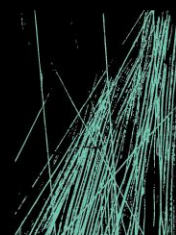




OUT-OF-HOURS CONSTRUCTION NOISE ASSESSMENT

TWEED VALLEY HOSPITAL



JHA

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DOCUMENT CONTROL SHEET

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1 INTRODUCTION

JHA Engineers has been engaged by Lend Lease in order to provide an acoustic assessment for the out-of-hours construction works proposed works located at the Cudgen Road & Turnock St Roundabout located in Tweed Heads NSW.

The objectives of this acoustic assessment are:

- Establish the appropriate noise level and vibration criteria in accordance with the relevant standards, guidelines and legislation
- Carry out an acoustic assessment to determine whether the OOH works are in compliance with the established Construction Noise Management Levels
- Provide noise mitigation measures in order to reduce noise impacts to nearest noise sensitive receivers

The following documentation has been used for the preparation of this report:

- NSW DECCW Interim Construction Noise Guideline (ICNG) 2009.
- Noise & Vibration Impact Assessment for SSDA prepared by JHA Engineers
- Noise data collected from measurements carried out on site

This document complies with JHA Consulting Engineers accreditations ISO 9001:2016 Quality Management System and ISO 14001:2016 Environmental Management System.

2 RELEVANT NOISE STANDARDS AND GUIDELINES

2.1 CONSTRUCTION NOISE CRITERIA

The proposed construction activities, noise criteria are established in accordance with the NSW DECCW Interim Construction Noise Guideline (ICNG) 2009. This guideline provides Noise Management Levels (NMLs) for construction works. If NMLs are exceeded a feasible and reasonable action will be triggered to minimise noise impact to the nearest noise sensitive receivers.

The recommended construction hours are as follows:

- Monday to Friday: 7am to 6pm.
- Saturday: 8am to 1pm.
- Sundays and Public Holidays: No excavation or construction works

The ICNG suggest construction noise management levels that may minimise the likelihood of annoyance being caused to noise sensitive residential receivers depending on the duration of works. The management levels for long-term duration works are as follows:

- Within recommended standard hours.

The Management Level ($L_{Aeq,15min}$) measured at the most exposed boundary of any affected residential receiver when the construction site is in operation must not exceed the background noise level (RBL) by more than 10 dB(A). This noise level represents the point above which there may be some community reaction to noise.

However, in the case of a highly noise affected area, the Management Level ($L_{Aeq,15min}$) at the most exposed boundary of any affected residential receiver when the construction site is in operation should not exceed 75 dB(A). This level represents the point above which there may be strong community reaction to noise.

- Outside recommended standard hours.

The Management Level ($L_{Aeq,15min}$) measured at the most exposed boundary of any affected residential receiver when the construction site is in operation must not exceed the background noise level (RBL) by more than 5 dB(A). It is noted that a strong justification is required for works outside the recommended standard hours.

ICNG suggests construction noise management levels for other sensitive land uses surrounding construction sites. Table 1 below summarises the airborne construction noise criteria (NMLs) for the noise sensitive receivers surrounding the development site.

Sensitive Receiver		Airborne Construction Noise Criteria, L_{Aeq} dB(A)	
		Within Standard Hours	Outside Standard Hours
Residential – Catchment B & C	Noise affected / External	57	39
	Highly noise affected / External	75	N/A

Table 1: ICNG construction airborne noise criteria for sensitive receivers surrounding the site.

3 CONSTRUCTION NOISE ASSESSMENT

3.1 ASSESSMENT METHODOLOGY

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

- Works to be carried out over one evening/night
- Construction noise sources (listed in Table 2)

3.2 CONSTRUCTION AIRBORNE NOISE ASSESSMENT

Table 2 presents the predicted worst-case construction noise levels from the works that are representative at the nearest noise sensitive residential receivers.

The preliminary noise assessment for these works is shown below in Table 2.

<i>Item</i>	<i>Typical Equipment Noise Level L_{A10} (dB ref 10pW)</i>	<i>Range of Predicted Noise Levels $L_{Aeq,15m}$ at nearest residential receiver</i>
Light Tower	75	27-39
Line marking	107	59-71
Water Blasting	107	59-71

Table 2: Anticipated airborne noise levels for construction works

Given the nature and duration of the proposed construction works the qualitative assessment method as per the Interim Construction Noise Guideline has been adopted. This avoids the need to perform complex predictions by using a checklist approach to assessing and managing noise. The checklist approach recommends feasible and reasonable mitigation measures as outlined in the following section

3.3 NOISE MITIGATION MEASURES

Based on the results of the assessment as shown above, mitigation measures are recommended. In order to reduce the impact of construction noise generated by the road works on the adjacent residential properties, the following noise mitigation measures are recommended to be implemented where feasible

3.3.1 COMMUNITY NOTIFICATION

- Contact potentially noise affected neighbours at the earliest possible time before any site work begins
- Inform potentially noise affected neighbours about the nature of the construction stages and the duration of noisier activities – for example water blasting and line marking
- Keep potentially noise affected neighbours up to date on progress
- Provide contact details on a site board at the front of the site, and maintain a complaints register suited to the scale of works.
- Ask about any concerns that potentially noise affected neighbours may have and discuss possible solutions.

3.3.2 OPERATE PLANT IN A QUIET AND EFFICIENT MANNER

- Ask about any concerns that potentially noise affected neighbours may have and discuss possible solutions.
- Where practical, undertake the noisiest works during the recommended standard hours.
- Turn off plant that is not being used.
- Examine, and implement where feasible and reasonable, alternative work practices which generate less noise
- Examine, and implement where feasible and reasonable, the use of silenced equipment and noise shielding around stationary plant (such as generators), subject to manufacturers' design requirements.
- Ensure plant is regularly maintained, and repair or replace equipment that becomes noisy.
- Arrange the work site to minimise the use of movement alarms on vehicles and mobile plant.

3.3.3 INVOLVE WORKERS IN MINIMISING NOISE

- Talk to workers about noise from the works at the identified land uses and how it can be reduced.
- No use of radios/stereos

3.3.4 HANDLE COMPLAINTS

- Keep staff who receive telephone complaints informed regarding current and upcoming works and the relevant contacts for these works.
- Handle complaints in a prompt and responsive manner.
- Where there are complaints about noise from an identified work activity, review and implement, where feasible and reasonable, actions additional to those described above to minimise noise output.

4 CONCLUSION

An Out-of-hours (OOH) Construction noise assessment has been carried out for the Cudgen Road & Turnock St Roundabout site. This report forms part of the documentation package to be submitted to the Department in order to verify the expected noise levels on site.

This report establishes the relevant noise level criteria, outlines the results of the assessment and provides mitigation measures in order to reduce any potential construction noise impacts.