

APPENDIX 10.2: BASELINE SURVEY

Baseline Noise Survey

The environmental (LT# and ST#) and entertainment (E#) noise monitoring locations are described in Table 10.2.1 and shown in Figure 10.1.

Table 10.2.1: Noise Monitoring Positions

Position	Period	Description	Observations and Predominant Noise Sources
LT1	Unattended measurement 15/05/24 to 21/05/24	Façade measurement at the north-west corner of the existing building on the Site, at 2 nd Floor level.	During the daytime, road traffic noise from Whitworth Street West and surrounding roads dominates, with regular passing trams also contributing. During evening and night-time hours at the weekend, high levels of low-frequency noise from music at the Rebellion nightclub, and to a lesser extent Deansgate Locks dominates the noise climate.
LT2	Unattended measurement 15/05/24 to 21/05/24	Façade measurement at the southern façade of the existing building on the Site, at 3 rd Floor level, overlooking the Deansgate railway station platform.	Regular passenger trains both stopping at the station and passing through dominate the noise climate at this façade. Occasional freight trains also influence the noise climate for short periods. Road traffic noise from the surrounding area contributes to the background noise levels.
ST1	Attended 15-minute measurement 15/05/24	Façade measurement at the north-west corner of the existing building below LT1 at 1.5 m above ground level (AGL)	Road traffic noise from Whitworth Street West and surrounding roads dominates, with regular passing trams also contributing
E1	Attended 5-minute measurement	Façade measurement below LT1 at 1.5 m AGL, during band playing at Rebellion	The bass and vocals of the band playing at Rebellion were audible outside of the venue over the prevailing environmental noise, largely escaping from closed fire exit door.
E2	Attended 10-minute measurement	Façade measurement opposite Rebellion fire escape at 1.5 m AGL, during band playing at Rebellion	
E3	Attended 5-minute measurement	Free-field measurement 2m from the Rebellion fire exit, 1.5 m AGL, during band playing at Rebellion	
E4	Attended 5-minute measurement	Free-field measurement 15m from Revolution, 1.5 m AGL, during busy nightclub	Nightclub music was audible over the prevailing environmental noise, increasing when the venue doors opened. The doors are kept shut unless patrons enter/exit. The three venues were similar in noise level, but with Popworld appearing to have slightly louder emissions.
E5	Attended 5-minute measurement	Free-field measurement 15m from Ark, 1.5 m AGL, during busy nightclub	

E6	Attended 10-minute measurement	Free-field measurement 15m from Popworld, 1.5 m AGL, during busy nightclub	
E7	Attended 5-minute measurement	Façade measurement opposite Rebellion fire escape at 1.5 m AGL, during DJ set at Rebellion	Low-frequency bass from the venue during the DJ set was significantly louder than the prevailing environmental noise climate. Elements of the Rebellion façade were clearly vibrating due to the music and the façade did not appear to reduce emissions from the venue to any degree.
E8	Attended 1-minute 33s measurement	Free-field measurement 1m from the Rebellion fire exit, 2.5 m AGL, during DJ set at Rebellion	

All noise measurements were taken with calibrated precision grade (Class 1) frequency (one-third-octave band) sound level meters to provide a detailed description of the prevailing environmental noise characteristics. The sound level meters were set-up to record the L_{eq} , L_{90} , L_{10} and L_{max} noise indices in the A-weighting network over a 125 ms fast response time constant interval for the duration of the survey. Roughly translated the indices describe in turn the average, background, road traffic and maximum noise level.

Full details of the instrumentation used for the noise measurements, including calibration certificates are available on request.

Weather conditions, whilst not actively measured during the survey period, were monitored remotely throughout. Weather conditions were ideal for the measurement of noise, with low wind speeds prevailing ($<4 \text{ ms}^{-1}$). There were small amounts of rain on Wednesday 15th and Thursday 16th May, however the data was reviewed at these times and is still considered suitable.

Figures 10.2.1 and 10.2.2 show the measured noise level time history charts at the long-term measurement locations.

Figure 10.2.1: Noise Level Time History Chart at Position LT1

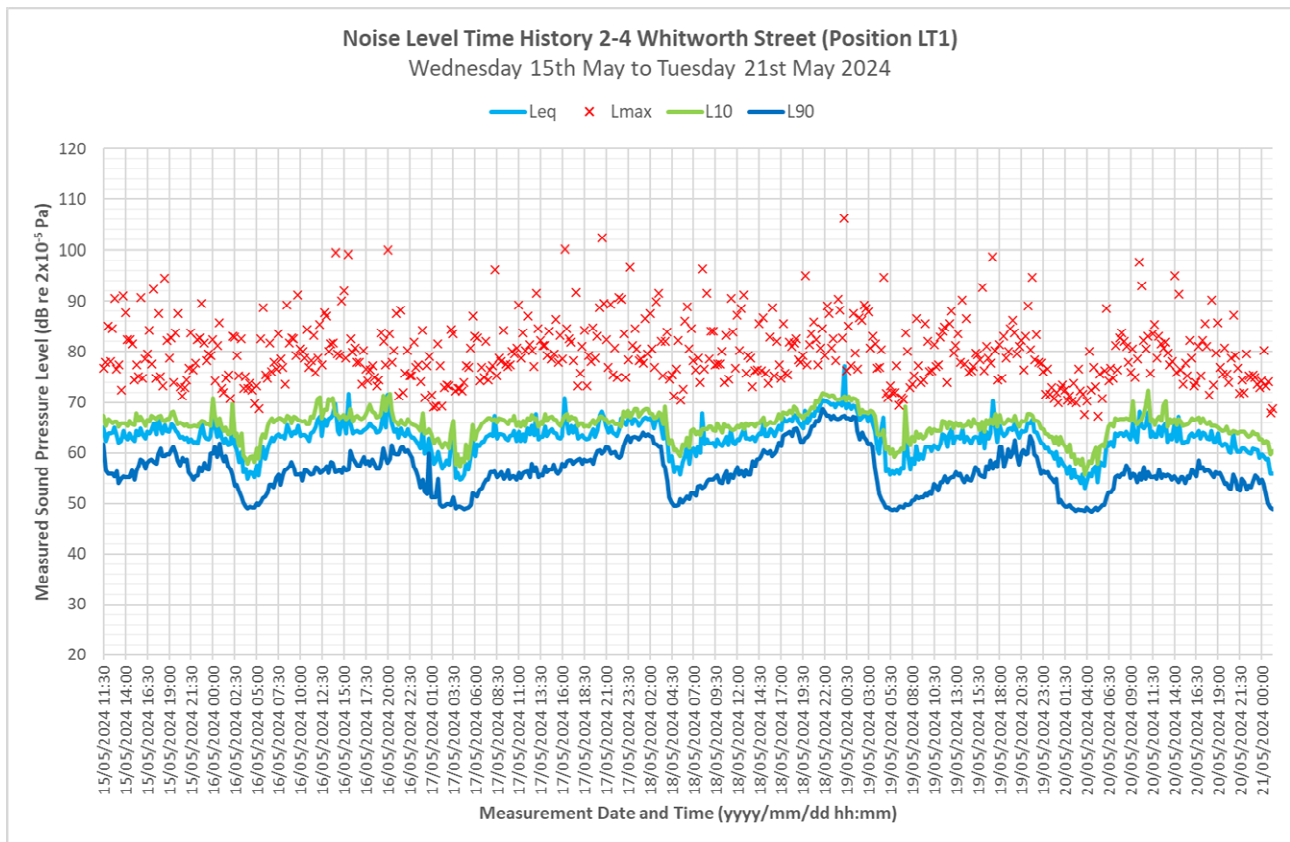
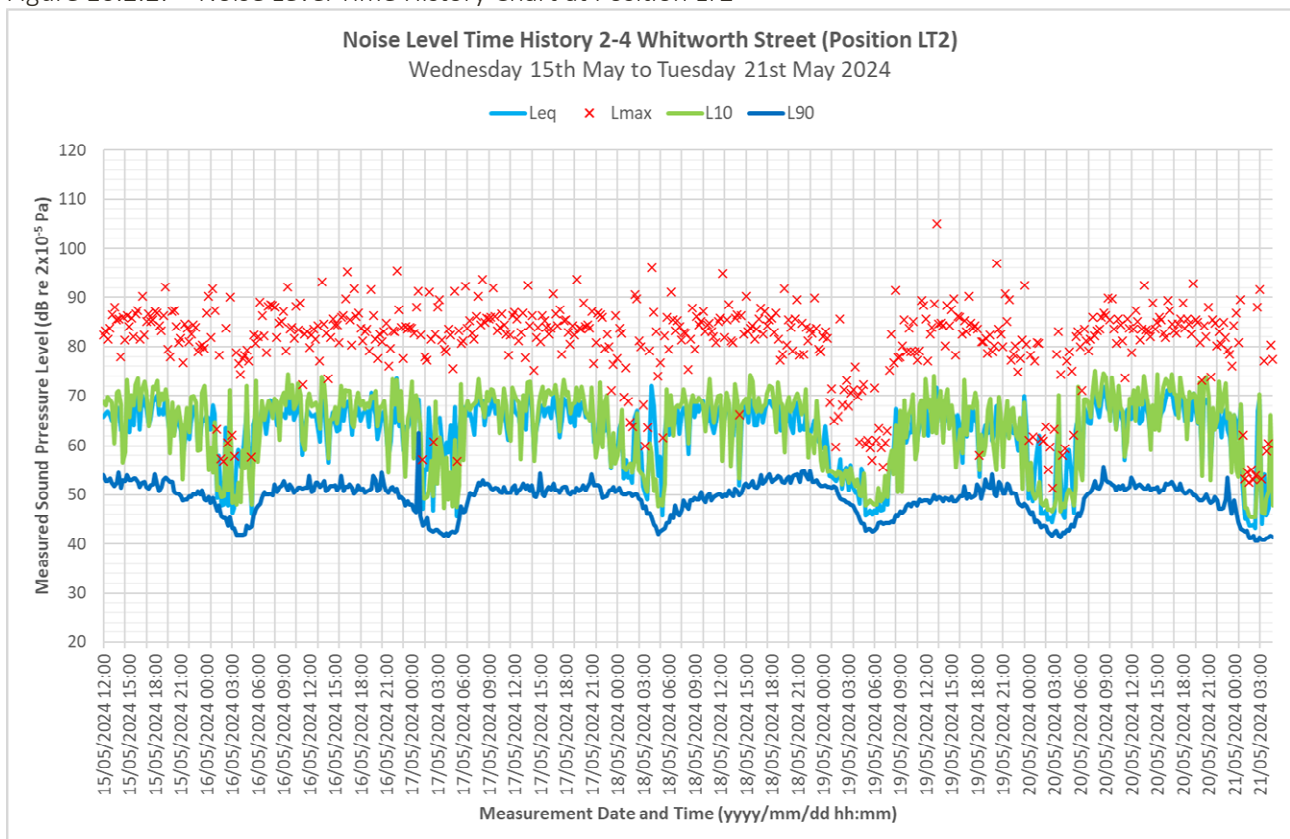


Figure 10.2.2: Noise Level Time History Chart at Position LT2



Vibration Survey

Attended baseline vibration surveys were undertaken on Thursday 18th, Tuesday 23rd and Monday 29th April 2024 at the Site to measure the level of ground-borne vibration from individual passing passenger and freight trains on the railway viaduct to the south. The vibration measurement locations are indicated in Figure 10.1 and described in Table 10.2.2 below.

Table 10.2.2: Noise Monitoring Positions

Position	Description	Observations and Predominant Noise Sources
V1	On the solid pavement in line with the existing southern building façade, between 2 and 4 Whitworth Street West. 2 m from the railway viaduct.	Regular passenger trains, both passing through Deansgate station and stopping at the platform. Freight trains are scheduled regularly but frequently do not run. Vibration was not clearly felt at any location.
V2	On the solid pavement central to the Site, between 2 and 4 Whitworth Street West. 10 m from the railway viaduct.	
V3	On the solid pavement in line with the existing northern building façade, between 2 and 4 Whitworth Street West. 20 m from the railway viaduct.	

Vibration measurements were taken using a data logger with a calibrated tri-axial accelerometer fixed to a heavy DIN plate, and mounted on domed feet. The plate was positioned on a paved surface with the x-axis accelerometer perpendicular to the viaduct.

Figure 10.2.3 shows the maximum measured acceleration levels in 1/3 octave bands during train passes at the measurement locations.

Figure 10.2.3: Measured Vibration Acceleration Levels

