Atlassian Building Central

Construction Noise & Vibration Monitoring - Report 06

BUILT PTY LTD

2025-07-01 to 2025-09-30

Table of Contents

1. Introduction

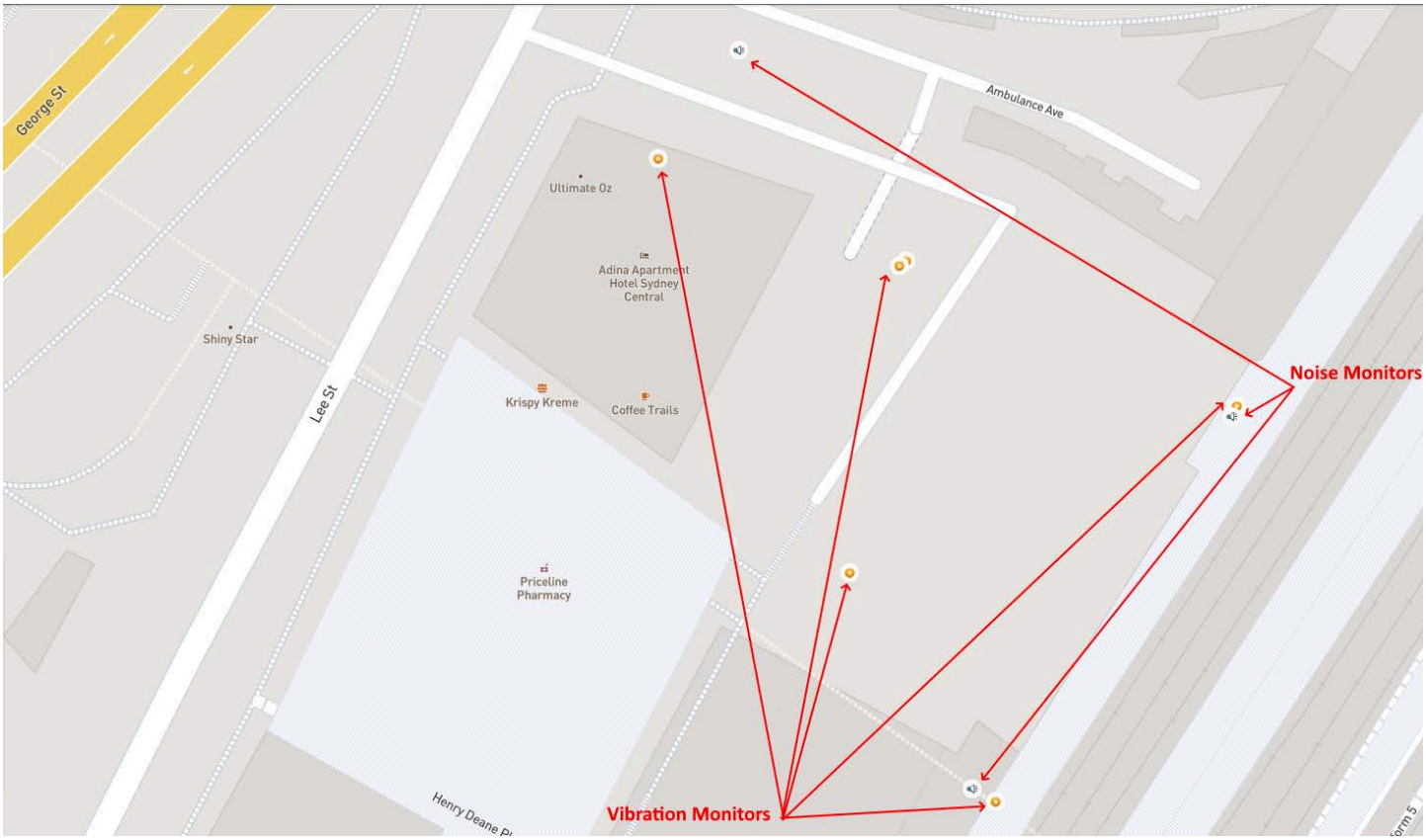
The report detailed below presents real-time Noise & Vibration readings for the associated construction activities within the Atlassian project. Multiple noise & vibration monitors were installed at the boundaries of Central station, Toga Adina Hotel building & the Devonshire tunnel.
The construction staging associated with the Atlassian site is as follows:

- Phase 1: Demolition and Heritage Dismantle
- Phase 2: Excavation and Piling
- Phase 3: Construction

Associated monitor trigger levels were implemented in line with the CNVMP "Construction noise, vibration and dust management plan".

2. Site Plan

i) Sensors Installed



3. Nominated Trigger Levels as per the CNVMP

Noise Monitoring Trigger Limits:

Noise trigger limits - Figure 5: Background Noise Measurement Locations, CNVMP.

Figure 5: Background Noise Measurement Locations

Following are the extracts from the CNVMP, section 7.2.2:

7.2.2 Summary of Relevant Construction Noise Limits

A summary is presented below.

Table 6 – Summarised Construction Noise Requirements During Proposed Hours

Receiver	Period/Time	Background Noise Level	Construction Noise Levels
Receiver 1 (See Figure 2)	Monday – Friday 7.00am – 8.00am	52 dB(A) L_{90}	57 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	52 dB(A) L_{90}	62 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	52 dB(A) L_{90}	57 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	52 dB(A) L_{90}	62 dB(A) $L_{10(15min)}$
Receiver 2 (See Figure 2)	Monday – Friday 7.00am – 8.00am	57 dB(A) L_{90}	62 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	57 dB(A) L_{90}	67 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	57 dB(A) L_{90}	62 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	57 dB(A) L_{90}	67 dB(A) $L_{10(15min)}$
Receiver 3 (See Figure 2)	Monday – Friday 7.00am – 8.00am	56 dB(A) L_{90}	61 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	56 dB(A) L_{90}	66 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	56 dB(A) L_{90}	61 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	56 dB(A) L_{90}	66 dB(A) $L_{10(15min)}$
Receiver 4 (See Figure 2)	Monday – Friday 7.00am – 8.00am	56 dB(A) L_{90}	61 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	56 dB(A) L_{90}	66 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	56 dB(A) L_{90}	61 dB(A) $L_{10(15min)}$
	Saturday	56 dB(A) L_{90}	66 dB(A) $L_{10(15min)}$

Table 7 – Summarised Construction Noise Requirements During Proposed Hours

Receiver	Period/Time	Background Noise Level	Construction Noise Levels
Receiver 6 (See Figure 2)	Monday – Friday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$
Receiver 7 (See Figure 2)	Monday – Friday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$
Receiver 8 (See Figure 2)	Monday – Friday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Monday – Friday 8.00am – 7.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$
	Saturday 7.00am – 8.00am	59 dB(A) L_{90}	64 dB(A) $L_{10(15min)}$
	Saturday 8.00am – 3.00pm	59 dB(A) L_{90}	69 dB(A) $L_{10(15min)}$

Note: Receivers 5 and 9 as presented in Figure 2 have not been included in the above table given that these receiving locations are vibration sensitive structures only.

Table 18 – Indicative Point Source Typical Noise Reduction Over Nominated Distance

Distance (m)	20	30	40	50	60	70
Noise Reduction dB	- 34	- 37	- 40	- 42	- 44	- 45

Vibration Monitoring Trigger Limits:

Following is the extract from the CNVMP, Table 8 " Safe limits for building vibration"

Table 8 – 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

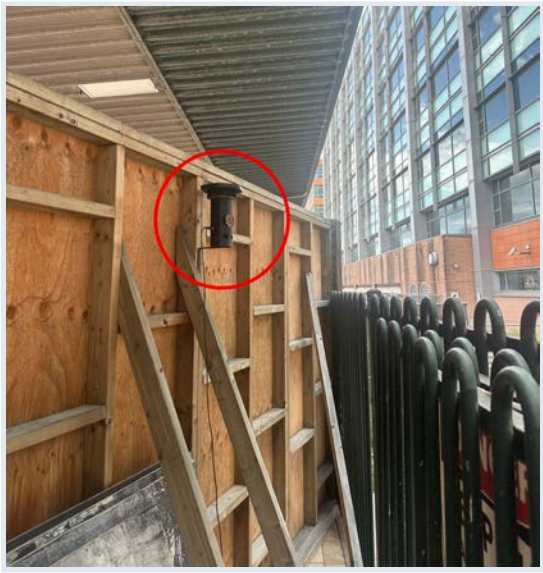
= Receivers 4,6,7

= Receiver 1 & 8

= Receivers 3 & 9

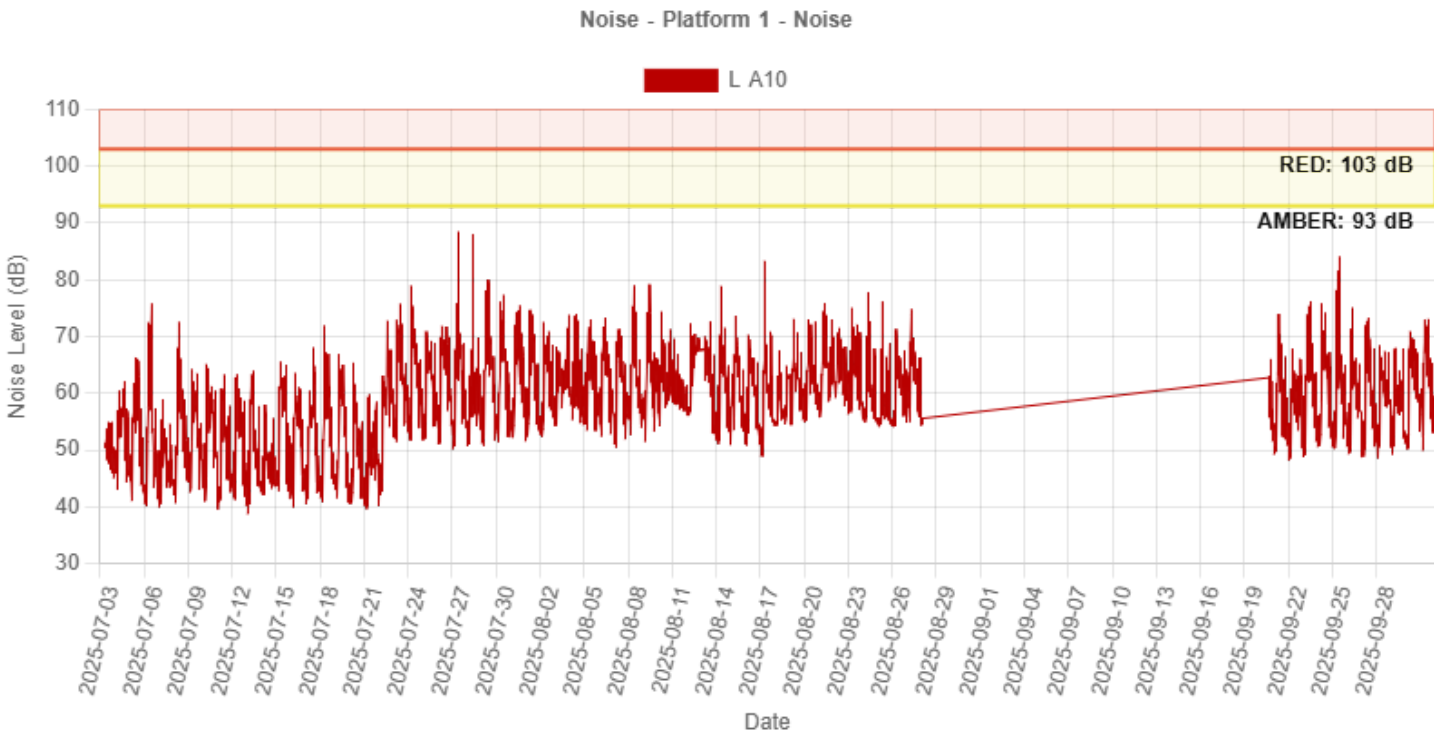
4. Result Summary

Noise Monitor installed at Platform 1:



Vibration Monitors installed around DST, Platform 1 and Adina Wall:

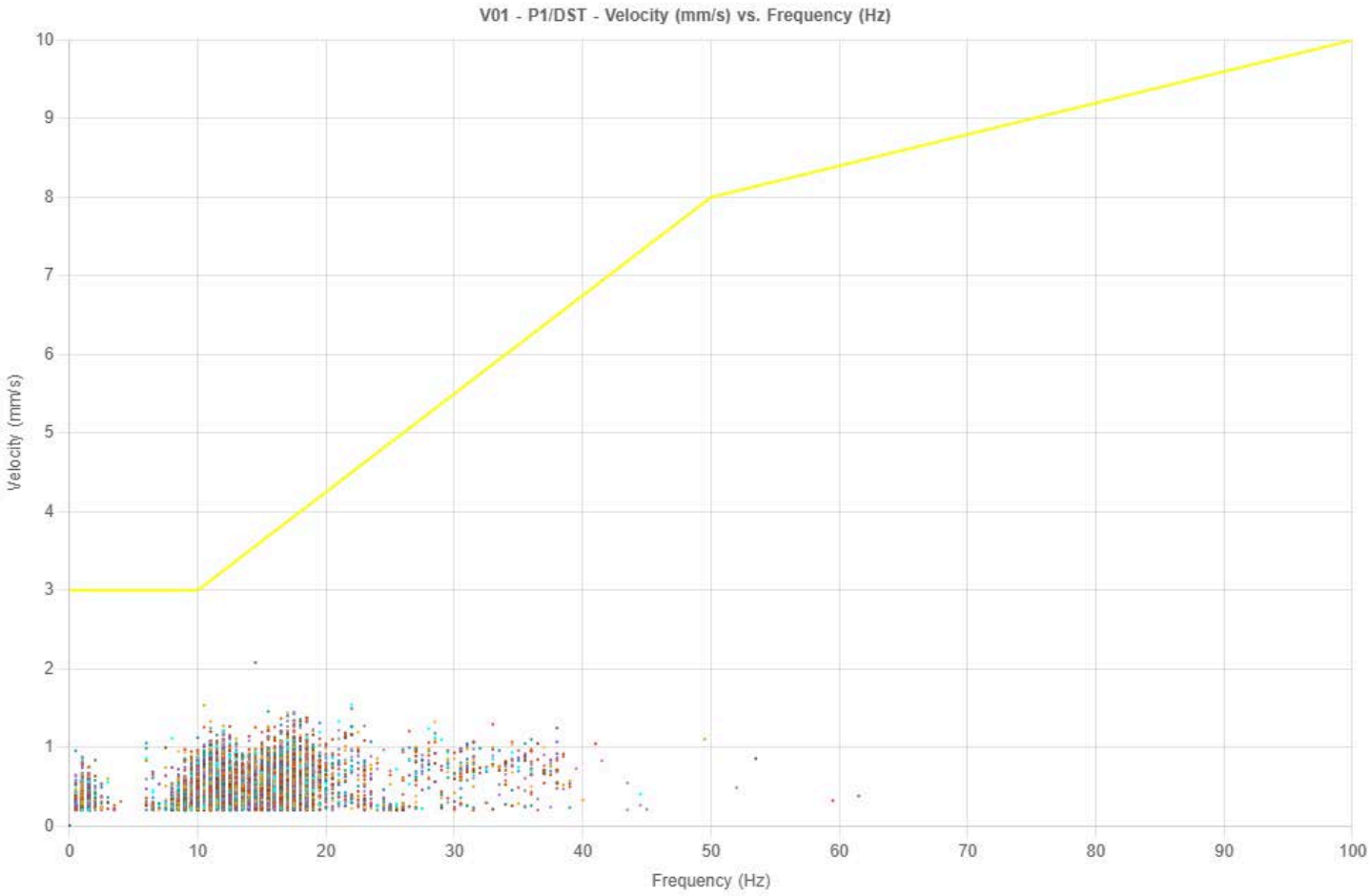
i) Noise Monitor

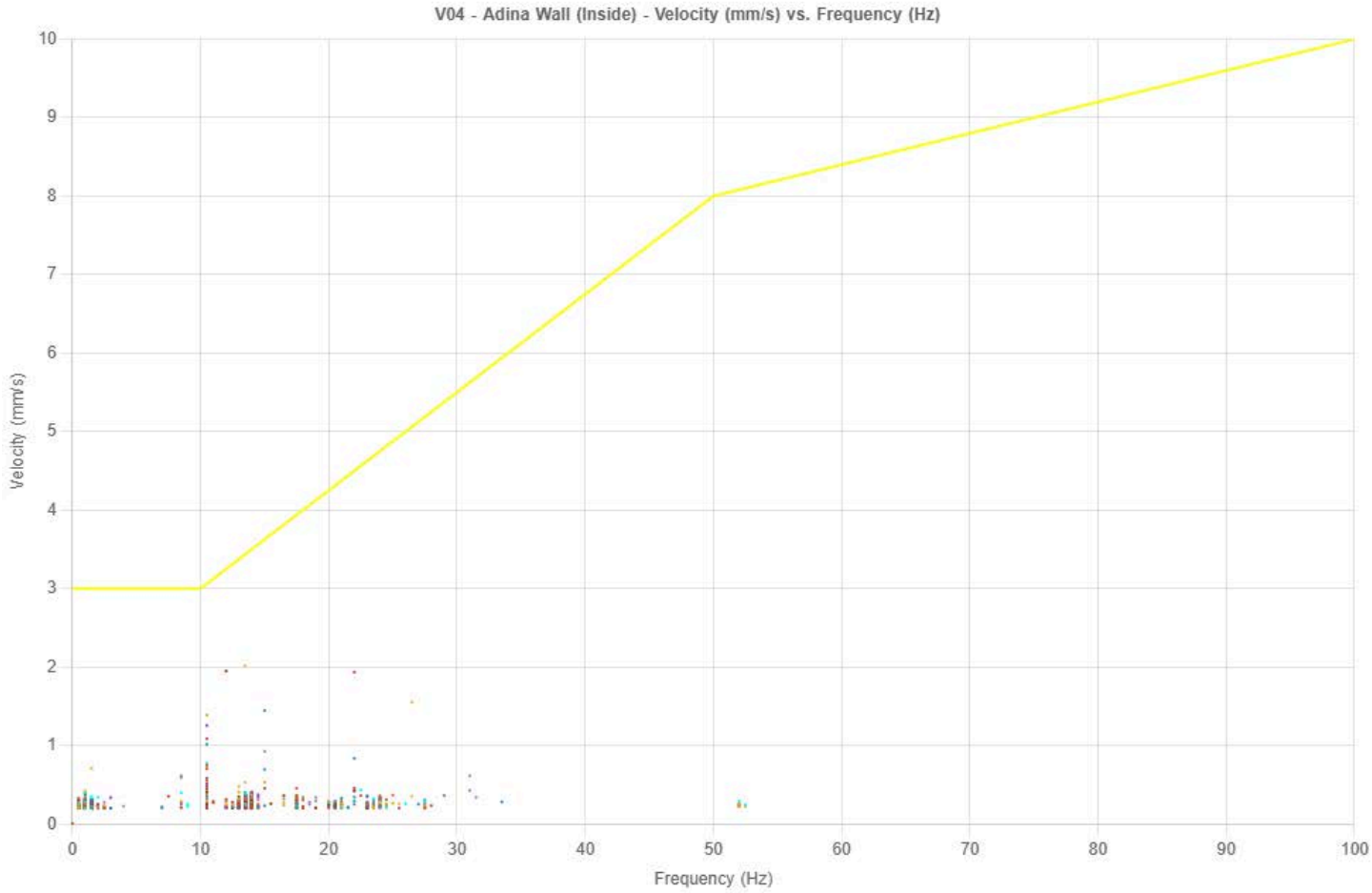


The data provided above was taken post Atlassian works commencing and represents the condition for above mentioned timeframes.

Data represents noise (LA10) monitored by the noise monitor on site, which are largely within specified limits. Any exceedances have been addressed on-site utilising the mitigation measures outlined below.

ii) Vibration Monitors





The data provided above was taken post Atlassian works commencing and represents the condition for above mentioned timeframes.

Data represents peak particle velocity (mm/s) vs frequency(Hz) monitored by the vibration monitors on site, which are largely within specified limits. Any exceedances have been addressed on-site utilising the mitigation measures outlined below.

5. Noise and Vibration Mitigation Techniques (Refer CNVMP - Section 12.2)

12.2 GENERAL RECOMMENDATIONS

Other noise management practices which may be adopted are discussed below. In addition, notification, reporting and complaints handling procedures should be adopted. Refer to Urbis Engagement Atlassian Central Construction Communications Strategy. Plan work activities in accordance with SSDA Condition F8 which provides respite periods for specific rock breaking and similar activities.

12.2.1 Acoustic Barrier

Barriers or screens can be an effective means of reducing noise. Barriers can be located either at the source or receiver.

The placement of barriers at the source is generally only effective for static plant (tower cranes). 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.

12.2.2 Silencing Devices

Where construction process or appliances are noisy, the use of silencing devices may be possible in some circumstances. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

12.2.3 Material Handling

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

12.2.4 Treatment of Specific Equipment

In certain cases, it may be possible to specially treat a piece of equipment to reduce the sound levels emitted. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

12.2.5 Establishment of Site Practices

This involves the formulation of work practices to reduce noise generation. This includes locating fixed plant items as far as possible from residents as well as rotating plant and equipment to provide respite to receivers.

Construction vehicles accessing the site should not queue in residential streets and should only use the designated construction vehicle routes. Loading of these vehicles should occur as far as possible from any sensitive receiver.