cass allen

Architectural & Environmental Acousticians
Noise & Vibration Engineers

Holloway Park, London

Construction Monitoring Report

Client:	London Square
Ref:	CM52-22405-R0
Date:	7 November 2023
Note by:	Adam Bamford, BSc MIOA DipIOA, Principal Acoustics Consultant

1. INTRODUCTION

1.1 This Technical Note sets out results of the construction monitoring being carried out at the above between Monday 30th October and Saturday 4th November 2023. The monitoring is being carried out in accordance with the methodology set out in the Cass Allen response (reference LR03-22405-R0 dated 27 October 2023) to a S60 warning letter issued to Downwell Demolition Ltd.

2. WEEKLY ACTIVITIES

2.1 The following activities have been carried out onsite this week:

Downwell

- Exposing Block 2 piles.
- Engineer plotting Block 2 piles.
- Removing Block 2 piles down to 2m with muncher attachment.
- Exposing Block 1 piles.
- Engineer plotting Block 1 piles.
- Removing Block 1 piles down to 2m with muncher attachment.
- Backfilling excavations.
- Loading skips.

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- Processing concrete with hydraulic muncher.
- Crushing arisings to 6f2 with crusher.
- Breaking slab at Block 1 within noisy periods.
- Breaking slab at Block 1 Sports hall within noisy periods.
- Removing Block 2 foundations with bucket attachments.
- Removing Block 2 foundations with Breaker attachment within noisy periods.

Horizon

- Watch and brief attendance with Downwell.
- Ground remediation.
- Attenuation tank dig.
- Loading lorries 180 Nr loads of crush leaving site.
- Screening.

Careys London

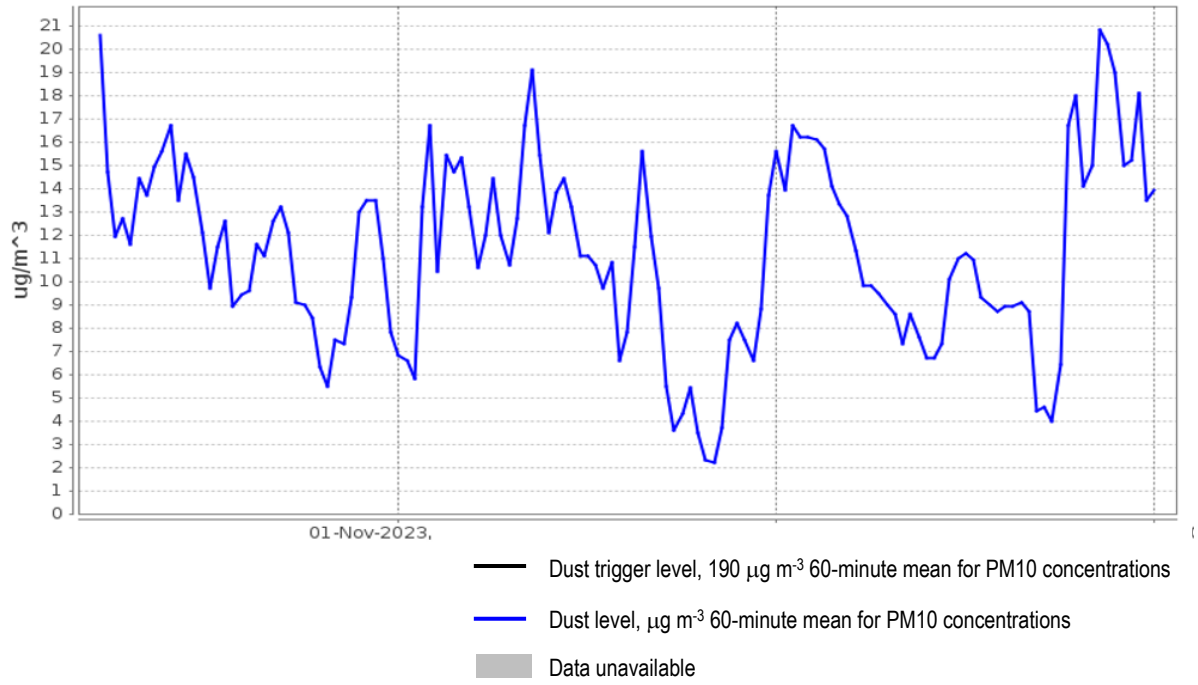
- Delivery of plant and site set up.

3. MONITORING DATA & DISCUSSION OF BPM

3.1 This section sets out a summary of the monitoring data that has been recorded onsite and provides a discussion of any exceedances and best practicable means incorporated by the site team if exceedances were believed to be construction related.

Dust Monitoring Results

Location 1

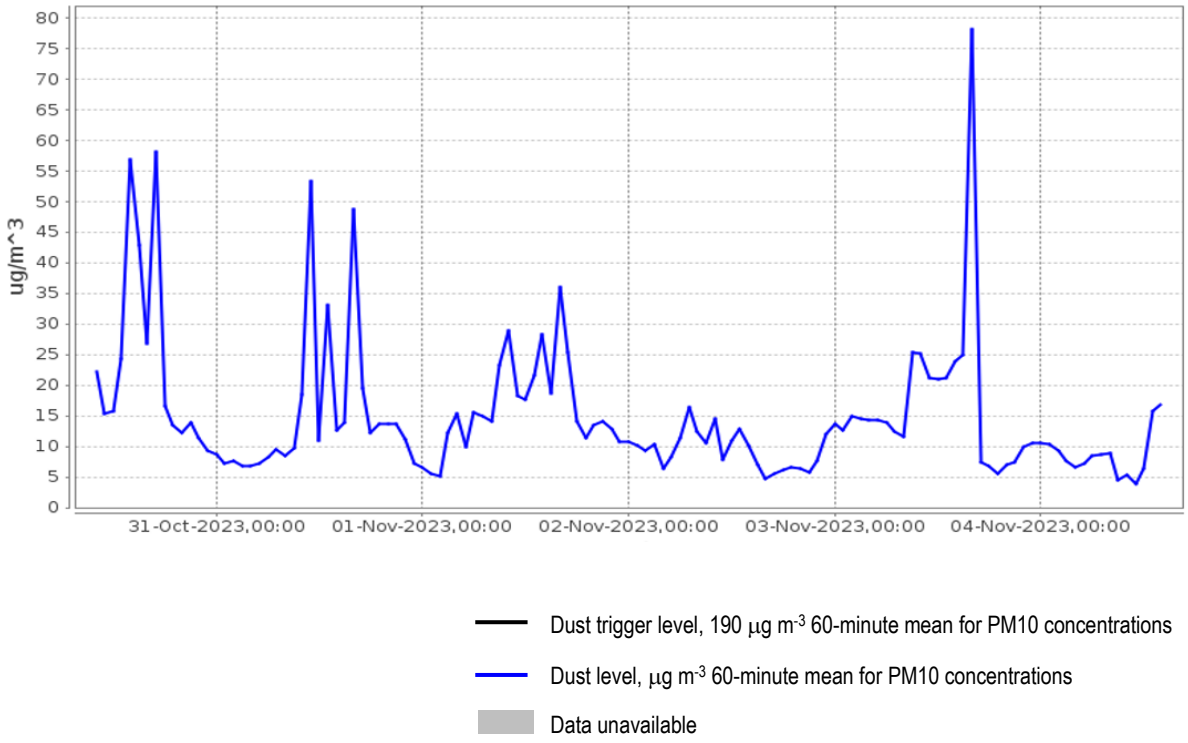


3.2 There was 96% data coverage at Location 1 for the monitoring period covered by this report. The only missing data occurred during Monday morning when the site team were swapping the depleted battery from the weekend. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.

Location 2

3.3 There was 0% data coverage at Location 2 for the monitoring period covered by this report. The dust monitoring unit at Location 2 has been sent off for its biennial laboratory calibration and we have asked the manufacturer to investigate and repair/fix the local interface communication issue that was reported in the previous weekly report. It is anticipated that the monitor will be back onsite in 2 to 3 working weeks.

Location 3



3.4 There was 96% data coverage at Location 3 for the monitoring period covered by this report. The only missing data occurred during Monday morning when the site team were swapping the depleted battery from the weekend. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.

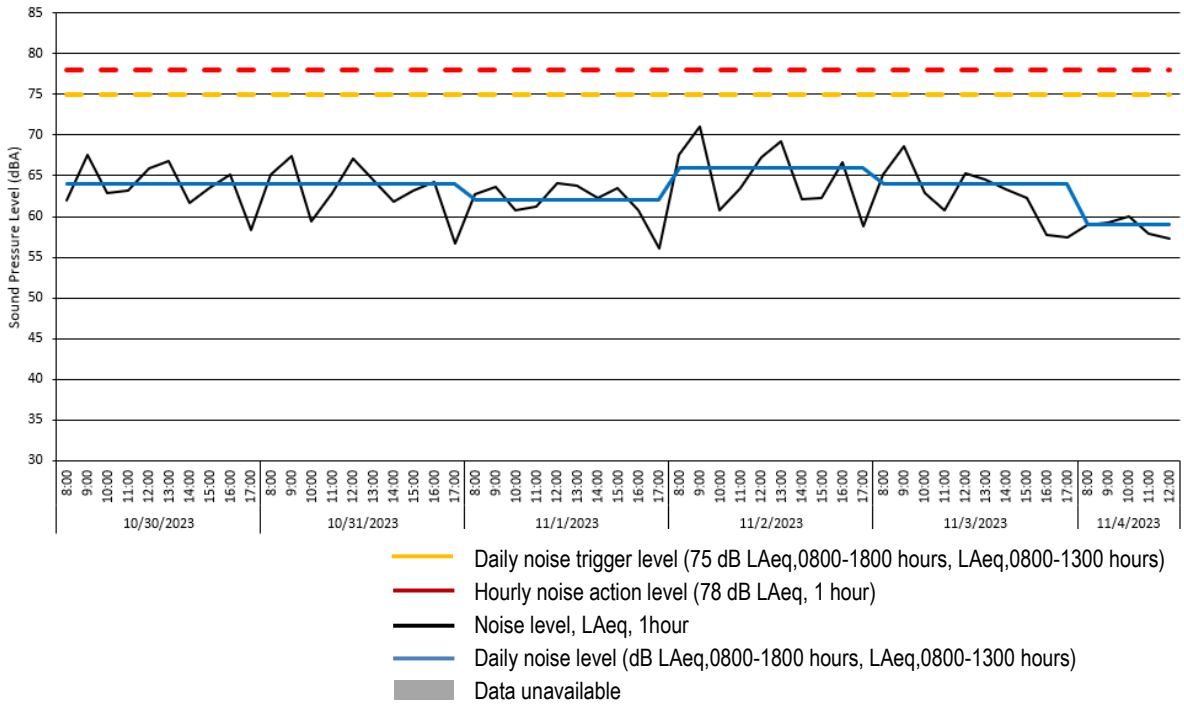
Noise Monitoring Results

Location 1 – Raw Data

Broadband Results

Date [YYYY-MM-DD]	Time [hh:mm:ss]	LAeq(60min) [dB]	LAeq(7hr) [dB]	LAeq(10hr) [dB]	LAeq(5hr) [dB]
2023-10-30	09:00:00	62.0	-.-	-.-	-.-
2023-10-30	10:00:00	67.5	-.-	-.-	-.-
2023-10-30	11:00:00	62.9	-.-	-.-	-.-
2023-10-30	12:00:00	63.2	-.-	-.-	-.-
2023-10-30	13:00:00	65.9	-.-	-.-	-.-
2023-10-30	14:00:00	66.8	-.-	-.-	-.-
2023-10-30	15:00:00	61.7	-.-	-.-	-.-
2023-10-30	16:00:00	63.5	-.-	-.-	-.-
2023-10-30	17:00:00	65.1	-.-	-.-	-.-
2023-10-30	18:00:00	58.3	-.-	64.4	-.-
2023-10-31	09:00:00	65.2	-.-	-.-	-.-
2023-10-31	10:00:00	67.4	-.-	-.-	-.-
2023-10-31	11:00:00	59.4	-.-	-.-	-.-
2023-10-31	12:00:00	62.9	-.-	-.-	-.-
2023-10-31	13:00:00	67.1	-.-	-.-	-.-
2023-10-31	14:00:00	64.5	-.-	-.-	-.-
2023-10-31	15:00:00	61.8	-.-	-.-	-.-
2023-10-31	16:00:00	63.2	-.-	-.-	-.-
2023-10-31	17:00:00	64.2	-.-	-.-	-.-
2023-10-31	18:00:00	56.7	-.-	64.2	-.-
2023-11-01	09:00:00	62.8	-.-	-.-	-.-
2023-11-01	10:00:00	63.7	-.-	-.-	-.-
2023-11-01	11:00:00	60.8	-.-	-.-	-.-
2023-11-01	12:00:00	61.2	-.-	-.-	-.-
2023-11-01	13:00:00	64.1	-.-	-.-	-.-
2023-11-01	14:00:00	63.8	-.-	-.-	-.-
2023-11-01	15:00:00	62.2	-.-	-.-	-.-
2023-11-01	16:00:00	63.5	-.-	-.-	-.-
2023-11-01	17:00:00	60.8	-.-	-.-	-.-
2023-11-01	18:00:00	56.1	-.-	62.4	-.-
2023-11-02	09:00:00	67.6	-.-	-.-	-.-
2023-11-02	10:00:00	71.0	-.-	-.-	-.-
2023-11-02	11:00:00	60.7	-.-	-.-	-.-
2023-11-02	12:00:00	63.5	-.-	-.-	-.-
2023-11-02	13:00:00	67.2	-.-	-.-	-.-
2023-11-02	14:00:00	69.2	-.-	-.-	-.-
2023-11-02	15:00:00	62.1	-.-	-.-	-.-
2023-11-02	16:00:00	62.2	-.-	-.-	-.-
2023-11-02	17:00:00	66.6	-.-	-.-	-.-
2023-11-02	18:00:00	58.8	-.-	66.4	-.-
2023-11-03	09:00:00	65.2	-.-	-.-	-.-
2023-11-03	10:00:00	68.6	-.-	-.-	-.-
2023-11-03	11:00:00	62.9	-.-	-.-	-.-
2023-11-03	12:00:00	60.8	-.-	-.-	-.-
2023-11-03	13:00:00	65.3	-.-	-.-	-.-
2023-11-03	14:00:00	64.5	-.-	-.-	-.-
2023-11-03	15:00:00	63.3	-.-	-.-	-.-
2023-11-03	16:00:00	62.2	-.-	-.-	-.-
2023-11-03	17:00:00	57.8	-.-	-.-	-.-
2023-11-03	18:00:00	57.4	-.-	63.9	-.-
2023-11-04	09:00:00	59.0	-.-	-.-	-.-
2023-11-04	10:00:00	59.3	-.-	-.-	-.-
2023-11-04	11:00:00	60.0	-.-	-.-	-.-
2023-11-04	12:00:00	57.9	-.-	-.-	-.-
2023-11-04	13:00:00	57.3	-.-	-.-	58.8

Location 1 – Time History Data



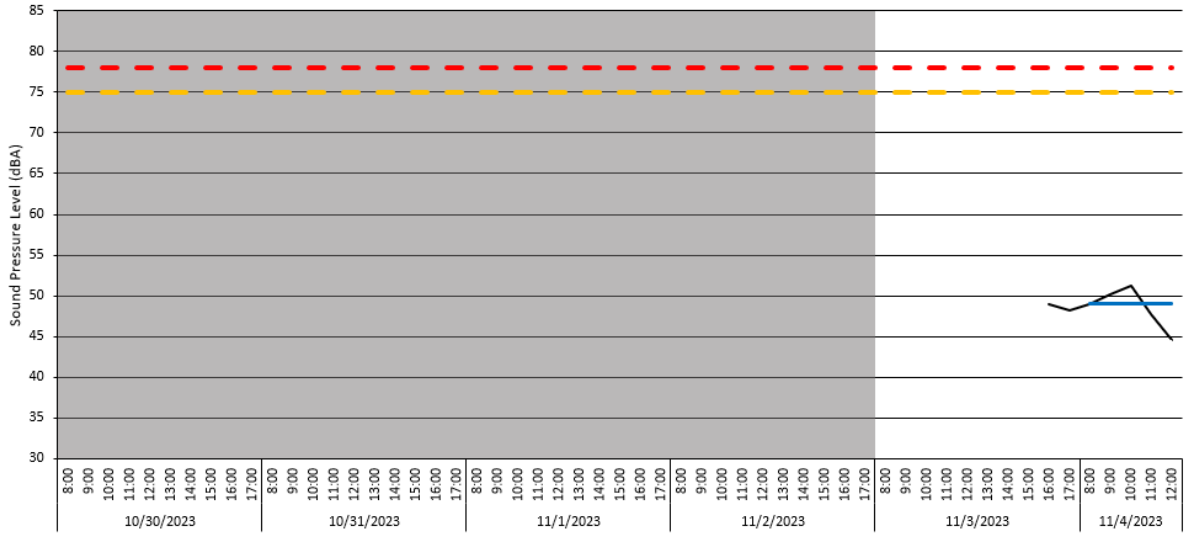
3.5 There was 100% data coverage at Location 1 for the monitoring period covered by this report. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report.

Location 2 – Raw Data

Broadband Results

Date	Time	LAeq(60min)	LAeq(10hr)	LAeq(5hr)
[YYYY-MM-DD]	[hh:mm:ss]	[dB]	[dB]	[dB]
2023-11-03	17:00:00	48.9	-.-	-.-
2023-11-03	18:00:00	48.2	-.-	-.-
2023-11-04	09:00:00	49.0	-.-	-.-
2023-11-04	10:00:00	50.2	-.-	-.-
2023-11-04	11:00:00	51.2	-.-	-.-
2023-11-04	12:00:00	47.7	-.-	-.-
2023-11-04	13:00:00	44.6	-.-	49.1

Location 2 – Time History Data



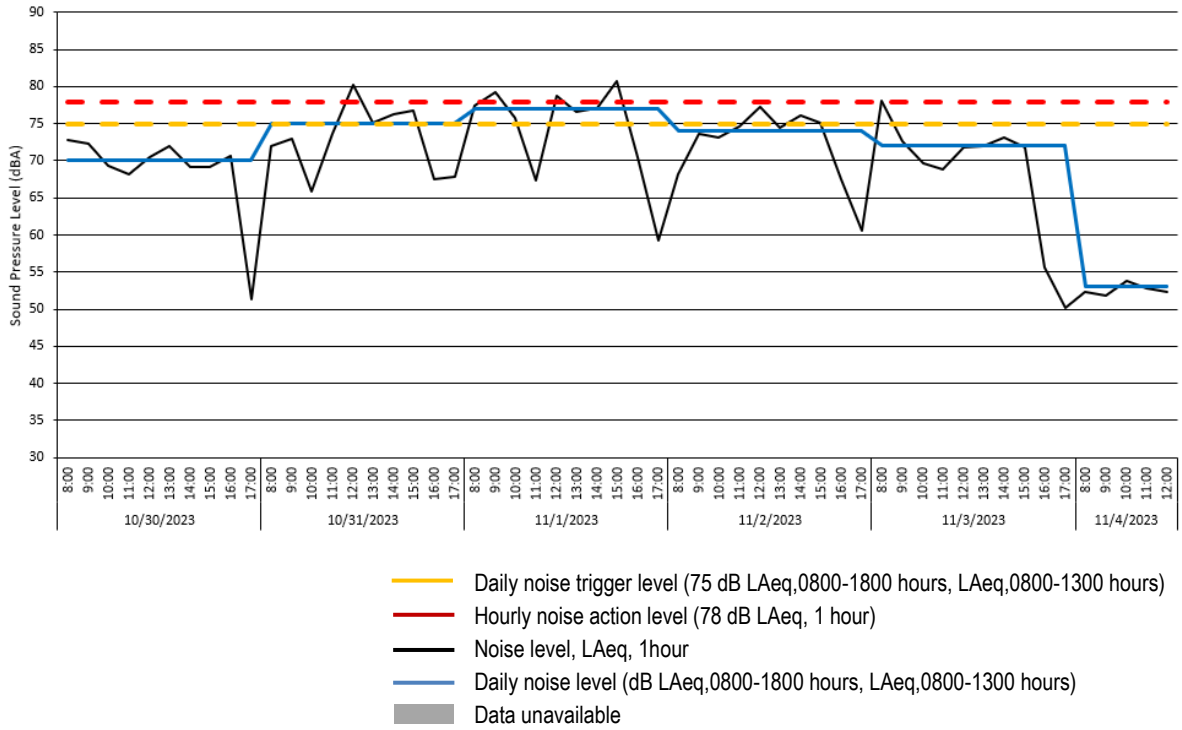
3.6 Data collection resumed at Location 2 on Friday 3rd November following the replacement of the Netbox due to extensive water damage. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report, for which there is available data.

Location 3 – Raw Data

Broadband Results

Date	Time	LAeq(60min)	LAeq(10hr)	LAeq(5hr)
[YYYY-MM-DD]	[hh:mm:ss]	[dB]	[dB]	[dB]
2023-10-30	09:00:00	72.8	-.-	-.-
2023-10-30	10:00:00	72.3	-.-	-.-
2023-10-30	11:00:00	69.4	-.-	-.-
2023-10-30	12:00:00	68.1	-.-	-.-
2023-10-30	13:00:00	70.5	-.-	-.-
2023-10-30	14:00:00	72.0	-.-	-.-
2023-10-30	15:00:00	69.1	-.-	-.-
2023-10-30	16:00:00	69.1	-.-	-.-
2023-10-30	17:00:00	70.6	-.-	-.-
2023-10-30	18:00:00	51.3	70.2	-.-
2023-10-31	09:00:00	72.0	-.-	-.-
2023-10-31	10:00:00	72.9	-.-	-.-
2023-10-31	11:00:00	65.9	-.-	-.-
2023-10-31	12:00:00	73.7	-.-	-.-
2023-10-31	13:00:00	80.3	-.-	-.-
2023-10-31	14:00:00	75.2	-.-	-.-
2023-10-31	15:00:00	76.2	-.-	-.-
2023-10-31	16:00:00	76.7	-.-	-.-
2023-10-31	17:00:00	67.5	-.-	-.-
2023-10-31	18:00:00	67.8	74.8	-.-
2023-11-01	09:00:00	77.4	-.-	-.-
2023-11-01	10:00:00	79.2	-.-	-.-
2023-11-01	11:00:00	75.8	-.-	-.-
2023-11-01	12:00:00	67.4	-.-	-.-
2023-11-01	13:00:00	78.8	-.-	-.-
2023-11-01	14:00:00	76.6	-.-	-.-
2023-11-01	15:00:00	77.1	-.-	-.-
2023-11-01	16:00:00	80.7	-.-	-.-
2023-11-01	17:00:00	70.5	-.-	-.-
2023-11-01	18:00:00	59.2	76.8	-.-
2023-11-02	09:00:00	68.1	-.-	-.-
2023-11-02	10:00:00	73.6	-.-	-.-
2023-11-02	11:00:00	73.2	-.-	-.-
2023-11-02	12:00:00	74.6	-.-	-.-
2023-11-02	13:00:00	77.3	-.-	-.-
2023-11-02	14:00:00	74.5	-.-	-.-
2023-11-02	15:00:00	76.1	-.-	-.-
2023-11-02	16:00:00	75.1	-.-	-.-
2023-11-02	17:00:00	67.5	-.-	-.-
2023-11-02	18:00:00	60.6	73.8	-.-
2023-11-03	09:00:00	78.1	-.-	-.-
2023-11-03	10:00:00	72.7	-.-	-.-
2023-11-03	11:00:00	69.6	-.-	-.-
2023-11-03	12:00:00	68.9	-.-	-.-
2023-11-03	13:00:00	71.8	-.-	-.-
2023-11-03	14:00:00	71.9	-.-	-.-
2023-11-03	15:00:00	73.2	-.-	-.-
2023-11-03	16:00:00	71.8	-.-	-.-
2023-11-03	17:00:00	55.7	-.-	-.-
2023-11-03	18:00:00	50.1	72.2	-.-
2023-11-04	09:00:00	52.4	-.-	-.-
2023-11-04	10:00:00	51.8	-.-	-.-
2023-11-04	11:00:00	53.8	-.-	-.-
2023-11-04	12:00:00	52.8	-.-	-.-
2023-11-04	13:00:00	52.3	-.-	52.7

Location 3 – Time-history graph



3.7 There were:

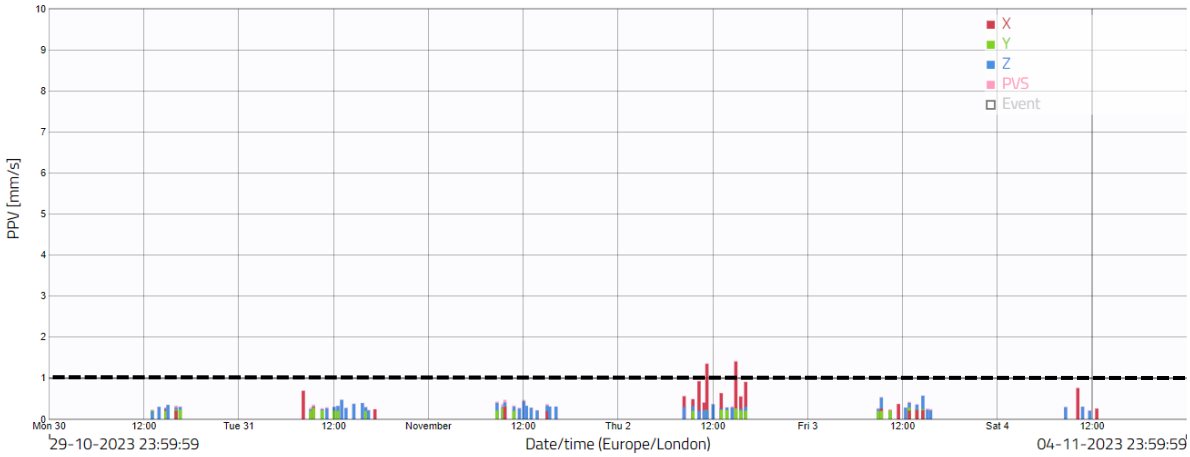
- 5 exceedances of the hourly noise trigger level of 78 dB LAeq, as indicated by the yellow highlighted cells above; and
- 1 exceedance of the daily noise limit of 75 dB LAeq,10 hour. This occurred on Wednesday 1st November. It is understood that this was caused primarily by the operation of the onsite wheel washing facility which includes the use of high-powered mobile jet washes. The site team have since relocated this away from the eastern site boundary as far as reasonably practicable to reduce noise emissions in this location.

Vibration Monitoring Results

Location 1 – Raw data

Measuring point:	Period:	Order	Value	Date	Time
Holloway - L1	30/10/2023 to 04/11/2023	1	1.43	02/11/2023	14:54
		2	1.36	02/11/2023	11:14
Criteria mm/s PVS	Exceedances	3	0.94	02/11/2023	10:15
1	2	4	0.92	02/11/2023	16:09

Location 1 – Time-history graph



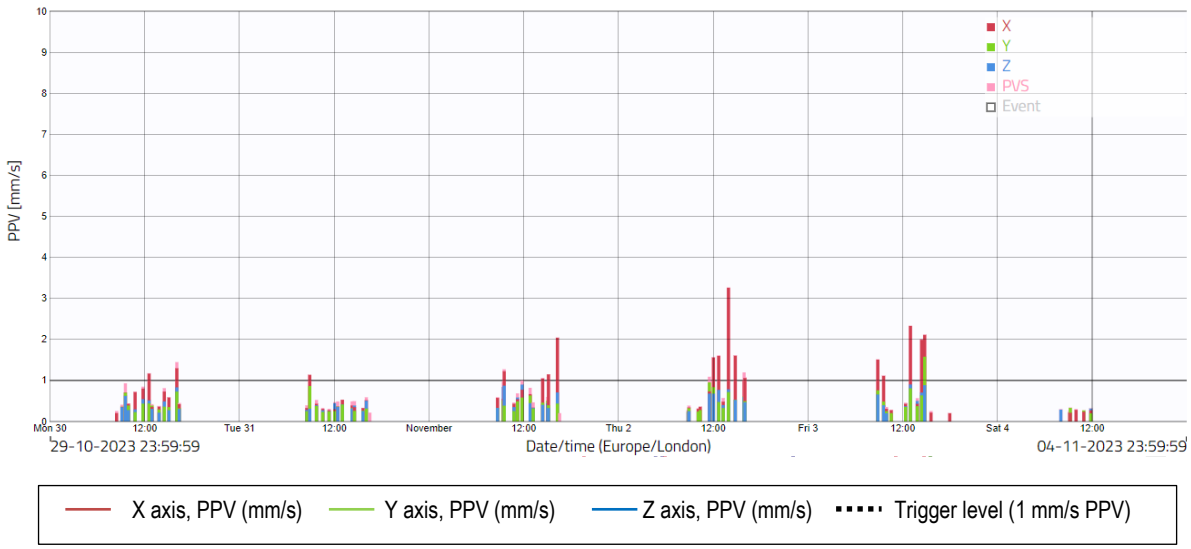
X axis, PPV (mm/s) — Y axis, PPV (mm/s) — Z axis, PPV (mm/s) — Trigger level (1 mm/s PPV)

3.8 There were 2 exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The project team have confirmed that no active demolition works have taken place in this area of the site since 24th October and therefore the exceedances are considered to be due to non-construction related events. In this location, it is likely that residents opening and closing the main door to the residential building will cause occasional vibration spikes, given that the monitor is located on the same facade as the doors.

Location 2 – Raw data

Measuring point:	Period:	Order	Value	Date	Time	Order	Value	Date	Time
Holloway - L2	30/10/2023 to 04/11/2023	1	3.27	02/11/2023	13:55	18	1.20	02/11/2023	15:55
		2	2.33	03/11/2023	12:58	19	1.18	30/10/2023	12:32
Criteria mm/s PVS	Exceedances	3	2.12	03/11/2023	14:46	20	1.18	03/11/2023	14:10
1	34	4	2.05	01/11/2023	16:15	21	1.17	02/11/2023	13:54
		5	2.04	03/11/2023	14:44	22	1.16	01/11/2023	09:30
		6	2.01	03/11/2023	14:23	23	1.15	01/11/2023	15:07
		7	1.62	02/11/2023	12:42	24	1.14	31/10/2023	08:53
		8	1.61	02/11/2023	14:47	25	1.12	02/11/2023	14:41
		9	1.58	01/11/2023	16:15	26	1.12	03/11/2023	09:22
		10	1.57	02/11/2023	12:01	27	1.10	03/11/2023	08:27
		11	1.52	03/11/2023	08:50	28	1.09	02/11/2023	11:30
		12	1.50	03/11/2023	14:47	29	1.08	02/11/2023	16:00
		13	1.47	03/11/2023	08:25	30	1.06	01/11/2023	14:23
		14	1.45	30/10/2023	16:03	31	1.02	03/11/2023	14:11
		15	1.43	02/11/2023	12:03	32	1.02	30/10/2023	12:03
		16	1.42	02/11/2023	14:46	33	1.01	03/11/2023	12:59
		17	1.27	01/11/2023	09:32	34	1.00	01/11/2023	11:47

Location 2 – Time-history graph

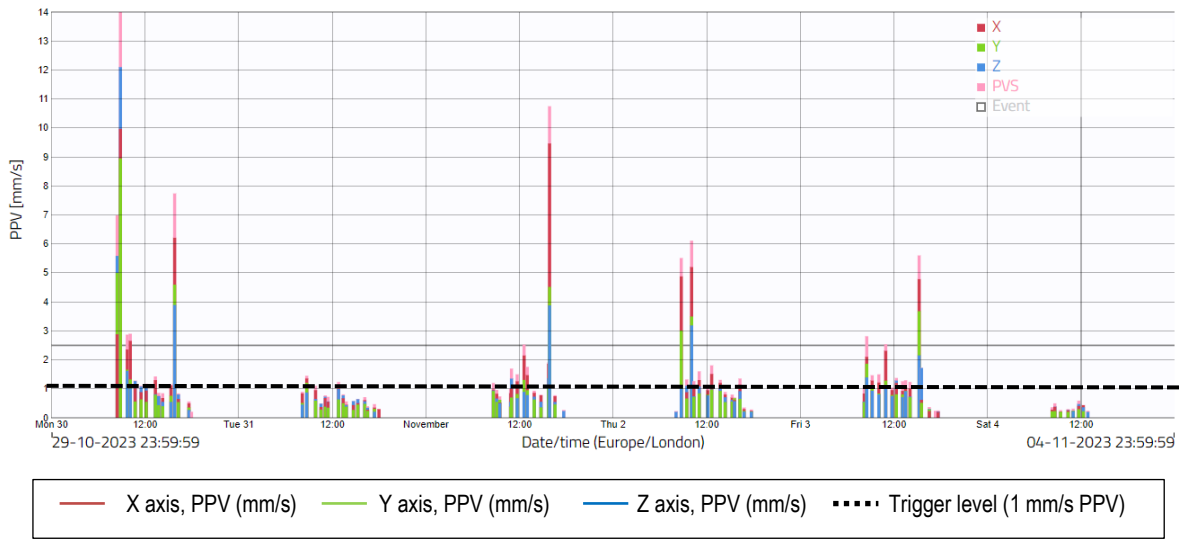


3.9 There were 34 exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The project team have confirmed that no active demolition works have taken place in this area of the site since 24th October and therefore the exceedances are considered to be due to non-construction related events. In this location, it is likely that heavy rainfall will have been responsible for the exceedances, as the rain will directly hit the vibration sensor at Locations 2 and 3.

Location 3 – Raw data

Measuring point:	Period:	Order	Value	Date	Time	Order	Value	Date	Time	Order	Value	Date	Time
Holloway - L3	30/10/2023 to 04/11/2023	1	15.07	30/10/2023	08:38	52	1.68	30/10/20	15:53	103	1.19	30/10/20	11:10
		2	13.12	30/10/2023	08:48	53	1.68	02/11/202	10:05	104	1.17	03/11/202	08:53
Criteria mm/s PVS	Exceedances	3	10.90	30/10/2023	08:43	54	1.64	30/10/20	08:28	105	1.17	30/10/20	10:05
1	154	4	10.75	01/11/2023	15:50	55	1.62	03/11/202	08:53	106	1.16	30/10/20	12:00
		5	7.74	30/10/2023	15:46	56	1.60	02/11/202	11:01	107	1.16	02/11/202	13:16
		6	7.17	30/10/2023	15:50	57	1.58	30/10/20	10:00	108	1.16	30/10/20	15:19
		7	6.99	30/10/2023	08:24	58	1.52	01/11/202	15:53	109	1.15	30/10/20	09:58
		8	6.69	01/11/2023	15:52	59	1.50	01/11/202	11:41	110	1.14	02/11/202	11:00
		9	6.11	02/11/2023	10:03	60	1.50	03/11/202	10:03	111	1.13	03/11/202	09:14
		10	5.60	03/11/2023	15:13	61	1.47	03/11/202	09:13	112	1.12	02/11/202	12:00
		11	5.59	30/10/2023	16:00	62	1.46	03/11/202	09:29	113	1.12	30/10/20	16:08
		12	5.51	02/11/2023	08:43	63	1.46	03/11/202	10:29	114	1.12	02/11/202	10:18
		13	4.95	30/10/2023	08:46	64	1.46	30/10/20	09:48	115	1.11	03/11/202	10:48
		14	4.85	30/10/2023	15:59	65	1.45	31/10/202	08:43	116	1.11	02/11/202	16:21
		15	4.50	30/10/2023	08:46	66	1.43	30/10/20	13:18	117	1.10	30/10/20	11:28
		16	3.46	30/10/2023	09:03	67	1.41	30/10/20	08:57	118	1.10	31/10/202	12:49
		17	3.41	30/10/2023	15:58	68	1.40	30/10/20	15:42	119	1.10	31/10/202	09:50
		18	3.37	30/10/2023	15:36	69	1.39	02/11/202	10:16	120	1.10	01/11/202	08:37
		19	3.03	30/10/2023	15:52	70	1.39	30/10/20	10:06	121	1.09	30/10/20	11:27
		20	2.92	30/10/2023	09:00	71	1.38	02/11/202	12:36	122	1.09	01/11/202	15:49
		21	2.90	30/10/2023	10:05	72	1.38	03/11/202	12:19	123	1.09	02/11/202	12:55
		22	2.87	30/10/2023	09:42	73	1.37	30/10/20	15:45	124	1.09	02/11/202	13:29
		23	2.87	02/11/2023	10:02	74	1.35	02/11/202	16:15	125	1.09	02/11/202	13:31
		24	2.82	30/10/2023	08:59	75	1.34	03/11/202	12:30	126	1.08	30/10/20	10:34
		25	2.81	03/11/2023	08:30	76	1.34	30/10/20	08:51	127	1.07	31/10/202	12:49
		26	2.54	03/11/2023	10:57	77	1.33	02/11/202	10:15	128	1.07	03/11/202	08:11
		27	2.53	01/11/2023	12:29	78	1.33	03/11/202	11:00	129	1.07	03/11/202	14:21
		28	2.44	02/11/2023	10:05	79	1.33	02/11/202	11:02	130	1.07	30/10/20	09:46
		29	2.30	01/11/2023	15:50	80	1.32	02/11/202	09:22	131	1.07	30/10/20	15:22
		30	2.18	30/10/2023	15:50	81	1.31	02/11/202	13:44	132	1.07	03/11/202	09:24
		31	2.12	03/11/2023	15:07	82	1.30	02/11/202	13:12	133	1.07	02/11/202	16:06
		32	2.12	30/10/2023	09:45	83	1.30	03/11/202	13:29	134	1.06	03/11/202	09:23
		33	2.11	30/10/2023	09:56	84	1.28	30/10/20	10:42	135	1.05	03/11/202	09:55
		34	2.10	30/10/2023	08:53	85	1.27	03/11/202	10:26	136	1.05	02/11/202	12:06
		35	2.09	30/10/2023	15:45	86	1.27	02/11/202	10:21	137	1.05	30/10/20	09:32
		36	2.05	02/11/2023	10:06	87	1.26	03/11/202	13:06	138	1.04	30/10/20	10:02
		37	2.05	30/10/2023	08:47	88	1.26	30/10/20	15:58	139	1.04	03/11/202	11:46
		38	1.99	03/11/2023	08:40	89	1.25	30/10/20	15:56	140	1.04	02/11/202	10:18
		39	1.94	30/10/2023	09:01	90	1.25	03/11/202	08:46	141	1.04	30/10/20	09:14
		40	1.92	30/10/2023	09:36	91	1.24	03/11/202	13:26	142	1.04	03/11/202	09:26
		41	1.90	01/11/2023	15:36	92	1.24	03/11/202	14:04	143	1.03	03/11/202	13:31
		42	1.87	30/10/2023	09:03	93	1.24	31/10/202	12:48	144	1.03	03/11/202	09:06
		43	1.84	30/10/2023	08:44	94	1.23	02/11/202	13:18	145	1.03	02/11/202	08:34
		44	1.84	30/10/2023	09:04	95	1.22	02/11/202	13:22	146	1.02	03/11/202	12:23
		45	1.81	03/11/2023	08:24	96	1.22	30/10/20	08:50	147	1.02	31/10/202	09:04
		46	1.81	02/11/2023	12:37	97	1.22	03/11/202	12:19	148	1.01	02/11/202	10:19
		47	1.79	03/11/2023	08:57	98	1.22	30/10/20	16:02	149	1.01	03/11/202	11:47
		48	1.76	01/11/2023	12:59	99	1.20	03/11/202	12:32	150	1.01	03/11/202	09:55
		49	1.73	03/11/2023	15:14	100	1.20	01/11/202	08:38	151	1.01	03/11/202	12:00
		50	1.72	03/11/2023	15:32	101	1.20	03/11/202	15:13	152	1.00	02/11/202	08:38
		51	1.70	01/11/2023	10:57	102	1.19	02/11/202	13:15				

Location 3 – Time-history graph

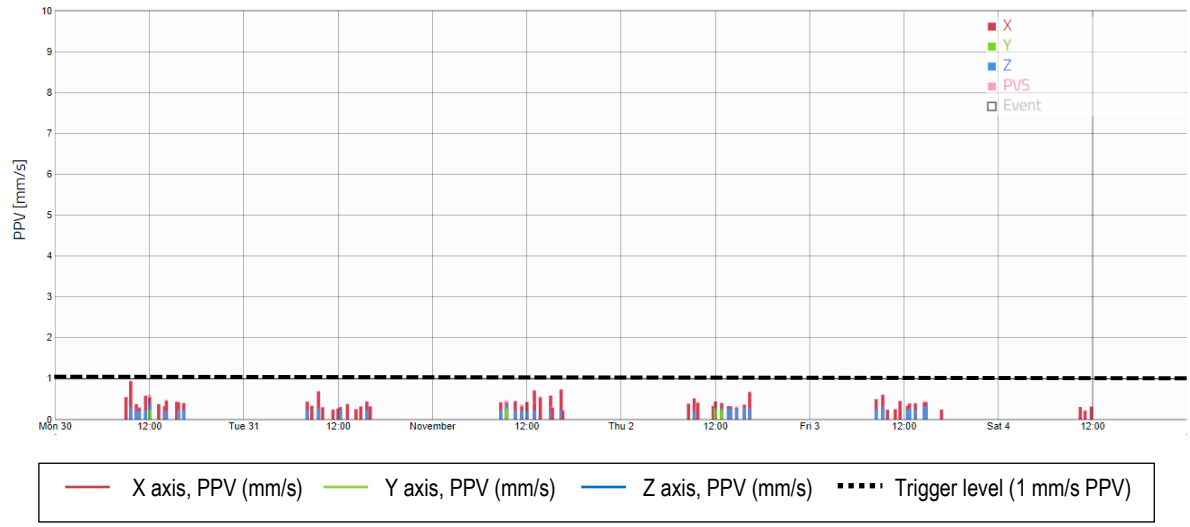


3.10 There were 154 exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The majority of these exceedances are being caused by plant vehicles travelling along the haulage road which is directly in front of where the vibration monitor is currently located. These movements are unavoidable and there are no reasonably practicable measures that the site team can implement to reduce these emissions at this time. The larger vibration exceedances have been caused by site operatives changing over the dust batteries which are heavy and can result in knocks as the batteries are lowered into and out of the pelicases.

Location 4 – Raw data

Measuring point:	Period:	Order	Value	Date	Time
Holloway - L4	30/10/2023 to 04/11/2023	1	0.96	30/10/2023	09:35
		2	0.76	30/10/2023	09:32
Criteria mm/s PVS	Exceedances	3	0.76	30/10/2023	09:33
1	0	4	0.75	01/11/2023	16:21

Location 4 – Time-history graph



3.11 There were no exceedances of the project vibration trigger level of 1 mm/s PPV at Location 4 and the project team have confirmed that there are no active works in this area of the site currently.