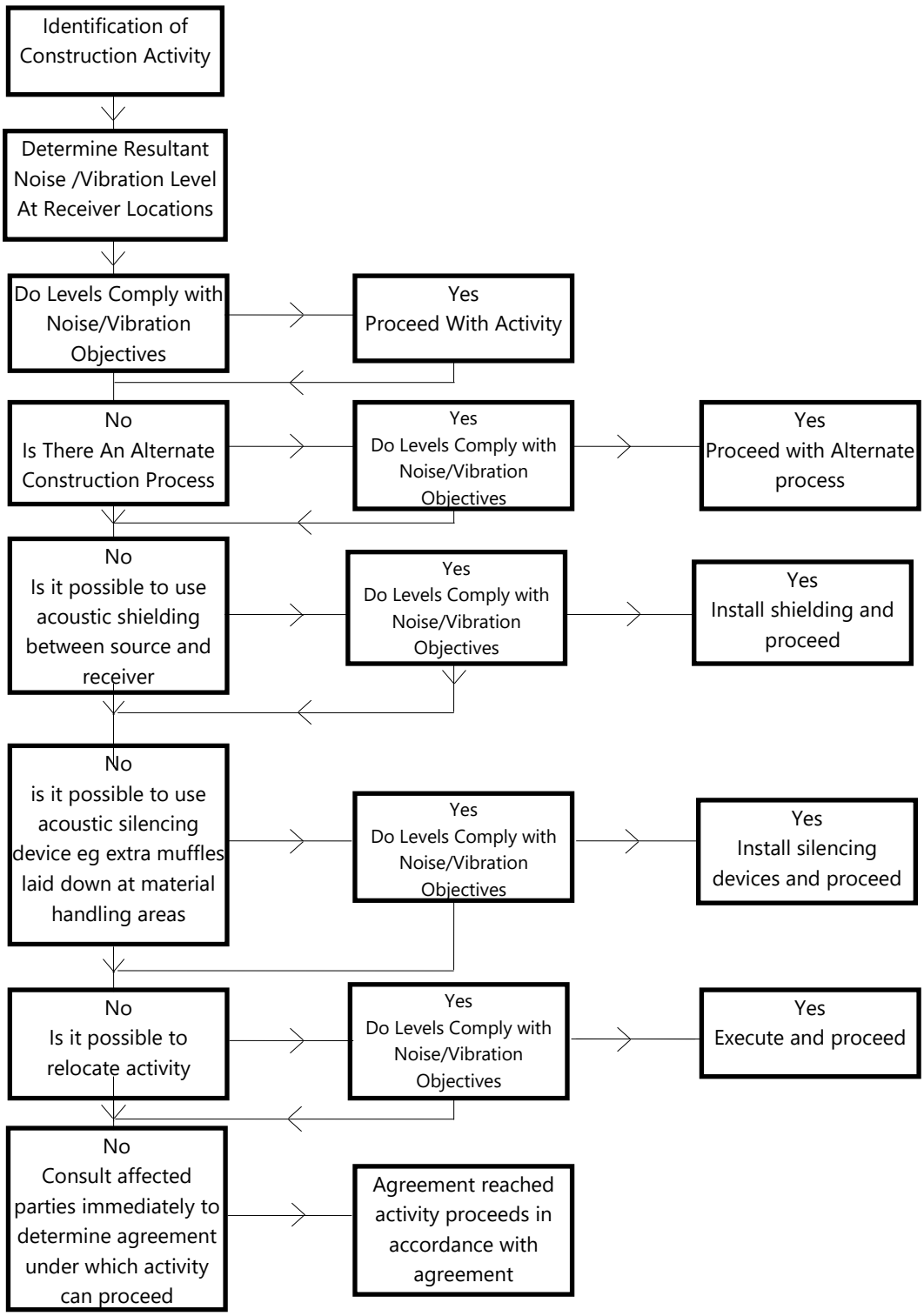
4. **Vibration monitoring**: In the event of a complaint, we recommend vibration monitoring is to be implemented along the property boundary closest to the vibration receiver who issued the compliant.

5. **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).

6. **Complaints Handling:** In the event of complaint, the procedures outlined in Section 9 should be adopted.

8 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

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



9 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.

9.1 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.

9.2 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.

9.3 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).

9.4 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.

9.5 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.

10 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

10.1 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.

10.2 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.

10.3 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.

10.4 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.

11 CONCLUSION

A construction noise and vibration assessment has been undertaken of the proposed construction works to be undertaken for Coffs Harbour Cultural & Civic Centre. Potential noise and vibration impacts on nearby developments have been assessed in accordance with Condition of Consent C14, D2-6 and D8-14 of Application SSD 10300.

Provided that the mitigation techniques recommended in this plan are adopted noise and vibration impacts on the adjacent receivers are capable of complying with construction noise management levels.

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

Yours faithfully,

Acoustic Logic Pty Ltd
Lillian Lockett