KP Acoustics Ltd.
info@kpacoustics.com
1 Galena Road, W6 0LT London, UK
+44 (0) 208 222 8778
www.kpacoustics.com

200 Dantzic Street, Manchester M4 4DD

Noise, Vibration & Dust Monitoring Report
Report 22602.NVDM
11/05/2021 – 20/05/2021

Henry Construction Ltd
The Queen's Walk, Bishop's
London, SE1 7PB

Registered in England Company No. 7947892. KP Acoustics is the Trading Name of KP Acoustics Limited

Contents

1.0 INTRODUCTION 3
2.0 MONITORING LOCATIONS 3
2.1 Noise, vibration & Dust Monitoring Locations 3
3.0 NOISE 4
3.1 Noise Criterion 4
3.2 Noise Results 4
4.0 VIBRATION 5
4.1 Vibration Criterion 5
4.2 Vibration results 6
5.0 DUST 6
5.1 Dust Criterion 6
5.2 Dust Results 6
6.0 CONCLUSIONS 7

List of Attachments

22602.BNTH1-2	Background Noise Time Histories
22602.BVTH1	Background Vibration Time History
22602.BDTH1	Background Dust Time History
22602.NTH1-2	Noise Time Histories
22602.VTH1	Vibration Time History
22602.DTH1	Dust Time History

1.0 INTRODUCTION

KP Acoustics Ltd have been appointed by Henry Construction Ltd, The Queen's Walk, Bishop's

London, SE1 7PB to undertake environmental noise, vibration and dust monitoring of on-site works at 200 Dantzic Street, Manchester M4 4DD, UK.

This is the report details the measured noise, vibration and dust levels recorded from 11/05/2021 – 20/05/2021. Measured noise, vibration and dust levels will be compared against measured background levels.

The following equipment has been installed:

- 3 No. Class 1 equivalent sound level monitors;
- 1 No. PM10 dust monitor.

2.0 MONITORING LOCATIONS

2.1 Noise, vibration & Dust Monitoring Locations

Noise, vibration and dust monitoring equipment have been installed at three positions, as shown on the below map.

Icon	Descriptor	Location Description
	Noise & Dust Measurement Position 1	Both the noise and dust meters were installed next to the site entrance with access from Dantzic Street.
	Noise Measurement Position 2	The noise meter was installed on the northern side of the site and next to Dantzic Street.
	Vibration Measurement Position 3	The vibration meter was installed at the South of the site and installed on the party wall in the closed proximity to the railway.

Table 2.1 Noise, vibration & Dust measurement positions and description



SP1. Site plan with Indicative noise, vibration & dust monitoring locations

3.0 NOISE

3.1 Noise Criterion

British Standard BS5228 suggests that noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut. The standard goes on to propose that noise levels, between 08:00 hours and 18:00 hours (Monday to Friday) and 08:00 hours and 13:00 hours (Saturday), measured at a point 1m in front of the most exposed of any windows and doors in any façade of any eligible dwelling should not exceed 75 dBA $L_{Aeq,T}$ over that time period.

Owing to the distance between the site and its nearest noise sensitive receiver, approximately 60m, there will be attenuation in the noise levels produced by onsite works. This attenuation is likely to be around 18-36 dB.

The above suggests a monitoring strategy where 85 dBA $L_{Aeq,15\ min}$ is set as the noise trigger level should allow sufficient noise levels to be produced on site to allow works to continue uninterrupted, whilst keeping levels at the nearest neighboring properties generally below 70 dBA.

3.2 Noise Results

The results of the noise monitoring for the week 11/05/2021 – 20/05/2021 are shown in Figure 22602.NTH1-2. The graph shows the measured 15 min dB L_{Aeq} noise levels in

comparison with those recorded during our baseline survey, and the agreed trigger level criterion of 85dB(A) $L_{eq,15\ min}$.

There have been no exceedances of the above criteria measured during this monitoring period.

The daily 'Working Day' results are shown in the table below.

Date	dB L_{Aeq} (10hrs 08:00-18:00 Monday – Friday, 5hrs 08:00-18:00 Saturday)	
	Location 1	Location 2
Friday 30 April 2021	70	80
Saturday 01 May 2021	60	56
Sunday 02 May 2021 (No works)	60	57
Monday 03 May 2021	62	58
Tuesday 04 May 2021	73	81
Wednesday 05 May 2021	71	81
Thursday 06 May 2021	-	78
Friday 07 May 2021	-	79
Saturday 08 May 2021	-	60
Sunday 09 May 2021 (No works)	-	57
Monday 10 May 2021	73	72
Tuesday 11 May 2021	69	74
Wednesday 12 May 2021	70	78
Thursday 13May 2021	72	80
Friday 14 May 2021	71	77
Saturday 15 May 2021	61	58
Sunday 16 May 2021 (No works)	61	57
Monday 17 May 2021	71	78
Tuesday 18 May 2021	70	78
Wednesday 19 May 2021	71	81
Thursday 20 May 2021	70	77

Table 3.1 Daily Noise levels for Location 1 and Location 2

Unfortunately, we are unable to present data at Position 1 from Thursday the 6th to Sunday the 9th of May 2021 owing to an electrical fault with the equipment. This fault was subsequently repaired and power was returned to the location on Monday 10 May 21021.

4.0 VIBRATION

4.1 Vibration Criterion

With respect to vibration limits, BS 5228 states that

"It is recommended that, for soundly constructed residential property and similar structures which are in generally good repair, a conservative threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak particle velocity (P.P.V.) of 10 mm/s for intermittent vibration and 5 mm/s for continuous vibrations. Below these vibration magnitudes, minor damage is unlikely to occur. Current experience suggests that these values

may be reduced by up to 50% where the preliminary survey reveals existing significant defects (such as a result of settlement) of a structural nature."

"Buildings constructed for industrial and commercial use exhibit greater resistance to damage from vibrations than normal dwellings, and it is recommended that light and flexible structures should be assigned thresholds of 20 mm/s for intermittent vibrations and 10 mm/s for continuous vibrations, whereas heavy and stiff buildings should have higher thresholds of 30 mm/s for intermittent vibrations and 15 mm/s for continuous vibrations."

In addition to the above, BS7385-2 notes that the probability of damage tends towards zero at 12.5mm/s peak component particle velocity.

The above suggests that a monitoring strategy where 10mm/s PPV is set as the trigger level for vibration levels should result in a significantly reduced likelihood of minor or cosmetic damage to neighbouring structures.

4.2 Vibration results

The results of the vibration monitoring for the period spanning 11/05/2021 – 20/05/2021 are shown in Figure 22602.VTH1. The graph shows the measured 15 min Peak Particle Velocity (P.P.V) for vibration measurements in comparison to the set criterion.

There have been no exceedances of the above criteria measured during this monitoring period.

5.0 DUST

5.1 Dust Criterion

Automated particulate monitoring of average 15-minute PM10 dust is being undertaken in general accordance with the Institute fort Air Quality Management's *Air Quality Monitoring in the Vicinity of Demolition and Construction Sites,* 2018 which recommends an action level of 190 µg/m3 of PM10 (1 hour average).

5.2 Dust Results

The results of the dust monitoring for the period spanning 11/05/2021 – 20/05/2021 are shown in Figure 22602.DTH1. The graph shows the measured PM_{10} levels averaged over 15 minutes.

There have been no exceedances of the above criteria measured during this monitoring period.

6.0 CONCLUSIONS

Noise, vibration and dust monitoring is being undertaking in 200 Dantzic Street, Manchester, M4 4DD.

The results are presented herein.

Report by

Alejandro Santana AMIOA
KP Acoustics Ltd