

152-156 Kentish Town Road- Proposed Monitoring & Reporting Methodology

Overview

If commissioned, Tetra Tech intend to install 2 unattended noise meters and 2 unattended vibration meters on the construction site to measure noise and vibration levels associated with the construction works. The monitors will be positioned along the boundaries of the site to represent the facades of bordering sensitive receptors, likely to be on the northern and southern boundaries of the site.

Noise and vibration levels will be measured continuously throughout the duration of the works.

<u>Noise</u>

The equipment comprises a black briefcase sized box with a noise meter inside with a cable running out of the box attached to a microphone/windshield. The noise meter is powered by 4x 12-volt batteries housed in 2 further black peli cases (see Figure 1). The equipment will be clearly labelled with Tetra Tech contact information on and will be chained and padlocked up along boundary fences or attached to an unmoveable object; the equipment will be positioned so that it does not interfere with any pedestrian or vehicular access. The initial set-up of noise monitoring equipment is likely to take around 1 hour. The equipment will be serviced, calibrated and batteries changed by Tetra Tech staff every 2-3 weeks.

Figure 1: Typical unattended noise meter set-up photo





Automatic alerts will be sent through to Tera Tech staff when designated boundary noise trigger levels are breached or near to exceedance. Tetra tech staff will then remotely analyse noise levels and sound files and inform the site manager of the situation. Alerts can be set-up to be sent to site representatives if required. A traffic light approach will be used to determine what action needs to be taken on site. Red, amber and green criteria will be determined based on boundary limits calculated in the construction noise management plan (taking into account distance to nearest receptors) or set by the local authority. An example is shown below in figure 2.

Figure 2: Example of Noise Level Criteria Using Traffic Light System

Monitoring Levels	Time Period	Maximum Permissible Noise Levels at Site <u>at Site</u> Boundary (dB L _{Aeg,10hour})	
Red (at this level all works to cease immediately, investigate cause of exceedance and use alternative methods where appropriate)	Hourly between 08:00 – 18:00	> <u>7</u> 65.0	
Amber (continual monitoring and investigation of alternative methods where appropriate)	Hourly between 08:00 – 18:00	<u>7</u> 60.1 – <u>7</u> 64.9	
Green (no action required)	Hourly between 08:00 – 18:00	< <u>7</u> 60.0	

Note exceedance of the 'Red' (maximum permissible) limit would result in cessation of site work where they are deemed to be the source of the noise.

Data will be downloaded remotely on a weekly basis (or more regularly if needed) with a report issued to the client on a monthly basis. Results will be reported with reference to site boundary limits

Vibration

The equipment comprises a black briefcase sized box with a vibration meter inside with a cable running out of the box attached to a transducer (see Figure 3). The equipment will be clearly labelled with Tetra Tech contact information on and will be chained and padlocked up along boundary fences or attached to an unmoveable object; the equipment will be positioned so that it does not interfere with any pedestrian or vehicular access. The initial set-up of vibration monitoring equipment is likely to take around 1 hour. The equipment will be serviced, batteries changed, and transducer checked by Tetra Tech staff every 2-3 weeks.

Figure 3: Typical Vibration meter set-up





Automatic alerts will be sent through to Tera Tech staff when designated boundary vibration trigger levels are breached or near to exceedance. Tetra tech staff will then remotely view the vibration levels and quickly inform the site manager of the situation. Alerts can be set-up to be sent to site representatives if required. A traffic light approach will be used to determine what action needs to be taken on site. Red, amber and green criteria will be determine based on the results of the attended vibration survey that will be undertaken prior to construction works/ during the initial construction works which will be carried out in accordance with BS 5228-2:2009+A1:2014 'Code of Practice for noise and vibration control on construction and open sites – Part 2: Vibration'. An example is shown below in figure 4.

Figure 4: Example of Vibration Level Criteria Using Traffic Light System

Monitoring Levels	Time Period	Vibration Limit at Monitoring Position (peak particle velocity)	
Red (at this level all works to cease immediately, investigate cause of exceedance and use alternative methods)	08:00 – 18:00	>15.0 mm/s	
Amber (continual monitoring and investigation of alternative methods where appropriate)	08:00 - 18:00	1.1 – 14.9 mm/s	
Green (no action required)	08:00 – 18:00	<1.0 mm/s	

Note exceedance of the 'Red' (maximum permissible) limit would result in cessation of site work where they are deemed to be the source of the vibration.

Data will be downloaded remotely on a weekly basis (or more regularly if needed) with a report issued to the client on a monthly basis. Results will be reported with reference to site boundary limits.

Façade Monitoring

The adjacent buildings to the development site will be monitored for movement before and during construction works.

Retro reflective survey targets will be established on the building facades which will be measured using a tripod mounted total station. The total station will be set up over accurate primary survey control established in a safe and stable location with a clear view to each of the targets. Sufficient primary control points will be established, referenced to an arbitrary grid and datum, to ensure that all monitoring points can be observed. A minimum of three face left and face right observations will be taken to each of the monitoring targets to accurately determine the X,Y,Z location of each.

A base measure survey will be carried out to determine pre-construction co-ordinates and levels for the monitoring points, against which all subsequent measures will be compared.

The survey results will be presented on a spreadsheet providing X,Y,Z coordinates and a millimetre value shift between each measure and the base measure results. Any movements will be coloured coded according to the trigger levels in the table below.

Alert Level	At Completion of Excavation		At Completion of Basement	
	Vertical	Horizontal	Vertical	Horizontal
Red (at this level all works to cease immediately, investigate cause of exceedance and use alternative methods)	5mm	5mm	10mm	14mm



Amber (continual monitoring and investigation of alternative methods where appropriate)	4mm	4mm	7mm	11mm
Green (no action required)	3mm	3mm	6mm	10mm