

Holloway Park, London

Construction Monitoring Report

Client: London Square
Ref: CM72-22405-R0
Date: 20 February 2024
Note by: Anthony Coraci, MSc DipIOA MIOA, Senior Acoustics Consultant

1. INTRODUCTION

1.1 This Technical Note sets out results of the construction monitoring being carried out at the above site between Monday 12th & Saturday 17th February 2024. 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, in addition to the usual use of the Haul Road with site vehicles:

Horizon

- Crushing crush to Type 1 (Phase 1 & Phase 2)
- Removing car park slab
- Loading tipper lorries and moving crush from Phase 1 to Phase 2

Kesel

- Refurbishment of site welfare cabins

Trident

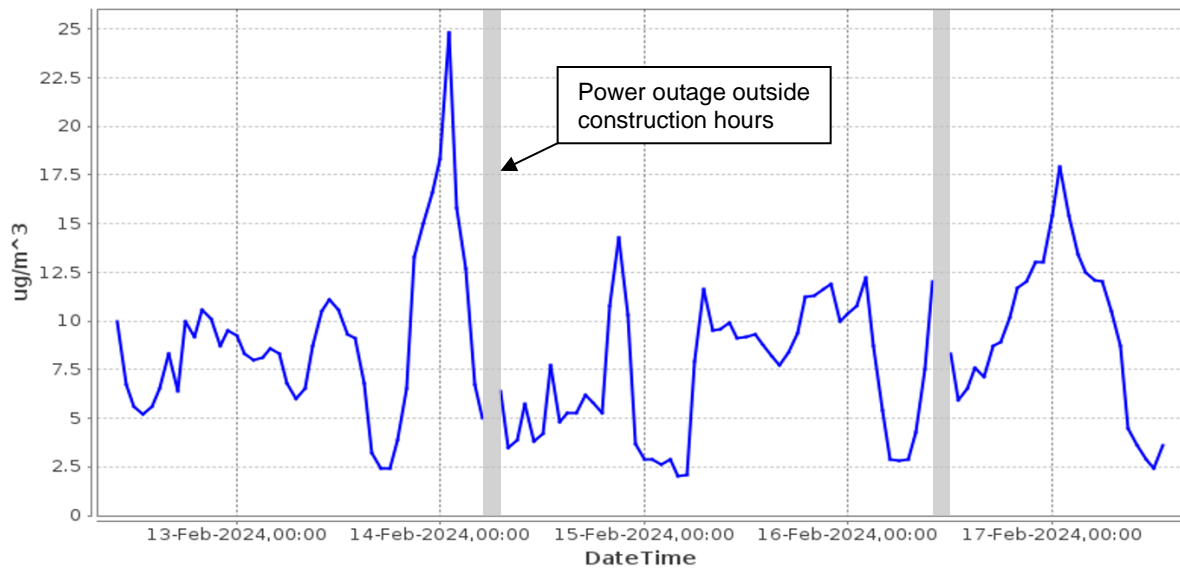
- Installing services to the welfare cabins

3. MONITORING DATA

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

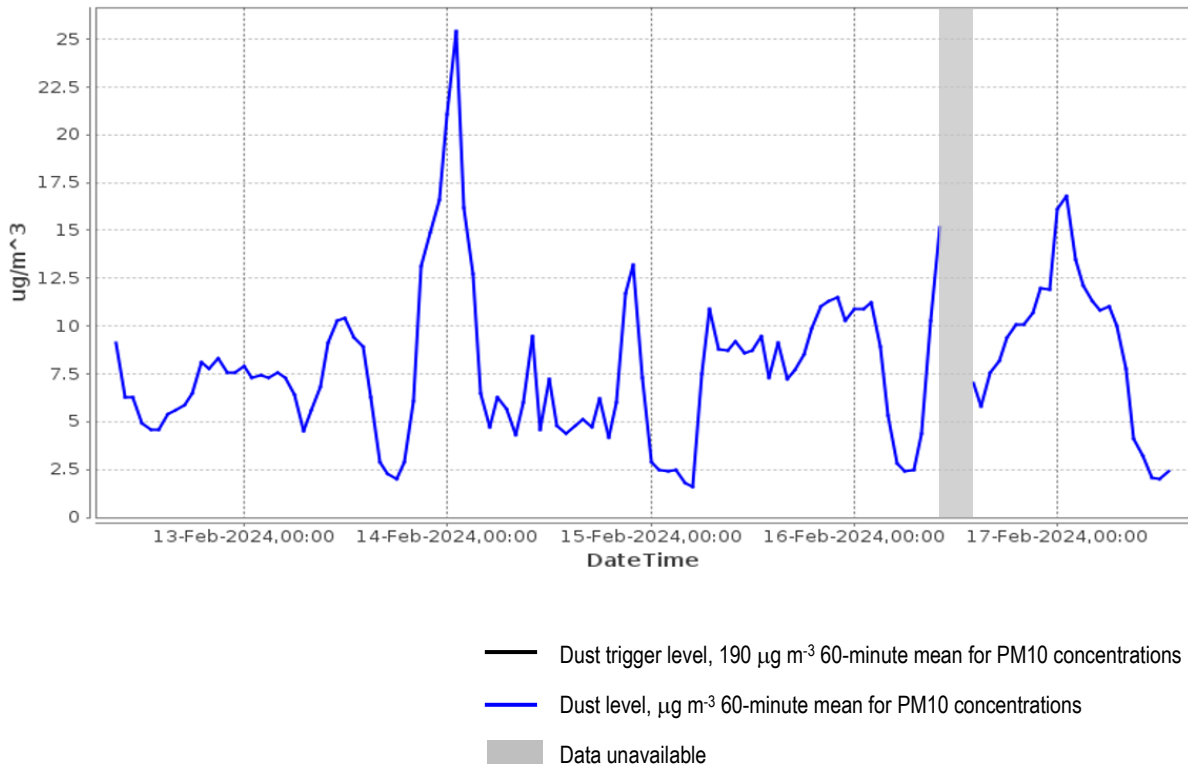
Location 1



- Dust trigger level, 190 $\mu\text{g m}^{-3}$ 60-minute mean for PM10 concentrations
- Dust level, $\mu\text{g m}^{-3}$ 60-minute mean for PM10 concentrations
- Data unavailable

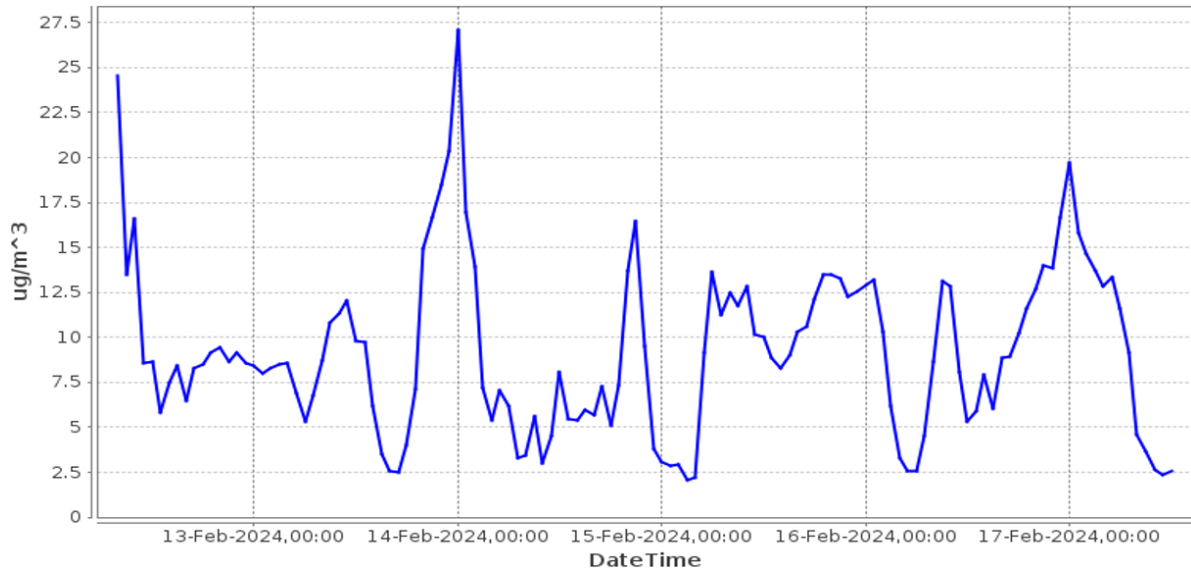
3.2 There was 98% data coverage at Location 1 for the monitoring period covered by this report. The monitor was offline between 11:00 & 12:00 on Friday 16th February, before the battery change was completed. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.

Location 2



3.3 There was 95% data coverage at Location 2 during construction hours for the monitoring period covered by this report. The monitor was offline for three hours from 11:00 on Friday 16th February, before the battery change was completed. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.

Location 3



- Dust trigger level, 190 $\mu\text{g m}^{-3}$ 60-minute mean for PM10 concentrations
- Dust level, $\mu\text{g m}^{-3}$ 60-minute mean for PM10 concentrations
- Data unavailable

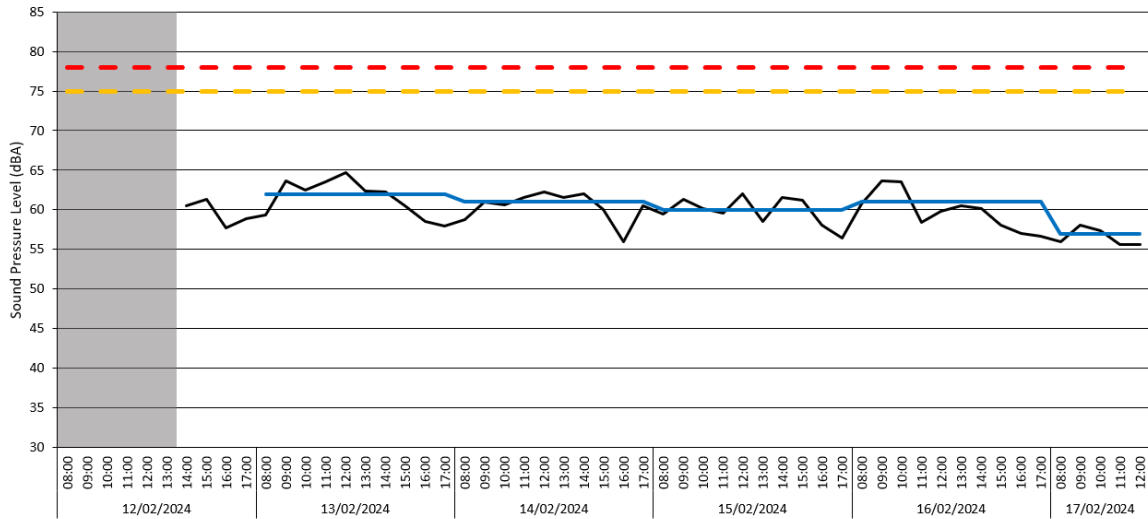
3.4 There was 100% data coverage at Location 3 for the monitoring period covered by this report. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.

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]
	2024-02-12	15:00:00	60.5	--	--	--
	2024-02-12	16:00:00	61.3	--	--	--
	2024-02-12	17:00:00	57.7	--	--	--
	2024-02-12	18:00:00	58.9	--	--	--
	2024-02-13	09:00:00	59.3	--	--	--
	2024-02-13	10:00:00	63.6	--	--	--
	2024-02-13	11:00:00	62.5	--	--	--
	2024-02-13	12:00:00	63.5	--	--	--
	2024-02-13	13:00:00	64.7	--	--	--
	2024-02-13	14:00:00	62.4	--	--	--
	2024-02-13	15:00:00	62.2	--	--	--
	2024-02-13	16:00:00	60.5	--	--	--
	2024-02-13	17:00:00	58.5	--	--	--
	2024-02-13	18:00:00	57.9	--	62.0	--
	2024-02-14	09:00:00	58.7	--	--	--
	2024-02-14	10:00:00	61.0	--	--	--
	2024-02-14	11:00:00	60.6	--	--	--
	2024-02-14	12:00:00	61.6	--	--	--
	2024-02-14	13:00:00	62.3	--	--	--
	2024-02-14	14:00:00	61.5	--	--	--
	2024-02-14	15:00:00	62.0	--	--	--
	2024-02-14	16:00:00	60.0	--	--	--
	2024-02-14	17:00:00	56.0	--	--	--
	2024-02-14	18:00:00	60.5	--	60.7	--
	2024-02-15	09:00:00	59.4	--	--	--
	2024-02-15	10:00:00	61.3	--	--	--
	2024-02-15	11:00:00	60.2	--	--	--
	2024-02-15	12:00:00	59.6	--	--	--
	2024-02-15	13:00:00	62.0	--	--	--
	2024-02-15	14:00:00	58.5	--	--	--
	2024-02-15	15:00:00	61.5	--	--	--
	2024-02-15	16:00:00	61.2	--	--	--
	2024-02-15	17:00:00	58.1	--	--	--
	2024-02-15	18:00:00	56.4	--	60.1	--
	2024-02-16	09:00:00	60.7	--	--	--
	2024-02-16	10:00:00	63.7	--	--	--
	2024-02-16	11:00:00	63.5	--	--	--
	2024-02-16	12:00:00	58.4	--	--	--
	2024-02-16	13:00:00	59.8	--	--	--
	2024-02-16	14:00:00	60.5	--	--	--
	2024-02-16	15:00:00	60.2	--	--	--
	2024-02-16	16:00:00	58.1	--	--	--
	2024-02-16	17:00:00	57.0	--	--	--
	2024-02-16	18:00:00	56.7	--	60.5	--
	2024-02-17	09:00:00	55.9	--	--	--
	2024-02-17	10:00:00	58.1	--	--	--
	2024-02-17	11:00:00	57.4	--	--	--
	2024-02-17	12:00:00	55.6	--	--	--
	2024-02-17	13:00:00	55.6	--	--	56.6

Location 1 – Time History Data



- Daily noise trigger level (75 dB LAeq, 0800-1800 hours, LAeq, 0800-1300 hours)
- - - Hourly noise action level (78 dB LAeq, 1 hour)
- Noise level, LAeq, 1 hour
- Daily noise level (dB LAeq, 0800-1800 hours, LAeq, 0800-1300 hours)
- Data unavailable

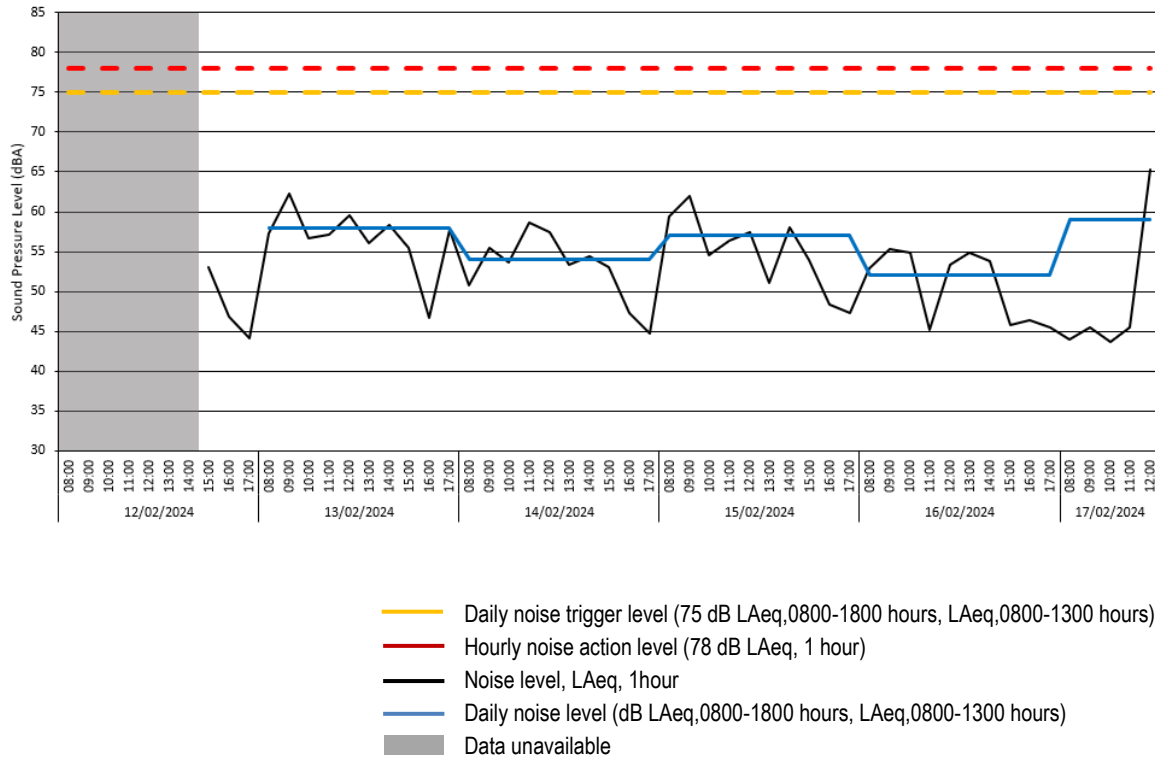
3.5 There was 89% data coverage at Location 1 for the monitoring period covered by this report. The monitor was offline between 08:00 & 13:00 on Monday 12th February until the battery change was carried out. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise 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 [YYYY-MM-DD]	Time [hh:mm:ss]	LAeq(60min) [dB]	LAeq(10hr) [dB]	LAeq(5hr) [dB]
2024-02-12	16:00:00	53.1	--	--
2024-02-12	17:00:00	46.8	--	--
2024-02-12	18:00:00	44.1	--	--
2024-02-13	09:00:00	57.2	--	--
2024-02-13	10:00:00	62.3	--	--
2024-02-13	11:00:00	56.7	--	--
2024-02-13	12:00:00	57.1	--	--
2024-02-13	13:00:00	59.5	--	--
2024-02-13	14:00:00	56.0	--	--
2024-02-13	15:00:00	58.3	--	--
2024-02-13	16:00:00	55.5	--	--
2024-02-13	17:00:00	46.7	--	--
2024-02-13	18:00:00	57.7	57.9	--
2024-02-14	09:00:00	50.8	--	--
2024-02-14	10:00:00	55.4	--	--
2024-02-14	11:00:00	53.7	--	--
2024-02-14	12:00:00	58.7	--	--
2024-02-14	13:00:00	57.4	--	--
2024-02-14	14:00:00	53.4	--	--
2024-02-14	15:00:00	54.4	--	--
2024-02-14	16:00:00	53.1	--	--
2024-02-14	17:00:00	47.3	--	--
2024-02-14	18:00:00	44.7	54.4	--
2024-02-15	09:00:00	59.4	--	--
2024-02-15	10:00:00	62.0	--	--
2024-02-15	11:00:00	54.6	--	--
2024-02-15	12:00:00	56.3	--	--
2024-02-15	13:00:00	57.5	--	--
2024-02-15	14:00:00	51.0	--	--
2024-02-15	15:00:00	58.1	--	--
2024-02-15	16:00:00	54.0	--	--
2024-02-15	17:00:00	48.3	--	--
2024-02-15	18:00:00	47.3	56.9	--
2024-02-16	09:00:00	52.9	--	--
2024-02-16	10:00:00	55.3	--	--
2024-02-16	11:00:00	54.8	--	--
2024-02-16	12:00:00	45.2	--	--
2024-02-16	13:00:00	53.4	--	--
2024-02-16	14:00:00	54.8	--	--
2024-02-16	15:00:00	53.8	--	--
2024-02-16	16:00:00	45.8	--	--
2024-02-16	17:00:00	46.4	--	--
2024-02-16	18:00:00	45.4	52.4	--
2024-02-17	09:00:00	44.0	--	--
2024-02-17	10:00:00	45.4	--	--
2024-02-17	11:00:00	43.7	--	--
2024-02-17	12:00:00	45.4	--	--
2024-02-17	13:00:00	65.3	--	58.5

Location 2 – Time History Data



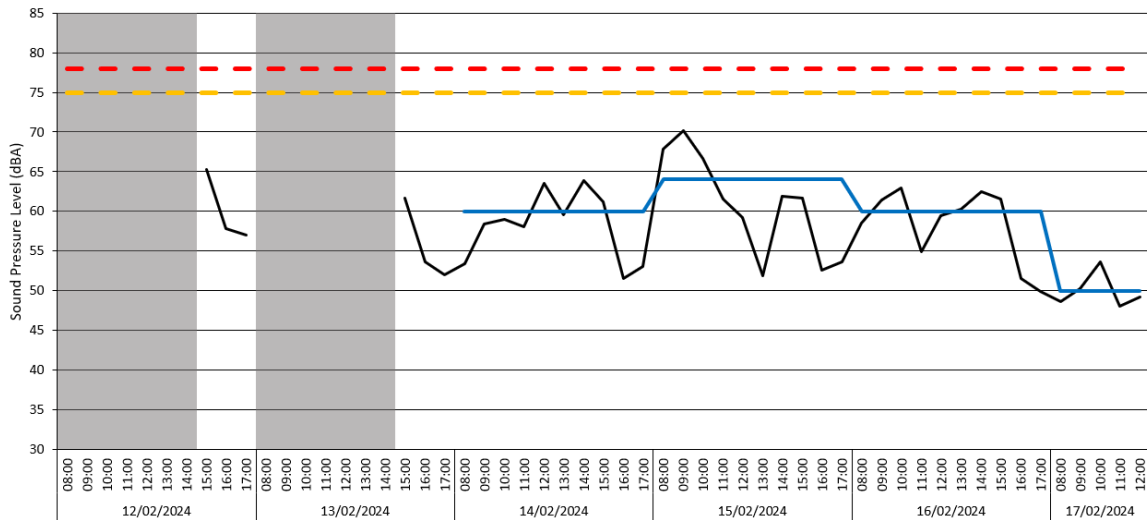
3.6 There was 87% data coverage at Location 2 for the monitoring period covered by this report. The monitor was offline between 08:00 & 15:00 on Monday 12th February until the battery change was carried out. It is understood that a battery change was carried out sooner than 15:00; however, it is understood that, due to a potential fault with the initial battery swapped in, a second battery change was required. 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 3 – Raw Data

Broadband Results

Date [YYYY-MM-DD]	Time [hh:mm:ss]	LAeq(60min) [dB]	LAeq(10hr) [dB]	LAeq(5hr) [dB]
2024-02-12	16:00:00	65.3	--	--
2024-02-12	17:00:00	57.8	--	--
2024-02-12	18:00:00	57.0	--	--
2024-02-13	16:00:00	61.7	--	--
2024-02-13	17:00:00	53.6	--	--
2024-02-13	18:00:00	52.0	--	--
2024-02-14	09:00:00	53.4	--	--
2024-02-14	10:00:00	58.4	--	--
2024-02-14	11:00:00	59.0	--	--
2024-02-14	12:00:00	58.0	--	--
2024-02-14	13:00:00	63.5	--	--
2024-02-14	14:00:00	59.6	--	--
2024-02-14	15:00:00	63.9	--	--
2024-02-14	16:00:00	61.2	--	--
2024-02-14	17:00:00	51.5	--	--
2024-02-14	18:00:00	53.0	59.8	--
2024-02-15	09:00:00	67.9	--	--
2024-02-15	10:00:00	70.2	--	--
2024-02-15	11:00:00	66.7	--	--
2024-02-15	12:00:00	61.6	--	--
2024-02-15	13:00:00	59.2	--	--
2024-02-15	14:00:00	51.9	--	--
2024-02-15	15:00:00	61.9	--	--
2024-02-15	16:00:00	61.7	--	--
2024-02-15	17:00:00	52.6	--	--
2024-02-15	18:00:00	53.6	64.4	--
2024-02-16	09:00:00	58.5	--	--
2024-02-16	10:00:00	61.4	--	--
2024-02-16	11:00:00	62.9	--	--
2024-02-16	12:00:00	54.9	--	--
2024-02-16	13:00:00	59.5	--	--
2024-02-16	14:00:00	60.3	--	--
2024-02-16	15:00:00	62.5	--	--
2024-02-16	16:00:00	61.6	--	--
2024-02-16	17:00:00	51.5	--	--
2024-02-16	18:00:00	49.9	59.9	--
2024-02-17	09:00:00	48.6	--	--
2024-02-17	10:00:00	50.2	--	--
2024-02-17	11:00:00	53.6	--	--
2024-02-17	12:00:00	48.0	--	--
2024-02-17	13:00:00	49.2	--	50.4

Location 3 – Time-history graph



- Daily noise trigger level (75 dB LAeq, 0800-1800 hours, LAeq, 0800-1300 hours)
- - - Hourly noise action level (78 dB LAeq, 1 hour)
- Noise level, LAeq, 1 hour
- Daily noise level (dB LAeq, 0800-1800 hours, LAeq, 0800-1300 hours)
- Data unavailable

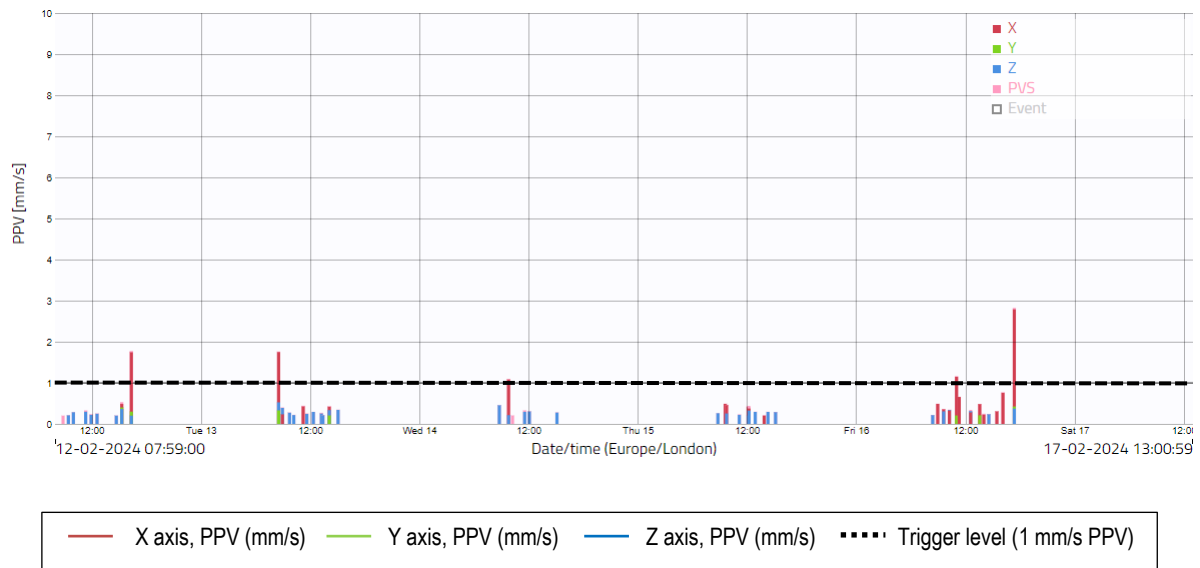
3.7 There was 75% data coverage at Location 3 for the monitoring period covered by this report. The monitor was offline between 08:00 & 14:00 on Monday 12th February and between 08:00 & 14:00 on Tuesday 13th February. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report.

Vibration Monitoring Results

Location 1 – Raw data

Measuring point:	Period:	Order	Value	Date	Time
Holloway - L1	12/02/2024 to 17/02/2024	1	2.82	16/02/2024	17:17
		2	1.77	12/02/2024	16:21
Criteria mm/s PVS	Exceedances	3	1.76	13/02/2024	08:33
1.0	5	4	1.16	16/02/2024	11:01
		5	1.09	14/02/2024	09:49
		6	0.77	16/02/2024	16:08
		7	0.66	16/02/2024	11:20
		8	0.53	12/02/2024	15:19
		9	0.49	15/02/2024	09:36
		10	0.49	16/02/2024	08:57

Location 1 – Time-history graph

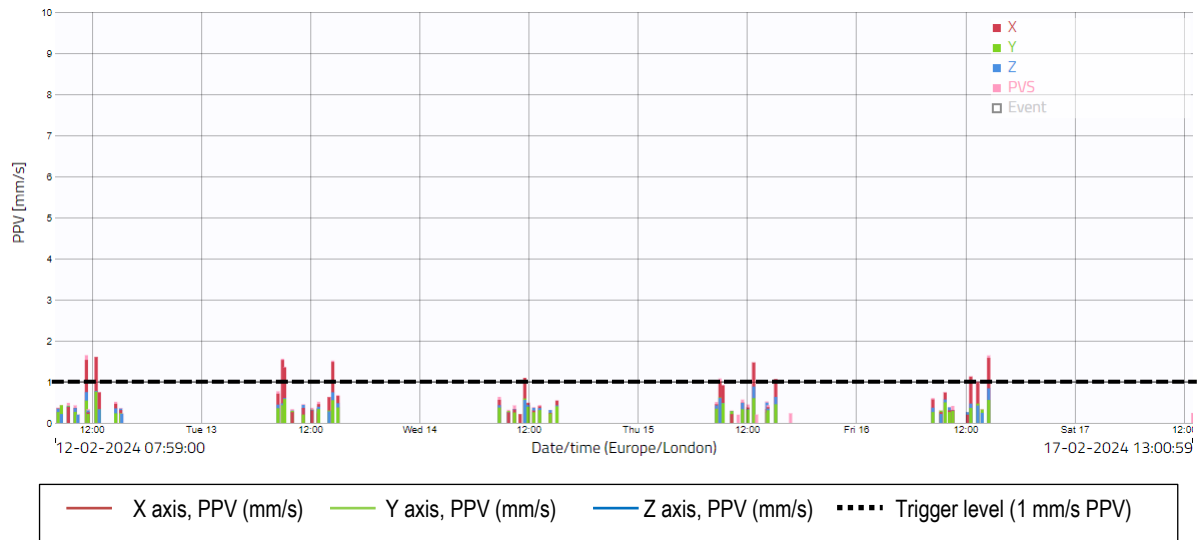


- 3.8 There was 100% data coverage at Location 1 for the monitoring period covered by this report. There were five exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The highest recorded vibration level was 2.8 mm/s, which occurred at 17:17 on Friday 16th February. It is worth noting from the raw data above that the exceedances are sporadic and are likely to have been caused by individual, short-lived events, rather than continuous activity at this location. This will continue to be monitored. The exceedances are believed to be due to non-construction related activities. In this location, it is likely that the residents opened 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
Holloway - L2	12/02/2024 to 17/02/2024	1	1.65	12/02/2024	11:25
		2	1.64	16/02/2024	14:33
Criteria mm/s PVS	Exceedances	3	1.61	12/02/2024	12:29
1.0	21	4	1.56	13/02/2024	08:53
		5	1.52	13/02/2024	14:30
		6	1.47	15/02/2024	12:45
		7	1.44	15/02/2024	12:42
		8	1.39	16/02/2024	14:33
		9	1.36	13/02/2024	09:13
		10	1.31	12/02/2024	12:49
		11	1.21	12/02/2024	11:27
		12	1.18	13/02/2024	09:13
		13	1.15	12/02/2024	12:30
		14	1.13	16/02/2024	12:35
		15	1.10	14/02/2024	11:36
		16	1.08	15/02/2024	09:03
		17	1.07	12/02/2024	11:27
		18	1.07	15/02/2024	15:09
		19	1.07	12/02/2024	11:21
		20	1.04	15/02/2024	08:53
		21	1.01	16/02/2024	13:21

Location 2 – Time-history graph

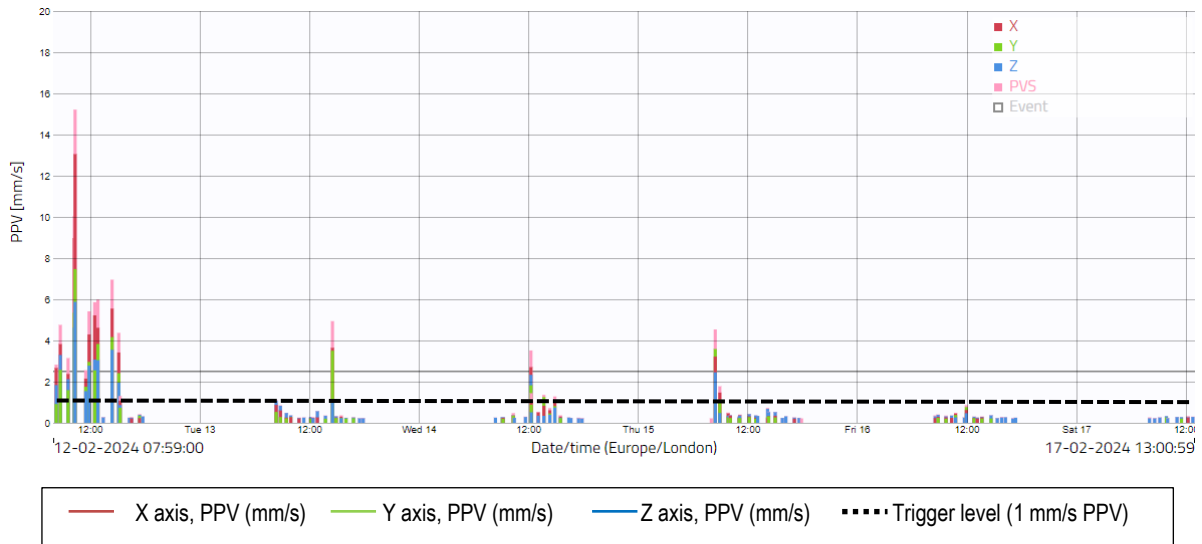


3.9 There was 100% data coverage at Location 2 for the monitoring period covered by this report. There were 21 exceedances of the project vibration trigger level of 1 mm/s PPV, which are shown in the raw data and graph above. It is understood that the majority of exceedances were likely to have been caused by loading from the crush heaps, within the proximity of the monitor. Furthermore, it is our understanding that one of the residents behind the monitoring location has some form of workshop with power tools at the rear of their garden. Any operation of these tools could also generate vibration alerts.

Location 3 – Raw data

Measuring point:	Period:	Order	Value	Date	Time	Order	Value	Date	Time	Order	Value	Date	Time
Holloway - L3	12/02/2024 to 17/02/2024	1	15.21	12/02/2024	10:22	31	4.24	12/02/20	10:15	61	2.70	12/02/20	09:59
		2	10.05	12/02/2024	10:18	32	4.04	12/02/20	12:50	62	2.69	12/02/20	11:37
Criteria mm/s PVS	Exceedances	3	8.97	12/02/2024	10:05	33	4.02	12/02/20	09:53	63	2.62	12/02/20	09:14
1	188	4	8.85	12/02/2024	10:08	34	3.93	12/02/20	12:32	64	2.60	15/02/20	08:33
		5	7.69	12/02/2024	10:06	35	3.85	15/02/20	08:34	65	2.58	15/02/20	08:30
		6	7.17	12/02/2024	10:15	36	3.81	15/02/20	08:27	66	2.56	12/02/20	11:33
		7	7.16	12/02/2024	10:09	37	3.67	12/02/20	08:51	67	2.54	12/02/20	11:51
		8	6.95	12/02/2024	14:25	38	3.64	12/02/20	12:29	68	2.49	12/02/20	11:02
		9	6.66	12/02/2024	10:25	39	3.55	12/02/20	09:58	69	2.46	12/02/20	11:07
		10	6.51	12/02/2024	10:12	40	3.54	12/02/20	12:52	70	2.46	12/02/20	09:52
		11	6.43	12/02/2024	10:03	41	3.54	12/02/20	08:46	71	2.43	12/02/20	09:26
		12	6.38	12/02/2024	10:25	42	3.51	14/02/20	12:17	72	2.41	12/02/20	11:53
		13	5.99	12/02/2024	12:43	43	3.47	12/02/20	10:05	73	2.37	12/02/20	10:18
		14	5.86	12/02/2024	12:32	44	3.31	12/02/20	12:42	74	2.34	12/02/20	09:13
		15	5.77	12/02/2024	10:16	45	3.17	12/02/20	15:09	75	2.33	12/02/20	08:57
		16	5.72	12/02/2024	10:11	46	3.14	12/02/20	09:36	76	2.24	12/02/20	11:38
		17	5.54	12/02/2024	10:24	47	2.99	12/02/20	12:43	77	2.22	12/02/20	09:49
		18	5.42	12/02/2024	09:50	48	2.95	12/02/20	12:42	78	2.20	12/02/20	08:50
		19	5.41	12/02/2024	11:54	49	2.91	12/02/20	09:32	79	2.20	14/02/20	12:16
		20	5.25	12/02/2024	10:13	50	2.90	12/02/20	08:53	80	2.19	12/02/20	08:25
		21	4.95	12/02/2024	12:33	51	2.89	12/02/20	11:53	81	2.19	12/02/20	08:24
		22	4.94	13/02/2024	14:33	52	2.89	12/02/20	14:10	82	2.19	12/02/20	08:53
		23	4.76	12/02/2024	08:46	53	2.89	12/02/20	12:35	83	2.17	12/02/20	10:21
		24	4.54	12/02/2024	08:38	54	2.83	12/02/20	10:08	84	2.16	12/02/20	15:07
		25	4.54	15/02/2024	08:28	55	2.82	12/02/20	08:18	85	2.10	12/02/20	09:56
		26	4.47	12/02/2024	09:58	56	2.80	12/02/20	10:00	86	2.09	12/02/20	09:35
		27	4.37	12/02/2024	15:09	57	2.74	14/02/20	12:14	87	2.07	12/02/20	09:50
		28	4.36	12/02/2024	12:29	58	2.74	12/02/20	15:17	88	2.01	12/02/20	11:48
		29	4.34	12/02/2024	11:43	59	2.74	12/02/20	10:02	89	1.98	12/02/20	09:55
		30	4.28	12/02/2024	10:19	60	2.73	12/02/20	10:05	90	1.94	12/02/20	14:24

Location 3 – Time-history graph



3.10 There was 100% data coverage at Location 3 for the monitoring period covered by this report. There were 188 exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The vast majority of the exceedances at this location are generally 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. Furthermore, correspondence between Cass Allen and the site team confirmed that the following activities caused exceedances at this monitoring location:

- Site vehicles within close proximity to the monitor, as discussed above;
- Loading into a tipper lorry;
- Offsite activity from other trades (not related to the Holloway Park development).

3.11 In addition, the site team confirmed that the removal of a ground floor slab was taking place during the week covered by this report, which was located in close proximity to the vibration monitor. As stated in the BPM document issued by Downwell for this week, the following measures are being taken to minimise noise & vibration emissions from this activity:

- All plant used during the procedure to be suitable for the works.
- All operatives to be suitably trained and competent.
- Machine to be sat at the furthest point from the boundary whilst loading.
- No unnecessary use of the horn.
- Suppression to be used when required.
- No loud music in the plant cab.

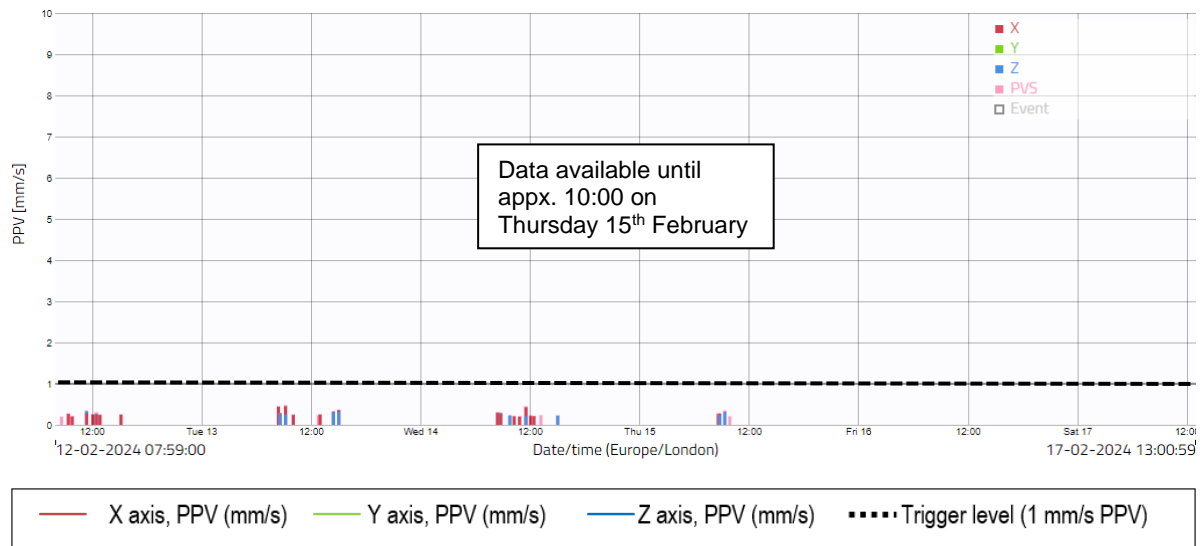
3.12 However, due to the proximity between the vibration sensor and the nearest sensitive receptor, it follows that the vibration levels at this position would have been lower than shown at the sensor location, but still likely above the 1.0 mm/s PPV action level at the NSR, at times.

3.13 It is understood that the above activity is due to continue during the w/c 19th February. Cass Allen will continue to review noise and vibration emissions and advise on any further practicable measures to minimise vibration.

Location 4 – Raw data

Measuring point:	Period:	Order	Value	Date	Time
Holloway - L4	12/02/2024 to 17/02/2024	1	0.48	13/02/2024	09:13
		2	0.45	13/02/2024	08:27
Criteria mm/s PVS	Exceedances	3	0.45	14/02/2024	11:34
1.0	0	4	0.40	13/02/2024	08:27
		5	0.37	13/02/2024	15:03
		6	0.35	15/02/2024	09:22
		7	0.35	12/02/2024	11:25
		8	0.34	13/02/2024	14:28
		9	0.33	13/02/2024	15:04
		10	0.32	13/02/2024	14:30

Location 4 – Time-history graph



3.14 There was 58% data coverage at Location 4 for the monitoring period covered by this report. The monitor was online until appx. 10:00 on Thursday 15th February. The manufacturer of the monitor requested it to be removed for a fault investigation, and confirmed they will supply a temporary replacement for Cass Allen to install during the week commencing 19th February. From the available data, there were no exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above.