Memo

Project: National Paediatric Hospital

Report Type: Summary of Noise and Vibration Monitoring Results

Period of Monitoring: Sensor data 3rd August – 25th August 2017

Introduction

Contained within the project documents for the National Paediatric Hospital development are requirements for Environmental Monitoring to be completed during construction works. This monitoring regime includes recording dust deposition, noise at the perimeter of the site, and ground vibration at the perimeter of the site. Permissible limits for each monitoring regime have been set out in the Project EIS which was submitted with the Planning Permission for the Hospital.

The number of Monitoring points will vary throughout the project depending on the construction works being undertaken. Additional monitoring points may be added if particular features of adjacent properties require it.

Vibration Monitoring.

Vibration monitor sensors will be located at the perimeter of the site in locations where significant works are ongoing on site.

The Project Environmental Impact Statement (EIS) that was part of the project Planning Permission established vibration limit at structures depending on their condition and type. Please see tables below for the limits set.

Table 11.7: Allowable vibration during construction phase for soundly constructed buildings

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of		
Less than 10Hz	10 to 50Hz	50 to 100Hz (and above)
15 mm/s	20 mm/s	50 mm/s

Table 11.8: Allowable vibration during construction phase for sensitive buildings

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of		
Less than 10Hz	10 to 50Hz	50 to 100Hz (and above)
3 mm/s	3 – 8 mm/s	8 – 10 mm/s

Site operations are monitored using a traffic light trigger system of Green, Amber and Red trigger levels with the Red trigger level set at a vibration limit of 3mm/s PPV which corresponds to the lowest

permissible vibration limit for sensitive structures. Any vibration level recorded below Red levels is acceptable within the limits established in Planning.

Number of Monitors on Site:

During the monitoring period summarised for this report (3rd to 25th August 2017) there were up to 7 active vibration monitors installed at the perimeter of the site.

Location of Vibration Monitors:

Location of Vibration Monitors

Memo

Observations:

Executive Summary:

All vibration readings recorded below the limit specified within the Project EIS

Detailed Summary:

Sensor Location 2 (9244) O'Reilly Avenue No. 72

- All vibration readings recorded below the limit specified within the Project EIS

Sensor 8681 – MP7 – Brookfield Clinic

- All vibration readings recorded below the limit specified within the Project EIS

Sensor Location 2A – Sensor Number 8898 – MP07 – O'Reilly Avenue No. 64

- All vibration readings recorded below the limit specified within the Project EIS

Sensor Number 9141 – MP04 – Hospital (External)

- All vibration readings recorded below the limit specified within the Project EIS

Sensor Number 8939 – MP01a – Cameron Square

- All vibration readings recorded below the limit specified within the Project EIS

Sensor Number 8995 – MP08 – O'Reilly Avenue No. 68

- All vibration readings recorded below the limit specified within the Project EIS

Sensor Number 8983 – MP05 – O'Reilly Avenue No. 58

- All vibration readings recorded below the limit specified within the Project EIS

Noise Monitoring.

Noise monitor sensors will be located at the perimeter of the site in locations where significant works are ongoing on site. When works are ongoing the noise monitor sensors run continuously and readings are recorded in decibels (dB) LA_{eq1hr}. Decibels is the standard unit of measurement of sound energy and 'LA_{eq1hr}' means that sensors record all levels of sound over a 1 hour period and then calculate an average equivalent decibel level as if the sound was continuous. Isolated instantaneous loud noises are thus averaged out.

The Project Environmental Impact Statement (EIS) that was part of the project Planning Permission established a noise limit at residential dwellings of 70dB LA_{eq1hr}. Site operations are monitored using a traffic light trigger system of Green, Amber and Red trigger levels with the Red trigger level set at the noise limit set out in the project EIS (70 dB LA_{eq1hr}.). Any noise level recorded below Red levels is acceptable within the limits established in Planning.

Memo

Number of Noise Monitors on Site:

During the monitoring period (3rd to 25th August 2017) summarised for this report there were up to 6 active monitors at the site boundaries. Monitor 01, 02, 03, 04, 05, and 06 (shown on the map view below) have recorded results.

Location of Noise Monitors:

Location of Noise Monitors

Observations:

Detailed Summary:

The monitoring results for noise for this period were all within the limits set out in the Project EIS with the following exception:

17th August:

- Noise Monitor 05 recorded levels above those set out in the Project EIS with a peak of 79dB LA_{eq1hr}.